



KLE Society's S Nijalingappa College

II Block, Rajajinagar, Bengaluru - 10

Reaccredited by NAAC at 'A+' level with 3.53 CGPA

College with UGC STRIDE Component - 1

UGC STRIDE Sponsored

National Webinar on

Proceedings

“

IMPACT OF nCOVID-19 ON

HIGHER EDUCATION TRANS-DISCIPLINARY RESEARCH

& EMPLOYABILITY

”

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KLE Society’s

S. Nijalingappa College

II Block, Rajajinagar, Bengaluru-560010

Re-accredited by NAAC at ‘A’ grade with 3.53 CGPA

College with UGC STRIDE Component –I

UGC – STRIDE Sponsored One Day National Webinar

ON

**“IMPACT of nCOVID-19 on HIGHER EDUCATION, TRANS-
DISCIPLINARY RESEARCH AND EMPLOYABILITY”**

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About Society

The KLE Society, Belagavi, since its inception 1916, has been a model in parting quality education and upliftment of socioeconomic status. The KLE Society disseminates the knowledge in all spheres of education from pre nursery to PG, for overall personality development of the students. It promotes and encourages the student’s community to opt for programmes like Medicine, Dentistry, Pharmacy, Nursing, Agriculture, Law, Business management, Hotel management, Engineering & Technology, Basic Arts, Science, Commerce and Education. Under the leadership of visionary chairman Dr. Prabhakar B. Kore, M.P., the number of institutions has elevated up to 270 in various fields of education including research in India & abroad with equality concept. The dynamism of our chairman has motivated the faculty & students in the process of exploring the knowledge for the welfare of the society at large.

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About Our College

KLE’s S. Nijalingappa College, established in the year 1963, is one of the premier institutions under KLE Society, and has been included under 2(f) and 12(b) of UGC. The college has seen phenomenal growth in terms of courses offered, quality enhancement, student and staff strength besides development in infrastructure. The college offers higher education to 3,685 students from all sections of the society. Over its glorious service of more than half a century to the community, the college has earned many significant laurels. The crowning one of these are: the rare distinction of having been re-accredited at ‘A⁺’ grade with CGPA of 3.53 on a 4 point scale in 2016; it has received the status of the ‘College with Potential Excellence’ Phase – 2 and STRIDE Component – 1 by UGC in 2019. The college conducts a range of UG courses in BA, B.Sc, B.Com, BCA, BBA, BHM and PG Courses in M.Sc., M.Com., MCA, and Ph.D in Commerce to cater to the diverse needs of the evolving higher educational scenario at the national as well as global level.

The college is also recognized as research center in commerce by Bengaluru Central University.

About Seminar

The recent outbreak of the novel corona virus has caused disruption across the world. Containment measures, including lockdown of cities, cancellation of events, unprecedented “work from home” arrangements and quarantine measures are having worldwide impacts. Even as governments all over the world are scrambling to control the corona virus outbreak, the disaster that this pandemic has brought along with it has impacted the socio-economic viability of all strata of society. The challenge today is to strive towards a higher level of understanding among corporate sectors, civil societies, and citizens to ramp up the preparedness for mitigating the damage and expanding the cure. Needless to say, the pandemic has transformed the centuries-old, chalk-talk teaching model to the one driven by technology. A multi-pronged strategy is necessary to manage the crisis and build a resilient Indian education system in the long term. The seminar aims to foster a platform for sharing of knowledge with the most up to date knowledge, methodologies and tools overcome this crisis. Therefore, the theme “Impact of nCovid-19 on Higher Education, Trans-disciplinary Research and Employability”, seeks to broadly analyse and promote discussion on the battle against the Covid-19 pandemic and way forward.

Subthemes

A. Trans-disciplinary Research

1. Biological therapeutics
2. Role of government in combating with nCovid-19
3. Student behavioural stress and Psychological resilience
4. Global mobility to treat pandemic diseases
5. Impact of global lockdown on biodiversity
6. Contribution of AYUSH to treat pandemic
7. Data Privacy, Protection and Security
8. Disaster planning, response, and recovery
9. Role of mass media
10. Policy initiatives
11. Food security
12. Biomedical applications

B. New approaches in HEI

1. Pedagogical changes in higher education
2. Evaluative systems
3. Robust online platforms
4. Resetting of ethics and values
5. Social responsibility of youth

C. Employability

1. Opportunities for Start Up
2. Reverse migration
3. Travel and tourism
4. Agripreneurship
5. Vocal for Local
6. Neo-protective apparel
7. Unorganized labour sector
8. e-commerce

Participants/Beneficiaries: Academicians, Research scholars, UG and PG students.

Awards: Two best papers have been awarded to Faculty and UG/PG students (One each) respectively, along with a certificate to be conferred at the valedictory.

Prof. Rajaiah B, Organizing Secretary

rajaiabh99@gmail.com, covid19kle@gmail.com, Mobile No. 08277110132

Webinar Schedule

23rd June 2020

Time	Tuesday, 23 rd June 2020
9.30 am – 10.00 am	Online entry for participation & presentation
10.00 am – 10.15 am	Inauguration
10.15 am – 11.15 am	Key Note address Prof. Y. M. Jayaraj Vice Chancellor, Pravara Institute of Medical Sciences Loni, Maharashtra
11.15 am – 12.15 pm	Technical Session – I Dr. T. Thievasanthi International Research Centre, Kalasilingam University Krishnankoil – 626190 India
12.15 pm – 12.30 pm	Session Break
12.30 pm – 01.30 pm	Technical Session – II Oral Presentations
01.30 pm – 02.15 pm	Lunch break
02.15 pm – 03.15 pm	Technical Session – III Oral Presentations
03.15 pm – 04.15 pm	Valedictory Sri. Shankaranna I. Munavalli Director, KLE Society, Belagavi Presided By Dr. Arunkumar B Sonappanavar, Principal
04.15 pm	Generating Certificates to Delegates

Organizing Secretary

Sri. Rajaiah B.

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Sri. K. Nagi Reddy

Dr. Parvathi N. Angad

Coordinator

Dr. M.B. Chittawadagi



Message by

**Dr. Prabhakar B. Kore,
Chairman
KLE Society Belagavi
Karnataka**

I am happy to learn that IQAC of KLE Society’s S Nijalingappa College, Bengaluru is organising UGC-STRIDE Sponsored one day National webinar on “**Impact of nCOVID-19 on Higher Education, Trans-Disciplinary Research and Employability**” 23rd June 2020 and invited eminent resource personalities. I am sure that the webinar will enrich the knowledge of academicians and administrators of higher education institutions across the nation. Congratulations to the organisers and I wish the webinar a grand success.

Dr. Prabhakar B. Kore



Message by

**Shri. Shankaranna I Munavalli Member,
Board of Management
KLE Society Belagavi
KLE Society’s S Nijalingappa College
Rajajinagar, Bengaluru-560010**

This is my privilege and I am very happy to welcome you all for UGC-STRIDE Sponsored one day National webinar on **“Impact of nCOVID-19 on Higher Education, Trans-Disciplinary Research and Employability”** 23rd June 2020 organised by KLE Society’s S Nijalingappa College, Bengaluru. It is worth mentioning that the topic of the conference is related to the current nCOVID-19 outbreak. The webinar will help in understanding the impact of nCOVID-19 on society. I am sure that the one day keynote address, special talk and academic/research work presentations will be helpful for the participants.

Shri. Shankaranna I Munavalli



Message by

Dr. Arunkumar B Sonappanavar
Principal
KLE Society's S Nijalingappa College
Rajajinagar, Bengaluru-560010

It gives me immense pleasure to welcome all the eminent speakers and delegates to the UGC-STRIDE Sponsored One day National webinar on “**Impact of nCOVID-19 on Higher Education, Trans-Disciplinary Research and Employability**” 23rd June 2020 organised by KLE Society's S Nijalingappa College, Bengaluru.

The webinar covers a keynote address followed by three technical sessions by eminent speaker, Research scholars and students across the country. The one day academic deliberations in the webinar enlighten the faculty, researchers and students to bring awareness about the impact of nCOVID-19 on higher education, trans-disciplinary research and employability.

On this occasion, I extend a heartfelt welcome to all the delegates to KLE Society's S Nijalingappa College, Bengaluru. The college will bring out proceedings of the webinar. I congratulate the organising committee members of webinar in conducting such an event to boost the knowledge of faculty, researches and students.

Dr Arunkumar B. Sonappanavar



Prof. Rajaiah B
Organising Secretary

Report of National Webinar

I feel privileged to present a brief talk on **“Impact of nCovid-19 on Higher Educational Trans-Disciplinary Research and Employability”**. Our College has been awarded A⁺ grade by NAAC on third cycle with 3.53 CGPA and College with UGC stride component-1 and has been offering quality education since its inception in 1963. In the present situation pandemic Covid-19 has severely affected the total education system of the globe, some of the most impacted areas of higher education of India are destabilization of educational activities, mixed impact on Academic research and professional development i.e. Covid-19 has both negative and positive impacts on research, severely affected the educational assessment system and reduced employability opportunity. Our College has been striving to contribute forwards the enrichment of Higher Education by offering a forum for generating innovative ideas in National Seminars/Conferences and workshops.

The present UGC Stride sponsored National webinar on **“Impact of ncovid-19 on Higher Educational Trans-Disciplinary Research and Employability”** is continuation of quality in higher education in the era of Covid-19. As a result the papers presented during the technical sessions have been brought into the document form and this webinar proceeding with ISBN is likely to motivate the research scholars in the field of Trans-Disciplinary Research to go in for further and greater research for contributing forwards eradications of this pandemic. I am very much thankful to the Research scholars and students for taking pains to offer the research papers for enriching the academia. These proceedings contain the papers received from teachers, research scholars and students on

enrichment of trans-disciplinary research in the era of Globalizations. This proceeding has been prepared on a valuable document for guiding the young researchers and students to develop passion in research. I take this opportunity to thank UGC-STRIDE for providing financial support for organizing one day National webinar. I thank our honourable chairman Dr. Prabhakar B Kore K L E societies Belagavi, all the members of Board of management, the secretary and life members for extending their full support and valuable guidance in successfully organizing this academic event. I also thank our beloved Principal, my colleagues and all others who have directly and indirectly extended their support in making this webinar a grand success.

Prof. Rajaiah B

Organising Secretary

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Covid-19 Research Avenues - Self- Reliance India 2020

Dr. Mamatha Hegde

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Abstract

The corona virus (Covid-19) has impacted overall health, business, and culture and research sector too. Ample of research opportunities have opened to the doors for research in multi-disciplinary sector starting from health, food, clothing, comfort, protection and overall wellbeing of mankind. Research and Innovation in these sectors helps to solve the problems of ancient, present and future. Innovator will be able to find out the problems based on end users perception. Extensive research is required in all these areas. ”Innovative research in agriculture sector needs food standardization and harmonization. Govt. of India has allotted different grants for undertaking R&D activities. This also opens up avenues for collaboration and public-private partnerships. Manufacturing is not new to India. Branding, Standardization, Promotion and filing patents helps the manufacturers to become quality conscious.

Keywords: Covid-19, Innovation, Self- Reliance India, Digital health and Starts ups

Introduction

Research and Innovation in these sectors helps to solve the problems of ancient, present and future. Innovator will be able to find out the problems based on end users perception. Expansion of venture capital and quality of leadership in maintaining a healthy environment for innovation is also crucial. India can become global production centre with right re- search of our indigenous knowledge. There is a need for differently thinking mind, Creativity and Insightfulness. The corona virus (Covid-19) has impacted overall health, business, and culture and research sector too. Ample of research opportunities have opened to the doors for research in multi-disciplinary sector starting from health, food, clothing, comfort, protection and overall wellbeing of mankind. Extensive research is required in all these areas. “Innovation is core to any business model.” Most important is balancing of traditional business thinking with more effective innovative mind sets. The first thing is to recognize that our traditional way of thinking and acting is not programmed for innovation. Therefore, to be innovative, we need to transform how we act and think. Manufacturing is not new to India. We found number of examples In Indian manufacturing history where India was global leader. In Harappan

Civilization (4000-3000 BC) we found evidences of manufacturing of weights, measures, casting of metal tools, technologies for lifting load and transportation of material. In medieval history, India was famous for its iron work. Innovation to become innovator one should generate idea, select and implement idea with process and techniques.

Innovation

Innovative research in agriculture sector needs food standardization and harmonization. An investigation of the efficiency of farms in India according to area of location with a study of the policies on supply of water and relevance to agriculture-perspectives is most need of the day. India's honorable Prime Minister Shri Narendra Modi says 'I see startup technology and Innovation as exciting and effective instruments for India's transformation'. India is presently ranked 76th among a total of 143 economies, as per the Global Innovation Index (GII)

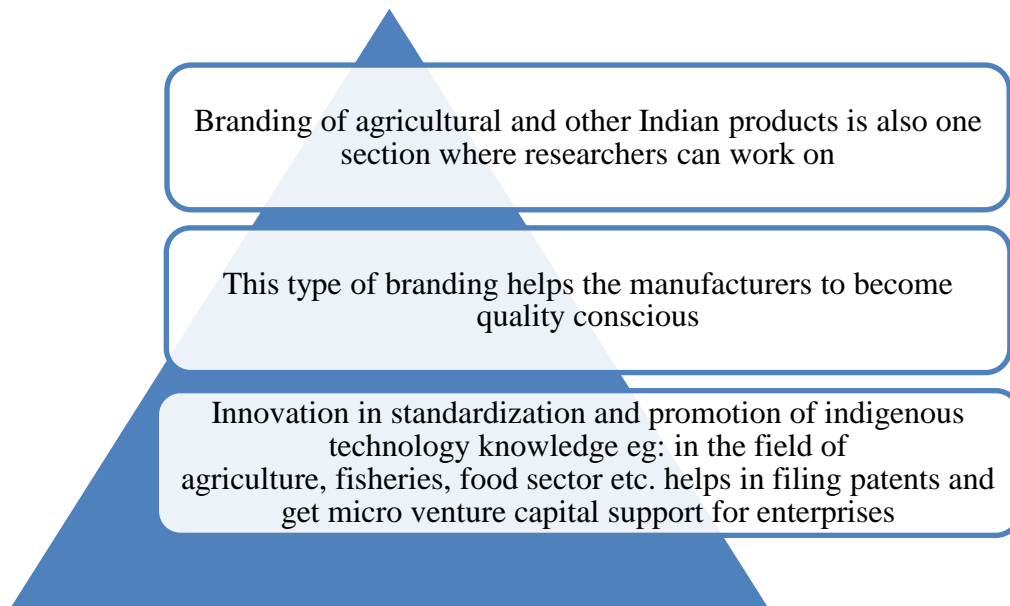


Figure 1 Innovation and Branding in Different Sectors

Government of India Support for Research Covid- 19 virus

Govt. of India has allotted different grants for undertaking R&D activities. This also opens up avenues for collaboration and public-private partnerships. The Government of India aims to develop India into a global innovation hub in 5years period. Development of Industrial machineries in India provides ample opportunities for manufacturers. This need new creativity and research in the field. Innovation in development of electronic items such as set-top boxes, solar power systems and telecom network products helps overall Electronic production Industry thereby contributing to Self-Reliance of India.

There are also business incubators and accelerators, where corporations invest in start-ups and provide funding assistance and guidance to entrepreneurs in the hope that new innovations will result that they can use to their benefit.

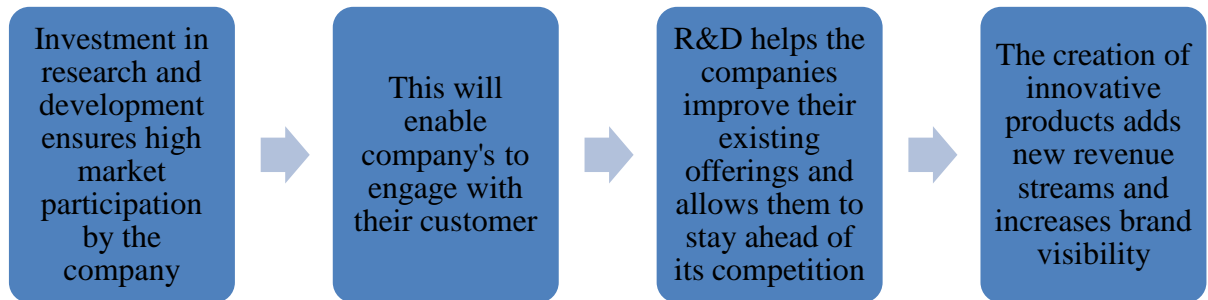


Figure 2 Research and Development for Investors



Figure 3 Research and Development Opportunities in Various Sub Sectors of India

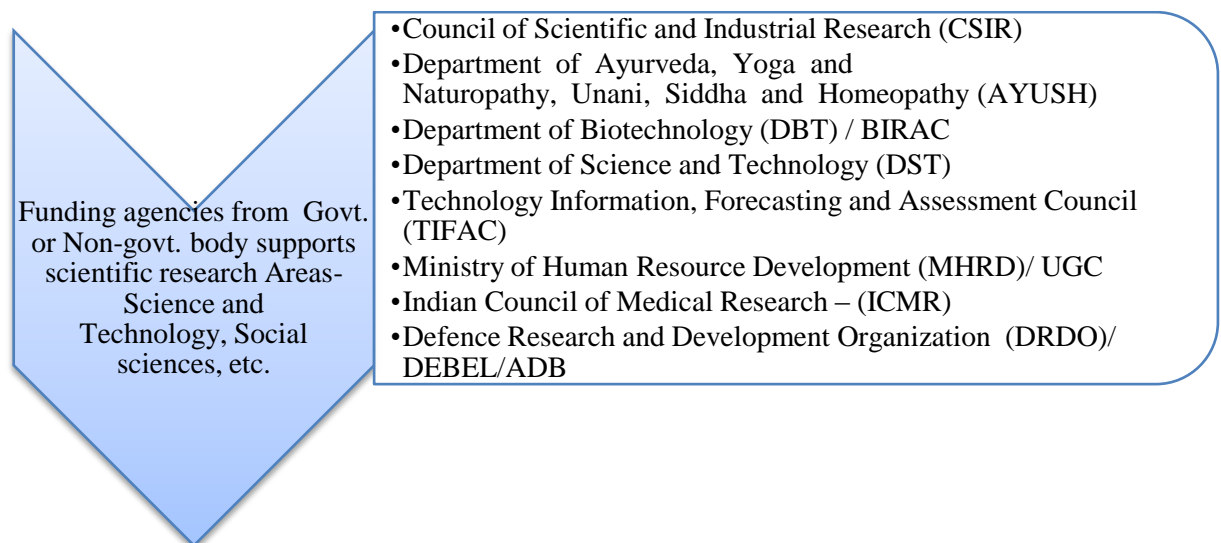


Figure 4 Supporters for Research and Developments in India

Conclusions

Various Schemes and sponsoring sectors under Govt. of India have allotted different grants for undertaking R&D activities which also opens up avenues for collaboration and public-private partnerships. Funding agencies from Govt. or Non-govt. body supports scientific research areas. Branding, Standardization, Promotion and Filing patents helps the manufacturers to become quality conscious. India has Process technology ways to combine 5M's of manufacturing (material, machine, manpower, market and money), organically well lead a nation toward attainment of self-reliance. India needs to create more synergies in food technology, agriculture, biotechnology. Prioritizing and adaption of innovation should act as main drivers of productivity growth and improved sustainability. Creativity, flexibility, and adaptation are the keys for innovation.

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Pedagogical Changes in Higher Education

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Abstract

As the COVID 19 pandemic ravages our world ruthlessly, turning our notions on living upside down, we are left to grapple with far reaching changes that are taking place in every area of life such as health, finances, relationships, career, etc. One such area which is seeing tectonic shifts is the sector of higher education. Our time tested traditional way of dispensing college education through classroom teaching has come to an end in a sudden and shocking manner in the past few months of lockdown. We teachers have had to hurriedly embrace technology to continue our syllabus delivery by using online platforms. Higher education, hence, is now transitioning from a reliable system to an unfamiliar but exciting one which will revolutionize the way in which academic development happens. This paper presentation explores the transformation in higher education and attempts to predict its favourable outcomes as well as its inevitable challenges to stakeholders of HEI.

Keywords: *COVID 19; HEI; pedagogical changes; trends*

Introduction

In the past few decades, our two thousand year old education system, which had its origin in Gurukula culture, had evolved into a traditional university based one with its classical model of teaching-learning -evaluation through classroom endeavours. Beginning with frenzied admissions the semesters went through the usual rigmarole of syllabus distribution followed by its delivery via blackboard teaching and ended in mass, public examination with declaration of results. The mechanism involved the much relied upon chalk and talk method which did produce a fair number of brilliant students and generally satisfied most of the stakeholders of HEI, which are the students, faculty, parents and college managements.

Of late, due to advances in technology, a clamour was growing to make use of online delivery systems in imparting higher education. But this suggestion to cross over from conventional method of teaching to technology assisted learning was usually met with resistance by most educators with old mindsets. There was a general perception among teachers that an online education technology could never ever fortify, much less to

replace the tried and tested offline method. An occasional use of technology mainly through PowerPoint presentations was in practice just as a half-hearted response to educate enthusiasts who pressed for increased incorporation of online tools in teaching. A reluctance to be tech savvy, a stubborn belief in robustness of the old system, inability to develop online teaching pedagogies and lack of easy accessibility to digital models especially in rural places, led to a state of inertia where rote learning was encouraged and no attention was given to needs of future employment would be graduates.

All this changed suddenly in the months of March-April 2020. The novel Corona virus disease 2019 now infamous as Covid 19 believed to have originated from a Chinese wet market began its Armageddon run through our world demolishing our innocent beliefs about our safety in matters of health, economy, family life and especially our survival as human species. In the past few months everything we thought we knew about the business of living has changed. This disease, with its scant respect for our hitherto accepted norms of existence has turned our lives upside down. Rich nations with best health care systems have been reduced to crumbling economies with high death rates. Almost the entire planet has been forced into a lockdown by various governments bringing an eerie stillness to our famous cities. Every area of life has been affected with terms like quarantine, social distancing, primary contacts, PPE, etc being casually thrown in to everyday conversation. Employees losing their jobs, educational institutions locked up, families losing their dear ones, manufacturing units being non-functional, etc are the fall outs of this situation.

For the first time in recent history our higher institutions of learning have closed down completely resulting in the large student community staying indoors with great anxiety about the future. The need to deliver the syllabus and complete it on time has forced our institutions to resort to the only way in which this is possible: to go completely online. From a state where only a cursory attention was paid to virtual tools of teaching our teachers are now suddenly plunged in to an unfamiliar zone of Google classrooms, Zoom and other teaching apps, webinars, etc. This new mode of teaching and learning has brought about a tectonic shift in the HEI sector and our old way of doing academics has changed irrevocably in to something new, challenging as well as exciting.

Possible outcomes due to pedagogical changes in higher education:

The sudden change from offline to online mode of teaching, when contemplated seriously leads to a number of possible outcomes. These outcomes, which can be considered as tentative future predictions for trends in higher education are as follows:

1. An exponential increase in blended learning: The biggest future benefits of virtual instruction will come after our professors and students return to their physical classrooms [1]. We will come back from COVID-19 with a much more widely shared understanding that digital tools are complements, not substitutes, for the intimacy and immediacy of face-to-face learning. Precious classroom time will be more productively utilized for discussion, debate and guided practice. Presidents, vice-chancellors, provosts and academic deans will be forced to reconsider what part of their educational delivery will be offered in person and what part will be offered online [2]
2. Open universities: Universities/institutes could be online- providing internet-based flexible offerings. Private universities may close their physical campuses and move to online learning along with their public counterparts [3].
3. Admissions will be online: While it is still a grey area, online platforms will be developed wherein students can fill up a single application form to apply to more than 250+ colleges in India at one go. This can also be facilitated with an online counselling facility, wherein education experts counsel students on the best course, degree or college for students basis his/ her academic background and aspiration [4].
4. A growth in demand for skills-based learning. High levels of unemployment across a range of sectors will lead many residents to seek new skills and capabilities to help insulate them from the economic and personal “aftershocks” of the lockdown.

Demand for skills-based learning will grow, but this may look very different from past demand. A focus on short courses, micro-credentials, experiential learning and work-based learning accreditation, based on demonstrable competencies, will replace the demand for long, campus-based programs [5].
5. Impact on faculty: The most evident impact on teachers is the expectation, if not the requirement, that they continue to teach using the virtual modality. It requires a great deal of understanding & application of learning science and digital pedagogy. Every teaching faculty needs to be enabled with this knowledge [6].
6. Impact on non teaching staff: The situation of non-teaching staff, in administration and services, is equally risky when their main tasks are not considered critical to the continuity of teaching. Thus, for example, the personnel linked to technical and computer support belong to the critical category, different to the personnel

who work in canteens, dining rooms or cleaning services. In all these cases, it will be the measures taken by the governments in terms of employment and social protection that will set the tone. It is also the most vulnerable sector in terms of the possible reduction of jobs that private universities, for example, would have to implement in the face of possible financial stringency due to the cancellation of fees or reduction of student enrolment [7].

7. Rise of teleconferencing: Most companies, colleges and universities have banned all non-essential travel for employees. Teleconferencing opportunities will partially replace long distance travel as both faculty and administrators re-evaluate recruitment travel and attendance at academic conferences [2].
8. More students will study closer to home: Specific cohorts of students will opt to study closer to home. According to a report published by QS, prospective Asian students may increasingly look to intra-regional universities for tertiary study [2].

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Higher Education and Learning Analytics: Analysing the Covid 19 Impact

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Abstract

Technology has become predominant aspect of life. It has expanded its branches in all the sectors of the economy including Education. Education is a communally oriented activity and quality education has conventionally been associated with strong teachers having high degrees of personal contact with learners. But online has become the default mode of education during this long lockdown period in the rouse of Covid-19. Among many economic sectors, the higher education sector is undergoing an industrial shift right now. Futurists and education technologists had anticipated earlier, is now happening. The new, complete technology-mediated education can be labelled as Education 4.0, the first three waves of education systems that evolved over 2000 years of civilization –firstly the Gurukula system i.e., one master to a few pupils, secondly the traditional university system which was one to many learners and distance learning i.e. one to very many learners across the spectrum. The use of analytics in higher education is a fairly new area of practice and research. Learning analytics provides students with prospect to have control of their own learning, give them aimproved idea of their present performance in real-time and help them to make well-versed choices about what to study. The purpose of this article is to analyze the concept of learning analytics and what impact it has on higher education. Specifically it will look at the working of learning analytics and its benefits. It explains how it is assisting students, teachers and universities in performing in a better way.

Keywords: *Learning Analytics; Student Retention*

Introduction

There is growing competition in the higher education sector to implement practices which ensure organizational success at all stages by addressing questions about educating and retaining a larger and varied student population, admissions, fund raising and operational efficacy. In this competitive environment, Higher education institutions have arrived at the era of ‘big data’ and are gathering large volumes of data linking to their learners and the educational course. These enormous amounts of data are stowed in the student information systems; including learner interactions with various educational technologies such as learning/course management systems. The data extracted from these

technologies are possibly accessible for data mining, analysis and interpretation and has apprehended the attention of officers, scholars, researchers and government agencies.

Analytics is evolving as a new technology in the higher education sector as it shows various ways to maximize strategic outcomes. There are many examples where institutions have effectively used analytics to develop customized study program for the students, to improve persistence and grades, to recognize students at risk and improve retention. It has also helped to improve resource utilization at various universities.

The global education and learning analytics market size was valued at USD 17.01 billion in 2018. It is anticipated to witness a CAGR of 17.4% over the forecast period. The increased awareness about the potential of learning analytics is improving or changing the learning system in response to student performance, or, in a corporate context, improving the performance of educational institutions is the key factor driving the market for education and learning analytics. Also, learning analytics helps the education sector progress the quality of teaching & learning through advanced and adaptive lessons that suit the reasoning abilities of the learners, which encourages the increased adoption of these techniques in the education sector.

Meanwhile students, as consumers, will increasingly, and admissibly, expect to see that their fees are being spent appropriately. By merging information identified about individuals in advance, like their prior qualifications, with data accumulated about their educational growth, learners who are likely to withdraw can be identified earlier than in the past. Personalized involvements such as guidance from an instructor can then be taken to help to try to retain those students. Teachers are likely to have an interest in make the most of the academic performance of their students and enhancing the overall experience of being present in their institutions. Learning analytics can equip teachers with information on the quality of the educational content and activities they are providing, and on their teaching and assessment process. Some analytics are used by orators to monitor the performance of their students while the classes are being taking place; they can then adjust their teaching if they identify that students are besieged with a particular topic.

Learners, when beginning higher education have little idea of how they are performing in comparison with others, have less prerequisite knowledge, and also lack key learning skills. Providing students better information on how they are developing and what they need to do to encounter their educational goals is a significant application for learning analytics. This has the potential to transmute their learning and their understanding of

how they learn by giving continual decisive feedback as they advance through their studies. It also allows them to compare themselves to peers, by adding a competitive element and a check whether they are keeping up with the class or with the growth of successful students.

Learning analytics is a way of enhancing teaching by some universities, in specific by inspiring more timely marking of student work and serving to build better relationships between students and staff. For many institutions the focus was on putting the analytics tools in the hands of staff that are in direct work contact with learners, and providing them with actionable understandings into student performance. At Nottingham Trent University the tutors were putting effort into supporting students who interested help but missing those who badly needed it. A key aim of learning analytics there was to help identify students at risk before it was too late to arbitrate.

Meaning

The interpretation of a wide range of data produced by and gathered on behalf of students in order to assess academic progress, predict future performance, and spot potential issues. Learning analytics is the use of data and models to forecast student progress and performance and the ability to act on that information. According to Siemens & Gašević “Learning analytics is the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimizing learning and the environments in which it occurs”.

Review of literature

(Sclater, Peasgood, & Mullan, 2016) have stated that, learning analytics acts a tool for quality assurance and quality improvement. It helps the students to understand their level of skills and knowledge and enables to track the progress of them. The underperforming students can be accumulated with the required attention and advice at an earlier stage. It also provides the students with a prospect to take control of their learning.

(Bichsel, 2014) has expressed that, learning analytics has helped institutions advance in ranges such as resource allocation, student success and finance. The author has stated that analytics is being used mainly in enrolment management and student progress. But she states that there are other benefits such as resource optimization and various other administrative functions. Analytics will be successful only if features such as institutional research and information technology are implemented together.

(Kirkwood & Price, 2014), have analyzed the application of Information and Communication technology i.e., technology enhanced learning in teaching and learning.

The article also examines the reason of technology interventions, methods adopted to demonstrate the role of technology in enhanced learning experience.

(Phillips, 2013) has explained that, technology and data analytics helps in increasing the graduation rates by retention of students. Through the identification of student capabilities, it recommends the optimal course structure for each individual student. It also provides additional support to students whose performance is low. It helps to recognize students at risk and offer them with required guidance.

(Dietz-Uhler & Hurn, 2013), have described how learning analytics is used to predict student success and increase student retention. The various tools are used by different universities which include Progressive and Course Management (PACE), Grade Performance System (GPS) etc., to track and analyze data and assess student performance. Finally it also gives an overview about the issues and concerns of using data in learning analytics.

(Atif, Richards, Bilgin, & Marrone, 2013) have observed that higher education institutions are using approaches from learning analytics to make decisions about learner's academic progress, predict future performance and recognize potential issues in timely manner. Many tools and approaches are used in learning analytics like SNAPP tool, C4S tool, AWE tool etc., to facilitate decision making.

(Fergusson, 2012) has pointed out that, learning analytics mainly focuses on learner outcomes. They also throw light on the economic concerns related to higher education costs and results. The integration of technological advances and huge volume of data has lead to the significant development of learning analytics. The challenges noted by the author include the formation of ethical framework for the ownership and usage of the data.

(Barneveld, Arnold, & Campbell, 2012), have explained that, learning analytics in the higher education helps in the improvement of efficiency of individuals. The emergence of learning analytics has facilitated increase in operational efficiency. It is also stated that analytics could help in the reduction of costs, and also improve teaching and learning. Ultimately, learning analytics contributes to the overall development of the students.

Significance of the study

Students are living in a world where more and more of their daily interactions are personalized and expect the same from their university and overall learning experience. About 60 million students across the globe have been limited to home during the crucial months of February to April - which generally see an outbreak of curricular and

assessment activities. Institutions and students are under pressure not to lose academic time and re-invent their teaching-learning in the only possible way i.e. to go completely online. Learning analytics is an interest rather than a major priority at most institutions. While learning analytics is not widely applied or used at this time, there is possibility for notable growth in the future. There is an increasing interest in using new resources of data for personalizing the learning experience, for ongoing formative assessment of learning, and for performance measurement. Therefore there is a need to know the concept of learning analytics and its contributions to higher education and an effort is made to explore the implications on higher education.

Objectives of the study

- To understand the concept of Learning Analytics
- To analyze the influence of Learning Analytics on Higher education in the wake of Covid-19

Findings of the study

The secondary data is sourced from various journals, articles and websites and the findings are interpreted as follows:

Objective 1: To understand the concept of learning analytics

Learning analytics is the measurement, collection, analysis and reporting of data about learners and their backgrounds, for the purpose of understanding and improving learning experience and the environments in which it occurs. It is the use of intelligent data, learner-produced data and analysis models to discover information and social connections for forecasting and counselling people's learning.

Learning analytics refer to the range of data that is gathered while learners are involving in the e-learning activities. It consists of analysis and reporting of the information gathered during these sessions. Learning analytics is concerned with the recording of information like learners score on a particular test, the speed of progress through a module, number of times the learners have logged in, their participation in a discussion board, etc.

Learning analytics also facilitates the instructors to track the routine of the learners, whether they require additional help and also check if the learner is likely to pass or not in the particular test. This data can be then used to make educational analysis and predictions, which helps to determine the appropriate learning materials and methodology. This is primarily based upon learner's performance, personal interests, skill level, etc.

At least for two decades now, researchers have been envisaging that technology will become the biggest midway of teaching–learning processes. In the stir of Covid-19 pandemic, millions of students across the globe have been driven out of their university spaces, and tutors have been narrowed to their homes. Higher education stands disaggregated, and faculty and students are coping with the sudden new model of completely tech-mediated teaching and learning.

Working of learning analytics

The main source being used for learning analytics is the Virtual Learning Environment (VLE), where students can view timetables, valuations, scores and course information, get learning materials, interact with others through forums, and submit assignments. The use of the VLE varies considerably across units, courses and institutions.

The second major data source is the student information system (SIS), which contains data about students such as qualifications, socio-economic status, module selections, ethnic group and scores obtained till date. These are the probable valuable information to combine with VLE activity data in order to forecast academic results.

Data from the VLE and SIS is complemented by other information. In few institutions attendance monitoring systems are also in place which record campus visits of students or their attendance in locations such as lecture halls, libraries and cafeterias. These are captured from proximity cards, swipe cards and other entry systems, or from accesses to institutional Wi-Fi services by learners.

Library data can also act as a source of data for learning analytics. Information such as a student’s library visits, accounts of borrowing books and access to electronic journals is provided to personal tutors in some institutions on dashboards for facilitating discussions with individuals or groups. Attendance monitoring and swipe card access to buildings and media streaming systems are also being measured. Wherever digital technologies are positioned in the learning process, data can potentially be apprehended from those systems to help understand the student engagement thereby provide additional assistance to students who require it, or to inform improvements to the content.

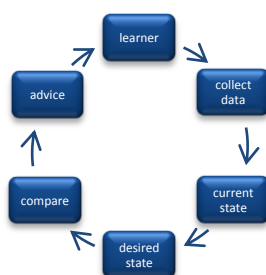


Figure 1 Represents the cycle of learning analytics

Objective 2: To analyze the impact of learning analytics on higher education in the wake of Covid-19

The use of analytics in higher education is comparatively a new area of training and research. Driven by the need to improve student experience, Learning Analytics (LA) has been a swiftly growing area of interest in HEIs. Learning analytics is the process through which data about a student's characteristics and learning behaviour is gathered and analyzed to improve understanding and target interventions. Learning analytics has been on the HE radar for some years now. The New Media Consortium (NMC) first identified learning analytics by name as a trend in its 2011 Horizon Report, putting the time to adoption at four to five years.

It acts as a tool for quality assurance and quality improvement in teaching. Learning Analytics can give lecturers much more insight in the effectiveness of their courses, information on improvements they can make and contribute to the quality assurance process. Learning analytics can help teaching staff with better information on the quality of the educational content and actions they are providing, and on their teaching and assessment processes, to empower its continual improvement. For example, if a tutor can see that no students are downloading a particular resource, or that all students are heavily relying on one, then this becomes a powerful piece of feedback for the tutor to take on board when devising teaching strategies or designing modules and lessons. Universities are reporting that these involvements can help to shape better relationships between students and staff.

Provides learners with a personalized e-Learning experience through learning analytics, eLearning professionals and online instructors gain the ability to custom tailor eLearning experiences for each and every individual learner. If the data depicts that a learner is taking more than the prescribed time to complete a particular eLearning unit, then suitable measures can be taken to provide learner more tailored educational tools and eLearning course resources. For example, learners can be provided with links to sites that may help them to effectively understand the topic, or videos which help them to learn through a more audio/visual approach. No two learners are the same, and learning analytics helps eLearning professionals the power to make sure that no two eLearning experiences are like one another.

It provides immediate feedback to the learners

Feedback is traditionally one of the poorer areas of performance for universities, with 'assessment and feedback' generally being the two areas where students are least

satisfied. Analytics offer a way for tutors to better understand how each individual student is progressing on their course, and in turn provide better – and more immediate – feedback for students. In many courses feedback is only provided when a student submits an assignment or sits the final exam, meaning that it comes too late to have any impact on their learning experience. An analytics system that combines data from all of the systems a student uses in the course of their study can provide a highly accurate, instant picture of learner's performance and engagement, and allow a tutor to provide high-quality, specific feedback more quickly. It not only provides insight about how learner is accomplishing today but also about their future performance. It helps learners to better understand their own progress, and to compare themselves with their peer group if the data is made available to them.

It acts as a tool for boosting retention rates

A better knowledge about the learners and their learning can help universities to manage high attrition rates, which in turn will result in adverse impacts on the lives of those affected, and wasted expense for the institutions. LA systems give tutors the ability to identify students who are disengaging at a much earlier stage, meaning that tutors can intervene before the situation escalates, and improving the likely success of their students. The problems are identified in the earlier stages thereby reducing future consequences. Once an at-risk student has been identified, personalized involvements such as mentoring or support from a tutor can then be taken to help to try to retain those students. At the University of New England, attrition was cut from 18% to 12% during early trials of their Automated Wellness Engine.

Boost in cost efficiency

The complete understanding of e-Learning modules and the uses of respective resources, the way in which learners are acquiring information, these information's leads to achieve higher quality e-learning at a lower cost. For example, if you understand that a particular module of the eLearning course isn't helping the learners to achieve their learning goals, then time and resources can be devoted in improving it or focus on another area that may be a more sensible investment.

Conclusion

Learning analytics is still at a relatively early stage of development, but the processes for developing its use, and ensuring the authenticity and validity of the findings, are developing rapidly. Though not well understood, there is substantial evidence that learning analytics will aid in emerging more student-focused provision of higher

education, and provide data and tools that institutions will be able to use for constant development. Learning analytics has the power to transmute the way in which learning environment's impact and outcomes are measured, aiding the providers to progress new ways of attaining excellence in teaching and learning, and providing students with new information to make the finest choices about their education. It has a vast impact on higher education by improving the quality in teaching, boosting retention and improving learner's performance by providing timely feedback.

Acknowledgement

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A Study on the Efficacy of Online Classes DuringnCOVID-19 Lockdown Phase in Bangalore

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Abstract

This research was conducted to find out whether Online Classes are effective or not along with the various issues which respondents have faced during the Online Classes. This research has been organized based on Survey method by using questionnaire. The data has been collected from 300 students who all are studying Undergraduate and Postgraduate courses in various colleges. The collected data has been analyzed with the help of Percentage method. During the research, the researcher has found that most of the participants have attended the online classes. The research also found that during the Online Classes most of the respondents are facing difficulties in attending the classes because of network issues along with domain server problems, audio and video related problems and background noise. The collected data focused that maximum respondents are facing difficulties in attending the Online Classes and not recommended Online Classes for future purposes.

Keywords: Survey; Questionnaire; Domain; Online Class.

Introduction

The whole world economy has seen numerous ups and downs because of several challenges. But recently the whole world has seen a new challenge which has been arise from a disease called COVID-19. This virus is originated from bats and started effecting humans in China from December, 2019. Presently major portions of the citizens from different countries are affected with this virus. Because of this virus so many people have died in different countries. This virus is mainly spreading from human to human through small droplets from nose and mouth. For this nature of the virus some countries have declared total Lockdown of all economic operations to avoid mass spreading of the disease and India also among one of them. In India during Lockdown not only economical operation but also all schools & colleges are also declared to be shut until the effect of the virus will come down. Hence, the schools and colleges are facing new challenges to continue their operations along with completing the syllabus for their students. Henceforward, all the schools & colleges have started the online classes to complete the syllabus by using several web platforms. The main objective of this research

is to find out whether this online classes are effective for the students or not and how much useful it is during this tough time.

Research Methodology

This research has been conducted mainly on various college students (Undergraduate & Postgraduate) in Bangalore by using Google form. The study based on the survey of 300 students in Bangalore rural & urban area. The survey is based on the questionnaire which consists of 12 various questions along with various issues which are facing by the students during online classes. The collected data has been analyzed based on Percentage method and with help of graphs.

Objective

To find out the effectiveness of Online Classes during Lockdown Phase due to COVID-19.

Data Analysis

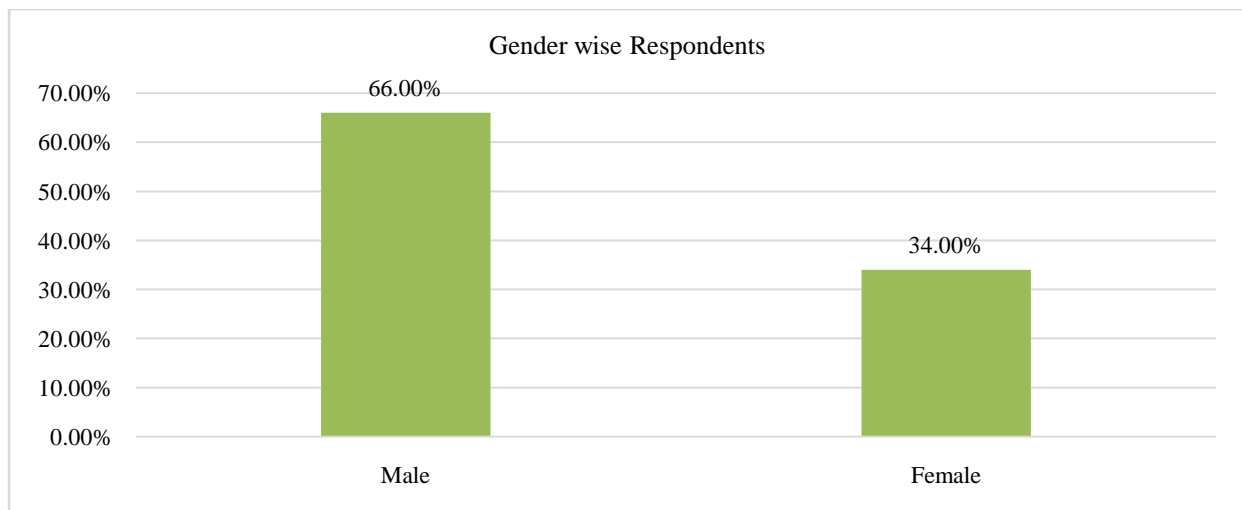
Gender wise Respondents

Table 1. Gender wise responses by the Students.

Total Respondents	Male	Female
300	66%	34%

This particular study is based on 300 respondents of various colleges who are the students of UG & PG courses. Out of total respondents 66% are Male and 34 % are Female.

Chart 1. Gender wise responses by the students.



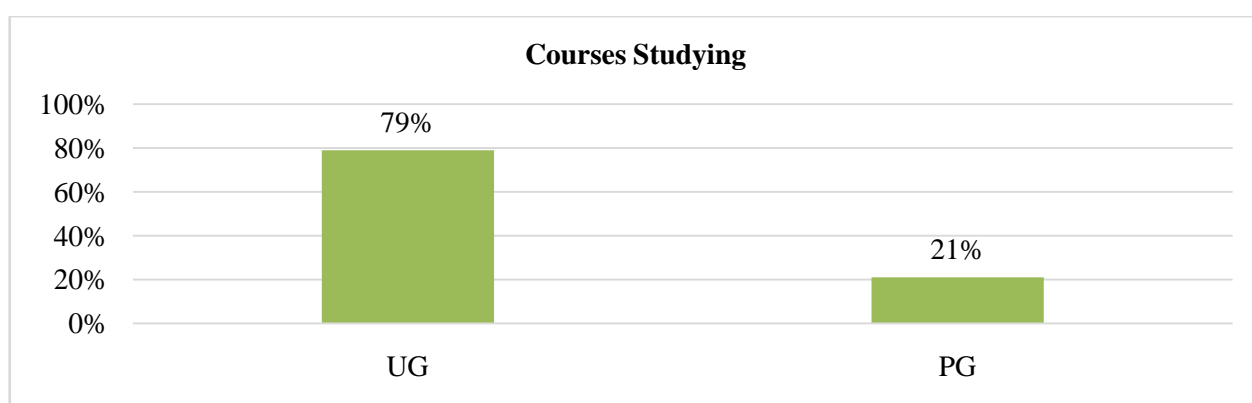
Courses Studying by Respondents

Table 2. Courses studying by the Respondents.

Total Respondents	UG	PG
300	79%	21%

This table is showing the result that how many Undergraduate & Postgraduate students have participated in this study. Out of 300 respondents 79% respondents are currently pursuing Undergraduate courses whereas 21% respondents are pursuing Postgraduate courses.

Chart 2. Courses studying by the Respondents.



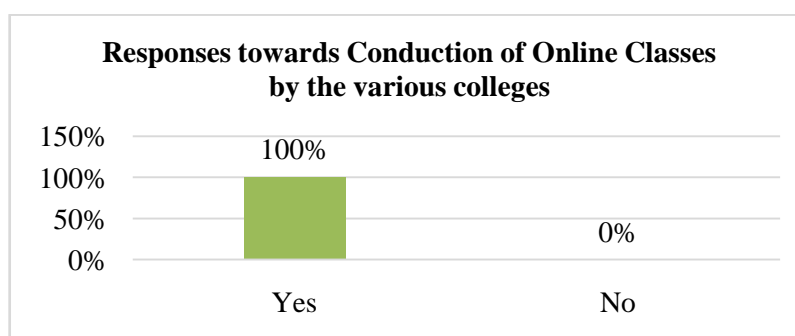
Whether College is Conducting Online Classes during nCOVID-19 or not

Table 3. Conduction of Classes by various colleges during lockdown.

Total Respondents	Yes	No
300	100%	0%

As because of COVID-19 all the colleges have closed their doors, but the study shows that all the respondents who are studying in various colleges in Bangalore have attended the Online Classes during this Lockdown phase.

Chart 3. Conduction of classes by various colleges during Lockdown.



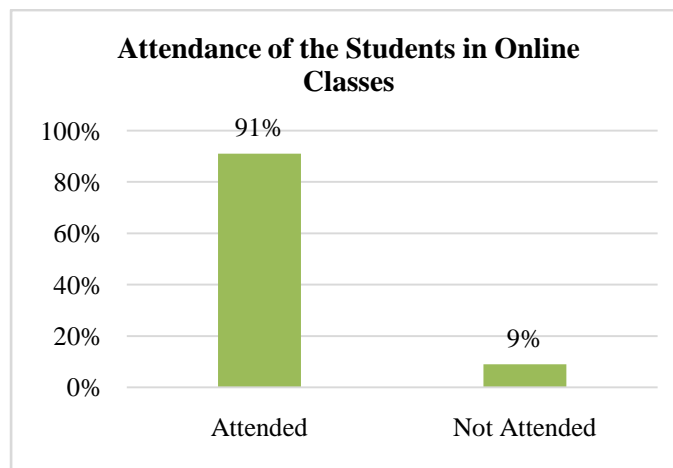
Attendance of the students during Online Classes

Table 4. Percentage of the Respondents attended online Classes.

Total Respondents	Attended	Not Attended
300	91%	9%

As study shows that 98% of various colleges in Bangalore have conducted Online Classes, but out of total 300 respondents 91% respondents have attended the online classes whereas remaining 9% have not attended Online Classes.

Chart 4. Percentage of the Respondents attended online Classes.



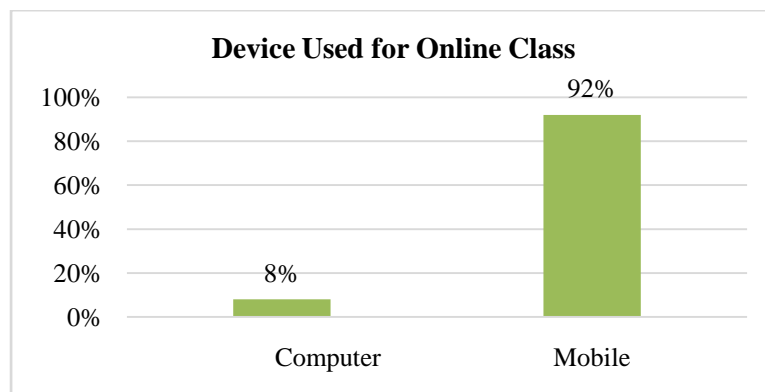
Using of Device during Online Classes

Table 5. Device Using by the respondents during Online Classes.

Total Respondents	Computer	Mobile
300	8%	92%

The collected data also shows that 92% respondents have attended Online Classes by using Mobile and only 8% students have attended the classes by using Computer.

Chart 5. Device using by the respondents during online classes.



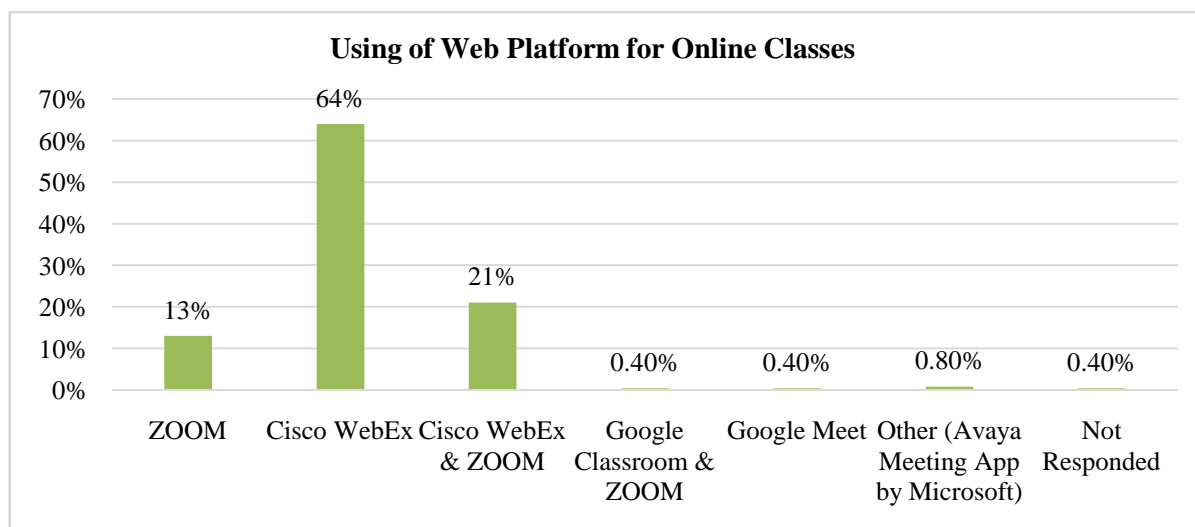
Using of Web Platforms

Table 6. Various web platforms used for online classes.

Total Respondents	ZOOM	Cisco WebEx	Cisco WebEx & ZOOM	Google Classroom & ZOOM	Google Meet	Other (Avaya Meeting App by Microsoft)	Not Responded
300	13%	64%	21%	0.4%	0.4%	0.8%	0.4%

This study also focused on available web platforms which are all have been used for Online Classes. The study resulted that Cisco WebEx has been used for online classes in maximum numbers followed by ZOOM platform which has been used by 13% respondents. Out of total respondents 21% respondents have attended online classes in both ZOOM & Cisco WebEx.

Chart 6 Various web platforms used for online classes.



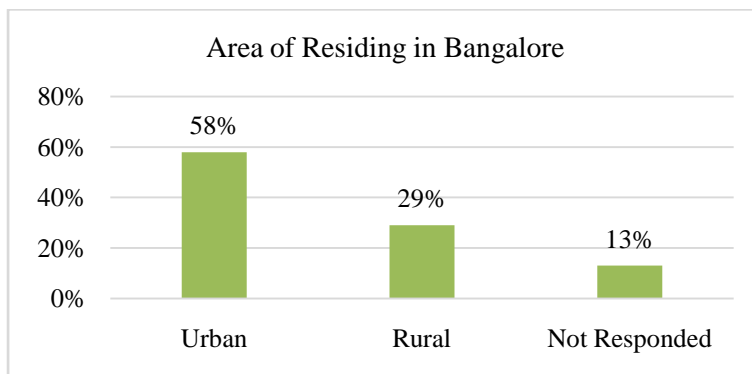
Area of Residing in Bangalore

Table 7. Respondents residing in Bangalore.

Total Respondents	Urban	Rural	Not Responded
300	58%	29%	13%

During the survey it is found that not only students from Urban area of Bangalore but also students from Rural area of Bangalore have attended the Online Classes. But out of total respondents 13% students have not responded this particular question.

Chart 7. Respondents residing in Bangalore.



Several issues facing by students during online classes

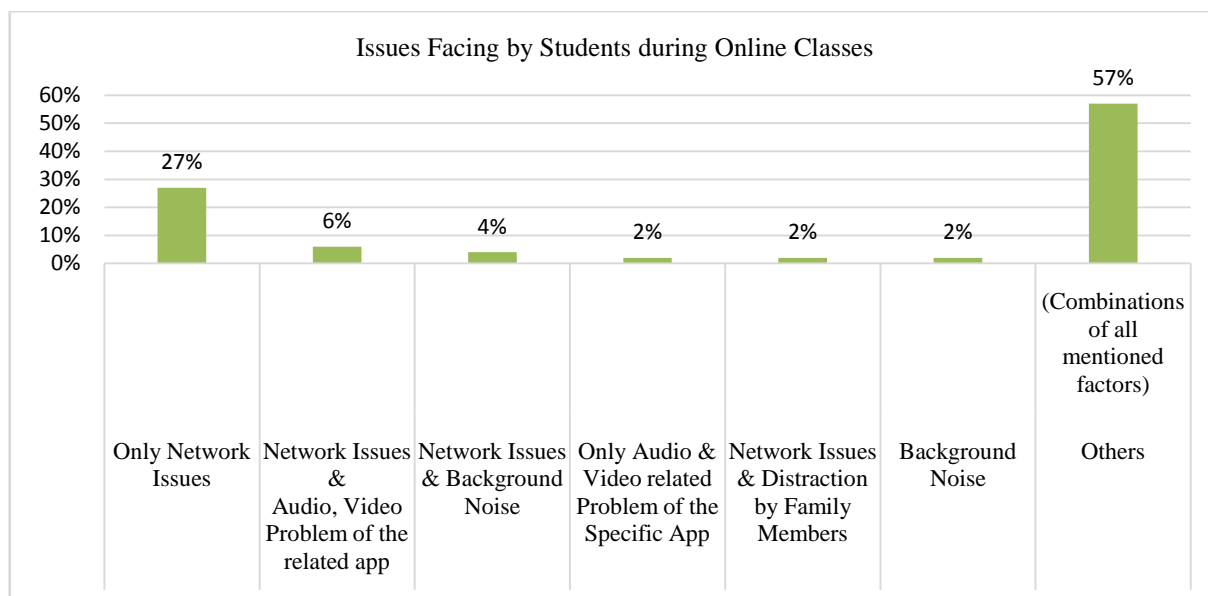
Table 8. Various issues facing by the students during online classes.

Total Respondents	Only Network Issues	Network Issues & Audio, Video Problem of the related app	Network Issues & Background Noise	Only Audio & Video related Problem of the Specific App	Network Issues & Distraction by Family Members	Background Noise	Others (Combinations of all mentioned factors)
300	27%	6%	4%	2%	2%	2%	57%

As the concept of Online Class is new for the students, hence this research is also tried to find out the various problems are facing by the students during Online Classes. The research resulted that 27% students are facing Network related issues and 2.8% students are facing only Audio and Video related issues of the specific app during Online Classes. Out of total respondents 6% students are facing Network issues along with Audio and Video related issues with the specific app. The study also reveals that 2.1% respondents are facing only Background noise related problems and 7.4% students are facing Network issues, Audio and Video related problems, Background noise along lack of technological

knowledge of using the platform. The research also found that 2.8% are facing Domain Server problem along with Network issues during the Online Classes.

Chart 8. Various issues facing by the students during Online Classes.



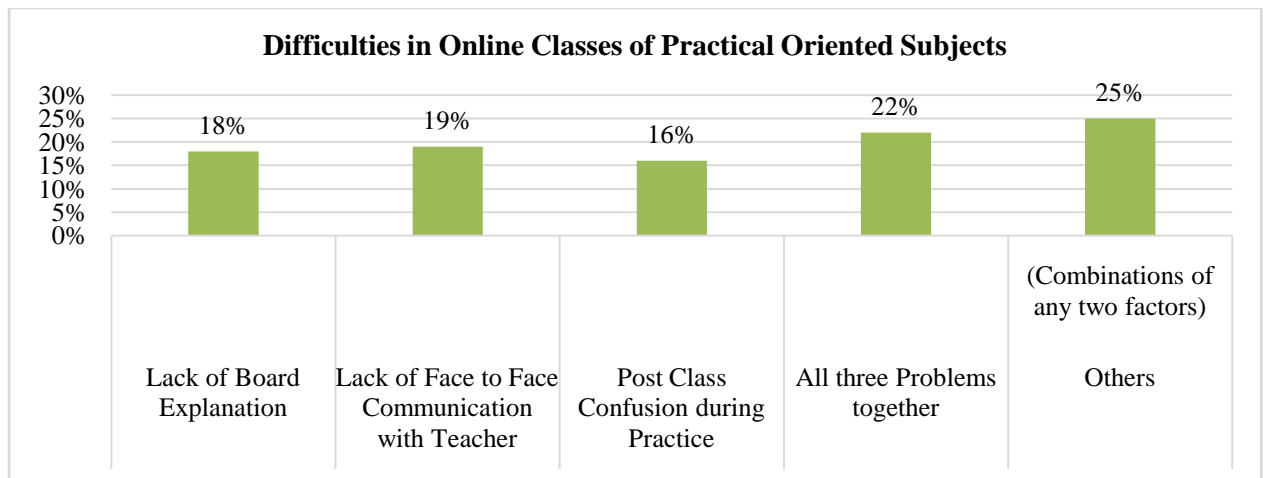
Difficulties in online classes of practical subjects

Table 9. Problems facing by the Respondents during Online Classes of Practical Oriented Subjects.

Total Respondents	Lack of Board Explanation	Lack of Face to Face Communication with Teacher	Post Class Confusion during Practice	All three Problems together	Others (Combinations of any two factors)
300	18%	19%	16%	22%	25%

The survey has found that the respondents are facing new challenges while attending the practical oriented subjects. 18% of the total respondents are finding difficulties in the practical subjects because of the absence of Board explanation. Out of total respondents 19% are also finding difficulties in clearing doubts during Online Classes because of face to face communication with the teacher. 16% students are facing difficulties while practicing the subjects after class and also 22% respondents are facing all these three problems together.

Chart 9. Problems facing by the respondents during online classes of practical oriented subjects.



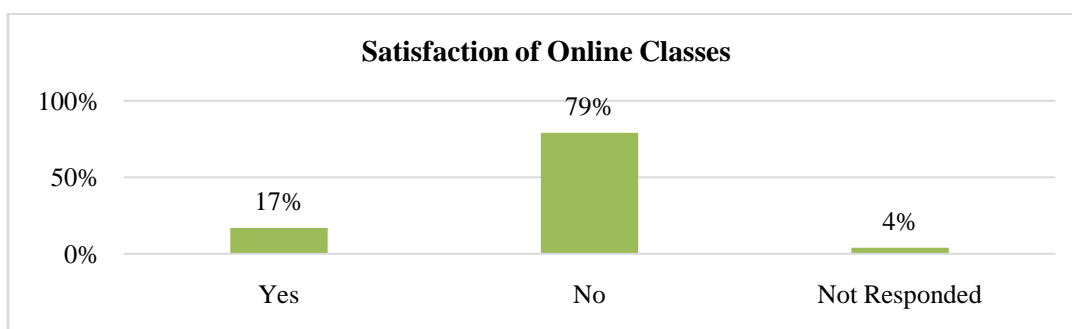
Satisfaction of online classes

Table 10. Responses towards satisfaction of online classes.

Total Respondents	Yes	No	Not Responded
300	17%	79%	4%

The research also tried to find out whether the respondents are convinced with the Online Classes or not. The study reveals that only 17% respondents are satisfied with the Online Classes while 79% respondents are not. Though 4% respondents are not respondents towards this question.

Chart 10. Responses towards satisfaction of Online Classes.



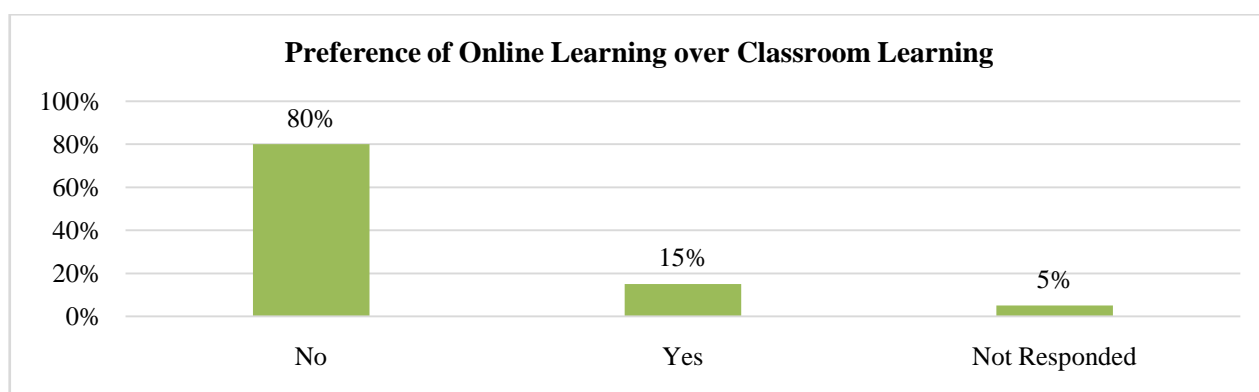
Preference of Online Classes over Classroom Learning

Table 11. Preference of the respondents between online learning & classroom learning.

Total Respondents	No	Yes	Not Responded
300	80%	15%	5%

The research also tried to find out that whether students want to adopt Online Classes over Classroom Learning. 80% of the total respondents are not ready to adopt Online Classes over Classroom Learning while 15% are ready to adopt the Online Classes.

Chart 11. Preference of the respondents between online learning & classroom learning.



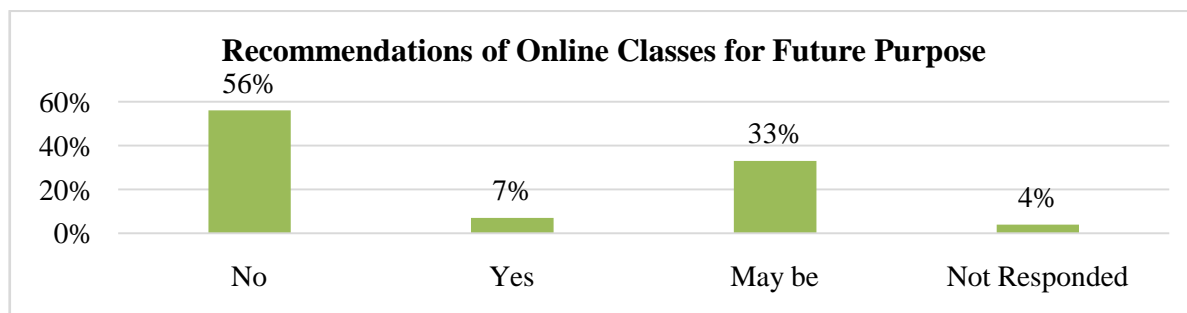
Recommendation of Online Classes for future purpose

Table 12. Recommendations of Online Classes for Future purpose by the Respondents.

Total Respondents	No	Yes	May be	Not Responded
300	56%	7%	33%	4%

The research also initiated that 56% of the respondents are not suggesting the Online Classes for future educational purposes whereas 7% of the respondents have recommended Online Classes for the future purposes.

Chart 12. Recommendations of Online Classes for Future purpose by the Respondents.



Conclusions

This study has been conducted to find out the effectiveness of the Online Classes among the Undergraduate and Postgraduate students. The research has been done the survey on 300 students from various colleges. The collected data shows that maximum respondents are facing network issues during the Online Classes. Most of the students are also finding difficulties in attending Online Classes of practical oriented subjects. The research also shows that 80% of the total respondents are not in favor of Online Classes over attending Classroom Learning. From the above data analysis, it can be concluded that Online Classes are not effective for the UG and PG students. Though 91% of the total respondents have attended Online Classes but most of them are not satisfied with the classes because of various technical issues and not recommending Online Classes for the future purposes.

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Corporate Education Initiative (CEI) As Policy Initiative by Corporate World under CSR

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Abstract

Today, education faces the rising challenges of standardized testing, strained budgets, teacher retention, and global workforce competition. In the field of business CSR has taken the targeted approach in incorporating the corporate social responsibility programs and are creating an impact over societal issues with inculcating their brand image in the competitive world. For many business companies, education is an important part of their annual plans under CSR in all geographic areas, across s all subject areas with all group of people. The major recognition in education is to create the bottom line of educational outreach efforts with the capability to make a real and lasting difference for all groups of people involved. This paper traces the use of CEI as Educational technology. Educational technology was initially viewed as technology in education, a sole focus on CEI under CSR. Subsequently, a holistic perspective of the educational system was adopted, termed the technology of education in all round Educational development. In this larger view, educational technology is informed by research from learning theories and other educational research with the support of corporate sectors under Corporate Education Initiative (CEI).

Keywords: Educational technology; CSR; E-learning; CEI

Introduction

CSR and Education

To educate, in Latin stems from the term “educare” with its root meaning to “lead forth” (Oxford English Dictionary 1989). The Latin word also implies a change brought about by practice or usage (Sharma 1987). The leading out of an individual has been formalized by society through educational systems and the induction of a curriculum. The earliest known educational systems originate from the ancient traditional educational followers of Greece, China and India. The structure of each educational system is based on each country’s educational philosophies at that time. Computing power and technologies under CEI practices have been developing rapidly in the present century. Fuelled by the knowledge economy, IT and education are forecast to become one of the biggest sectors in the world using CSR by many corporate sectors.

In the field of business CSR has taken the targeted approach in incorporating the corporate social responsibility programs and are creating an impact over societal issues with inculcating their brand image in the competitive world. For many business companies, education is an important part of their annual plans under CSR in all geographic areas, across all subject areas with all group of people. The major recognition in education is to create the bottom line of educational outreach efforts with the capability to make a real and lasting difference for all groups of people involved.

Corporate companies in the recent time are getting involved and tagged to many educational sectors for various purposes like providing financial aid, enhancing their brand reputation, creating the awareness on social issues in society, improving the infrastructure and many more programs which is a part of CEI under CSR. This boost sales of the company, or establish the company as an industry leader, easier access to capital; building a more educated workforce; raising consumer awareness about a particular issue; and fulfilling a company mission or mandate. Students, schools, and the general public can benefit from the experience and expertise that corporations bring to the table, particularly if the groups work together to ensure the right needs is being met on both ends.

Corporate companies are looking forward to contribute to public school education for overall development of students and employees benefit. This meet the demand raised in schools to face daily time constraints, tight budgets, technology access, standardized testing, and explicit curriculum standards as well as the unique places where outside help is needed. These initiatives make companies to provide highly engaging resources, by building in strong connections with instructional needs, and by effectively marketing the resources, that meets educational goals and their own business goals. Parents are enthusiastic about the industry involvement, too, so long as it's positive and productive. CEI policies, through partnerships between business organizations, the government, particularly at the local level, and not-for-profit sector, can play a vital role in enabling increased access to higher education through two different aspects.

- Demand side measures e.g. provision of scholarships, general awareness programs, training programs, awards and recognition.
- Supply side measures e.g. provision of endowments, making corporate staff available as resource persons, funding research and by contributing to infrastructure and maintenance.

There is increasing consensus that well-designed CEI practices could assist companies domestic and foreign, operating in India, to sustain long-term growth and profitability for increasing acceptability to local population.

Objectives

- To understand the need of corporate social responsibility towards education in India.
- To study the CEI practices by corporate Sectors in India.
- Mapping of education and CSR activities under CEI financial investment by Corporate Sectors in India.

Research methodology

Research analysis is based on secondary data hence exploratory in nature. The secondary data and information have been analyzed for future interpretation. The secondary information gathered from various research articles and journals, e-books, , periodicals, conference paper, working paper and websites.

Limitations

The study aimed to understand broad range of perspectives of corporate sectors involved in CEI, the CSR sector- implementers and enablers in the niche area of educational development. The cause of education itself is complex and involves multiple facets. The data in this paper is limited to few companies in India involved in CEI.

Interpretation

Objective1: Need of CSR towards Education in India

CEI (Corporate Educational Initiative) is a Business approach that contributes to sustainable development by delivering economic, social and environmental benefits for all stakeholders. Corporate social responsibility (CSR) has different programs in the field of Education, Health, Environment Sustainability, Community Development, Rural Development and Livelihood & skilling.

The primary fundamental stepping stone to improve the quality of Educational system can be achieved by CEI. Access to quality education is fundamental to the growth of India and also in the world. The ideology behind the top companies under CEI under CSR (corporate social responsibility) in education year to year is to transform their career perspective through the continuous enhancement of knowledge and empowerment both in curriculum and extracurricular programs.

Objective 2

CSR is the part of management in the companies to integrate social and environmental issues in their strategic business operations. As a part of CSR, CEI is one the programs planned on Education project. Top companies spent on education sector in 2018 are specified in the table.

Top Company's CSR Education project details in India 2018 under CEI

Sl no	Name of the company	CSR amount spent on Project (crores)	Over all CSR spent in Education Sector (Crores)
1	Reliance industry Limited	31.99	231.68
2	Asian paints limited	20.14	40.55
3	Primal Enterprises Limited	6.42	17.39
4	ICICI foundations	15.8	47.5
5	Ultra Tech Cement Limited	13.08	17.86
6	Wipro	9.59	129.66
7	Larsen & Toubro Limited	8.64	51.74
8	Indian Oil Corporation Limited	2.55	80
9	Grasim Industries Limited	5.76	6.488
10	Ashok Leyland Limited	7.25	51.3

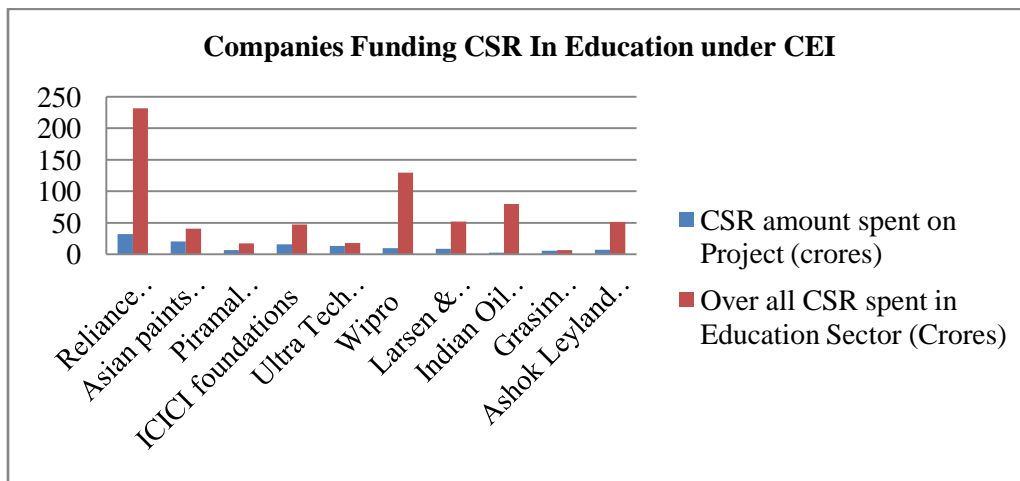
<https://thecsrjournal.in>

Objective 3

A mapping of education and CEI activities under CSR of the top 10 companies specified in table includes

- Infrastructure building
- Providing learning materials
- Supporting children with monetary and non-monetary incentives in schools
- Training and awareness program
- Under Swachh Bharat mission, a number of companies taking CEI initiatives in constructing Basic toiletry facilities at schools.

All programs executed under CEI are reported in 'The promoting Education program document'. Also, for most of the companies, the data on CSR activities reported in the public domain are very sketchy and do not provide details of fund allocation and amount spent on different interventions/sub-themes under education.



Findings:

Through the interpretation it allows to understand that Education and skill development are two of the broad areas specified in the Act for eligible CEI activities.

- Reliance industry limited and Wipro are the top companies to invest on Education sector Activities
- The investment purpose is for the various schemes and it includes
 - Promoting curriculum and extra curriculum
 - Inclusive education development
 - Employment enhancing vocation skills
 - Women, elderly and the differently abled education enhancement projects like ICT.
 - Promoting sports & physical education in school
 - Construction and development of libraries and laboratories,
 - Teacher's training,

The existing facts and figures on CSR activities on education reflect very little strategic thinking and innovation. This also shows that companies in India view CSR more as a charitable endeavour. With this mandatory clause, many of them are basically classifying their activities as CSR with no real change in social welfare. Even if there is a real increase in socially beneficial activities, the spending on activities is mostly determined on the basis of the companies' preference rather than the priorities for the sector or people or area of interventions.

Conclusion

Education system in the involvement to the current requirement needs is very difficult and challenging by the public education sectors. There is strong desire to change the current state of education that has the impact on the companies through their own

financial growth. India has to restructure the education system at the levels in technology use and execution in

- Elementary
- Secondary
- Higher education

This is possible when the corporate also perform their responsibilities towards society. They are also the consumers/users of trained/skilled manpower produced by the universities. In order to reap concrete benefits they must help these universities /colleges to produce such skilled and trained manpower by providing funds for research and development, organizing various workshops, training and development programs, cross over exchange programs, infrastructural support and last but not least providing facilities for qualitative education that quantitative.

The role of CSR in education is thus mitigating the skills gap with considerable experimentation, and learning-by-doing along the way. In this process, the affected individuals, companies, and society at large are likely to benefit. To order to compete in the changing education industry and also to fulfill their mission in a world in perpetual transformation, education sector must recognize that their own actions should reflect the values and norms which they claim to embody. This means deepening their commitment to CEI under CSR at the operational level as well as the academic level, mostly by curricular activities and all extracurricular activities through programs scheduled according to the need as and when arises. This will not only be beneficial to the Educational sectors itself but also will be beneficial to the society in general.

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Ayurveda intrusion: An elucidation for Covid - 19 pandemic

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Abstract

The COVID-19 pandemic is increasing progressively and acquiring all parts of people around the world. The entire world is fighting against the Novel Corona virus (COVID-19) and the number of incidents and demises are increasing day by day across the world. The medicine or the treatment for the virus has not yet been found. Scientists and doctors have not found any actual solution in allopathic medicine across the Globe. Whereas plasma therapy is being resorted to for helping COVID-19 patients recover from the deadly virus in India, the treatment has not been proven as totally effective. Many countries are trying their best to treat the patients in all possible ways. Different treatments are carried out but these are not so effective and promising. The research is going on to come with the proper medicine and effective treatment. The COVID-19 belongs to Beta Corona virus which also contains SARS-CoV and Middle East Respiratory Syndrome CoV (MERS-CoV). Presently, the Hydroxychloroquine is being used widely across the world to treat the patients but it is not so effective. However, COVID-19 related epidemiology and pathogenesis, a realistic and probable solution for health keeping approaches through Ayurveda including usage of Chyavanprasha, Brahma Rasayana, Sanjeevani vati, Swarna prashan for Unexposed asymptomatic group of people and With mild COVID-19 symptoms Pippali rasayan, Go Jihvadi Quath, Kantakari Avaleha, Chitrakadi vati, Vyaghri haritaki and Yashtimadhu can effectively use to fight against COVID-19. In this background, a few important concerns need to be specified at the creation for improving immunity among the common people through the above recommendations. Though these solutions doesn't claim to be cure for COVID-19.

Keywords: COVID-19, SARS-CoV, Hydroxychloroquine, Plasma therapy and Ayurveda.

Introduction

Ayurveda is one of the ancient natural remedial systems of the Vedic Sciences which generated in India approximately 5000 years ago and is often termed as the “Mother of All Healing”. The literal meaning of Ayurveda is “The Science of Life”; it's the combination of two Sanskrit words ayur (life) and Veda (Lad, 2003). In the beginning, there were mainly three principal remedial systems: Greek, Chinese and Ayurveda

medicine (Subbarayappa, 2001). Among all other medicinal systems Ayurveda emerged world's best medical system with the renewed interest in the interaction between religion (Sreena Raj et al. 2011) and spirituality with health and medicine (Chattopadhyay, 2007). Ayurveda allows the individual to understand their body, mind and soul at its deepest level and experience the wisdom of this knowledge to appreciate the conscious that is present in the entire universe.

Dhanvantari was one of those deities, who then transferred this knowledge of science to modern world. Dhanvantari is considered as "Father of Ayurveda" (Valiathan, 2009). During Vedic period, Ayurveda was merely like as priestly or religious medical practice. All these evidences emerged to be elite (Subbarayappa, 2001). Vedic medicinal practice was the use of Herbal formulation for treatment. Thus Ayurveda improved itself as a model medical system. The COVID-19 pandemic is spreading across the globe and killing people across the world. There is no accurate treatment for the virus. The allopathic medicines are being used but the accurate results are not found. The use of these medicines have also lead to many side effects resulting in multiple organ dis-functioning. The scientists are trying to find the proper medicine to control the virus. The recovering Plasma therapy is also being tried in some places to cure the infection.

Research in Ayurveda

Researches in Ayurveda are mainly involved in two aspects. One is screening and identification of new drugs from different Ayurvedic formulations. The oldest medical knowledge has led to great improvements in healthcare system. The most advanced development in the field of plant-originated drugs were probably seen in the area antitumor properties, For Cancer treatment chemotherapy many compounds extracted used few examples are vinblastine, vincristine and camptothecin have proved their effectiveness in against some of the deadliest cancers (Ilya Raskin et al., 2002). The advanced research need to standardizaed in terms of for the world acceptance of the ayurvedic formulation, researches like standardization and quality control of drugs by correlating with international standards, identification of active ingredient and their toxicological studies are of chief importance. Identification of active principles from plant generated sources with no use in human history (Daniel S Fabricant, 2001). Global market also need to be stand up from present situation dominant in global market. (Aneesh T.P, 2009).

Ayurveda Approaches in Prevention of the Pandemic

A realistic and probable plan of action for health keeping approaches through Ayurveda including usage of Chyavanprasha, Brahma Rasayana, Sanjeevani vati, Swarna prashan for Unexposed asymptomatic group of people and With mild COVID-19 symptoms Pippali rasayan, Go Jihvadi Quath, Kantakari Avaleha, Chitrakadi vati, Vyaghri haritaki and Yashtimadhu can effectively use to fight against COVID-19 (Tillu G., 2020). But it is also decided not to use the Ayurvedic treatment as a cure for the pandemic. It is said that, the use of Ayurveda and modern medicine will be in conjunction but the diagnosis and medication will be through scientifically-backed modern medicine.

Some have proposed plans and sent for scientific validation of ayurveda and traditional medicinal formulas through research institutions in tackling the COVID-19. AYUSH set up with a new task force to identify potential preventive therapy and therapeutic approaches in different stages of COVID-19 treatment.

As the study suggests the Hydroxychloroquine is not effective against the pandemic. The Fifatrol, enriched with immune-enhancing herbal medicine, are found effective against many bacterial infections. And now AIMIL Pharmaceuticals which produces the Fifatrol also said that it cures some of the viral infections and they have decided to determine if it can be helpful in treating the novel corona virus.

The Government AYUSH and CSIR collaborations are having good perspective. It is said that the traditional medicinal system can show the ways to overcome the pandemic. The 4 important things used are Ashwagandha, Yashtimadhu (Mulethi), Guduchi and Pippali (Giloy). The AYUSH-64 is also used which was introduced to treat malaria. The comparative study is being made between Hydroxychloroquine and Ashwagandha.

While, Patanjali has also developed medicine that can cure the pandemic as said by the CEO of Patanjali. This cures the infection within 5-14 days. Satisfactory results and feedback found from the medicine.

The background was associated SARS-CoV-2 epidemiology and pathogenesis, plan for Ayurvedic intervention are presented (Table 01) (Sharma R 2009). In this situation, a few important issues need to be stated at the onset. Our proposal complements the guidelines issued by Ministry of AYUSH, Government of India for boosting immunity among the people (Tillu G., 2020). Ayurveda medications here have been safety and potential usefulness, broad-spectrum applicability, ease of availability, long term

enduring experiential knowledge with clinical use, ease of administration, and as far as possible in terms of affordability (Saggam A, 2020).

Table 1 Ayurveda solution in controlling / immune boosting against COVID-19 outbreak

Sl No	Category Of COVID-19 symptoms	Proposed Intervention
1	People with Asymptomatic	The use of Chyavanprasha, Brahma Rasayana, Amrit Bhallataka, Sanjeevani vati, Swarna prashan. By adopting the healthy approaches of Ayurveda including healthy diet, healthy life-style, and Adequate rest and good conduct.
2	Exposed People [asymptomatic]	The use of Sanjeevani vati, Chitrakatdi vati, Chyavanprasha, Brahma Rasayana, and decoction of a combination of herbs, Tinospora cordifolia, Zingiber officinale, Curcuma longa, Ocimum sanctum, Glycyrrhiza glabra, Adhatoda vasica, Andrographis paniculata etc.
3.	People with Mild COVID-19 symptoms	Usage of Pippali rasayan, Go Jihvadi Quath, Kantakari Avaleha, Chitrakadi vati, Vyaghri haritaki, Dashamul kwath, Sitopaladi, Talishadi, and Yashtimadhu etc.

The Prevention of the Pandemic: A realistic and probable plan of action for health keeping approaches through Ayurveda including usage of Chyavanprasha, Brahma Rasayana, Sanjeevani vati, Swarna prashan for Unexposed asymptomatic group of people and With mild COVID-19 symptoms Pippali rasayan, Go Jihvadi Quath, Kantakari Avaleha, Chitrakadi vati, Vyaghri haritaki and Yashtimadhu can effectively use to fight against COVID-19. Section headings.

Conclusion

Ayurveda usage to cure COVID-19 in India must include the use of these naturally and available medicine in India should not remain minimalistic usage there is need to increase

the usage and extension of healthcare services and support to existing additional system. However, the extensive measures to be follow to extent as per an individual's convenience. Recommended by the following eminent methodologies. The measures are recommended measures to be used and adopted and recommended by Ayurveda and Ayur pundits. The recommendations of various Vaidyas across country may successful in individual immunity against various infections.

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COVID 19- Pedagogical Changes in Higher Education and Students Behavioural Stress and Psychological Resilience

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Abstract:

In India, the first outbreak of corona virus is seen among humans in February 2020. In March 2020 the cases of corona virus were seen in higher amount as the result the Indian government announced the shutdown of all commercial place, educational institution, workplace, transportation except the health care related workplace. As a result of closure of education institute, the educational disruptions are seen among the students. To prevent educational disruptions, Indian government and education institute decided and implemented the online classes thought the country. In this study, the researcher highlights the effect of educational disruption, psychological and emotional state of the students. The main objective of this study is to assess and analysis the effect of educational disruption, psychological and emotional state among the students. The effect of educational disruption, psychological and emotional well-being of 100 students (17-22 years) at Chennai, Tamilnadu, India were analysed by questionnaire. The collected data were interpreted with descriptive analysis. From the present study, the researcher concluded that educational disruption shows the negative effect towards the students. The psychological and emotional status of the students are in negative manner because there are stressed due to online classes , simultaneously students feels anxiety due to the changes in the academic schedule .The researcher also concluded that students are bothered about their future career due to delay in their academic.

Keywords: COVID 19; Educational disruption; Psychological and emotional status; stressed; anxiety;

Introduction

Corona virus is the common virus which affects the human beings and may leads to death. It typically shows upper respiratory infection. Corona virus is single stranded RNA. The virus spreads from the infected person to healthy person through the air via coughing, sneezing, close contact and touching the surface or the object used by the infected person. The symptoms are sore throat, running nose, cough and fever. The prevention methods are maintaining proper hygiene practices such as washing hands by using alcohol containing hand wash, social distance and self-isolation. There is no vaccination for COVID 19. The first outbreak of corona virus is seen among humans in

Wuhan (China) in December 2020 as a result many humans were dead due to difficulty in reparation. In order to avert the cases of corona virus the china government announced the closure of educational institution, commercial place, workplace, transportation etc.

The corona virus was declared as epidemic pandemic by World Health Organization (WHO) in January 2020. As March 2020, the corona virus were spread among 177 countries and affected more than 722,435 patients and results in more than 33,997 deaths. In India, the first outbreak of corona virus is seen among humans in February 2020. In March 2020 the cases of corona virus were seen in higher amount as the result the Indian government announced the shutdown of all commercial place, educational institution, workplace, transportation except the health care related workplace. As a result of closure of education institute, the educational disruptions are seen among the students. (Krishnakumar).

The exam was postponed due to closure of educational institute which leads to major anxiety among the students because of delay in their graduation. The present corona virus epidemic situation may have a serious consequence on the careers of this year university students. Due to corona virus tremendous level of stress were seen among the stake holders. This stress leads to unfavorable effects on learning, psychological and emotional health of students. (Shau). In order to exclude the educational disruptions, Indian government and education institute decided and implemented the online classes thought the country. In the present study, the researcher highlights the effect of educational disruption, pedagogical changes in higher education-online classes, psychological and emotional state of the students. So that this study is entitled as “COVID 19- Pedagogical Changes in Higher Education and Student Behavioral Stress And psychological Resilience”.

Objectives of Study

- To asses and analyze the effect of pedagogical changes in higher education-online classes among the students.
- To asses and analyses the psychological state among the students.
- To asses and analyses the student’s emotional states.

Methodology of the Study

Participants

The study was carried on 100 students of 17-22 years at Chennai, Tamilnadu, India. The samples were selected by purpose sampling technique. Normative survey with Cross

sectional study and Descriptive method were designed to investigate the effect of pedagogical changes in higher education-online classes, psychological and emotional well-being of students.

Development of Tool:

The data was collected by survey method and tool used for the study was questionnaire schedule. The questionnaire was developed by researcher. General information, educational disruption (5 close ended questions) psychological and emotional state (12 close ended questions).Questionnaires was distributed among the selected samples via goggle forms. The collected data were interpreted with descriptive analysis.

Data collection and analysis:

Questionnaires were distributed among the selected samples. The collected data was consolidated, tabulated and analysed using descriptive analysis.

Result and discussion:

General information:

Results pertaining to the general information of the students are given in table 1, in which age distribution represents that 40 samples were in the age group of 17 -18 years, 30 samples were in the age group of 19- 20 years and 30 samples were in the age group of 21-22years. The educational qualification of the samples showed that 60 samples were undergraduate and 40 samples were postgraduate.

Pedagogical changes in higher education-online classes:

Table 2 summarise the pedagogical changes in higher education-online classes of students. The majority of respondents have negative effect on educational disruption. Many of the respondents underwent the online class but few of the respondents are comfortable towards classroom class than the online class due to network issues. They also felt that online class gives less information than classroom class.

Psychological and emotional well-being:

Table 3 represents the psychological and emotional status of the students. Majority of the respondents are stressed due to online class because their feel lack of interest towards the online classes. Most of the respondents are stressing free towards the COVID 19, their also stressed while staying at home and missing their friends. Majority of the respondents are mildly stressed due to online classes.

Table 1: General Information

S.NO	Particulars	Number of Sample (N=100)
1.	Age	
	17-18 Years	40
	19-20 Years	30
	21-22 Years	30
2.	Educational Qualification	
	Undergraduate	60
	Postgraduate	40
3.	Gender	
	Male	50
	Female	50

Table 2: Pedagogical Changes In Higher Education-Online classes

S.No	Particulars	Percentage Of Respondents (N=100)
Negative effect	Yes	57%
	NO	43%
Online class	Yes	100%
	NO	-
Online class gives more information when compare to classroom class	Yes	-
	NO	100%
Comfortable class	Online class	-
	Classroom class	100%
Network issue	Yes	71%
	No	29%

Table 3: Psychological and Emotional Well Being

S.No	Particulars	Percentage of Respondents (N=100)
Stressed due to COVID 19	Yes	42%
	No	58%
Stressed due to online class	Yes	57%
	No	43%
Lack of interest – online class	Yes	71%
	No	29%
Anxiety due to changes in academic schedule	Yes	71%
	No	29%
Worry about your future career due to academic delay	Yes	82%
	No	18%
Stressed due to COVID staying at home	Yes	85%
	No	15%
Stressed missing friends due to COVID	Yes	80%
	No	20%
Stress level	Mild	75%
	Moderate	25%
	Severe	-
Happy on webinar class	Yes	10%
	No	90%
Usage of mobile has increased due to COVID 19	Yes	100%
	No	-
Changes in sleeping pattern due to COVID 19	Yes	57%
	No	43%
Changes in eating behaviour due to COVID 19	Yes	60%
	No	40%

The present study depicts that the majority of the respondents were anxiety due to changes in academic schedule at the same time they were worried about their future career due to academic delay. Due to COVID 19 , the students undergoes many changes in their day-to-day life style such as increase in their usage of mobiles , changes in eating and sleeping pattern as a result there undergoes changes in their body composition.

Conclusion

From the present study, the researcher concluded that educational disruption shows the negative effect towards the students. Online class gives less information than classroom class as a result the students underwent lack of interest towards the study. Students come across the network issues during the online class which inhibits their studies. Students

feel comfortable towards classroom class than the online class. The psychological and emotional status of the students are in negative manner because there are stressed due to online classes at the same time students feels anxiety due to the changes in the academic schedule. The researcher also concluded that students are worried about their future career due to delay in their academic. Due to COVID 19 and changes in teaching method, increase usage of phone , changes in their sleeping and eating pattern were seen among the students which affects their health status.

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A Study on the Student Behavioral Stress and Psychological Resilience in College

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Abstract

Stress is a physical, mental, or emotional factor that causes bodily or mental tension. Stresses has two factors Stress can initiate the "fight or flight" or freeze response .This Research study is under taken for the purpose of analyzing the various kinds of student's stress in classroom. Students are tomorrow's citizen of India.so the behavior and attitude of students is needed to be shaped for the advancement of the entire world activities. Psychological resilience is the ability to mentally or emotionally cope with a crisis or to return to pre-crisis status quickly.Students frequently stay in classroom with teachers, with friends, & classmates. They will be coming from various kinds of background, families, and problems; so the teachers have to handle them with love and care according to their behavior .The secondary data is collected through websites, journals& magazines. Experience what I learnt from my teaching life, my friends, and colleagues, suggestions about how they handle and face their students. Student's behavioral stress in classrooms is presented in this paper.

Keywords: - Student's behavior- psychological resilience - attitude of students.

Introduction

The supreme vital part of our life is our college life. College life decides ones future career development, life status, level of earning, achievement's, personal satisfaction, etc. After completion of higher secondary studies, students enter the college with hero's thought in film. But after entering in college they will realize the reality, forget the expectations try to adopt with the college rules .college will have certain rules and procedures like uniform, compulsory attendance, punctuality, semesters, assignment, projects, maintaining silence , gender disciplines, fees burden, senior –junior fights, event management and arrangement responsibilities etc.

Usually it is the time period of changing from childhood to matured character students will get angry frequently, feel guilty will scolding, economic of the family will surely affect in the time. Students will have one dream or goal to achieve, but parents may compelled them to join in other course which they can able to afford. Due to hosteller

there may be homesickness problems. Health issues etc. This all will be or may be the reasons for student's behavioral stress in the classroom.

Objectives

- To find out the factors that causes stress among students.
- To analyses the student behavioral changes in classroom.
- To know about the psychological resilience.
- To suggest effective ways to handle the students behavioral stress and overcome psychological resilience.

Statement of the Problem

The student's behavior and stress -free education is need for the enhancement of better society. Due to covid-19 there government announced the lockdown from march and till now it still continues after certain expectation.in this current situation how its impact on students future is been studied .how the resilience can been overcome by the students. The government and the university have to decide the student's future and growth of the country by developing the students' knowledge.

Research Design

- Introduction.
- Objectives.
- Statement of the problem.
- Research design.
- Research methodology.
- Review of literature.
- Limitations of the study.
- Analyses and interpretation.
- Findings.
- Conclusions.
- Suggestions.
- Reference.

Research Methodology:

The basics data is collected using WhatsApp messages for analyses & interpretation the secondary data is collected for description of the paper. The period taken for this study is limited. Based on the experience of past and present survey it is focused for future study. Due to the covid-19 national & international lock down, WhatsApp messages

was sent to the students through WhatsApp and asked to reply the questions. Students from various colleges gave their valuable replies.

Review of Literature

Manisha Singhai, Geeta Jain (Oct -2017) in their Studies - {Academic Stress Amongst Students} have stated that the main source of stress for the students is the inadequacy of right support. There is a standard evaluation procedure which does not give enough scope to the students to experiment and push the boundaries to excel. There are many personal and social factors that lead to stress among students. Lack of clarity and unavailability of right career counsellors lead to directionless goals, and even after graduating, students are clueless with their careers and are insecure regarding a job. The pressure of the studies in terms of academics, extra-curricular activities, assignments etc. has increased beyond comparison. Parents expect their children to be a part of rat race and outshine their competitors, to enhance their own social status in the society. In regard to the environmental stressors, lack of electric supply, lack of well-functioning latrines and showers, water supply problem, computer and internet access problem, lack of recreational centers, quality health service, and inadequate study rooms were found the most stressful items.

Analysis & Interpretation

By considering few most important factor the analysis has been made using statistical tools correlation .there are multiple factor to compare and all are interrelated. Some of the factors are like finance, family background, situation, responsibility, social aspects, infrastructure ,library, restroom facilities ,travelling time, teaching methods, poor grading system ,priority given, lack of studying interest, single child behaviour, this study is undertaken.

Tables 1.7 shows the factors which influence the stress and reason change for behavior

Particulars	Economic	Education institution	Emotional	Family background	Health	Lack of Interest	Media	Total
UG Students	13	5	4	6	5	8	3	44
PG Students	5	3	1	3	1	2	3	18
Total	18	8	5	9	6	10	6	62

The UG Students out Of 44 members 13 students affect from the factor of economic problem which causes them stress and change in their behavior.5 students have problem with educational institution rules and regulations like discipline in classroom, punctuality, and so on.4 students have emotional stress which have to be changed for betterment.6 students suffer due to family issues, low income of parents, responsibility. Lack of affection shown in family.5 students has health problem which cause stress in their studies. 8 students lack their interest in studies, just for the completion of the parents and teachers so they have stress and the behavioral disturbance in classroom. In the same way for PG students also have the problems which cause their stress.

Findings

There are various factors which affect the student's behavior stress. According to the analysis of the collected data: Economic factors, social factors, family factors, emotional factors, and financial factors. Most of the female students responded reason for the cause of stress as family problems. A male student due to family responsibility has a chance to dropout. Now Exams were postponed and planned to conduct online students time & travelling expenses have been saved through online class, Students are enjoying the lockdown period and can able to take care their health .few students have started to go for job.

Conclusion

Through this study we can conclude that the student's behavioral stress or chance is due to the problems faced by them like family problem, finance problem, friends problem, impact of mass media, emotions, changing govt rules, by the influence of society and community, psychological resilience can be affected to students. So steps to be taken by everyone behalf in order to give solution to the problems faced by students in behavior and stress. We must create the peaceful environment to study to stay, and to achieve great things in future for the development of the country.

Suggestions

- Students must be properly guided by parents and teachers.
- Institution should make the proper infrastructure to make feel the students as home environment.
- Guide the students for going the part time job or self saving habit in order to solve the financial problem

- Conduct parents –teachers meeting to know about the students activities so that we can improve the qualities of student to make them feel happy and stress free from fearing.
- Institution can take measures to teach Gender equality, Morality, and Ethics, in order to avoid unnecessary crimes happening in the society.
- As students reflects the family or educational institution where they are studying provide them with sufficient knowledge, physical education to shine in their futures to avoid stress from family factor.

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New Approaches in HEI

Focus of the Article: Social responsibility of Youth

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Abstract

The corona virus, a pandemic has made us realize that we all are connected and this entire world is a family. Although connected, we being a responsible youth of this country should participate in this battle against the disease. The out-break of corona virus has affected the mental health of humans. Less is known about why youth are engaging in social distancing and how these motivations are connected with their engagement, mental health, responsibilities and social health.

Keywords: Corona Virus, Mental Health, Social Distancing, Motivation.

Introduction

Youth in India is added up to 1/4th of the population. Youth is the biggest resources of India. In fact, youth power drives our country. Indian economy is based on employment of youth. The corona virus breakout had pushed world into edge of death. The world has seen countless innocent deaths over last six months because of a tiny virus. Youth have taken many responsibilities and initiatives to overcome this pandemic of 2020 corona virus. The unity of youth can change the world. Right from helping the underprivileged to motivate students, the youths have much responsibility on their shoulders. Creating awareness, structuring the helping process, helping citizens to follow safety measures and government instruction are some of the main intentions in regard with the responsibility to rise up against the deadly virus which has caused a humongous challenge in the world.

Awareness

Awareness programme is very important tool to educate among the people about corona virus disease and to prevent the spread of disease. It includes origin of corona virus, its symptoms, how it is being spread and some preventive measures.

Many Indian youth communities such as national service scheme (NSS) [1] and scouts and guides and national Cadet Corps (NCC) [2] have taken awareness initiatives programmes. And many other youth volunteers are educating among the people on do's and don'ts during this period. On the other side many Organisations, Companies and Universities educating and conducting awareness programmes using online platforms like Videos, guidelines, advertisement and songs. Using online platforms everyone can

educate people and reach everyone efficiently. Most of the educated people took initiative among themselves making a group and helping the illiterates and few among them are listed below.

- Mohmmed Ferdus (27) young guy from community development for peace organisation Bangladesh visited slum areas where high possibility of disease spreading chances are and he gave training to those slum residents on how to keep their slums surroundings clean and hygiene [3].
- Jama Jack (28) made posters and videos busting myths about corona virus and conducted awareness programmes [4].

All these instructions given by the educated people made them to up-skill their knowledge towards the disease and its impacts.

Real-Time System

The outbreak of corona virus has impact on all the humans. And because of this people are facing financial problem and for students, schools and colleges have closed. To overcome all these problems youths are discovering and creating websites which help the students and also the webinar's conducted by various colleges. They also conduct National and International level quiz to make sure that students are occupied. The classroom has been overcome by technology.

In this situation, youths have created own website wherein one can get to know the total counts of corona affected people in and around your surroundings. And the outbreak has lead to the rise of drone delivery. The essential items to our door steps were delivered using drones. We all should face this problem together and get rid of this issue and one of the renowned person shared his opinion about covid19 in thus way.

According to medical doctor Hashim Hounkptain there are two diseases currently spreading around the world in viral manner.covid19 and fake news. He tell us that fake news is making everyone fearful than the covid19. So he teamed up to design an app that displays trusted knowledge in local language and allows user to interact directly with expert for help.[5]

Formulation

Now a days youths are becoming more responsible due to this communicable disease. They are taking their own initiative for preparing low cost products required to avoid this disease like masks, sanitizers, hand gloves etc. For example: National Institute of Technology Karnataka(NITK), Surathkal has developed low-cost, reusable, transparent face shields using locally available materials.

Though our youths are giving their best to avoid this disease, we lack in availability of Personal Protecting Equipment (PPE) such as hand gloves, protective coverage, masks, face shield etc. Because of the non-availability of the face shields, police personnel and health workers who are directly dealing with COVID-19 infected patients are at high risk.

Leadership and Appreciation.

COVID-19 is now classified as pandemic by World Health Organization (WHO). The whole world is impacted by covid19 (corona virus) and it's spreading beyond expectation .Older people and people with low immunity are at higher risks. The declaration of lockdown to prevent spread of virus made all industries and companies to shutdown their work to let the workers stay at home. But unavailability of transportation services made many migrant workers to stay where they were instead of reaching their homes. Those who worked daily pay basis couldn't have penny to buy food for themselves as all hotels and food stalls were closed. In this situation many youth groups and volunteers organised themselves to provide food, clothes and daily basic needs and masks and sanitizers and helping out older people and vulnerable people in their community to pick up groceries and medicine. Many youth organisations donated money to prime minister care funds. Few of them who took initiative to execute their ideas are mentioned below.

- Muhammed Ferdaus: A 27 year old young leader from Community development for peace organisation (CDI) distributing dry food and sanitisation kits to daily labours such as street vendors , rikshaw pullers.[6]
- Social activist Krishna Mahaeshawari is also providing free meals to poor families [7]
- Bernard Mascoso a young lawyer who urged political parties and political leaders to donate money to fight against covid19 [8].
- Ramlat a 27 year old who lives in slum in Tanzania. Worried about their community and their living conditions. She want their community should be safe and hygiene so she started to make masks on their own and giving to their slum people for free [9].

Helping health workers to looking after their children while they attend life saving work in hospitals and clinics. Doctors and health care workers are busy working day and night treating thousands of patients and conducting tests and survey. As they are I the last hope of humankind in this situation. Actors and political leaders, social workers and all community and government appreciating them for their huge role in saving thousands of lives.

Conducting Research and Developing Technology

The Ministry of Science and Technology and the Ministry of Health and Family Welfare with their various departments are contributing in different ways towards the National R&D efforts for producing solutions to combat COVID-19. Few of them is Helena likaj a 28 year old medical science research student from US developed a drive thru testing centre In New Orleans. This facility provides free covid19 testing to individuals riding up in cars and bicycles. [10]

Hamaza Meghari (26) a clinical research assistant Palestine, UK. Joined world health organisation (WHO) to conduct study on epidemiological character of covid19, which would enable better understanding of the disease and to manage of its symptoms and spread.[11]. Apart from government department even private sector has come forward in a big way to support the initiatives taken by the health departments.

Conclusion

With 65 percent of the global population under the age 35, it is vital that governments and civil society take steps to ensure that young people are engaged and encouraged to be part of both the response to the pandemic and broader democratic participation. For their part, young people are eager to leverage their skills, technology, and social media know-how to build greater trust between citizens and their governments.

Young people are eager to put their energy and time in the service of tackling this pandemic and delivering a better future.

The development sector should ensure that empowering youth remains a key funding priority in the difficult months ahead.

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CORONAVIRUS IMPACT ON INDIAN FINANCIAL SECTOR

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Abstract

This article deals with corona virus impact on Indian financial sector. There is no doubt; corona virus has given great impact on Indian economy. IMF and WHO reports also says that Indian economy goes down. But the major problem is found in agricultural area. Number of people depends upon agricultural daily wages. So it was a crucial moment to the peasant. During the Lockdown period and daily agricultural labors are not able to sale their products to the market so they suffered to survive their lives. A nation depends upon the all sectors for improving their economic growth but the pandemic disease covid-19 has destroyed, specifically Indian financial sector.

Key words: lockdown, market, peasant, wages, products, suffered.

Introduction

Corona virus which is created a huge panic among the people. And it caused to a huge economic crisis in India. Corona virus outbreak was first reported in Wuhan, China on 31 December, 2019. In the early stage the people of India didn't care about it. They received it so neglect but no one could not imagine its great impact on Indian economic crisis. Basically India is a country of common people who depend on the daily wages which means numbers of Indian families are leading their lives by getting daily wages. After long time India has faced a big financial crisis. Corona virus is one of the dangerous viruses that cause illness but more impact we have to scene on financial field of poor countries. The whole world is undergoing the impact of corona virus.

IMF (International monetary Fund) noticed that nearly 20 lakhs people of the whole world faced the problem by Covid 19 and nearly 3 lakhs people died. When India had found its great spreading, respected Prime Minister Narendra Modiji had announced nationwide lockdown on 24 March and it was the first lockdown of India. During the time of 21 days India was in crucial moment because everyone knew that it was great effect on Indian financial growth. Although it was an outstanding decision of prime minister because, India is a developing country not developed. But there was no option to prime minister during that time. Prior to declare lockdown respected Prime Minister Naredra modi, on 19 March, asked all citizens to observe 'Janata Curfew' (people's curfew) on Sunday, 22 March, at the end of the curfew, Modi stated: "Janata Curfew is just the starting of a huge war against COVID -19".from that time India was in trouble.

The financial crisis of the 2020 corona virus pandemic in India has been a long term effective. The World Bank and rating agencies had noticed that Indian financial growth suddenly go down, and it was a great effect in the last 3 decades. Indian economy not only depends upon corporate sectors but also on agricultural area. Villages are the real back bone of Indian economy where the daily needs of people are produced by the formers. When lockdown was declared by PM, Automatically all products were stopped. Due to the corona effect or lockdown formers could not able to reach their products to the citizens. Some Poor people who settle down some mega cities for leading their life by doing daily wages. Most of the Agricultural labors went to cities for leading their life in the rest of time. But lockdown period created a big migration. People decided to return back their villages. It was sudden effect of covid -19.number of village formers threw their agricultural products unnecessarily, like tomatoes, cabbage, flowers, other vegetables. Mallappa the former who belongs Karnataka state Shimoga district who get 20 litres milk every day from his cows but unfortunately he could not able to sale that so he poured to road. These incidents show the helpless of the government. In the other hand government gave salary to the government employees without working, it was a huge loss. No products no work which cannot help to growth of Indian economy.

Especially in India, the locked period had learnt big lesson to Indian people, not only the poor people but also rich people had learnt that what the reality of life is. Common people, industry owners, IT companies, daily wagers, peasants, traders, and tourism were affected by lockdown. Some meyor industries were closed so workers lost their jobs that became unemployed. We have to find out many reasons for the slowdown of Indian financial growth. Industries stopped to products, transportation was closed, tourism, fishing, sports, film theatres, online shopping, and Jim centers are closed. So how can it is possible to improve the financial growth. Indian economy has recieved more income from the railway sector but due to the corona effect Indian Railway was stopped. So it was a huge loss to financial sector. Covid -19 is like a great health emergency; at the same time India was not to ready receive the real fact. Because Indian medical facilities are too low development. After this effect India had invested maximum amount into this area. It is so essential but how can it is easy to receive this situation. If the government focus its attention on only one sector, there is no use or profit.

Central government and state governments are declared to stop DA (Dearness allowance.) to government job holders up to 2021july. Which means government is struggling to maintain financial issues. Covid-19 is not just pandemic, it creats economic

emergency also. State governments are suffering from great financial trouble and they are unable to give salary to their government job holders. Emerging from two months under one of the world's most stringent covid-19 lockdowns, India faces a double dilemma. Every one tried to follow the stay at home rules but it could not help to Indian economy because all producing activities are closed during the lockdown period. The main purpose of that is only save their lives. 21 days lockdown period was the one of the biggest periods in world, at that time Indian GDP Lost nearly 7 to 8 lakhs rupees.

According to Du & Bradstreet, COVID-19 no doubt disrupted human lives and global supply chain but the pandemic is a severe demand shock which has offset the green shoots of recovery of the Indian economy that was visible towards the end of 2019 and early 2020. The data of the Dun & Bradstreet shows that at least 6,606 Indian entities have legal linkages with companies in countries with a large number of confirmed COVID-19 cases. And lockdown period gave big stroke to automobiles, tourism, metals, drugs, pharmaceuticals, electronic goods, MSMEs and retail among others.

Conclusion

Basically India is agricultural based country. The impact of COVID-19 on the economy is no doubt devastating. During the lockdown period, people stayed their homes but common people and daily wagers, out of state labor's who were suffered for food and daily needs. It's so simple to say it to stay your home but just we imagine how they leaded their lives without daily needs. We have to scene number of examples like labors spend their time without daily needs. The corona virus (COVID-19) crisis created nationalism in Indians because the people of India rejected to use the china products like mobile, other electronic products and mobile apps because they thought that china might be created covid-19 virus. The import dependence on China will have a significant impact on the Indian industry. Indians should try to develop their own mobile apps and mobile manufacturing industries.

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COVID 19- DENTAL INNUENDO

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Abstract:

As Covid-19 has changed the way of living across the world even Dental Professionals have to changed their concord for protection of our patients, to avert spread of COVID-19 and protect on one's own. "Physical Distancing & Hand Hygiene is The KEY". This paper attempted to present in another ways how to change oral medicine and radiology department setup during and after pandemic. What to accept in future and How too little brighter attitude towards this entire pandemic situation.

Keywords: Corona virus; Innuendo

Introduction:

During and after pandemic, we need to alter the departmental setup (Oral Medicine and Radiology).

Level 1: Pre-Screening Area:

Instructions:

The team members should wear adequate personal protective equipment. It is desirable to issue tokens to the patients or issue limited case papers (40 to 50 patients per day in institution) so that there is no crowding in the hospital premises and adequate distancing and safety measures can be maintained. Safe distancing protocol has to be maintained with at least 1 meter distance between every member and the patients. Not more than 5 patients shall be permit to wait in the pre screening area. Patient's relative shall not be allowed inside the department except in special cases where the patient may require a companion such as old aged patients, differently able patients etc. Patient shall not carry any bags except for their purse/hand bag with them. All patients shall compulsorily wear masks throughout except during examination in the OPD room. Hand hygiene shall be performed by every patient. Every patient should be given a shoe cover so that the floor contamination can be minimized. Every patient shall be subjected to COVID screening questionnaire, and thermal screening. Any suspected patient with elevated body temperature/ symptoms of cough, fever, breathing difficulty will be referred to OPD to

obtain opinion for dental examination. Medical history and habit history will be taken as per routine [1, 2].

Level 2: Out Patient Examination Area

Instructions:

All team members shall wear N 95 masks and gloves compulsorily all the time. All the team members who are examining the patient shall wear the complete PPE including N 95 masks, gloves, drape, face shield etc. Not more than 5 patients will be allowed into the OPD area at any given time. Patients will be examined on alternate chairs only so that adequate distancing can be maintained. Only 3 patients will be allowed in the waiting lobby outside the OPD room. The patients will be made to sit in the seating area with minimum 1 meter distancing. Patients shall always wear the masks except throughout examination. Instrument sterilization protocol shall be followed as per routine. No unwanted items such as textbooks, registers, stationary items shall be kept on the OPD table. OPD pens to be kept in OPD and shall not be taken away by the team members while leaving the department. The team members examining the patient shall change their gloves and perform hand hygiene after every patient. The team members shall not be permitted to carry mobile phones into the room. All team members shall follow rules of donning and doffing of PPE and hand hygiene measures as per prescribed guidelines. After examination, all patients intend to the respective department [1-3].

The floor shall be cleaned every one hour by the servants with recommended floor disinfectants. The dental chair and accessories shall be wiped with 1% Sodium hypochlorite solution every one hour. OPD room shall be fumigated every day. Work done in this area Patient examination and diagnosis Additional Requirement at the OPD area :-

- Hand scrubs for patient and the team members
- PPE kits, gloves, additional N 95 masks.

Level 3: Pg Clinic/ Tobacco Cessation Centre:

Instructions:

All team members shall N 95 masks and gloves compulsorily all the time. All the PGs/staff who are examining patients shall wear the complete PPE including N 95 masks, gloves, drape, face shield etc. Not more than 2 patients will be allowed into the PG clinic area at any given time. Not more than 2 patients shall be permit to wait in the lobby. Patients shall always wear the masks except throughout examination. Instrument sterilization protocol shall be followed as per routine. All registers for entering the

records must be protect by plastic sheets which shall be changed every day. The team members shall note the patient detail on a rough paper kept with them. They enter the work record in the register only at the end of every session. The members may wear fresh gloves while entering the information in the respective registers and performed hand hygiene before and after entering the data. The floor shall be cleaned every one hour by the servants with recommended floor disinfectants. The dental chair and accessories shall be wiped with 1% Sodium hypochlorite solution every one hour. PG clinic shall be fumigated every day [1-3].

Level 4: Radiology Clinic

Only emergency radiographic services will be provided as per the prescribed guidelines. IOPA radiographic techniques will be strictly avoided as there is a high risk of patient gagging and also cross contamination of digital sensors which cannot be subjected to sterilization procedures OPG, Extra Oral radiographs, CBCT scans will be made only for emergency cases as certified by the department staff. All the PGs/staff who are examining patients shall wear the complete PPE including N 95 masks, gloves, drape, face shield etc. Not more than 2 patients will be allowed into the radiology at any given time. Not more than 2 patients shall be permit to wait in the lobby. Patients shall always wear the masks except examination time. All registers for entering the records must be protected by plastic sheets which shall be changed every day [4, 5].

NOTE: All Staff and PGs who will be examining the patients shall consider prophylaxis with Hydroxychloroquine as per the ICMR guidelines. (400 mg twice on first day followed by 400 mg once daily for next 7 days) [4].

Conclusion

Dentist does not precede any kind of dental treatment, if basic PPE including surgical facemask are not available during current situation. Dentist and team members must be under 14days of quarantine, if they were come in contact with a confirmed or suspected case of covid-19, if any patients treated without protection or PPE kit, then that is considered as high risk scenario during this pandemic.

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The Role of Ayush as an Immunomodulator for the Prevention and Management of Covid-19 Pandemic

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Abstract

Globally Covid -19 has become an unprecedented pandemic increasing in mortality. Despite worldwide effort on bringing about many effective therapeutic strategy the disease is spreading. The current scenario shows that there is no available treatment or cure for the disease in the western system of medicine .This prevalent disease requires a drastic knowledge system of natural medicine available all over the world. Indian system of medicine from the ages has been proven that traditional medicine has taken a predominant role in the prevention and boosting immunity against various diseases. Ayush has recommended the Ayurveda and Homeopathy to combat the covid-19 pandemic in India. The Ayush mainly focuses on to serve as an immunity booster rather than the onset of disease in our body. According to Ayurveda the efficacy of diagnosis and treatment relies based on the concept of three doshas in our body, that is vatta, pitta and kapha. Any variation in the combination indicates the proper diagnosis and treatment to a particular disease. The panchakarma is one such prayoga which uses Rasayana to rejuvenate the body immune system. Some of the strategies includes yoga ,dietary changes, using of medicated drop for steam inhalation .The present study shows Ayush cannot be used as a mainstream treatment option for pandemic covid -19 as it lacks scientific evidence .Proper research on clinical trial are essential for the efficacy and safety of the therapy. This review reveals the best practice of Ayush in maintaining the health of the healthy to prevent the disease.

Keywords: Ayush, Covid-19, Tradititonal medicine, Immunity booster,

Introduction

The corona virus has sprung since 21st century, the three corona virus so far has caused disastrous outbreak of pneumonia in human beings. Severe acute respiratory syndrome coronavirus (SARS-CoV) in 2002–03 and Middle-East respiratory syndrome coronavirus (MERS-CoV) in 2012 is evidently taken into existence. The current progressing Covid-19 (Corona virus disease 2019) is the third corona virus epidemic of zoonotic origin in the present century (Sun et al., 2020), which has originated from a single city and has spread to the whole countries across the world within 30 days (Wu and McGoogan, 2020); and

has been transmitted to nearly 72 countries in less than three months . Surprisingly Antarctica is the only spotless area of Covid 19 (Acharya, 2020). On 12th March 2020, Covid-19 was declared a pandemic by the World Health Organization (WHO). As of 17th April 2020, there have been 2,074,529 confirmed cases and 139,378 deaths worldwide due to Covid-19 as reported by the WHO (WHO, 2020). (S. Nikhat et al., 2020).

Due to human contact and aerosol transmission, this deadly dangerous disease has dissipated the entire globe, bringing the world economies to their knees. Doctors, scientists, and governments are exploring for safe and effective treatments to aid the people who are sick. However, yet there is no specific treatment and cure available. At present scenario, the SARS-CoV-2 treatment can alleviate the symptoms, such as difficulty in breathing, chest discomfort, fever, body aches, etc. The current availability of drugs may not directly act on viruses due to non-specificity but provides relief to the infected people by reducing further complications. The scientific idea behind treating the symptoms is to help prolong a patient's life by improving immune system by clearing from viral infection. Invariably the old age people, children, and immune compromised patients are at higher risk, although a young person is not invincible from the COVID-19. Person with diabetes, cardiac problems, kidney disease, and COVID-19 may require special attention and clinical care. (S. Nikhat et al., 2020).

In India, the first case of Covid-19 was found apparently in a student who returned from Wuhan, China on 30th January 2020 (Sahasranaman and Kumar, 2020). By 14th April 2020, total of 13,387 cases and 437 deaths was been found in the country. Although community transmission is not reported, clusters of cases have been identified (WHO, 2020). The causative agent of Covid-19 was provisionally named as 2019 n-CoV (2019 novel corona virus) by WHO on 12th January 2020. On 11th February 2020, it was officially named as SARSCoV-2 (severe acute respiratory syndrome corona virus 2) by the International Committee on Taxonomy of Viruses. Evidently SARS-CoV-2 has a 96.2% structural similarity with a bat corona virus (CoV RaTG13) and 79.5% similarity with SARS-CoV. However, its spike (S) glycoprotein has a 10–20 times higher affinity to human ACE2 receptors as compared to SARS-CoV, leading to more chances of human-to-human transmission; though having a lesser mortality rate (average 3.4%) than that of SARS (9.6%) and MERS (35%) respectively .(S. Nikhat et al., 2020).

The current management strategies of the disease includes the reduction of secondary infections by early symptom diagnosis and isolation of cases, equipping optimal care to infected patients, and the development of effective diagnostic, preventive and therapeutic

strategies, including vaccines (WHO,2020). Due to lack of any proven treatment option, many drugs are under investigation to control this disease with a potentially fatal outcome. Notably Chloroquine is the widely used drugs, with in vitro evidence of reducing viral replication (Deponi et al., 2017). A combination of hydroxy chloroquine and azithromycin has also been found to be a significant synergistic effect in reducing viral load and early recovery. During the severity of disease, the use of steroids, passive antibodies, and selective cytokine blockade is been suggested (Mehta et al., 2020). The role of NSAIDs and corticosteroids, however, is still controversial and not advisable at present. Anti virals such as interferon- α , lopinavir/ritonavir, ribavirin, etc are also being used as a tentative treatment for Covid-19 (Dong et al., 2020).Current investigation predicts that, there are no specific antiviral drugs or vaccines verified to be effective against SARS-CoV-2, hence the future emphasis more on preventive measures and symptomatic treatment (Jean et al., 2020, S. Nikhat et al., 2020).

In this context, traditional systems of medicine are gaining more importance in exploring on preventive, supportive and rehabilitative care to patients. Although the studies shows no direct evidence available, some uncontrolled studies on traditional medicines suggest that they may have a direct efficacy on the virus. Presently an antimalarial and antiviral drug i.e. Hydroxy-chloroquine, (HCQ), Remdesivir have been directly tried on patients to combat with COVID-19 and some improvements were been observed, but large trials are required to meet their validity and efficacy. Globally, researchers and medical fraternity have merged to bring some promising drugs or vaccine which can save humanity. (Sadia et al., 2020)However, such invention will be for longer duration due to large clinical trials on patients with COVID-19, and this provides the effective platform which will be able to reveal precisely whether these interventions are safe and effective. Virtually these kinds of large trials needs time, money, and patience to carryout, nevertheless, they are ongoing and some of them could be effective in the near future. (Prajapathi et al, 2020).

Despite that time elapse, persistent research and development of vaccines are underway for the treatments of COVID-19 to reach patients who desperately need them. Subsequently, the scientific community should think about the Complementary and alternative systems available globally. CAM's are currently the part of the medicinal system and national drug program in different countries, like in India, Srilanka, Bangladesh, China, Singapore, etc. In India, it is referred to as Indian traditional

medicines and are combined under one roof termed AYUSH and is integrated with the national medicinal system in treating several diseases. (Prajapathi et al, 2020).

AYUSH system encompasses with five different holistic treatment approaches that include, Ayurveda, Yoga, Unani, Sidha, and Homeopathy. Among all Ayurveda, Yoga and Homeopathy are worldwide accepted and referred to as the ancient medicinal system. Predominantly Ayurveda and Homeopathy classics, progressive scientific studies, and experiential knowledge on similar clinical settings, the holistic approach of Indian traditional medicine inclines on prevention through lifestyle modification, dietary management, prophylactic interventions for improving the immunity and simple remedies based on presentations of the symptoms. (Prajapathi et al ,2020).

Presumably that no system of medicines has any evidence-based medicine treatment against the COVID-19 so far. Clinical interventions are being done globally to overcome the disease. Indian Government has taken an initiative to implement Ayurveda and Homeopathy system of medicine as an immune booster in improving the respiratory health of citizens.

The Indian traditional medicines suggests on avoidance of causative factors and enhancing the self-immunity against a host of infections and this is the key characteristics feature of the classical Ayurveda and homeopathy remedy. The Indian traditional medicines interventions are classical and historically more relevant by the fact that there is an elaborate description of causation and management of epidemic such as Janapadodhwamsa in Ayurveda. (Prajapathi et al., 2020).

Apparently, homeopathy is well known for its efficacy during the several epidemics such as Cholera, Diphtheria, Typhoid ,Spanish Influenza, Yellow fever, Scarlet feveretc.,⁶ Apart from these homeopathic interventions are familiar for the management of few genus epidemics i.e. Dengue,Virus ,Chikungunya and Japanese encephalitis. The Indian traditional medicine in managing several epidemics is based on the potential of AYUSH systems in addressing the challenge and restoring health, medicines from Ayurveda like Chyavanprash, Herbal tea, and turmeric milk were recommended as immune boosters. Herbal tea was made from Basil, Dry ginger, Cinnamon, Black pepper and Raisin. Basil leaves are rich in Vitamins, phytonutrients chlorophylland minerals, as well as eugenol, a bioactive compound and having a various medicinal application. (Prajapathi et al, 2020).

Holy basil leaf usage has shown more beneficial in respiratory complications such as allergic bronchitis, cough, asthma, and eosinophilic lung disease it has a unique property to liquefy the phlegm. Cinnamon is the major source of cinnamaldehyde and *trans-*

cinnamaldehyde (Cin), which has various biological activities apart from this its bark contains procyanidins and catechins and has shown to be exhibiting tremendous antioxidant capacity. (Prajapathi et al, 2020).

Traditionally black peppers are used as a home remedy in the treatment of cold and flu which is shown to activate the circulatory system. Ginger contains chemicals called sesquiterpenes that target cold viruses. Most of the traditional medicine includes spices used for cooking which has immune-boosting potential with antibacterial properties that can help prevent nausea. Similarly raisins are rich in fiber, vitamins, and minerals, due to these it has also tremendous medicinal applications. Thus these traditional spices were recommended as herbal tea to boost immunity.

Among homeopathic medicines, Arsenicum album 30 CH is recommended daily once in an empty stomach for three days as an immune booster in improving respiratory health. However, the above-mentioned drugs are not yet clinically proved against the SARS-CoV-2 infection although various studies are ongoing. (Prajapathi et al, 2020).

Besides AYUSH, it is noteworthy that, traditional Chinese herbal medicine (TCM) has shown an important role in the management of COVID-19 and is part of the national health program of China. TCM is used as palliative therapy in combination with western medicine to treat the SARS-like illness. TCM is now officially included in the Chinese Guideline on diagnosis and treatment of COVID-19 and shown as an effective treatment for some patients in China and Beijing. Given the success of TCM in managing a SARS-CoV-2 pandemic in China, it is essential to explore how Ayurveda and Homeopathy work and can help in control the COVID-19 infection in India. (Prajapathi et al, 2020).

The Indian traditional medicine especially, Ayurveda and Homeopathy potential practices give the better opportunity in the management of COVID-19. The traditional medicine with scientific studies can serve as an alternative therapy. However, the followers of western medicine always criticize and challenge these medicinal systems from time to time due to lack of instant first aid relief to the patient. Despite this, about 70–80% of the world's population relies on alternative and traditional medicines. (Prajapathi et al, 2020).

Therefore more research studies should be carried out in the future to explore the scientific data to validate these drugs in a modern scientific way to prove their safety and efficacy. Due to scanty scientific evidence this system of medicines gets very limited attention to the scientific community. Recently, it is noticed that these systems of medicine specially AYUSH, in India and TCM in China getting the attention of the

scientific community and government. Such support will provide an emerging scientific advancement of these forgotten systems of medicine in the 21st century. The present pandemic of SARS-CoV-2 cherishes a golden opportunity to the alternative and traditional medicinal system to prove its significance importance and utility in the shadow of western science. (Prajapathi et al, 2020).

Methodology

Sl.No	Category of People	Proposed intervention
1	Unexposed asymptomatic group	Common health keeping approaches of Ayurveda including nutritional diet, healthy life style, adequate sleep, physical activity, good conduct, care for retainable urges, and avoidance of disease causing factors(excessive cold and exposure to pollutants).In addition, Chyavanprasha, Brahma Rasayana, Amrit Bhallataati, Swarna prashka, Sanjeevanivwarnaprashan
2	Exposed asymptomatic (Quarantined)	Savanjeevanivati, chitratkaddivati, Chyavanprasha, Brahma Rasayana and decoction of a combination of herbs, Tinosporacordifolia, Zingiberofficiale, Curcuma longa, Ocimum sanctum, Glycyrrhizaglabra, Adhatodavastica, Andrographispaniculata, Swertiachitrata, Moringaoleifera, Triphala and Trikatu.
3	With mild COVID-19 symptoms	Pippalirasayan, GojihvadiQuath, KantakariAvaleha, ChittrakadiVati, Vyaghri and Haritaki, DasamulKwath, Sitopaladi, Talishadi and Yashtimadhu etc.
4	With moderate to severe COVID-19 symptoms	Pippalirasayan, laghuvasant Malati, SanjeevaniVatiCchintamanorana, Mrityunjaya rasa, Siddha Makardhvaja et

Table 1 Proposed Ayurveda interventions in COVID-19 outbreak and their rationale (SanjeevRastogi et al, 2020).

Coronavirus disease 2019

Causative agent

SARS-CoV-2 belongs to the genus β -corona viruses, sub-genus botulinum (Sun et al., 2020). It is the seventh in the family of corona viruses which infect humans (Andersen et al., 2020). Corona viruses are a group of enveloped viruses with a spherical shape, having a non-segmented, single-stranded RNA genome with club-like projecting spikes on their surface. SARS-CoV-2 was first isolated from bronchoalveolar lavage samples from three patients suffering from pneumonia of unidentified cause. The genome of SARS-CoV-2 has structural similarity to other β -corona viruses having long coding strand on which five ORFs are identified: including ORF1ab polyprotein, spike (S) glycoprotein, envelope protein, membrane protein, and nucleocapsid protein. The S glycoprotein is the primary target of antibodies and vaccines as it is surface-exposed. Two distinct features have been identified in the genome sequence: (i) Structural and biochemical studies reports that SARS-CoV-2 receptor-binding domain (RBD) in the spike protein has a high affinity to human or human-like angiotensin converting enzyme-2 (ACE2) receptors; and (ii) a second feature is a polybasic cleavage at the junction of sub-units S1 and S2 of the spike, which determine the infectivity and host range of the virus (Andersen et al., 2020). So far mutations and deletion identified in the genome sequence of virus samples isolated from patients across countries indicates genetic diversity and evolution of the virus. Genetic analysis of 103 genomes has indicated that SARS-CoV-2 has evolved into two major types, designated as S and L. The L-type is more prevalent, found in about 70% of the cases in Wuhan (S. Nikhat et al, 2020).

Modes of transmission

55% of the patients in the preliminary stage of infection were related to seafood and wet animal market, a likely zoonotic origin was suggested (Sun et al., 2020). Research studies has shown that SARSCoV-2 has close structural similarity with bat coronaviruses, supporting the theory that SARS-CoV-2 was derived from bats. Snakes have also been suggested as a likely wildlife repository of the virus. However since late December 2019 there was an exponential rise in unrelated cases (Sun et al., 2020). Since bats are a natural reservoir of various coronaviruses, a zoonotic angle is not entirely ruled out. But statistics reveal that the disease is spreading rapidly by human-to human transmission. SARS-CoV-2 infected people has been detected in the secretion of broncho-alveolar secretions, sputum, saliva, throat and nasopharynge. About 50–80% transmission of the virus is from asymptomatic carriers, hence transmission through speech droplets is considered as a significant mode of transmission of the disease. The virus can be transmitted directly through speech droplets, or through fomites. Based on reports, it is estimated that 44% of

the transmission can occur before the onset of symptoms. SARS-CoV-2 binds to the ACE2 receptors, which are present in abundance in the lungs and gastrointestinal tract. Numerous studies suggest viral RNA has also been detected in feces. Hence, an oro-fecal route of transmission is also considered. Air-borne transmission is not completely ruled out. Evidently the virus can be transmitted through tears and body fluids if they come into contact with the mucosa of eyes, mouth or nose. Depending on the route of entry, the virus binds to ACE2 receptors and infects type-2 pneumocytes, ciliated bronchial epithelium of lungs (Rodriguez-Morales et al., 2020), or enterocytes of the small intestine. The virus has also been isolated in blood, indicating more routes of transmission (S. Nikhat et al, 2020).

Disease spectrum

The management strategies of covid infection include the incubation period of ranges from 1 to 14 days, averaging 5–6 days in most patients. Though an incubation period of up to 24 days has been reported in some cases. Apparently the disease affects males and females equally, although a slight male predominance has been observed. The preliminary symptom includes fever with chills, dry cough, and malaise in 83–98% of cases. Sputum production is seen in about one-third. Other symptoms include shortness of breath, abdominal pain, diarrhea, headache and vomiting in a few cases. If pulmonary inflammation worsens, hypoxemia occurs which may lead to cardiac arrest. Elderly patients and those with underlying diseases such as chronic obstructive pulmonary disease, cardiovascular disease, hypertension, etc. have a more chance of developing acute respiratory distress syndrome, organ failure or other conditions leading to death. Most patients have a good prognosis, with mild flu-like symptoms.

The small percentage of elderly and those with underlying diseases may develop complications such as arrhythmia, shock, acute renal failure, acute cardiac injury, acute respiratory distress syndrome, etc. Overall, the case fatality rate is estimated to be 2–3% , while it is as high as 8–15% in older adults. The research findings include a decreased white cell count in 70% patients, prolonged prothrombin time in 58% patients, and elevated lactate dehydrogenase in about 40% of the patients. Increased level of Interleukin-6 (IL-6), Interleukin-10 (IL-10), Tumor necrosis factor- α (TNF- α) is seen. Bilateral patchy infiltrates are seen on chest radiograph and ground-glass opacities are seen on chest CT scan. Histopathological examination of biopsy tissues has demonstrated the desquamation of pneumocytes, formation of hyaline membrane and bilateral diffuse

alveolar damage in lung, liver and cardiac tissue (Rodriguez-Morales et al., 2020). (S. Nikhat et al, 2020).

Infectious and epidemic diseases in Ayurvedic medicine

A brief introduction to AyushSystem of Medicine

Indian System of Medicine has its origin in India through a continuous process of transformation from its original Vedic form to modern day AYUSH system. AYUSH is an acronym for Ayurveda, Yoga & Naturopathy, Unani, Sidha and Homoeopathy and are the six indigenous systems of medicine practiced in India and other neighboring South East Asian countries (Samal J, 2014). India is the only country to legally empower these six traditional systems of medicine and accepted as the complete system of medicine. The birth of Indian System of Medicine and Homoeopathy took place in 1995 and was renamed in 2003 as the department of AYUSH under the aegis of Ministry of health and Famil Welfare, Govt. of India (AYUSH in India, 2014 and NHSRC, 2011).

General preventive measures during epidemic disease

The counteractive measures for epidemic diseases are mainly focu towards the missed on improvement of immunity, prevention of spread of infection, hygiene and anti-septic measures and promotion of general health. According to Razi (865–925 CE), Those who are involved in persistent physical activity and exercises are less prone to epidemic diseases (Razi, 2008). People already suffering from any kind of diseases or some illness are said to be more susceptible during epidemics (Sina, 1878).The main precaution is to avoid the exposure to the places where an epidemic is spread. In any unavoidable circumstances a person is advised to stay at a well-ventilated place, preferably distant from the ground. The interaction of patients to healthy person should be like no direct air passing from infected person to healthy individuals (Razi, 1991). During epidemics, it is advised to avoid unnecessary physical exertion and to stay in properly ventilated places with optimum temperature. (S. Nikhat et al, 2020).

Sanitization of surroundings

Sanitization measure is the ideal process to keep at bay of any infection during epidemics. Before the era of chemical-based air purifiers, Unani physicians has employed various herbs having medicinal properties which can be used as decoction ordistillate for spray, or as fumigants to keep the air free of contaminants. Alternatively diluted vinegar is also used as a home remedy to keep the air clean. Unanisystem also speaks about vinegar made from sugarcane (Saccharumofficinarum L., Poaceae) is also used. Arq-e-Gulab (Rosa damascenaHerrm.) should be applied on the body and curtains etc. If the air

smells foul, then fumigation with sandal (*Santalum album* L.) and camphor is also advisable. Fumigation with herbs like Qust (*Saussureacostus* (Falc.)Lipsch.), kundur (*Boswelliaserrata*Roxb. ex Colebr.), (*Paeoniaemodi*Royle.) and Murr (*Commiphoramyrrrha*Nees Engl.) is also advisable (Rushd, 1987).According to ZakariyaRazi, some aromatic drugs aid in destroying infectious agents and should be used as fumigants during epidemics. For instance amber (*Liquidambar acalycina* H. T. Chang), loban (*Styraxbenzoides* W. G.Craib), sandroos (*Hymenaeaverrucosa*Gaertn.) za'fran (*Crocus sativus*L.), aabnoos (*Diospyrosebenum* J. Koenig ex Retz.), mastagi (*Pistacialentiscus* L.), mushk (*Moschusmoschiferus* L.), izkhar (*Cymbopogonjwarancusa* (Jones) Schult.), abhal (*Juniperuscommunis* L.), zanjabeel.

(*Zingiberofficinale* Roscoe), sibr (*Aloe vera* L.), olive gum, etc. (Razi, 2008).Mushk however, is nowbanned for use, as theMusk deer is an endangered species in many parts of the world, including India. Information about these drugs, herbal fumigants and sprays are rarely used for the purpose specified in traditional medicine. Sporadic researches have been published on the efficacy of herbal drugs as fumigants, but more information has to be explored on its potential effect .There is no clinical evidence of herbal fumigants. If any studies report any beneficiary effect of these drugs it can be used as an insecticidal, acaricidal, etc. For some drugs such asH. verrucosa, O. europaea, etc., no studies were found where the drugs have been used for fumigation, although many herbal drugs are used as house hold incense in some countries. Based on the information that they contain volatile oils rich in alcohol, terpenoids etc. which may offer an anti-microbial effect on fumigation. However, the health effects of fumigation, along with quality control of drugs is needed before reaching into any kind of conclusion (S. Nikhat et al., 2020).

Dietary modifications

During any kind of epidemics management strategies suggests that to avoid meat, sweets, and fruits with high water content. If meat has to be taken, then that of birds found on mountains may be preferred over animal meat. Fish should be entirely avoided .Since the zoonotic spread of infection was speculated restriction was placed on the usage of fish and animals living near the ground and were more likely to be infected than those living at higher altitudes. Consumption of citrus and sour fruits, especially grapes, apples, lemon may help during pandemic. Overeating and under-eating both are considered harmful as they have adverse effects on the bodily constitution. Staying thirsty was also known to be detrimental. (S. Nikhat et al., 2020).

Possible approach to prevention and management of Covid-19 in the light of Ayurvedic medicine

Preventive measures

The primary steps include measures of isolation, quarantine, and social distancing must be followed mandatorily. Transmission through fomites is at higher risk hence care should be taken in handling and disposing of the same. Health care workers, family members and caretakers of the patients should take due precautions. Staying in well-ventilated places reduces the chances of contracting the infection. Razi's advice of avoiding airflow from the patient to a healthy person is remarkable. So the patient should stay away from healthy people while coughing, sneezing or talking, as the virus may also be excreted through saliva (Razi, 1991). Sanitization of the environment should always be given intense importance as it serves as the medium for lodging and dissemination of the virus. Several drugs have been prescribed for spray, for application on curtains, as sanitizers on the body, and for fumigation. These drugs are mostly aromatic, for instance loban (*Styraxbenzoides* W. G. Craib), sandroos (*Hymenaeaverrucosa* Gaertn.) za'fran (*Crocus sativus* L.), Rose water, vinegar, etc. which provide a relaxing aroma and are also said to have a clearing effect on microbes (Razi, 1991). In the future, herbal drugs may potentially provide a cost effective and safer alternative to chemical disinfectants. Health protective measures pay more attention. The immune modulatory effects of citrus fruits were also known. Besides, other measures of health promotion during epidemics include avoiding meat, fish instead having a wholesome diet and staying hydrated. Ayurveda treatment prescribes Nasya karma (inhalation of medicated smoke) and pratimarsha Nasya (instillation of nasal drops), Gandoosha (oil pulling) and kavala (gargling) with decoction and medicated oil. Under Rasayanaprayoga, rasayaanas like chawanprasha and other similar preparations are to be given to patients as immune booster. Satvavajayachikitsa advises consumption of herbal decoctions, Amruthashadangam, (processed water with lavancha or vetiver grass and milk fortified with Ashwagandhachurna. (S. Nikhat et al, 2020).

Conclusion

Human civilization and urbanization has been ended up in leading to the occurrence of epidemics directly or indirectly threatening to have disastrous effects on humankind. The Discovery of identifying many microbes and three viruses, belonging to a family hitherto which was considered less virulent, took the 21st century by storm. The newest of them, SARS-CoV-2, is, fortunately, lesser on virulence than its two recent predecessors, namely

SARS-CoV and MERS, but higher infectivity. Based on the speculation this simply implies that there are greater chances of reaching susceptible population leading to higher mortality. The present scenario gives an idea that close to two-thirds of Covid-19 cases from China may have gone undetected and is going to increase number of cases in the near future. This pandemic reflects a huge economic burden, especially on developing and under-developed countries. (S. Nikhat et al, 2020).

An important review of this paper may alarm all the readers and bring alertness about the concept and consequences of epidemic diseases and also gain knowledge about traditional medicine. The comprehensive description of preventing and protective measures during epidemic diseases theory in Ayush medicine has explored to keep a bay on such infectious agent. Concepts of sanitation, isolation, air purification and immunomodulation described remain the basic tenets of infection containment in the contemporary preventive medicine. Currently in the lacunae of any treatment available for covid-19, traditional medicine has gained attention as an alternative therapy in providing protection and prevention (S. Nikhat et al, 2020).

Herbal medicine which is found to have several bioactive compounds with important antioxidant and pharmacological activity plays a key role in reducing the burden of pandemic in the contemporary world. Notably among all epidemics, the literature mainly focuses on air-borne respiratory infections which affect the respiratory system. Although at some places epidemics involving food and water-borne diseases, and plague, etc. have also been discussed. It is possible because the most prevalent epidemics in the Muslim world during the medieval ages were plague, smallpox, chickenpox, etc. which are transmitted through fomites or respiratory route. According to the literature Vinegar, Rosewater are used for air purification. Fumigation with various resins such as loban, etc. are extremely noteworthy. Convincing scientific evidence is the greatest challenge in implementing the air-purifying activity of most of these drugs. According to Unani medicine, it does not mention epidemics and pandemics as separate entities, and a common term 'waba' is used for those diseases which affect a large geographical area. This could be because of two reasons, first and foremost, global communication was not possible in medieval ages like today; and second, travel over very long distances would have rarely occurred, hence the occurrence of a pandemic would have been a remote possibility, practically unlikely. The possibility could often encounter and will continue with the emergence of new organism and may be more aggressive than ever. Ministry of Ayush has tried several steps to bring Ayush on a global platform and to improve its

market like establishment of Forum for Indian Traditional Medicine at Research and information system for developing countries. Hence there is more challenging stress and demand in developing effective methods to control infection globally. Most of the herbal drugs described in this manuscript are cheap, easy to administer and available in most parts of the world. The review suggests that proactive researches on Ayush medicines can generate credible evidence regarding their role in health promotion and disease prevention (S. Nikhat et al, 2020).

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Review on Role of Textiles to Overcome Pandemic Situation nCovid-19

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Abstract

The development of novel human corona virus has become a worldwide wellbeing concern causing serious respiratory tract diseases in people. Human-to-human transmissions have been portrayed with brooding occasions between one to two weeks, encouraging its spread by means of moisture droplets, defiled hands or surfaces. Individual to-individual transmission is portrayed in public, clinic and family settings [1]. It is along these lines of most extreme significance to forestall any additionally spread in people in general and medicinal services settings [2]. Transmission of corona viruses from debased dry surfaces has been hypothesized including self-vaccination of mucous layers of the nose, eyes or mouth [3], stressing the significance of a nitty gritty comprehension of corona virus diligence on lifeless surfaces.

Apparel sector in its various forms has played a vital role in constraining the spread of pathogens since several decades. With the advent of non wovens and synthetic materials and technology, textiles find a very dynamic place in medical and healthcare sector. Covid-19 has posted a great challenge to textile sector to meet the rising demands of protective clothing for the Covid 19 warriors in particular and the entire population in general. India, which ones had absolutely no production of PPE kits, today claims to produce about 2.06 lakh PPE kits [4] producing masks, gloves, protective gowns and head gears. These components of textiles have inclined the entire globe to rise in confidence to fight against the unforeseen pathogen.

Keywords: Pathogens; Textiles; PPE; Mask; Gloves; Gowns

Introduction

India contributes to about 4% of global textile and apparel market and has been the second largest provider of employment contributing to about 7% to industrial output in value terms, 2% to the GDP and 15% to the country's export earnings [5]. The recent developments posing medical challenges in the entire globe has highlighted the contribution of textiles in medical sector. Textile sectors hold a share of about 4.02% of medical textile in the world market. The range of products produced in India and circulated around the globe is depicted in the Table 1. This clearly indicates the role of

Indian industry, its contribution in the world market to fight against the medical challenges portrayed by the unseen pathogens.

In the fore concept of adapting to the new unexpected challenges posed by Covid 19 disease, the world has taken a turn around to look for all the simple yet crucial possible means to keeps the virus trifling. Respiratory diseases and disorders are not new, and is been prevailing in the society in all age groups from long-long time. From occasional influenza to disastrous flare-ups, respiratory pathogens keep on plaguing us right up till the present time. [7].

Table 1: Textile fibres and its application in medical field [6].

Sl No	Fibre	Application in Medical Field
1	Cotton	Surgical Clothing Gowns, Bedding, Sheets, Pillow Cover, Uniforms, Surgical Hosiery
2	Viscose	Caps, Masks, Wipes
3	Polyester	Gowns, Masks, Surgical Covers, drapes, Blankets, Cover stocks
4	Polyamide	Surgical Hosiery
5	Polypropylene	Protective Clothing
6	Polyethylene	Surgical covers, Drapes
7	Glass	Caps, Masks
8	Elastomeric	Surgical Hosiery

The mode of transmission of virus is either airborne or through surface contact. Airborne spreading occurs when the droplets containing virus circulates in air due to gravitational force. The distance of travel is limited to less than one metre. Maintaining distance of at least two metres between individual would be the first primary preventive measure [8]. Surface contractual infection occurs when a susceptible person comes in contact with the surfaces on which the virus is deposited, due to contact of infected person.

Protective defensive measures are essential to reduce the impact of the virus and similar pathogen transmissions from the infected person, group or any other source to the society [9]. A simple model of transmission of virus is shown in Figure 1.

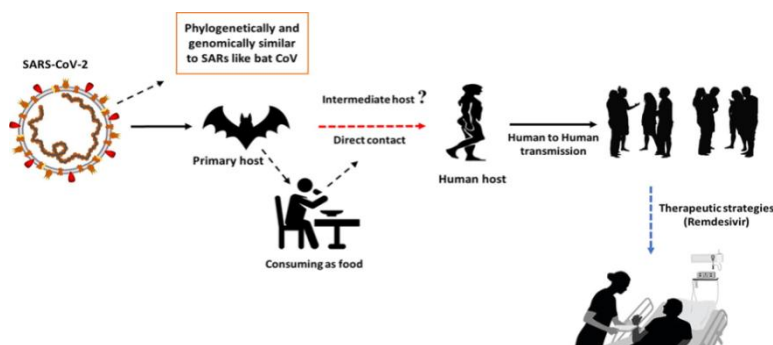


Figure 1: COVID-19 infection: Origin, transmission, and characteristics of human corona viruses [10]

It reflects the situation of occupational hazard, wherein the people around the infected person, in direct or indirect contact has high risk of being infected and the need for protective materials increases exponentially with the rate of increase in the number of victims to the disease. It is very important to curtail the virus, before allowing spreading to community. Vigilant administrations of supply chain, availability, use and minimisation of materials and methods are crucial to overcome the pandemic situation globally. The respiratory droplets from an infected person get transferred by means of cough, sneezing, exhale and tactile contact on surface to a healthy person [11]. In the absence of mask, gloves, headgears, protective gowns, etc, when a healthy person comes in contact with infected person or surfaces, the transmission of infection is rapid. Hence use of PPE kit or similar materials, made from medical textiles is essential to protect oneself and prevent the spread of deadly virus.

Protective clothing for health workers

Health workers are in the forefront of Covid -19 outbreak and put themselves in danger of contamination. Personal protective equipment (PPE) is the most essential textile product in preventing the transmission of any kind of pathogen. India secures second place in the production of PPE kits, next to China which is at first position [12]. PPE kit includes hooded head cover with transparent face shield, 3 ply mask, full body cover attached with shoe cover and gloves as shown in Figure 2. PPE kit is utilized by paramedical staff, health workers and attendees of infected persons. This UV treated material provides protection against infectious pathogens reaching the skin of the person close to infected person. The gloves and mask needs to be disposed after use. Head and body cover can be reused by the paramedical staff after treating with disinfectant. However disposable after use is advisable while treating in critical condition. Health workers should be exposed to proper training of use of PPE and also be made aware of limitations of PPE, need, care and maintenance. Lack of training would lead to further disaster and increase in landfill.



Figure 2: Personal protective kit for health workers

Protective clothing for commuters in public places and using public transport/ personal transport system

Public transports, by means of buses, local trains and private vehicles or similar means are very popular in metropolitan cities and that trains or buses are over-crowded with passengers during rush hour [13]. As nations around the globe take progressively intense measures to slow the corona virus episode, a study on the same reveals that the sickness can travel twice to the extent the official "safe separation" on open vehicle [14]. Public health risk due to corporal contacts with the surfaces in public or personal transport increases the infection rates. A model of spreading of virus in public transport is shown in Figure 3.

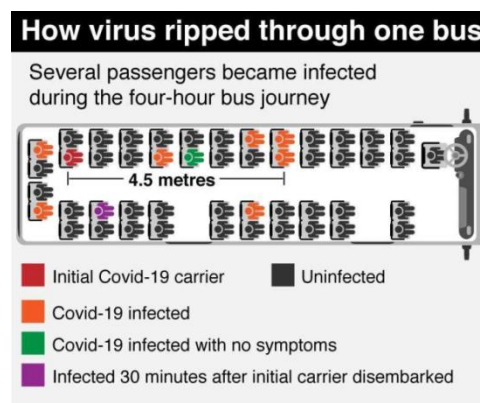


Figure 3: Model of spreading of virus in public transport.

Use of face mask, gloves and reusable over jackets by susceptible persons will reduce the rate of infection during transportation to overcome the apparent weakness and seriousness of being harrowed with dangerous sicknesses. The use of gloves and mask protects against direct exposure of mouth nose and eyes to the infectious droplets in air or on any surface. Wearing of protective materials and frequent hand sanitising should be followed to fight against the pandemic situation.

Protective clothing for media personal

News coverage being today's most risky professions, and a legitimate degree of security is required for contributors to keep attempting to report in the open intrigue places, while staying safe [15]. One of the all the more problems that need to be addressed is that, media organizations have to a great extent, redistributed the newsgathering and detailing that happens on the planet's most conflict torn spots. It is a situation wherein, young, inexperienced journalist with very little or no preparations for the situation, take chance with their lives to gather more conspicuous information for publication.

Individual security is tremendously significant during a pandemic, particularly for writers who can't self-segregate and need to keep on detailing from the bleeding edges [16]. Masks with high performance are essential. A well protective mask should be top priority against an aesthetic mask. The rating of the mask needs to be good, than the prints on it. Reusable mask is preferable. Proper treatment should be ensured before reuse.

Fabric Materials for protection against Covid - 19

Respirators

Respirators are the filters that are most difficult component to be produced, made from melt blown nonwoven polypropylene material. It provides protection to nose and mouth against infection. N95, N99 and N100 are some examples. N95 filters about 95% of particles of size above 0.3 microns, wherein N100 filters upto 99.97%.

Masks

Masks provide protection to nose and mouth and are a 3 to 4 layered fabric, with a textile fabric layer being sandwiched between non-woven polypropylene layers on either side. Masks are of different types with fluid resistance varying from 80 mmHg, 120 mmHg and 160 mmHg. [17].

Different types of face masks offer different levels of protection against pathogens. The N95 masks offer the highest level of protection, followed by the surgical mask. The various other types of mask are made from materials like woven cotton and knitted material, polyester and polycot blended fabric [18]. Though N95 is considered the best during pandemic situation, it has been compromised with the level of comfortability it offers over long period of usage. Further, it also adds to the landfill waste. A simple fabric mask, used by most of the public, is washable, reusable and comfort as compared to N95. These masks prevent the droplets from reaching the nose or mouth, but the level of protection over long use is uncertain. These masks are suitable for non-healthcare workers [19].

High Efficiency Particulate Air [HEPAs] is air channels customarily utilized in air purifiers or focal air frameworks to clean indoor air. It is a nonwoven fabric produced using random alignment of either polypropylene (PP) or fibreglass fibres. Polypropylene is a material, predominantly used in making of sportswear and is highly breathable [A]. HEPA filters aids in filtering solid particles with sizes of particles varying from 0.1 micron diameter to the particles of size of corona virus effectively up to 99% of the particles been removed in single pass. The layered polypropylene material acts as shield

at various level against the pathogens. The arrangement of polypropylene material in an HEPA mask is shown in the Figure 4.



Figure 4: HEPA filters for face mask

Source: <https://smartairfilters.com/wordpress/wp-content/uploads/2020/05/closeup-hepa-filter-material.jpg> [20]

Protective Gowns

Protective gowns are long gowns usually covering full length of the wearer attached with shoe cover. The gowns can be disposable or reusable types. Disposable protective gowns are made from spun bond or melt blown nonwovens made from polyester, polypropylene, polyethylene or similar materials. 100 percent cotton, polyester or polycot woven blends are used in the production of reusable PPE [21].

Gloves

Gloves are made from natural rubber, latex or nitrile, using moulding technique. The thickness of gloves depends on the length of the time the mould is allowed to remain in the liquid form of rubber or latex and then finished. The thickness varies depending on the application of the gloves. It protects the wearer from corporal contamination. Gloves are classified into three categories; Category I for protection against minimal risk, category II for protection against intermediate risk and Category III for irreversible risk. Single use medical gloves are used to protect against cross contamination [22].

Conclusion

Covid-19 has posed challenges to almost all the sectors and population in the world. The rapid growth and spread of the virus has trolled the economy of the entire world. The demand for clothing textiles has seen a drastic drop in both domestic and international market. Industries, which had never thought of protective clothing, has now started experimenting with the production of protective clothing and has proved successful in meeting the rising demands of protective clothing at global level. The textile and apparel sector is contributing in controlling the spread of infectious pathogen and is directly contributing in saving of lives of millions around the world.

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Untold struggles of PhD students during COVID-19 pandemic

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Abstract

The current COVID-19 pandemic situation has the potential to result in irreparable harm to a generation of talented researchers and derail the impressive progress we have seen in all different fields of science research in the 20th century. These consequences are making PhDs to struggle more get things done or to divert their paths to pursue opportunities in industry or other arenas, but the reality is much deeper.

Perspective article

The coronavirus disease 2019 (COVID-19) pandemic is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections [1]. The world everywhere at present is devastated with the effect of COVID-19. The current situation had a pervasive effect, including an unprecedented consequence on health, the economy and education [2]. Due to COVID-19 outbreak, everyone is at risk. It is cutting us all off from the social aspects of the human community. Anthony Fauci, Director of the National Institute of Allergy & Infectious Diseases, White House Coronavirus Task Force, quotes that *“When you're in the middle of a crisis, like we are now with the coronavirus, it really does... ultimately shine a very bright light on some of the real weaknesses and foibles in our society.”*[1]

Doctor of Philosophy (PhD) programs is awarded across the whole breadth of academic fields. In most of the countries, PhD is known as highest university degree. PhD students contribute a vast proportion of the work that constitutes scientific research, be it in data collection, data analysis, development and refinement of methods, or the production of the main vehicle of research communication, peer-reviewed publications [3]. The COVID-19 crisis has a tremendous impact on PhD students and early career researchers, by disrupting their career in different, yet unclassified ways, and causing a near-complete halt to their studies and hopes, and putting them at higher risk to experience. It is disheartening to see the status of well-being of PhD students from the corner, which includes prioritizing data analyses, grant and/or manuscript preparation and reviewing journals during this crisis to balance their career responsibilities with a daunting set of demands related to increased personal responsibilities during the pandemic [2].

Now a day it is common that the most science PhD students are known to be at the risk of depression, anxiety and other common psychiatric disorders [4]. They may be unaware of it or remained silent about it. Such issues could be due to a variety of causes. The first and worst scenario yet is the pressure to publish remains a shared symptom among students worldwide. There is also a pressure either from the supervisors or the hierarchical system on student to be included them in the co-authors list who contributed nothing whatsoever to the research, but rather enjoying the institutional incentive benefits and taking the fake credibility. This practice silently creates rift within the research groups and has a huge negative impact on students. Some other things may also go unnoticed, for example, pressuring the students to publish the unpublishable or crap data during this crisis. Unwillingly, in such scenarios students end up in the data manipulation to escape from the pressure/stress. This is quite fuelling and annoying for many students as well as the peer-review community. In most cases, it is also astonishing to see the silence behaviour of institutions/organisations just to be on the idea of top tier without questioning the research integrity, as well as the health of the students and the system. This practice of publishing is corrosive to scientific culture, and has tremendous impact on psychological health of the PhD students and their future prospects.

Despite the overwhelming contribution of PhD students, yet their worst concerns are about future employment [5]. With an already tough academic job market getting tougher, many hopefuls will need guidance. But that's not always easy to come by. PhDs have almost no idea about industrial training! These issues further threaten the careers and trajectories of the next generation researchers. Even more worrisome that job opportunities for PhDs are rapidly diminishing during the pandemic [2].

In addition, almost, since February or even before, and onwards, most of the laboratories around the world are facing shutdown issues. Except where there is a requirement for maintaining the expensive and most advanced instruments. This has greatly affected the global research community. Although, it is quite relaxing and unexpected rest days for researchers, but gaining the momentum once the institution resumes working would substantially drag their research time, troubleshooting the problems with experiments and or drifted sensitive instruments or waiting in the queue to carry out experiments elsewhere. Further, complications would occur due to unavailability of funding, technicians etc.

The funding landscape also presents daunting challenges. Universities and academic research institutions will be operating with reduced resources to provide essential

institutional support for hiring, internal grants and new programmatic initiatives in the context of reduced educational revenues. This has resulted in reductions in ongoing grant support and a decline in funding opportunities, which may continue for an extended duration. Therefore, we foresee a major gap in support for salary, protected time and pivotal investigations needed for the next generation to develop robust and durable research programmes. The current landscape has the potential to result in irreparable harm to a generation of talented researchers and derail the impressive progress we have seen in all different fields of science research in the 20th century. These consequences are making PhDs to divert their paths to pursue opportunities in industry or other arenas, not necessarily related to their research interest. But the reality is much deeper.

Declarations

The presented article is intended only for reaching out the audience. The author declares that some of the article information has been copied from the cited references. The author does not claim any right authorship or benefits from the presented article whatsoever.

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Importance of Biomedical Appliances for Prevention towards Covid-19

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Abstract

The COVID-19 disease found in December 2019 and has spread rapidly almost all over the world. This pandemic disease is an unexpected global crisis which has strongly affected everyone's routine. All-inclusive measures to decrease person-to-person transmission of COVID-19 have been implemented to control the current outbreak. Therefore, many preventive measures have been initiated in view of reduction the disease. Appliances such as ventilators, Personal Protective Equipment (PPE) and alcohol based sanitizer are used. PPE consists of protective clothing, helmets, gloves, face shields, goggles, surgical masks; respirators have been used extensively and effectively. PPE acts as barrier between infectious materials and mucous membranes such as skin, mouth, eyes or nose. It can block the transmission of pandemic disease.

Keywords: COVID-19, Corona virus, Pandemic, PPE, Ventilators.

Introduction

Universal outbreak of severe acute respiratory syndrome (SARS) 18 years ago, a large number of SARS-related corona viruses (SARSr-CoVs) have been discovered in their natural reservoir host, bats [1,2]. Corona viruses have caused two large-scale pandemics in the past two decades, SARS and Middle East respiratory syndrome (MERS) [3-5]. It has generally been thought that SARSr-CoV which is mainly found in bats could cause a future disease outbreak [6, 7]. In December 2019, an outbreak of pneumonia caused by a novel corona virus occurred in Wuhan, Hubei province, and has spread rapidly throughout China, with an ongoing risk of a pandemic [8]. On 30 January 2020, the WHO declared the outbreak of SARS-CoV-2 a Public Health Emergency of International Concern. Compared with the SARS-CoV that caused an outbreak of SARS in 2003, SARS-CoV-2 has a stronger transmission capacity. The rapid increase in confirmed cases makes the avoidance and control of COVID-19 extremely serious. The largest part of people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people, and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness, however, the disease has now progressed to be transmitted by human-to-human contact (World Health

Organization). The symptoms of COVID-19 infection appear after an incubation period of approximately 5.2 day [9, 10]. The period from the onset of COVID-19 symptoms to death ranged from 6 to 41 days with a median of 14 days. This period is dependent on the age of the patient and status of the patient's immune system. As of now no suitable vaccine available to prevent covid-19 pandemic, therefore alternative sources have been used to prevent this pandemic disease, whereas, biomedical appliances, like, ventilators, Personal Protective Equipment (PPE) such as protective clothing, helmets, gloves, face shields, goggles, surgical masks, respirators and alcohol based hand sanitizers.

Result and Discussions

PPE (Personal protective equipment)

It is used every day by healthcare personnel (HCP) to protect themselves, patients, and others when providing care. PPE helps protect them from potentially infectious patients and materials, toxic medications, and other potentially dangerous substances used in healthcare delivery. India has geared up the production of medical equipments on covid19, which fights against novel corona virus and has reduced depending on foreign countries for the items which are in demand universally due to pandemic. Recently it has said that, 2.22 crore PPE was ordered, of which around 1.42 crore has bought from domestic manufacturers and the remaining is been imported. Earlier there were no domestic manufacturing of PPE in our country, all were imported. Now we have 111 originating manufacturers. PPE production has increased so much, that India is the biggest, after China. This was said by the empowered group 3 Chairman who is also the secretary in the department of pharmaceuticals.

It is been used every day by healthcare personnel (HCP) to protect themselves, when providing care to patients and others. PPE helps in shielding themselves from infectious patients, materials, toxic medications and other equipment's used in health care system. India has reduced depending on other countries for the items which are universally in demand due to pandemic, instead has started preparing its own medical equipment's on covid19 which helps in fighting against novel corona virus. Recently it has said that, 2.22 crore PPE was ordered, out of which around 1.42 crore has bought from domestic manufacturers and the rest of them were imported. Earlier we had to import PPE to our country and there were no domestic manufacturers. Now we have 111 originating manufacturers and the production has increased so much that India stands next to China in the production of PPE. This was said by the empowered group 3 Chairman who is also the secretary in the department of pharmaceuticals.

Face mask:

Face mask can avoid the transmission of virus released from the infected person when he cough or sneeze by covering our mouth and nose. This helps in reducing the spread of COVID-19.

N95 respirator masks:

These masks filter out 95% of the smallest particles present in the air and it fit tightly around the face. WHO strongly suggested using N95 respirator masks, to avoid the transmission of disease to healthcare workers. It is not advisable to use these masks by general public as their supply is in highly demand.



Figure 1: N95 respirator masks (Credit: Google images).

So it is preferred to use by only health care workers.

Surgical masks:

Surgical masks are usually blue with white borders. It fits loosely over nose and mouth. These masks acts as a barrier against the large droplets that come through cough and sneeze. These masks are too loose to protect against germs and they cannot block the tiniest particles that carry corona virus.



Figure2: Surgical masks (Credit: Google images)

Using and reusing these masks for long term would lead to self contamination.

Cloth masks

Cloth masks are preferred for the ones who don't work in health care. These masks can be prepared using varieties of cloths and items of clothing include scarves, bandanas, t-shirts and pillow cases. Also we can make use of cotton silks, chiffon, flannels and various synthetics.



Figure3: Cloth masks (Credit: Google images)

Face shields

A face shield is an item of PPE, used to protect the wearer's entire face from hazards. The advantage of making use of face shield is, it can be easily cleaned and reused and need not often pull down while communicating. It also acts as a reminder to maintain social distancing. And we can also avoid touching of mucous membranes with contaminated hand.



Figure4: Face masks (Credit: Google images)

Gloves:

Gloves are one of the components of PPE which helps in protecting from corona virus. Medical gloves are used by health workers to prevent the spread of infection or illness.



Figure5: Gloves (Credit: Google images)

Thick gloves will provide more protection but increased thickness will lower the touch sensitivity and make us difficult to work. The variety of gloves are used to reduce the spreading of this pandemic such as Nitrile gloves, Latex gloves etc. the characteristics of these materials have been discussed below.

Nitrile gloves:

Nitrile is a synthetic rubber compound commonly used as a disposable glove material. It is gaining popularity throughout medical, food and cleaning industries and has a high puncture resistance than any other glove material. Nitrile is also a good chemical resistance than other gloves.



Figure6: Nitrile gloves (Credit: Goolge images)

Latex gloves:

Latex is a natural rubber. These are the most commonly used disposable gloves because they are the strong disposable glove material option on the market. Nowadays many hospitals and clinics have started replacing latex gloves with nitrile gloves.



Figure7: Latex gloves (Credit: Google images)

Gowns

Surgical gowns are used as a medium to high risk of contamination which minimizes the exposure of risk¹³. It avoids the body from direct contact with microorganisms. These are widely considered to be the foremost item of protective equipment today.



Figure8: Gowns (Credit: Google images)

Ventilators:

Key medical equipment that is needed for effectively dealing with critical patients is Ventilator. Ventilator is a machine that provides mechanical ventilation by moving breathable air into and out of the lungs, to deliver breaths to a patient who is physically unable to breathe, or breathing insufficiently.



Figure9: Ventilators (Credit: Google images)

Mechanical ventilators are generally used in hospitals and in transport systems such as ambulances and MEDEVAC air transport etc. In some cases, they can be also used at home, if the illness is long term and the care givers at home receive training and have adequate nursing and other resources in the home. Being on a ventilator may make you more susceptible to pneumonia, damage to your vocal cords, or other problems.

On may 1st government said that about 75,000 ventilators are required in India to fight corona virus pandemic. Chairman of empowered group 3, P D Vaghela, informed that 19,398 ventilators are available and have placed an order for 60,884 more, out of which 59,884 will be produced in our country.

Centre has created 11 empowered groups in the view of COVID-19 pandemic which is responsible to ensure availability of essential medical supplies.

Hand sanitizer

Hand sanitizer is a liquid, gel, or foam generally used to decrease infectious agents on the hands.



Figure10: Hand sanitizer (Credit: Google images)

Right way to stay healthy from COVID 19 is to wash your hands frequently with soap and water. Alcohol based hand sanitizer can be used to get rid of unwanted germs.

When you purchase the hand sanitizer, care should be taken to choose a sanitizer which contains 60 to 90% alcohol. You need to take the liquid to the palm of one hand and rub it over both the hands until it dries.

It is always advised to wash hands with hand sanitizer or soap and water before and after touching the surface which others have touched.

Ingredients for hand sanitizer

- Isopropyl or rubbing alcohol (99 % alcohol)
- Aloe vera gel
- An essential oil (tea tree oil or lavender oil) or we can make use of lemon juice.

Effectively use, germ-busting hand sanitizer is to take 2:1 proportion of alcohol to aloe vera. It has alcohol content around 60 %. According to the centres for control diseases, the minimal amount needed to kill most germs.

Conclusions:

As per reported data [11, 12], conclude that the ventilators are the very necessary for corona virus infected patient, in addition, for public and healthcare workers wearing mask and washing hands with sanitizers have been played an important role in preventing the percentage spreading of disease to the community level. Secondly, this pandemic which is an actual bane has also turned out to be a boon in terms of self reliance of India in terms of producing biomedical appliances. Triggered by the outbreak of pandemic and due to

lack of time for importing appliances from abroad, India was forced to produce its own appliances which in turn improve the productivity of the country.

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Food Production and Management in India

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Abstract

The production of food/ Food availability was studied during the year 2010- 2015, the result showed large quantity of food grains, during the year 2010 – 2011 1,967 kg/ ha whereas 2014- 2015 2,099 kg/ ha. The States like Odisha, Gujarat and Tripura shown more food grains kg/ ha average. Total production of rice and wheat increases from 2011 – 2015 2,090 -2,164 kg/ha. production of cereals and pulses in India increases, the year 2010-2011 218.92, 825.33 kg/ ha average respectively, however state wise Mizoram, Himachal Pradesh and Arunachal Pradesh 1363 1319 and 1006 kg/ ha. The products like rice, wheat, cereals and pulses average increases annually. The Punjab, Andhra Pradesh and Tamilnadu produced maximum production 3871, 3062 and 3204 kg/ha of rice. the sugarcane, wheat, Barley, Mustard seed and Rice 93.64 , 93.3, 75.6, 74.6 and 59.14 % crops. In milk production, Andhra Pradesh produced 58,716 thousand tonnes during the year 2014-15 among the other states, lowest production from the Arunachal Pradesh like 162 thousand tones. India has launched public food distribution programs consists of Targeted Public Distribution System, Antyodaya Anna Yojana, midday meals, integrated child development scheme to supply the food to the poor peoples to make hunger free India. India is more or less self-sufficient in cereals but deficit in pulses and oilseeds. Food management programs helps in improving incomes and providing protection for the population particularly the poor peoples.

Key words: TPDS, AAY, ICDS, food grains and Management

Introduction

Agriculture has been the backbone of the Indian economy, and even today it accounts for 54.6 per cent [1] of the total employment in India. Our country produces 104 million tonnes of rice and three million tonnes of wheat annually, which is very much sufficient for the peoples. These food grains distributed through public distribution system at subsidize prices, the PDS came in to being and its evolution ant a Targeted public distribution system (TPDS). According to Swaminathan Nutrition Security has defined as “physical, economic and social access to balanced diet, clean drinking water, environmental hygiene, primary health care and nutritional literacy” [2]. The most distinctive feature of the new policy was the division of the entire population into the

‘Above Poverty Line’ (APL) and the ‘Below Poverty Line’ (BPL) categories, based on the poverty line defined by the Planning Commission. The total number of the BPL families raised to 652.03 lakh. While the distribution of food grains to the BPL and AAY families is made at the rate of 35kg/ family per month, the allocation of APL category was made on the basis of stock availability in the central pool in the past off take [3]. The APL families were being allocated 15 to 35 kg per family per month depending on the availability of stocks and the past off take [3]. Pulses, oil seeds, maize and millets will have to contribute another 160 million tonnes. Since land is a shrinking resource for agriculture, the pathway for achieving these goals can only be higher productivity per unit of arable land and irrigation water. Factor productivity will have to be doubled, if the cost of production is to be reasonable and the prices of our farm products are to be globally competitive. The average farm size is going down and nearly 80 per cent of the farm families belong to the marginal and small farmer categories. Over 60 per cent of the Indian population continue to depend on agriculture and allied activities for their livelihood. Hence, growth of this sector is an essential prerequisite for overall economic growth. According to the Economic Survey 2012-13 [4], the agriculture and allied sector accounted for 14.5 per cent of the gross domestic product (GDP) in 2010-11 at constant 2004-05 prices. Food Production and Productivity’ and hopes that the suggestions made will get the priority and attention they deserve. Hence the topic entitled Food production and management in India.

Objectives

- Availability of food at the national level.
- Distribution food through the schemes and policies.
- To realize food.
- Nutrition security for all citizens of India

Methodology

The data collected from the the Dept. of agriculture and Food corporation of India during the year 2010-11 to 2014-15, state wise yield of food grains, wheat (in kg/ha) Production of Major Agricultural Crops (million tonnes) Milk Production , yield of rice ,pulses, Crop-wise Irrigated Area (percentage)and yield of oilseeds.

Result

The India grows large quantity of food grains, during the year 2010 – 2011 1,967 kg/ ha whereas 2014- 2015 2,142 kg/ ha. The States like Odisha, Gujarat and Tripura shown more food grains kg/ ha average, the overall production of food grains increases 1,967

to 2,142 but average production in India 2,099 kg/ ha (Table: 1) should develop a strategy for enlarging the extrapolation domain of bright spots.

Table 1: State-wise yield of food grains (in kg/ha)

State/UT	2010-11	2011-12	2012-13	2013-14	2014-15	
Andhra Pradesh	2,530	2,519	2,670	2,661	2,653	1,758
Arunachal Pradesh	1,673	1,778	1,786	1,794	#	1,871
Assam	1,763	1,704	1,962	1,916	2,012	1,982
Bihar	1,479	2,098	2,366	2,018	1,948	1,454
Chhattisgarh	1,424	1,384	1,506	1,524	1,433	2,389
Goa	2,264	2,272	2,361	2,659	#	1,948
Gujarat	1,843	1,874	1,970	2,097	1,955	3,744
Haryana	3,526	3,879	3,689	3,855	3,772	1,904
Himachal Pradesh	1,787	1,911	1,850	1,962	2,011	1,717
Jammu and Kashmir	1,639	1,690	1,962	1,915	1,379	1,735
Jharkhand	1,257	1,798	1,876	1,891	1,855	1,621
Karnataka	1,684	1,629	1,488	1,620	1,684	2,595
Kerala	2,399	2,695	2,547	2,530	2,805	1,534
Madhya Pradesh	1,162	1,510	1,676	1,603	1,719	1,125
Maharashtra	1,184	1,155	1,038	1,207	1,043	2,078
Manipur	2,244	2,397	1,926	1,745	#	2,015
Meghalaya	1,803	1,873	1,997	2,387	#	1,473
Mizoram	1,246	1,382	1,756	1,506	#	1,993
Nagaland	1,958	1,967	2,027	2,018	#	1,537
Odisha	1,432	1,303	1,592	1,625	1,733	4,327
Punjab	4,280	4,364	4,347	4,500	4,144	1,389
Rajasthan	1,249	1,348	1,480	1,334	1,535	1,389
Sikkim	1,448	1,495	1,608	1,577	#	1,532
Tamil Nadu	2,393	3,162	2,131	2,554	2,529	2,554
Tripura	2,587	2,620	2,711	2,680	#	2,650
Uttar Pradesh	2,386	2,498	2,542	2,484	2,117	2,405
Uttarakhand	1,841	1,945	1,962	1,995	1,824	1,913
West Bengal	2,601	2,645	2,717	2,721	2,691	2,675
All India	1,967	2,103	2,127	2,156	2,142	2,099

Sources: Agricultural Statistics

The states like Punjab and Haryana is recorded for rice and wheat average production during the year 2011 – 2015 whereas least production in Karnataka. Year wise **2010-11** to **2014-15** average production increases (2,090 kg/ ha to 2,187kg/ha)

Table 2: State wise yield of wheat (in kg/ha)

State/UT	2010-11	2011-12	2012-13	2013-14	2014-15	
Andhra Pradesh	1,375	1,250	1,300	5,00	1,000	1,231
Arunachal Pradesh	1,757	1,498	1,595	1,510	*	1,590
Assam	1,147	1,304	1,179	1,292	1,257	1,236
Bihar	2,206	2,427	1,948	2,358	1,851	2,158
Chhattisgarh	1,227	1,396	1,144	1,304	1,388	1,292
Gujarat	3,014	2,875	3,155	3,255	2,810	3,022
Haryana	5,030	4,452	4,624	4,722	4,574	4,680
Himachal Pradesh	1,671	1,671	1,530	1,873	1,800	1,709
Jammu and Kashmir	1,689	1,595	1,535	2,061	1,200	1,616
Jharkhand	1,908	1,944	1,642	2,123	1,931	1,910
Karnataka	858	796	1,094	1,005	1,091	969
Madhya Pradesh	2,360	2,478	1,757	2,405	2,551	2,310
Maharashtra	1,558	1,528	1,761	1,460	1,381	1,538
Meghalaya	1,564	1,806	1,791	1,881	*	1,761
Nagaland	1,711	1,801	1,712	1,823	*	1,762
Odisha	1,644	1,894	1,458	1,574	1,772	1,668
Punjab	4,898	4,724	4,693	5,017	4,492	4,765
Rajasthan	3,175	3,028	2,910	3,083	2,974	3,034
Sikkim	1,060	1,058	1,023	1,083	*	1,056
Tripura	2,000	2,000	2,025	2,000	*	2,006
Uttar Pradesh	3,113	3,113	3,113	3,038	2,561	2,988
Uttarakhand	2,379	2,396	2,316	2,422	1,902	2,283
West Bengal	2,765	2,786	2,760	2,791	2,836	2,788
All India	2,090	2,179	2,166	2199.1	2,187	2,164

Sources: Agricultural Statistics

The major agricultural crops in India produced food grains 252.02 million tonnes, pulses 17.15 million tonnes and oil seeds 27.51 tonnes during the year 2014-15. Total production of agricultural crops decreases from the year 2011 to 2015 (Table: 3).

Table 3: Production of Major Agricultural Crops (million tonnes)

Sl.No	Crops	2010-11	2011-12	2012-13	2013-14	2014-15
1	Food grains	244.49	259.29	257.13	265.04	252.02
2	Rice	95.98	105.30	105.23	106.65	105.48
3	Wheat	86.87	94.88	93.51	95.85	86.53
4	Maize	21.73	21.76	22.26	24.26	24.17
5	Nutri Cereals	43.40	42.01	40.04	43.29	42.86
6	Pulses	18.24	17.09	18.34	19.25	17.15
7	Gram	8.22	7.70	8.83	9.53	7.33
8	Tur	2.86	2.65	3.02	3.17	2.81
9	Lentil	0.94	1.06	1.13	1.02	1.04
10	Oilseeds	32.48	29.80	30.94	32.75	27.51
11	Groundnut	8.26	6.96	4.70	9.71	7.40
12	Rapeseed & Mustard	8.18	6.60	8.03	7.88	6.28
13	Soy Bean	12.74	12.21	14.67	11.86	10.37
14	Sunflower	0.65	0.52	0.54	0.50	0.43

India is one of the country highest production of milk. Andhra Pradesh produced 58,716 thousand tonnes during the year 2014-15 among the other states, lowest production from the Arunachal Pradesh like 162 thousand tonnes.

Table 4: State-wise estimates of Milk Production ('000 tonnes)

State	2010-11	2011-12	2012-13	2013-14	2014-15	
Andhra Pradesh	11203	12088	12762	13007	9656	58716
Arunachal Pradesh	28	22	23	43	46	162
Assam	790	796	800	815	829	4030
Bihar	6517	6643	6845	7197	775	27977
Chhattisgarh	1029	1119	1164	1209	1232	5753
Goa	60	60	61	68	67	316
Gujarat	9321	9817	10315	11112	11691	52256
Haryana	6267	6661	7040	7442	7901	35311
Himachal Pradesh	1102	1120	1139	1151	1172	5684
J & K	1609	1614	1631	1615	1951	8420
Jharkhand	1555	1745	1679	1700	1734	8413
Karnataka	5114	5447	5718	5997	6121	28397
Kerala	2645	2716	2719	2655	2711	13446
Madhya Pradesh	7514	8149	8838	9599	10779	44879
Maharashtra	8044	8469	8734	9089	9542	43878
Manipur	78	79	80	82	82	401
Meghalaya	79	80	81	82	83	405
Mizoram	11	14	14	15	20	74
Nagaland	76	78	79	81	76	390
Orissa	1671	1721	1724	1861	1903	8880
Punjab	9423	9551	9724	10011	10351	49060
Rajasthan	13234	13512	13946	14573	16934	72199
Sikkim	43	45	42	46	50	226
Tamil Nadu	6831	6968	7005	7049	7132	34985
Telangana	-	-	-	-	4207	4207
Tripura	104	111	118	130	141	604
Uttar Pradesh	213031	22556	23330	24194	25198	308309
Uttarakhand	133	1417	1478	1550	1565	6143
West Bengal	4471	4672	4859	4906	4061	22969
Total	311983	127270	131948	137279	138010	846490

Between 2010-2011 and 2014-2015, the food products like rice increases 2,074 kg/ha to 2,320 kg/ha average annual production rate in the country. The Punjab, Andhra Pradesh and Tamilnadu produced maximum production 3871, 3062 and 3204 kg/ha of rice respectively (Table 5).

Table 5: State wise yield of rice (in kg/ha)

State	2010-11	2011-12	2012-13	2013-14	2014-15	
Andhra Pradesh	3,035	3,148	3,173	2,921	3,036	3,062
Arunachal Pradesh	1,925	2,065	2,086	2,092	*	2,042
Assam	1,843	1,780	2,061	2,012	2,135	1,966
Bihar	1,095	2,155	2,282	1,759	1,951	1,848
Chhattisgarh	1,663	1,597	1,746	1,766	1,581	1,671
Goa	2,467	2,577	2,679	2,954	*	2,669
Gujarat	1,852	2,141	2,198	2,076	2,085	2,070
Haryana	2,789	3,044	3,272	3,256	3,113	3,095
Himachal Pradesh	1,673	1,705	1,629	1,625	1,751	1,677
Jammu and Kashmir	1,942	2,078	3,126	2,250	1,710	2,221
Jharkhand	1,541	2,131	2,238	2,238	2,210	2,072
Karnataka	2,719	2,793	2,632	2,666	2,827	2,727
Kerala	2,452	2,733	2,577	2,551	2,818	2,626
Madhya Pradesh	1,106	1,340	1,474	1,474	1,684	1,416
Maharashtra	1,766	1,837	1,965	1,924	1,891	1,877
Manipur	2,453	2,642	2,546	2,201	*	2,461
Meghalaya	1,912	1,988	2,125	2,493	*	2,130
Mizoram	1,160	1,411	2,088	1,522	*	1,545
Nagaland	2,102	2,106	2,204	2,260	*	2,168
Odisha	1,616	1,450	1,814	1,821	1,989	1,738
Punjab	3,828	3,741	3,998	3,952	3,838	3,871
Rajasthan	2,025	1,886	1,771	2,147	2,186	2,003
Sikkim	1,727	1,730	1,790	1,815	*	1,766
Tamil Nadu	3,040	3,918	2,772	3,100	3,191	3,204
Tripura	2,655	2,700	2,800	2,800	*	2,739
Uttar Pradesh	2,120	2,358	2,460	2,447	2,082	2,293
Uttarakhand	1,901	2,121	2,206	2,289	2,313	2,166
West Bengal	2,639	2,688	2,760	2,788	2,731	2,721
All India	2,074	2,249	2,344	2,307	2,320	2,259

Sources: Agricultural Statistics

The availability and total production of cereals and pulses in India decreases, the year 2010-2011 to 2014-15 218.92kg/ ha, 765.35kg/ha but overall production 825.33 kg/ ha average, however state wise Mizoram, Himachal Pradesh and Aruna Pradesh 1363, 1319 and 1006 kg/ ha respectively (Table 6).

Table 6: State wise yield of pulses (in kg/ha)

State	2010-11	2011-12	2012-13	2013-14	2014-15	
Andhra Pradesh	675	637	833	928	797	774
Arunachal Pradesh	879	920	1,076	1,149	*	1006
Assam	555	573	598	695	642	612.6
Bihar	878	975	1,052	1,044	830	955.8
Chhattisgarh	624	613	700	574	834	669
Goa	1,057	836	902	1,102	*	974
Gujarat	812	815	867	897	912	860.6
Haryana	899	706	800	819	692	783.2
Himachal Pradesh	1,213	954	1,413	1,763	1,251	1,319
Jammu and Kashmir	584	508	530	535	292	489.8
Jharkhand	773	885	1,038	1,021	1,004	944.2
Karnataka	561	492	555	641	644	578.6
Kerala	778	747	1,042	1,091	1,158	963.2
Madhya Pradesh	656	803	972	861	877	833.8
Maharashtra	768	693	704	802	554	704.2
Manipur	897	942	936	933	*	927
Meghalaya	881	896	1,019	1,092	*	972
Mizoram	1,534	1,389	1,061	1,468	*	1,363
Nagaland	1,085	1,091	1,099	1,124	*	1,100
Odisha	486	471	513	537	527	506.8
Punjab	910	789	823	872	894	857.6
Rajasthan	685	546	603	593	580	601.4
Sikkim	899	903	915	925	*	910.5
Tamil Nadu	386	552	413	752	689	558.4
Tripura	706	697	705	719	*	706.75
Uttar Pradesh	832	993	985	736	618	832.8
Uttarakhand	851	891	841	869	799	850.2
West Bengal	898	706	952	843	713	822.4
All India	812.92	786.53	855.25	906.6071	765.35	825.33

The availability of area for different crops between the year 2010 – 2015, the sugarcane, wheat, Barley, Mustard seed and Rice 93.64 , 93.3, 75.6, 74.6 and 59.14% crops respectively (Table 7).

Table 7 All India Crop-wise Irrigated Area (percentage)

Crops	2010-11	2011-12	2012-13	2013-14	2014-15	
Rice	58.8	58.6	58.5	59.7	60.1	59.14
Jowar	8.7	9.7	9.7	9.6	9.9	9.52
Bajra	8.0	8.1	9.1	9.0	9.5	8.74
Maize	24.5	25.7	25.9	27.2	26.6	25.98
Wheat	92.2	93.0	93.5	93.6	94.2	93.3
Barley	69.9	74.8	76.4	76.6	80.3	75.6
Total Cereals	56.3	57.7	58.6	59.5	60.1	58.44
Gram	29.7	33.5	36.5	35.2	38.6	34.7
Tur	4.0	3.8	3.9	4.3	4.0	4
Total Pulses	14.9	16.1	18.5	19.7	19.9	17.82
Total Foodgrains	48.1	49.8	51.3	51.9	53.1	50.84
Sugarcane	92.7	94.8	95.2	95.3	90.2	93.64
Groundnut	21.8	24.3	25.3	25.8	26.7	24.78
Rapeseed & Mustard	69.8	73.5	76.5	76.6	76.6	74.6
Soy Bean	0.6	0.6	0.6	0.6	0.7	0.62
Sunflower	31.2	32.3	29.0	28.6	30.1	30.24
Total Oilseeds	24.9	27.5	28.2	27.3	27.4	27.06
Cotton	33.8	35.9	33.8	32.5	33.7	33.94
Total area under all crops	38.32	39.98	40.58	40.72	41.20	40.16

The oil seeds total production decreased in recent years from 1079.07 kg/ha in 2010-2011, 982.2kg/ha in 2014-2015, but average production 1,054 kg/ha, states like Goa, Tamil Nadu, West Bengal and Gujarat 2,579, 2,263, 1,116 and 1,637 kg/ha produced (Table 8).

Table 8: State wise yield of oilseeds (in kg/ha)

State	2010-11	2011-12	2012-13	2013-14	2014-15	
Andhra Pradesh	861	650	849	929	778	813.4
Arunachal Pradesh	921	1,015	909	958	*	950.75
Assam	576	557	610	611	628	596.4
Bihar	1,048	1,046	1,120	1,189	1,058	1,092
Chhattisgarh	686	550	723	640	595	638.8
Goa	2,862	2,500	2,409	2,544	*	2,579
Gujarat	1,692	1,608	1,103	2,231	1,551	1,637
Haryana	1,855	1,394	1,712	1,637	1,415	1,603
Himachal Pradesh	514	579	514	490	591	538
Jammu and Kashmir	821	826	789	895	670	800
Jharkhand	625	680	787	663	652	681
Karnataka	782	665	647	824	773	738
Kerala	1,032	1,230	1,045	980	1,179	1,093
Madhya Pradesh	1,143	1,073	1,231	858	1,090	1,079
Maharashtra	1,394	1,223	1,337	1,276	658	1,178
Manipur	774	788	729	840	*	783
Meghalaya	704	766	695	1,030	*	799
Mizoram	1,203	967	1,078	1,146	*	1,099
Nagaland	1,040	1,043	1,047	1,048	*	1,045
Odisha	619	661	700	755	692	685
Punjab	1,336	1,360	1,350	1,335	1,065	1,289
Rajasthan	1,203	1,243	1,296	1,144	1,192	1,216
Sikkim	832	841	863	887	*	856
Tamil Nadu	2,077	2,479	2,103	2,362	2,292	2,263
Tripura	732	751	506	759	*	687
Uttar Pradesh	753	832	828	898	699	802
Uttarakhand	1,082	1,236	1,070	892	892	1,034
West Bengal	1,047	994	1,162	1,181	1,194	1,116
All India	1079.07	1055.60	1043.28	1107.21	983.2	1,054

Sources: Agricultural Statistics

Schemes for food distribution

Targeted Public Distribution System (TPDS) – In India launched the scheme in June 1997 mainly focus on the poor. Through this scheme 103 lakh tonnes of food allocate to the BPL card holders and also distributed to APL cardholders at subsidized rates higher than the prices for the BPL quota of food grains.

Antyodaya Anna Yojana (AAY) – It started from 2000, the scheme covers poorest of

the poor households from the BPL are provided foodgrains like wheat at Rs. 2/kg and rice at 3/kg. This benefit getting nearly 9316 beneficiaries. It effects from 1/5/2001.

ICDS (Integrated Child Development Services scheme) - In the year 1975 started by the Government of India in 1975, the ICDS scheme is today one of the world's largest and most unique programmes for early childhood development, main intention is to provide nutritional support, avoiding malnutrition and school dropout peoples/ students. In addition, children aged 3-6 should be able to access pre-school non-formal education under ICDS. Women and adolescent girls (aged 15-45) should also be able to access nutrition and health education, providing them with advice and support to help them look after their own health, nutrition and development needs as well as that of their children and families.

Discussion

The Punjab and Haryana are the main states produces 60% of wheat and 40% of rice to the public distribution system[3], the present study shows Punjab, Haryana, Gujarat and Rajasthan produced more wheat 4,765, 4,680, 3,022 and 3,034kg/ha during the year 2010-2015. However, in recent years there is stagnation in productivity improvement due to declining farm size and income, depleting natural resources base, as for example a steep fall in ground water table and impaired water quality, deficiency of micro-nutrients in the soil and deteriorating soil health, inadequate harnessing of post-harvest technology, high indebtedness of farmers, uncertain market prospects except for wheat and rice.

Similar conditions India occupies the first position in milk production; Andhra Pradesh produced 58,716 thousand tonnes during the year 2014-15 among the other states, lowest production from the Arunachal Pradesh like 162 thousand tonnes. Punjab, Haryana, Gujarat and Rajasthan produced more wheat 4,765, 4,680, 3,022 and 3,034 kg/ha average. Globally, India is the third largest producer of cereals, with only China and the USA ahead of it. The availability of cereals and pulses consequently witnessed a decline. Our total milk production is the highest in the world, but productivity per animal is extremely low by international standards. The growth of food grain production during the 2010-2015 increases due to institutional efforts in raising the levels of technology used in agriculture through research and extension. As a result of the decline in public investment, expansion in irrigation, growth in input usage and technological improvement, have all slowed down during the 1990s[6]. This has as expected impacted on production. In India may be seen as a reflection of the global decline in food output [7] present study shows the average pulses output reported declined from 812.92kg/ha year in

2010-2011 to 786.530 kg /ha by 2011-2012. The developed countries, which together accounted for about 40 per cent of world cereal output accounted for only an 18.6 per cent rise in cereal output over the same period, or an annual growth rate of 1.3 per cent, ahead of their own population growth, but insufficient to meet their own rising domestic needs and to provide an adequate surplus for meeting the increasing deficit of the developing world [7]. In the case of coarse cereals which accounted for 15 per cent of the food grain production in 2009-2010, there has been no major technological innovation. There has been progressive decline in per capita availability of pulses, it fell from 69 grams in 1961 to 32 grams in 2005. The requirement was estimated to be 21.3 million tonnes by 2012[5]. The Economic Survey 2012-2013[4] reports the estimated production of pulses in 2011-2012 as 17.09 million tonnes, indicating a wide gap in demand and supply, annual consumption of vegetable oil in the country at 14.10 kg is far below the global average of 23.60 kg[8]. The production of oilseeds though has increased in recent years from 184.40 lakh tons in 2000-2001 to 297.99 lakh tonnes in 2011-2012, has not kept pace with the demand for edible oils in India. The present study average production of oil seeds decreases 1079.07 kg/ha - 1,054kg/ha the year 2010-2011-2014-2015. A substantial portion of our requirement of edible oil is met through import of palm oil from Indonesia and Malaysia. Any disruption in the supply of palm oil from these countries will put the country in a difficult situation, especially since a large quantity of the global production of vegetable oils are being utilized for production of bio-diesel in Europe and North America. Such non-food use of edible oils ultimately reduces their availability and pushes up their prices [8]. According to Swaminathan [3], India's population is likely to reach 1.5 billion by 2030, the challenge facing the country is to produce more and more from diminishing per capita arable land and irrigation water resources and expanding abiotic and biotic stresses. India currently produces about 230 million tonnes of cereals to meet the needs of a population of 1.15 billion. While calculating food requirements, the needs of farm animals are often overlooked.

The current situation in India is that cereal production has to be doubled by 2050 in order to meet the needs of the expected population of 1.8 billion Hence, improving small farm production and productivity, as a single development strategy, can make the greatest contribution to the elimination of hunger and poverty [9]. The food distribution card system itself is another example of efforts to establish food security.

The allotment of food grains to the BPL and the AAY families is made at the rate of 35 kg per month per family, the allotment to the APL category was made on the basis of

stock availability in the central pool and the past off take [3]. The scale of rationing for the AAY and the BPL families went up from 10 kg per family per month in 1997 to 35 kg per month per family in 2002. The APL families were being allocated 15 to 35 kg per family per month depending on the availability of stocks and the past off take [3]. The availability food distributed through these methods. The World Bank's World Development Report 2008 [10] focused on 'Agriculture for Development' had also emphasized in a similar vein, "Using agriculture as the basis for economic growth in the agriculture-based countries India requires a productivity revolution in smallholder farming". As stated earlier, higher productivity requires higher investment in agriculture and agriculture research - a fact that needs to be heeded by the policy makers. The coronavirus pandemic has seriously challenged more than our health. Food management and the livelihoods of millions of people have been compromised, and many more millions are likely to be hungry because of the pandemic's impact on economies. The UN World Food Programme has estimated that COVID-19 will increase the number of people facing acute food insecurity around the world – up to 265 million in 2020, up by 130 million. We can only stop this by taking swift action today.

Conclusion

Country has many programs under this food grains should be allocate to the publics uniformly. Appropriate institutions are needed for the distribution of food.

- Implementation of policies and programmes.
- Improving implementation of development programs.
- India's role within global food markets needs to be more closely assessed.
- India will likely have to fill the gap between domestic production and food demand through increased technology for agriculture.
- Products distributed in one channel like public distribution system.

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Vocal for Local' – A Call

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Abstract

With upsurge in the impact of western goods coupled with the outbreak of covid-19 pandemic, there raised a dire need to bring nation into order. At this instance, Hon. Prime Minister Sri. Narendra Modhiji gave a call of 'GO VOCAL FOR LOCAL' to the nation with the intention of promoting swadeshi commodities. This paper intended to select four parameters namely: Food, fabric, cosmetics and medicine as reference standards to analyse to existing influence of the idea of 'SWADESHI' in the minds of the local people. 207 Reponses have been collected with wide audiences using Google forms and the results are tabulated. The results indicate thea strong inclination of people to support local commodities. Majority of the audiences are below the age of 20.

Index Terms

GO VOCAL FOR LOCAL, Swadeshi, Commodities, Survey, Responses, & Parameters

Introduction

'Go Vocal for Local' was a massive call to the Indian citizens to promote the utilization of Swadeshi goods. The aim of this massive mission was to elevate the self-esteem of the Indian producers and to instil confidence in the Indian masses regarding quality of Indian products. This mission and awareness was materialized due to the outbreak of COVID-19. If we turn the pages of history, this mission was activated few times during the British era by eminent freedom fighters. For example, many British fabrics were burnt in the open streets by Indians. Mahatma Gandhi has initiated the 'DANDI MARCH' which aimed at production of Swadeshi Salt. Now again due to an international reason (COVID-19) the same emotion was stirred by our Honourable Prime Minister to start using swadeshi commodities and to avoid the usage of foreign goods on 12th May 2020(3).

On May 12, Prime Minister Narendra Modi called upon Indians to be "vocal for local". The way in which we, as citizens and professionals, interpret the local will have far-reaching effects on the country's landscape and prosperity.(1). In this agenda it aims at the psychological and subconscious motivation of the Indian youth to give prime importance towards Indian commodities and subtly boycott foreign especially China products. This benefits many small scale Swadeshi Industries and village sector domains to flourish and rejuvenate again in the zenith from loss and failure.(2).This call is

universal in the domain of India and would promote the economy, GDP and also the life of middle class and below middle class masses. A study was conducted with the intention of supporting this novel and much needed idea and the results are discussed in the followings.

Study Objective

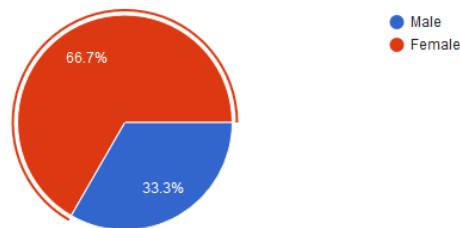
To check whether the people of India are showing subtle/massive inclination towards the usage of local goods to uplift Indian economy.

Methodology: A survey was planned and questionnaires were prepared regarding the usage of Swadeshi commodities. As it is not possible to personally monitor and receive the responses, it was sent through Google forms during the lock down period. Totally 21 questions of the following parameters namely food, Ayurvedic medicine, fabric and cosmetics were selected for the analysis.

Results and Discussion:

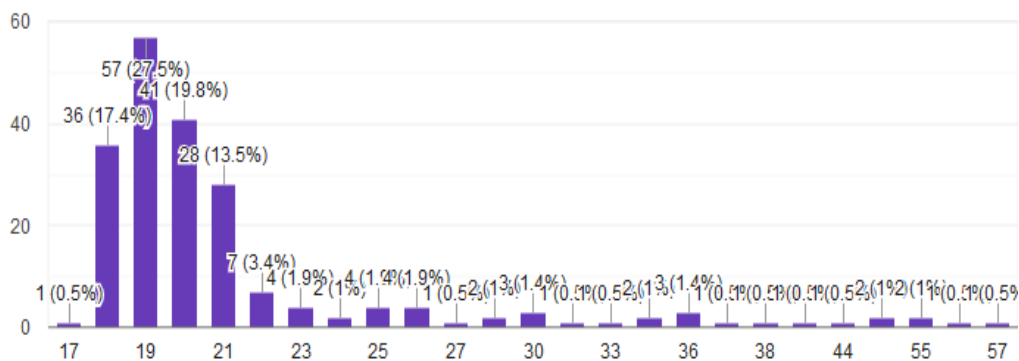
A total of 200 responses have been collected whose discussion is in the proceedings.

Gender domain



Age Group domain

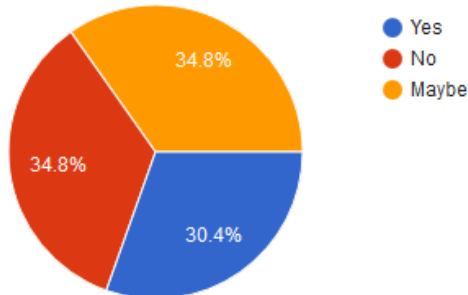
The age group of the responses is pictorially depicted below. The ordinate indicates the count of the people in the respective age domain and the abscissa indicates the age factor as shown below. From the graph it is evident that majority of the responses were received from the age group of 19 and they were females (67%) This shows teenagers and females are more motivated by the theme of the paper.



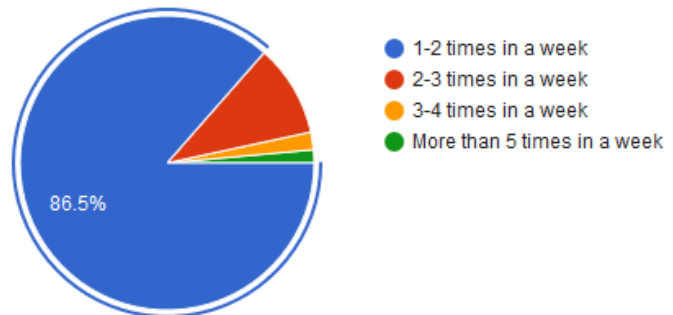
Parameters Discussion:

Food

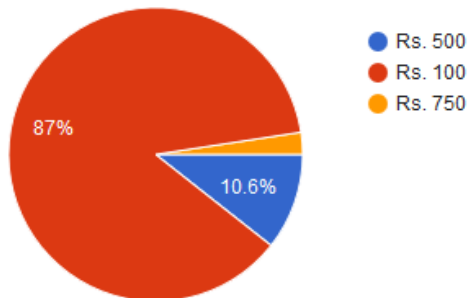
Do you consume food at home that can be prepared instantly (like noodles, canned food, frozen food, food that is easily made in microwave)?



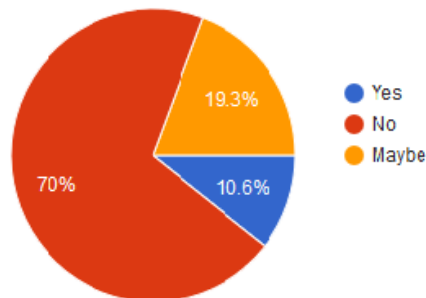
How often do you consume instantly made food (like noodles, canned food, frozen food, food that can be prepared easily in a microwave) at home?



On an average how much money do you spend on buying fast food per week?



Has your purchasing habit ever been influenced by promotions of fast food chains on social media?

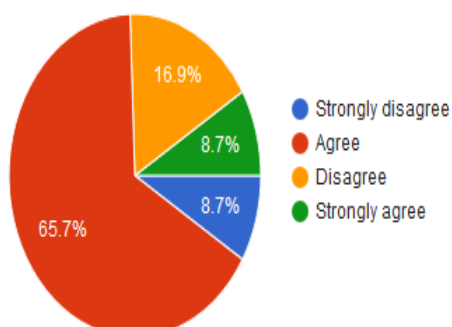


The below graphs indicate the responses of the people towards the questions of the parameter 'Food'. The above graphical responses indicate that the people are inclined towards the purchase and consumption of local made food commodities.

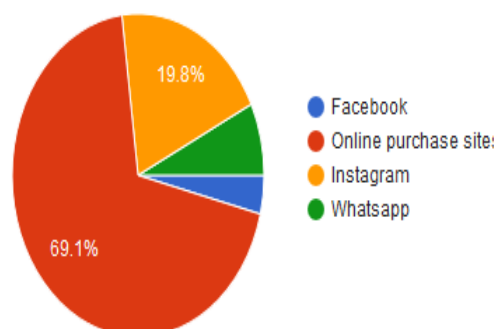
Fabric

The below graphs indicate the responses of the public towards usage of local dress. The results indicate that approximately 70% of the people prefer wearing local dresses.

I shop much of locally manufactured clothes

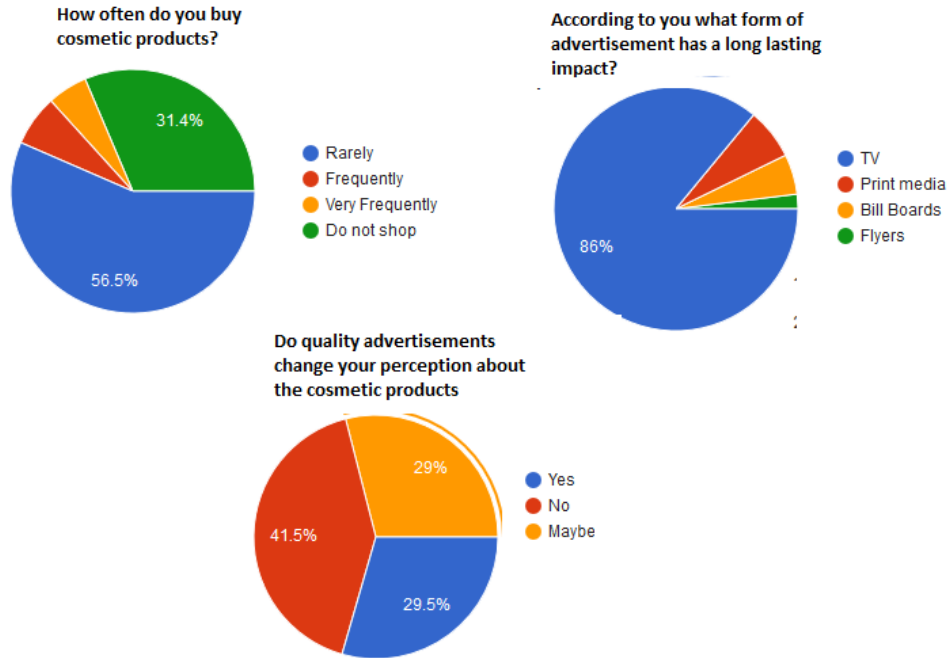


What social media sites influence your dress buying decisions

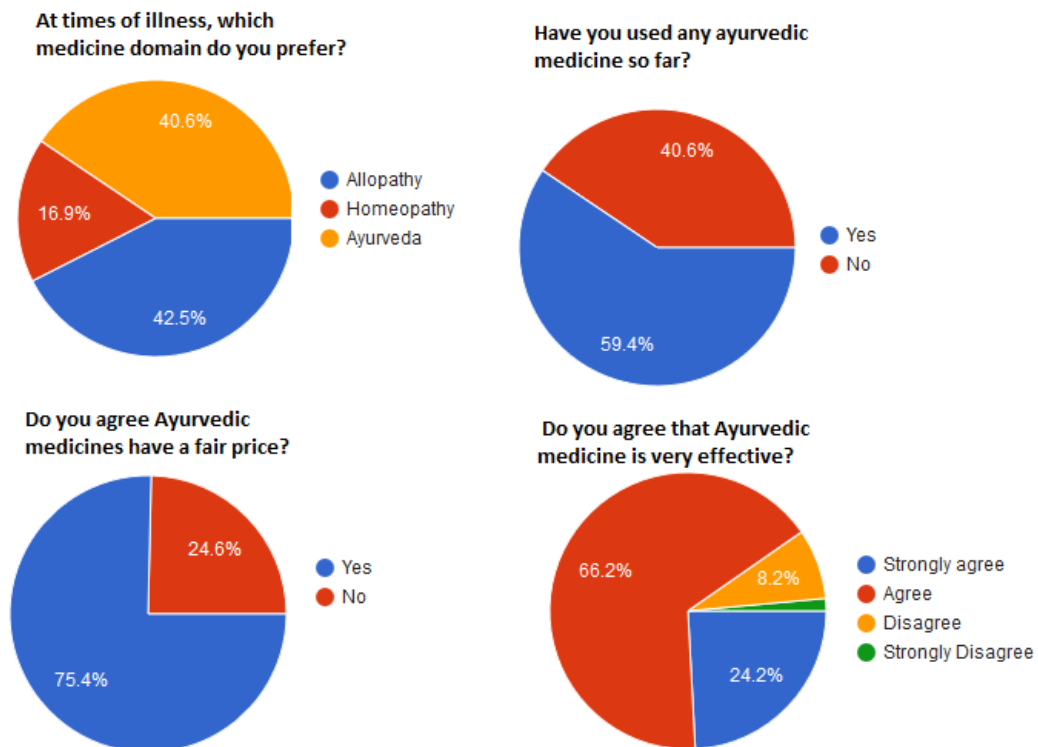


Cosmetics

The below graphs indicate that cosmetics usage is less within the masses and 41.5% of the population is not influenced by the foreign advertisements.



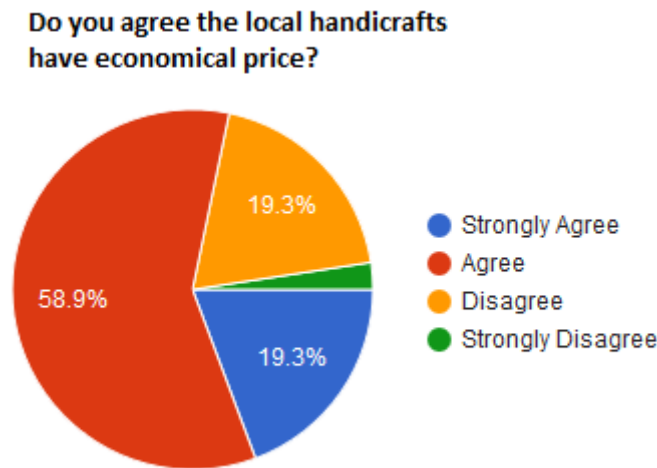
Ayurvedic Medicine



Above depicted graphs is comparative survey of different medicines. From the data it is evident that, 75.4 of the people agree that Ayurvedic medicines are economical and 66.2% of the people agree that Ayurvedic medicines are effective in treating diseases.

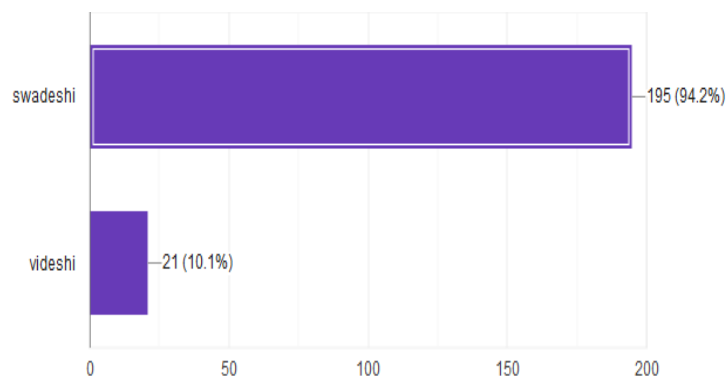
Handicrafts

About 59% of the population agrees that local made handicrafts have fair prices which are evident from the above pictorial representation.

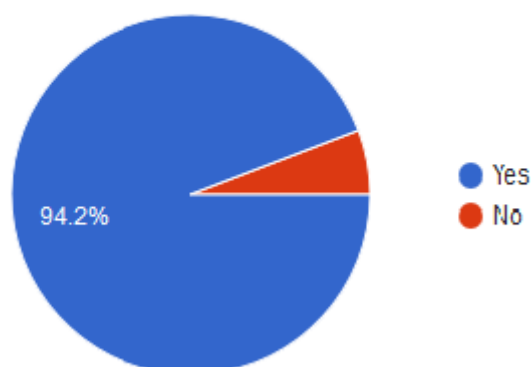


Conclusion

From the below graph and the graphical analysis, it is evident that, there has been a support for Swadeshi Products. Majority of the response holders being youth below the age of 20 has supported a strong need for the usage of Swadeshi Products (94.2%). This inturn would be beneficial for the swift growth of the economy of the nation and adds to the countries overall progress. Overall self-reliance of the country in the prime moto of the paper



Do you join hands in the economic growth of the country by purchasing local commodities?



The following question was posed and the public has joined our hands in the economic growth of the country. This finally indicates that people, particularly youngsters are motivated by 'GO VOCAL FOR LOCAL' to indulge in buying swadeshi products from our survey we found that the advertisements through Television has a deep psychological impact on the individuals. Hence, promoting the theme of our paper through this media will implant the idea to be much pronounced in the minds of the people.

Acknowledgements

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Covid19- Voyage of Pedagogy from Gurukulas to Online Teaching

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Abstract

Change is constant in this variable world. The pandemic has broke all trends and brought about turbulent changes in all our lives. The higher education sector is no exception. One thing is for sure. We can never return to the 'pre-corona-crisis' era. All that is in past now. We have to let go of the anachronistic syllabus which existed; Let go our traditional pedagogical ways of learning-teaching. With millions of students confine to their homes, traditional classroom classes seem impossible right now. Higher education, hence, to combat this loss has been looking into other alternatives like online teaching, broadcasting etc. This research paper concentrates on new wave of pedagogy due to Covid-19, its effect on learning process, positive impacts and the challenges that are ahead of us with respect to pedagogy.

Keywords: Covid-19, pedagogy, online learning, teaching and learning platforms, internet connectivity, universities, traditional teaching.

Introduction

UNESCO estimates that over 1.5 billion students in 165 countries are out of school due to COVID-19. Corona Virus Crisis has compelled universities to explore new pedagogical ways of teaching and learning. The pandemic has made a total 180 degree turn in education system from traditional chalk-board method to e-learning. The repercussions of the COVID-19 pandemic will continue to produce pedagogical changes in higher education. However, this has posed a serious emotional, physical and economical challenge to educators and students across the globe. But on other hand, Covid-19 crisis has sparked positive changes which were long due in traditional educational system. The pandemic has opened door to explore new digital learning, high and low technology solutions, etc. Structure of schooling and learning includes teaching and assessment methodologies which have witnessed a change. This paper concentrates on impact of COVID-19 on pedagogical methods in Higher Education.

Transformation of Pedagogy from Gurukulas to online learning:

The COVID-19 pandemic is set to change the world we live in. Thinking and functioning of our government, institution, organization and society has radically changed and will change much more in near future. Among many economic sectors, the higher education sector is witnessing a drastic shift right now. The future that the futurists and education technologies have been auguring is happening now. In the wake of Covid-19 pandemic millions of students around the world have been driven out of their educational institutions and are restricted to their homes. Higher education is witnessing turbulence and students are crippled by the sudden new norm of completely tech-mediated teaching and learning. For the past 20 years the transition to online learning was happening in fits and starts, limited to few islands of education. However, changes in policy level remained half-hearted attempts stemming from old mindsets. Utmost efforts were replicating some modern technology tools for few courses as an experiment or by making it a part of already existing classrooms as a blended learning. As the pandemic is occurring through the month of April, May and June, which is crucial month of academic year, teachers and students are both under a pressure not to lose an academic year. They are reinventing learning by bringing pedagogical changes in teaching i.e. shifting completely to digital learning as millions of students are unable to attend traditional classroom teaching during lockdown.

The new, total technology-mediated education can be termed as Education 4.0, after the first three waves of education systems that evolved through 2000 years of civilization – the Gurukula system , an ancient Indian teaching methodology, wherein selected students and imparted education from a renowned single master living under same roof. Then came the traditional university system, which is still most preferred and popular form of education. Usually students/scholars attend classrooms where a professor teaches using traditional chalk and talk method. The third wave was the distance learning, wherein students who are not physically present were able to get education via post, online learning platforms, etc. Students across spectrum could attend the class.

The good news is that the mainstream and conventional universities and institutions are now obliging to undergo transition to online. So is there a possibility of habits changing to enable the long due Education 4.0 which is technologically driven or is it just a pipedream? Let us ask some cardinal questions-

- Online higher education isn't today's invention; it has been there since a decade now. Then why did it not replace the traditional education system during pre-crisis time?
- Why is it not a conventional norm already?
- When gigantic businesses had already made a move from offline to online in the Pre- COVID era, then why has higher education not moved to online?

The inertia and 'fiefdom' attitude of existing educators and students are partially to blame. Anyway, every industry that is digital now had its own inertia and fiefdom hurdles. It is just that 'digital' technology THAT brought in a massive wave of efficiency and effectiveness in these industries and the pure economics and convenience of it washed away the inertia and fiefdom hurdles. In digital higher education, there has not been such a wave yet: it's important to understand this.

Several efficiency and effectiveness reasons have impeded this, such as:

- Dreadful course completion rates in the digital higher education system
- Rigorous Non-existent assessment
- Non-establishment or non-transparency in knowledge, application and competency in learners
- Non-contextual delivery (context is a key success factor in higher education – its influences the learning outcomes. Faculty in classroom setup can size-up and deliver the class)
- One-size-fits all delivery
- Replicate classroom to the digital medium is the root for many problems
- Doing 'live' classes may not bring an efficiency or effectiveness

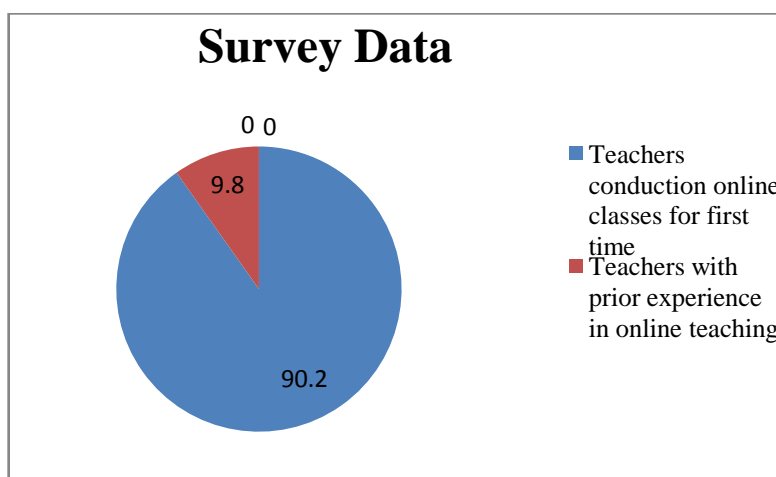
However, the pandemic has made Higher education to cede with these problems and make a swift shift to online learning. The major challenges are:-

Passive learning by students

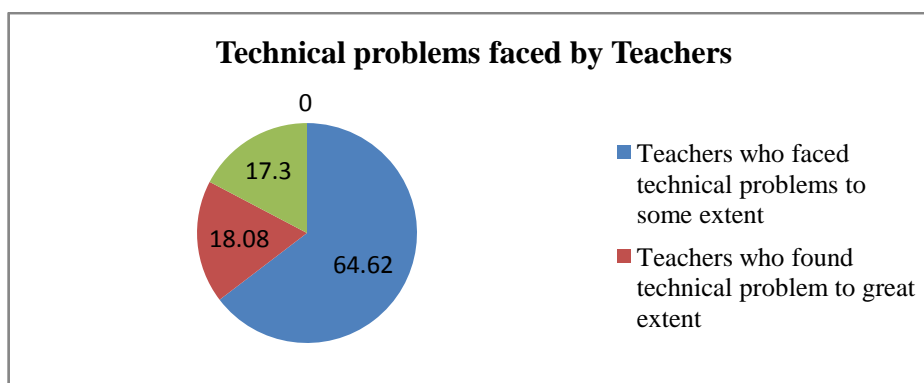
The swift shift to online learning without any prior planning -- especially in countries like India where the backbone for online learning was not ready and the curriculum was not designed for such a format -- most of the students are in peril of becoming passive learners as they seem to be lose interest because of low levels of attention span. Universities and Institutions are now beginning to realize that online learning could be tedious as it is creating a new set of passive learners which can pose new threat to educational fraternity.

Unprepared teachers for online education

Online learning is a special kind of pedagogy and not all teachers possess these skills or at least not all of them are ready to face this sudden shift from face to face learning to online learning and also due to lack of infrastructure most teachers are just delivering their lectures through platforms like Zoom, Cisco Webex, Microsoft Team View, etc which is equivalent to real online learning in absence of dedicated online platform. A recent survey data shows that as many as 90.2 per cent teachers are taking online classes for the very first time in their career due to corona virus crisis. An online survey was conducted by Internal Quality Assurance Cell (IQAC) of Dev Samaj College of Education, Chandigarh, in which 3,550 teachers from government, recognized private and government-aided private schools of Chandigarh and Punjab participated to analyze online teaching.



On thorough analysis of survey data it was found that only 33.56% of the teachers did not encounter any problem due to lack of appropriate materials and resources while majority of them i.e. 61.66% reported that they faced various challenges due to this reasons to some extent while 7.77% of them to a great extent. Mere 17.30% of the teachers reported that they did not face any technical problems while the majority of them faced this challenge to some extent (64.62%) and 18.08% to a great extent.



The study has additionally unconcealed that the majority of the academics (32.75%) use Whatsapp to send notes to the students in PDF formats and many teachers create their own videos of the lessons and share these videos with the students. This was followed by Cloud Meet apps like Zoom, Web Ex and Team Link (31.94%) to take online classes. As many as 16.08% of the teachers use Google apps like Google Classrooms, Google Hangouts and Google Meets for online teaching. While 19.20% of the teachers make use of other apps like Next Learning Platform, SnapHW, Shisya, Deeksha, and Extramarks and then provide YouTube links to their students.

Some percentage of teaching faculty complained that they were struggling to get a hang of the technology and demanded for proper training for them. Similarly, students too need training on how to attend online classes and take up online tests. Efficient Wi-fi and power systems are also required to make this system far more result-oriented and efficient. Hindi and Punjabi teachers face major hurdle because of Punjabi and Hindi fonts and material.

Changing format of student recruitment

Universities and colleges worldwide are facing a major problem in the area of student recruitment and retention. Most universities and institution especially those that attract a large number of foreign students are revamping their admission criteria, admission practices and overall recruitment process itself due to high risk of losing students

Lack of infrastructure

The people residing in rural areas are still very much deprived of the latest advancements and therefore hampering the cause of online learning. Currently, India is not able to reach every nook and corner of the country via online classrooms because of lack of infrastructure. The virtual classroom doesn't solely depend on e-lectures but also requires students to access digital notes and test papers as result the students from rural areas who often face internet connectivity issues, constant power cut and lack of digital device will be held back due to the current resort and there is no denying that. It's not just students that face these problems, many teachers and educators in remote areas lack electronic devices to teach students. Technology in education alone will not be the enabler.

Positive impacts and upcoming impacts of the pandemic in Pedagogy:

Improvement in learning material

This opens door for universities and colleges to improve their learning material. With the help of technology now learning material can be made more interactive and

illustrative for students. Since blended learning will be the new format of learning there will be an impetus to find new and innovative ways to design and deliver quality content especially due to the fact that the use of learning management systems will bring about more openness and transparency in academics.

Collaborative work

The teaching community, especially in countries like India have been isolated for long time here is a new avenue for new forms of collaborative teaching and learning that can be monetized. Faculty members/ teachers can deliver online courses to even students from competing institutions. Collaborations can also happen among faculty/teachers across the nation to benefit from each other. Finally, it's expected that with rise in teleconferencing opportunities, there will be a negative impact on travel. New online conferencing applications may emerge as large number of seminars and conferences will move online. Any change that is so disruptive is also likely to bring with it some new opportunities that will transform the higher education system worldwide and especially in a country like India which is motivated to bring about a planned reform and change in this sector.

Universities and colleges will soon adapt a new model of blended learning that includes both traditional classroom method as well as online learning. This will require all teachers to undergo trainings in order to get familiar with use of technology. New ways of delivery and assessments of learning outcomes will have to be adopted which opens immense opportunities for a major transformation in the area of curriculum development and pedagogy.

Learning management systems

The companies that have been working and developing Learning-management systems like keeping track of student's performances, fees and other details which can be used by universities and schools have a plethora of opportunity in digital learning era. They have the potential to grow exponentially provided they have fair pricing.

Teaching versus learning

Oscar Wilde once said, "Education is an admirable thing, but it is well to remember from time to time that nothing that is worth learning can be taught". In the coming days, the role of teacher will be redefined. The notion of a teacher as the knowledge-holder that imparts wisdom to students is archaic as students have easy access to unlimited knowledge and technical skill, through a few clicks on their phones, tablets and

computers.

Teaching will go technology

But just Zoom isn't e-learning. Technology plays an important role in enabling remote learning. In order to make sure e-learning reaches every nook and corner of the country we need to focus on three things. Firstly, students must have access to computing technology: secondly, reliable internet service and the last and most importantly perennial supply of electricity. Also, as stated before mere Zoom deployment isn't equivalent to online learning. There will be need to do more like integrating innovation and technology to capture the attention of students. There are already educationists working on taking a lot of science lessons, even geography, to 3-D. For example a detailed world map in 3-D, for a Class 6 student would be so much more fun to learn. Also, a 3-D view of the heart. Technology will enrich teaching, but for that teachers and technologists both will have to preserve and innovate.

Technology will be about the content, not the container.

Most of the people are so captivated by the technology and are distracted by the device related questions. They pay very little attention on how to utilize this technology to their full effect in order to yield desired results. As we move to a greater proliferation of devices, along with more content from multiple places, a greater value will be placed on the content, and how that content is used, rather than on any one particular device. Viewed from this perspective, the future of education is in the 'content', not the 'container'. However, connections and communities (students and teacher) are of importance than content that technologies can help enable, catalyze and support as well in the future. Distance learning courses may not be considered inferior in the future.

Blended learning & personalized education

There awaits an extraordinary future for new forms of blended education. During the 'Pre crisis' era there was already a growing demand for learning that was more flexible and adaptable and which lasted lifelong beyond the initial education in order to tackle the constant need for up-skill and re-skill for digital economy. Matured adult learners in the future will be and fascinated in micro-credentials which will permit them to accumulate specific knowledge and skills. There will be more demand for courses that are work-pertinent such as AR, VR, ML, Block chain, Big Data, Cloud, data analytics, voice deployment and more.. We will witness the emergence of top-of-the-line Master Class formats taught by best of the best scholars in every field, digitally delivered. There will be a significant thrust towards experiential learning too. All of this is going to be self-

learning, self-motivated and self-funded. With reduction in time spent on travelling to work, socializing and flexible work-from-home, people will have a lot of time on their hand and are more likely to spend more time on ‘passion’ learning like hobbies or skills that they always wanted to acquire and were fascinated by but had no time for.

Learning Result versus Informed Citizen

An incredible wrangle about on what online instructions implies for learning results, educators comfort students’ satisfactions as well as cost of delivery of course. However, this debate has been confined and has unfortunately evaded the talk of similarly imperative topic about in-class pedagogical extemporization, student’s ability to express their disapproval in an egalitarian way and how to build courage amongst students. There is no doubt that this shift to online and blended learning continuing beyond Covid-19, hence this will tectonically change the fundamental structure of education system. With this, the very purpose of education system in society is at stake. This rises some serious question on the role of education system, like will its role be confined to solely enhancing ‘learning outcomes’ and creating a cadre of skilled professionals? Or does it have a more broad commitment to deepen democracy by creating an informed citizenry that is well aware of its rights and have the ability to speak up against injustice using the various tools of democracy? Only time can answer.

Artificial Intelligence (AI) & Cloud Computing will enable MOOC

MOOC – massive open online courses – enable teachers and students around the world, especially those in secluded areas to learn and explore latest knowledge. While a definitive objective is mass customization, different applications and projects will help this grow in reach and impact. Tutoring applications will be modified, with their lesson structures relying upon the execution of a one of a kind user profile. Increased data crunching will make testing an increasingly interactive marvel. AI and machine learning will be used to outline a student’s qualities and shortcomings. Individual learning rates and records will be contemplated and computed. These tests, intended to support students’ confidence in zones they exceed expectations in and challenge them in regions they don’t will become holistic methodologies to enables students to stay encouraged and motivated.

Examination & grading will undergo a change.

AI will help teachers deal with assessment, evaluating, paper setting, making mark-sheets and tracking the performance of each student with less tedium. With these herculean tasks made simple, the teachers will now be able to concentrate more on

improving the course, working on their teaching quality as well as aptitude development. Artificial intelligence frameworks will make examinations and grading system more digital thereby decreasing the role of an examiner.

Chatbots for personalized help and guidance

Recently, The University of Murcia in Spain launched an AI-enabled chat box to answer students' queries and questions about the campus and areas of study. As this chat box was rolled out, the school's authorities were surprised to find that chat box was able to answer more than 38,708 questions, Not only was this chat box able to provide immediate answers to students outside of regular office hours, but university officials also found that the chat box increased student motivation. All of these benefits were achieved without the need to change the structure of the staff. Another advantage of having these chat box at universities to answer students' questions helps universities to procure large amount of big data regarding students' concerns, queries and areas of interest. This data is of immense value to the universities as they can analyze them and come up with innovative and ingenious ways to tackle these problems and further improve students' educational experiences.

Augmented Reality (AR) is a powerful visualization tool

This tool permits one to bring an object or concept that is imaginary, esoteric or difficult to understand, into reality thus making the invisible visible. All 185 first-year medical students at Case Western Reserve University (CWRU) are using Holo Lens and Holo Anatomy, an award-winning AR app by CWRU and Cleveland Clinic, to learn from their own places amid corona virus outbreak. Holo Anatomy has helped medical students learn about the human body in ways not otherwise possible. This technology overcomes the problem of limited availability of cadavers for dissection or 2d medical textbook illustrations as it provides minuscule details of human body. Annotation with AR helps guide through with the completion of a task, helps navigate a new environment or even provide real-time descriptions of what's happening around. London's National Theatre is now using AR to make its show more accessible for people who are deaf. When wearing a pair of smart caption glasses, users see a transcript of the dialogue and descriptions of the sound from a performance displayed on the lenses. AR makes new modes of storytelling and creative expression possible with experiences unfolding in real time. Introducing new and alternate perspectives, it changes the way we tell, share and even remember stories. The National Gallery of Prague is using haptics (virtual touch feedback) to help people who are blind and visually impaired experience artwork with

Touching Masterpieces by Neurodigital. Wearing a pair of haptic gloves, users are able to “see” 3D virtual sculptures like Michelangelo’s David through a series of touch vibrations to the fingertips, palms and hands.

Technology in education alone will not be sufficient

To ascertain a real crisis in education, we have to take a look into our government-run schools, or schools situated in the remote areas where an amateur teacher with a basic college degree in a secluded area tries to teach 60+ children in a dilapidated, multi-grade classroom where books are scarce and most of the students and their parents are often functionally illiterate. Now, talking about prestigious elevated places of learning, like Harvard, IITs, IIMs may know how new technologies can help transform education, in India it will first have to be about how such tools can help education systems function at a basic level. Change is on the way but those in pivotal positions will have to ensure that its benefits percolate to the benefit of all.

Challenges Ahead

The long term and sustainable triumph to change, the tectonic shift will depend on six major elements of online learning.

1. Subject matter covered in classroom is to be delivered online, but with technology as the intermediary. Mere replication of the same is a very bad idea: it calls for understanding & applying learning science and digital pedagogy. To enable this, collaboration with experts is way forward.
2. Classrooms have typically diverse learner groups. In traditional pedagogy, professors and subject matter experts interact and analyse their audience’s or students cluster’s ability and knowledge and then devise a teaching-learning technique best suited for their students. But this will not work in online learning. Educational Institutions need to spend as much as time on analysing their diverse learner profiles, develop a content and then weaves them into their program design
3. New technologies including the emerging sciences of artificial intelligence and deep learning models can help us create customized learning plans and methods. Higher education institutions must incorporate these to overcome the problems of digital higher education.
4. Online learning is not just one pedagogical model but conglomeration of various models. It indeed specializes learning science integrated with learning psychology, behavioural analytics, content delivery, and assessments to calibre

and measure individual learner's journey and progress. Working with expert and hand-stitching a delivery mechanism is the key.

5. By making learning science and not technology a priority. There are many teaching models that are being created today that use technology and technology related tools as a solution and thereby equating online delivery with online learning. The former is teacher-centric, and the latter is learner-centric. Learning is all about gradually instigating small changes in learner's actions and behaviour. The learning process, in incremental steps, brings about changes in thinking and mental models of the learner through deep understanding and conceptual strengthening. After each learning session, the student will be able to apply this gained knowledge in real scenarios in life, profession, or workplace. All the faculty have to re-trained and mould for online teaching-learning mode. While they could be content experts or great classroom teachers, they need to place equal importance to learning sciences in digital media.

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Psychological Impact of Ncovid-19 on Students and Resiliences

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Abstract

nCOVID-19 epidemic has been spreading in China and other parts of the world since December 2019. The epidemic has brought not only the risk of death from infection but also unbearable psychological pressure has been noticed from the survey of college students by using cluster sampling, they responded to a questionnaires that includes the 10-categories generalizing mental status, anxiety, emotions and measures to overcome stress. Results of correlation analysis indicated that economic effects, and effects on daily life, as well as delays in academic activities. However, social support was negatively correlated with the different levels of anxiety among different aged people.

Key words: nCOVID-19, Students, Psychology, Resilience, Epidemic.

Introduction

Corona virus, commonly known by the name nCOVID-19, which is already much needed by victims is an infectious disease caused by a newly discovered virus [1].

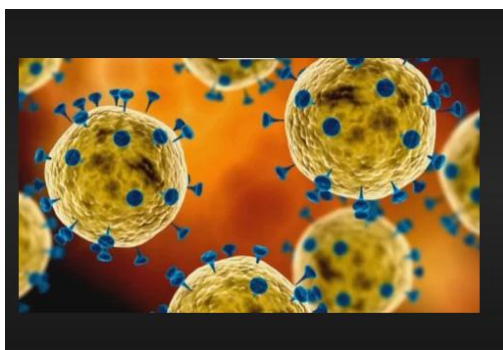


Figure 1 Novel Corona virus (google image)

As the coronavirus (nCOVID-19) pandemic sweeps across the world, it is causing widespread concern, fear and stress, all of which are natural and normal reactions to the changing and uncertain situation that everyone finds themselves in. “The issue facing each and every one of us is how we manage and react to the stressful situation unfolding so rapidly in our lives and communities. Here we can draw on the remarkable powers of strength and cooperation that we also fortunately possess as humans. And that is what we must try to focus on to respond most effectively to this crisis as individuals, family and community members, friends and colleagues,” said Dr Hans Henri P. Kluge, WHO Regional Director for Europe [13].

WHO takes the impact of the crisis on people's mental health very seriously and is monitoring the situation together with national authorities, while providing information and guidance to governments and the public to healthy people, people with monitoring (ODP), people without symptoms (OTG), patients with supervision (PDP), n Covid-19 patients, and vulnerable groups [3].

nCovid-2019 is pneumonia that arose on December 31, 2019 in Wuhan, China, and then swept the world. The continuing spread of the epidemic, strict isolation measures and delays in starting schools, colleges, and universities throughout the country are expected to affect the mental health of students. There have been reports of the psychological impact of the epidemic on the general public, patients, medical staff, children, and older adults [8] - [11].90% of students have experienced anxiety because of this nCOVID-19 outbreak. Living in urban areas, living with parents, having a stable family income are protective factors for students against the anxiety.



Figure 3: student with anxiety (Google Image)

Objectives

- Students behavioral stress
- Psychological resilience
- Suggestions and practical tips for students
- Health promotion for students

Methods

The survey has been conducted for the Postgraduate students by giving questionnaires for their natural experience of living in quarantine. Students are having very unique way of understanding the complexity of their experiences, beliefs and attitudes which will provide comprehensive plans for decision makers, health care professionals and mental health professionals. Students mental health is greatly affected when faced with a public health emergency, and they need attention, assistance, and support from the community, family, and institutions. It is recommended that the government and education sectors

should collaborate to solve this problem in order to provide crisis-oriented psychological services that are of high quality and timely bad character to students [12]. People start a new life in quarantine to be safe. Quarantine life is accompanied by psychological, social and economic consequences, and its implementation requires the support, supervision and compliance of the country's medical staff.



Figure 4: Stages of mind that has to face different unconditional status (Google image)

Impact on Students Mental Health Problems

The nCOVID-19 pandemic is an unnatural disaster that can have an impact on the mental health and psychosocial conditions of everyone. According to WHO (2020), the emergency of a pandemic caused stress to various levels of society. Although so far there has not been a systematic review of the effects of nCOVID-19 on mental health, a number of studies related to pandemics (including bird flu and SARAS) have shown a negative impact on the mental health of sufferers [8-11]. Research conducted to explore the cognition, psychological state, anxiety and depression level of students during the 2019 Coronavirus epidemic (nCOVID-19), by conducting online questionnaires regarding their Self-Assessment, psychological condition, online classes and if another nCovid appears whether ready to face in future?



Figure 5: Student undergoing stress due to many factors during nCovid-19(Google image).

The majority of students strongly agreed to reduce going out and gathering. There were statistical differences between the different sexes of students in anxiety and panic risk exposure. Moreover, anxiety and depression levels of students during the n COVID-19 epidemic were higher than the level of the national Norm. In addition, logistic regression analysis shows that the panic situation is epidemic. Therefore, it is very important to conduct psychological interventions that are needed for students [8].

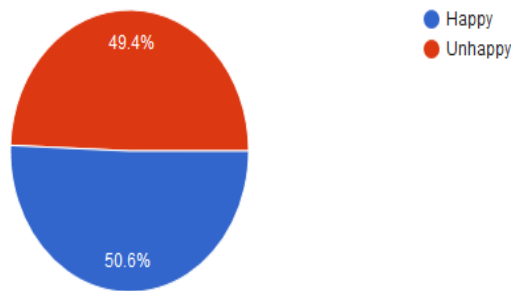


Figure 6: Students opinion about the closing of college due to Covid-19

When students heard college closed due to n COVID-19 their reaction reflects the thinking ability about the studies. Certainly they were happy because initially they did not know that how long this problem persists.

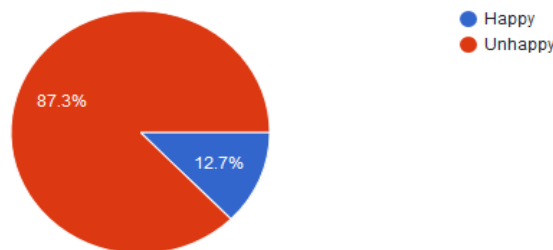


Figure.7: indicating the psychological conditions of students.

Survey indicates, during the lock down period as they heard that the college closed for long period they were unhappy, psychological studies shows that students were missing their friends, fun and learning opporunities as well as sports activities.

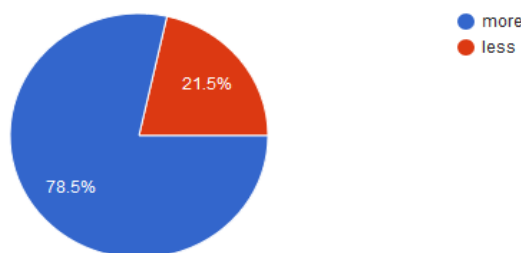


Figure 8: shows the students reaction towards online and offline classes.

This survey shows that students find online classes more stressfull and Uncomfortable than offline classes because, psychologically it is proved that listening capacity of a person is only 20 minutes and more than that they feel it is stress, since hearing directly affects brain, hearing for long period is very stressfull and the time schedule for one class is 40 minutes and students were attending about 4 such online classes conducted.

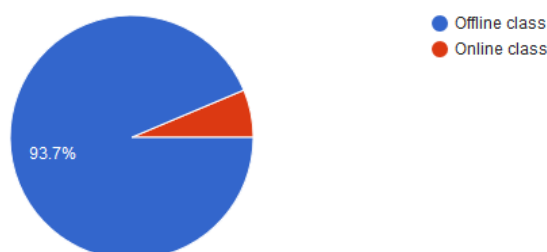


Figure 9: indicates students are more comfortable with offline classes

This signifies that students prefer offline class rather than online class as they are facing lot of mental stress ,lack of in depth knowledge , quality learning and hearing ,it makes students dull and lazy and can not concentrates for long period.

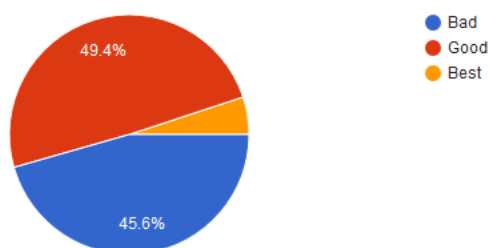


Fig.10: shows the psychological conditions during n Covid -19 period.

What could the impact of the n COVID-19 crisis be on student’s mental health?

This is indeed an unprecedented time for all of us, especially for children and students who face an enormous disruption to their lives. Children and students are likely to be experiencing worry, anxiety and fear, and this can includes such as a fear of dying, fear of what it means to receive medical treatment. If schools and colleges have closed as part of necessary measures, thenstudents may no longer have that sense of structure and stimulation that is provided by that environment, and now they have less opportunity to be with their friends and get that social support that is essential for good mental well-being.

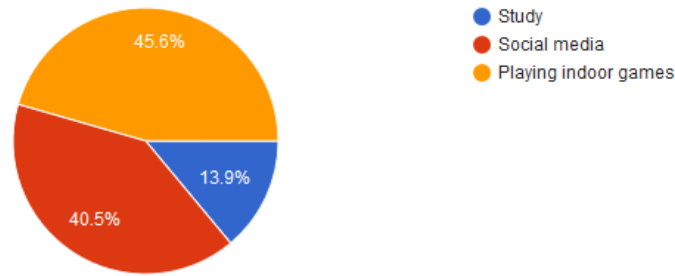


Figure 11: students stress bursters during the pandemic.

It is showing that the students facing stress due to many unconditional events and to overcome this they are engaging themselves in different activities such as playing indoor games, studies and Social media.

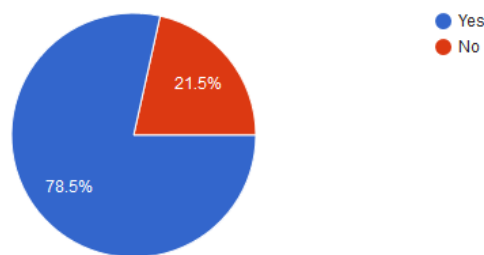
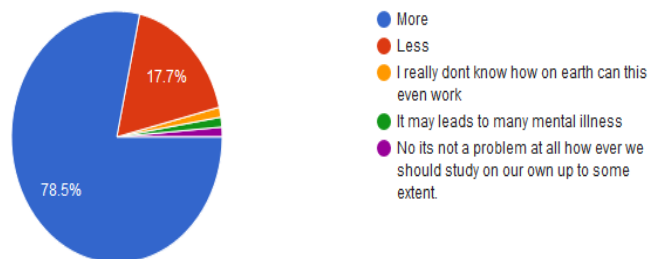


Figure 12: students engaging themselves in different activities during lock down period

The survey shows that students have spent most of their time in learning new thing apart from their academics, and they have found the resilience for their stress.



1

Figure 13: Students reactions towards online classes and offline exams

The above chart represents the students reactions towards attending online classes and writing offline exams. Many students denied to write offline exam by listening online classes .They feel it is stressful.

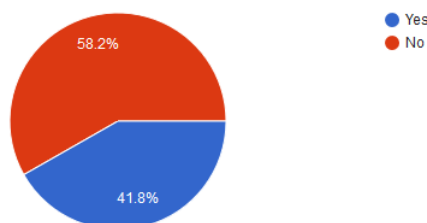


Figure 14: Students preparation to face post Covid-19 Challenges

This signifies mentally students are not prepared for acceptance of challenges of post Covid-19 like Continuing higher education and employ ability.

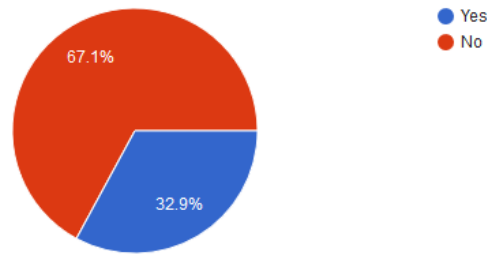


Figure 15: Preparation to face another SARAS

Students ingeniously do not want one more SARAS and at the same time they are not ready to face another Covid.

Resilience: Suggestions and practical tips for students

Stay physically safe from the virus Get and provide warm, comforting, social support by video, phone, or text Find ways of expressing kindness, patience, and compassion Create new routines and keep practicing health behaviours Reducing stress arousal through breath practices.

Student Coping Strategies

nCovid;19 is a source of pressure with great influence,because of the rapid spread.There are many death cases,since it has no specific drug to cure and poses a major threat to human life and health and also has a large impact on the mental health of the general public causing them to experience veyring degrees of psychological crisis.

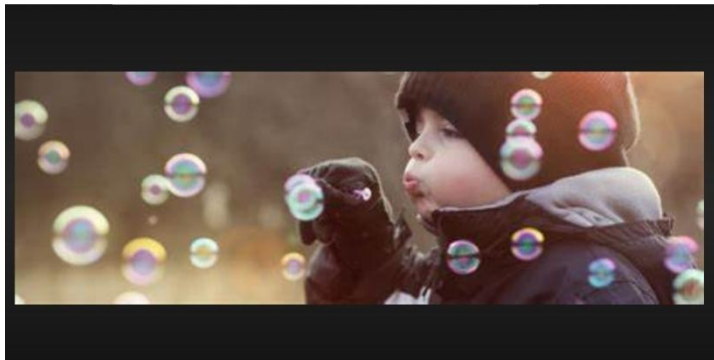


Figure 16: Resilience for psychological stress (from google image).

Scientists who study resilience and coping have provided grounds for optimism that many people will struggle through this challenging time yet emerge even stronger than before. Direct human contact or via telephone, skype or social media not only alleviates anxiety, stress, and sadness but also sets the stage for prosocial behavior and empathy (Alloway, Runac, Qureshi, & Kemp, 2014). This one-two punch of decreased negative emotionality and enhanced positive emotions facilitates coping and recovery. In times of stress, like we

are enduring today, it can be comforting to appreciate that we are all in this together and to direct compassion and loving feelings toward ourselves and others. The practice of loving-kindness meditation (LKM) consists of turning positive emotions (e.g., happiness, tenderness, warmth, compassion) towards oneself, loved ones, other humans, and ultimately all sentient beings. During LKM, people focus on their heart region and think about a person for whom they have powerful positive emotions and then extend those positive feelings toward themselves and other people in their life and finally to people in the world more generally, as all beings suffer and deserve compassion.

It must be realized that the addition of positive cases, once again still illustrates that there are still positive cases that have not been isolated, there is still transmission due to close contact, no one has been diligent in washing hands with soap. The public must be disciplined in implementing various policies that have been issued by the government in order to break the chain of transmission of nCovid-19 including by staying at home, keeping a minimum physical distance of 1 meter, and washing hands with soap.



This is new territory for everyone, which means we're in this together. And it will take time, but we don't know how long. It could be a marathon, rather than a sprint.

Acknowledgements

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Indian Government Emergency Plan of Action and Recovery to Combat Covid-19

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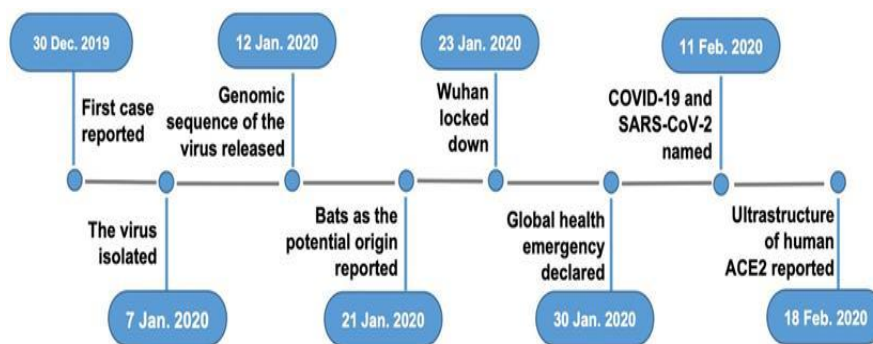
Abstract

Covid-19 pandemic outbreak vindicates multiple casualty incidents (MCI) of the highest nature the world has witnessed and battled so far. The situation has stirred up a hornets' nest, a fear of death and loathing. The paper calls for an optimal MCI disaster management. A detailed and critical literature survey on disaster planning, response and recovery with an analysis of the Indian response to combat Covid-19 pandemic is highlighted. After the outbreak, with the first case reported on 30th January, Indian Government increased the laboratories and speed up the testing, and nationwide lockdown was prescribed after WHO confirmed it as a pandemic on March 11th. The paper thus not only focus on India's preparedness and planning but also emphasizes on tipping points on the measures to maximize public trust as well as to shape the public's behaviours so that they are as adaptive and risk-reducing as possible. Moreover, it aims at supporting key personnel in critical infrastructure functions (e.g., healthcare, emergency responders, child-serving education or care, utilities, food, transportation). Further, it also lays prominence on reducing social and emotional deterioration of masses and improving their function, thereby turning risk to opportunity and investment for future.

Key words: Pandemic, tipping point, lockdown, mitigation, Public trust and mental health, Risk Communication.

Introduction

The Corona virus Disease (COVID-19) pandemic came into light on December 2019 in Wuhan city of China. The outbreak is due to severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) infections. The current statistics accounts to 83,057 patients been infected in China. This indicates the infection rates have been controlled in China through severe public health measures. However USA (2297190 cases) Brazil (1038568 cases) Russia (569063cases) India (396182 cases) UK (301815 cases) Spain (292655 cases) Italy (238011cases) have witnessed exponential increases in the number of infected individuals [1].



MHO and family welfare of India confirmed the country's first Covid-19 case on 30th January in a student who arrived in Kerala state from Wuhan [2]. The detection of virus in infected person takes an incubation period of 14 days or even more and hence thermal screening at airports and seaports have been unable to detect such cases. On 28th February government informed that all 3 corona virus Kerala students who were tested positive were cured. The National Institute of Virology in Pune has successfully developed the first indigenous antibody detection kit for Covid-19 that played a critical role in surveillance for corona virus infection [3]. A total of 111 labs for testing corona virus across the country were immediately made functional [4]. A cluster-containment strategy was mainly adopted, similar to how India contained previous epidemics, as well aimed at "breaking the chain of transmission".

Objective

A critical study, survey and analysis of Indian Government's response to combat covid-19 pandemic and their plan of action on infrastructure, health care, educational institution and public do

Indian preparedness and emergency plan of action to combat Covid19:

After India reported its first casualty from corona virus of an elderly man from Kalaburagi in Karnataka on March 13th, the number of infections in India soared to 74 [5]. The necessary contact tracing, isolation and other measures of infected individuals were carried out. Meanwhile, the government declared corona virus an epidemic and shut all cinema halls, schools and colleges, except those where exams are on, till March 31. The government also made it compulsory to disinfect all public places, including government and private offices and shopping malls, every day.

Preparedness is neither initiated on part of private citizen nor the prerogative of government alone. Instead all institutions, entities, firms both private and public sectors, every individual and household should take the initiative and make contingency and advanced preparedness plans. Also there should be a serious approach for development

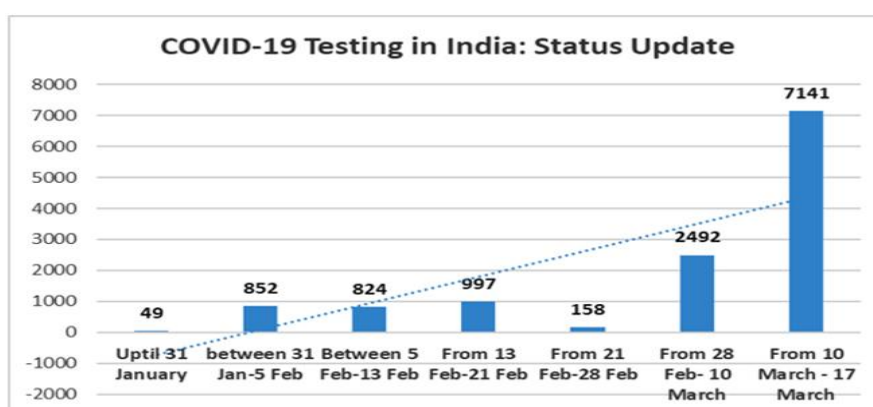
and maintenance to respond to new novel infectious agents that are capable of rapid spread and become pandemic. This calls for organizing a national disaster planning and management committee and designing plans for outbreak preparedness.

- To boost healthcare professionals, country-level coordination, planning, and monitoring were initiated.
- Planning also involved making of proper infrastructure to garner data on number and identities of death accompanied with provision for human resources for collection and disposal of death.
- Safe return of hundreds of Indians from China, Iran and other countries was ensured and decisive measures were taken by Indian Government to contain community spread.
- All international passengers entering India had to undergo universal health screening.
- Partnership between recognized health care experts and local community leaders and two-way dialogues between authorities and communities were facilitated.
- A website was introduced by the ministry of health giving the numbers of phone help lines, public communication apps (Arogya setu, Apathamitra, Seva Sindhu) as well detailed advice and guidelines. *And such an action was lauded by WHO Representative (World Health Organization) Henk Bekedam.*[6]
- A dedicated web portal was set up that includes dashboard with key indicators, current case definitions, guidelines, risk communication material and micro plans.
- Tracking of affected individuals, dissemination of information, educational measures to create awareness in public was taken seriously.
- National and state health systems were strengthened to support prevention and preparedness. They also aid to build resilient health systems to provide core public health, prevention and patient management functions to manage Covid-19 and future disease outbreaks.
- Contingent emergency response to an eligible future crisis or health emergency was successfully planned.

Indian responsive measures to deal with Covid 19 for containment and mitigation

- The Ministry of health and family welfare (MOHFW), Government of India (GOI) with support from the World health organization (WHO) developed a combination of emergency response and health system capacity building efforts consistent with Covid 19 containment plans.

- An immediate response to limit the impact of pandemic was taken to provide support to enhance disease detection capacities by scaling up procurement of personal protective equipment, ventilators and medicines with equipped hospitals and trained medical staffs for isolation and treatment of those infected.
- National laboratories were increased for research and rapid diagnosis. Indian council of medical research in collaboration with other global institutions to support research on Covid-19. This led to strengthening of pandemic research and multi sector, national institutions and platforms for one health.
- Personnel were made in charge for surveillance, rapid-response teams, and case investigation and Points of entries were blocked.
- Rapid actions were taken to limit travel by suspending visas and passengers were quarantined. Strict norms were followed to the people who were quarantined.
- WASH (water sanitation and hygiene), cough hygiene (proposed by WHO) and community health programs were empowered.
- Community engagement and risk communication were addressed significantly to improve Covid 19 surveillance, monitoring, case management and containment thereby preventing wide spread of the disease.
- Trials were carried out on a few suffering from Covid 19 by passively immunizing them using plasma taken from convalescent cases.
- At least two negative tests are obtained before a person is certified as being uninfected.
- Statistical representation [7]



- India exported 50 million hydroxychloroquine tablets to US for Covid-19 fight [8].
- Ministry of health and family welfare, Government of India guidelines were strictly followed at workplaces and educational institutions.
- Preventive measures at work places included:
Physical distancing of at least one meter was followed at all times.

Use of face covers/masks were made mandatory

- Lockdown 1.0 was called out where government ordered closure of all schools, colleges, gyms across India till March 31st and different phases of lockdown (1.0-5.0) were continued since then which helped in preparing to face the pandemic and also went a long way in educating public [9].
- Online classes through educational institutions for students were initiated.
- In context of death disposal, identification of deceased wasn't difficult. Statistical analysis of death was conducted. Safe disposal of dead bodies respecting socio cultural norms with adequate personnel and tools (PPE kits) were carried out.
- Measures to shape adaptive behaviors by maximizing public trust and communicating effectively and provide hope, empathy, and support [10]

Experts recommend four tasks to promote positive public health outcomes:

To maximize public trust and effectively communicate risk and health information

Tipping Points

- Knowledge about the nature of pandemic and its difference from regular influenza.
- Equity of messages: in every stage of the pandemic and for every population.
- • Message delivery: developing and monitoring of messages appropriate to targeted groups

To maximize adaptive behavior change

Tipping Points:

- Knowledge about: a) when to seek treatment b) what protective actions will be effective, etc [knowledge may vary by cultural context]
- Allocation of resources: perceptions about adequacy and equity in the distribution of resources.
- Community readiness: existing infrastructure's capacity to facilitate response and coping among its members.
- Potential impact of movement restrictions: the extent to which these policies will impact civil liberties, economic survival, etc.
- Availability of ongoing support: resources to facilitate communication, social interaction etc
- Attention to needs of vulnerable populations (e.g., children, elderly and co morbid).

To reduce social and emotional deterioration and improve functioning

Tipping Points

- Pre-existing social and emotional health.
- Coping strategies employed through access to mental health care professionals.
- To support key personnel in critical infrastructure functions.

Tipping Points

- Access to emerging information to facilitate response role.
- Appropriate policy guidance on response role, triage procedures & resource management.
- Prior training and planning of healthcare professionals
- Availability and accessibility of information and resources.
- Leadership and team cohesion.

Public Trust, risk communication and adaptive behaviour change measures

- Addressing public grievances.
- Having effective public risk communications.
- Creating awareness in public on health and hygiene through mass media and telecommunications.
- Preparing public to contribute and volunteer effectively with family, kith - kin and within neighbourhood.
- Easy access of public to health communication experts thereby reducing Covid-19 pandemic risk and enhancing adaptive behaviour.

Social and emotional deterioration:

- For a healthy life, one has to prioritize physical and mental health. The quarantine and lockdown has made patients to have no access to either mental health care professionals or external aid from friends and folks. The unprecedented nature of pandemic and the treatment itself can trigger panic attacks in victims of Covid-19. Isolation reduces infection but also reduces access to family, friends and other social support systems causing loneliness increasing depression.
- Government, hospitals, educational institutions, organizations and even individuals need to look into psychological intervention and adopt necessary measures.
- The closure of schools is likely to widen learning gap between children from lower income and higher income groups.

- Students and teachers were placed under stress due to sudden shift from formal education system to online system [11].

Indian Recovery Measures to deal with Covid 19 global emergency:

- Getting community health to normal levels
- Maintaining and monitoring the spread of diseases.
- Rebuild hospitals for intensive care and diagnostic centers, introduce isolation rooms, upgrading of lab testing systems including staff training programmes to face any biological warfare in future.
- Collaboration of Government laboratories with private sectors to enhance the feasibility of tracing infected persons, and advancement of techniques for standardization of sample collection and specimen transport mechanisms.
- The current research and technology should meet the need to safeguard any future pandemic at bio safety level, improving bio security management.
- Minimizing the loss in future and reduce spread by taking necessary steps and enhancing the treatment of disease making it free or at subsidized level.
- Turning risk to opportunity and investment for future.

Conclusion

It is concluded that the international level cooperation and grass root level for effective management of pandemic is needed to develop an agile and responsive approach. A survey of earlier pandemics should be critically examined and the preventive measures involving massive scale of planning and preparedness in the health infrastructure should be adopted according to the current Covid-19 pandemics. The idea of self quarantine deduced from plague pandemic of 14th century was honed and optimized. At times of uncertainties, public trust and communicating effectively should be prioritized. There is definitely a room for economic crisis; hence human resources and wealth should be used intellectually turning risk to opportunity and investment for future.

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Mass Media: Role Played in Novel Covid-19 Pandemic Management

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Abstract

The WHO announced ‘mystery pneumonia’ on 31 December 2019. Since then the virus has been identified (SARS-CoV-2), the disease named (nCOVID-19), and there has been global spread, with cases identified in about 200 countries, more than 78 Lakh people testing positive for the virus and more than 4 Lakh succumbing to this disease as on 15.06.2020. The mass media have been following every step of this journey – with multiple stories, incessant headlines and continuous updates across the past few months. The media so far has played a commendable role in containing nCOVID-19 and, potentially, saving lives in our country and across the world. An insight into the role the mass media can play in situations of emergencies of this type and a brief account of the role played so far by the mass media in creating awareness, and in managing the pandemic is presented in this article.

Key words: Mass media, nCOVID-19, disease outbreak, awareness, pandemic management, healthcare sector, education sector.

Introduction

Mass media refers collectively to all media technologies that are intended to reach a large audience via mass communication. Mass media is communication-whether written, broadcast, or spoken-that reaches a large audience. This includes television, radio, advertising, movies, the Internet, newspapers, magazines, and so forth (Figure 1). The term ‘media’ was first used with the advent of newspapers and magazines. With the passage of time, the term broadened by the invention of radio, TV, cinemas and internet. In the world of today media has become almost as necessary as food and clothing. It has a strong social and cultural impact upon society and is playing an outstanding role in strengthening the society, informing, educating and entertaining the people.



Figure 1 A mass media infographic (Courtesy-Google images)

The earlier role of media in delivering one-way information has changed. In the digital era, the web-enabled media interaction is a powerful tool, where both media reports and audiences are active participants. Due to the vast availability of the internet, the interactions could easily reach a vast audience instantly and make them active participants in the interaction. In spite of the controversial views of some aspect of their use, the mass media have brought about great changes in people's minds and in culture, such as the democratization of culture to an extent that would have been unthinkable without them.

Role played by mass media in creating awareness [1,2]

The outbreak of 2019 novel corona virus pandemic (nCOVID-19) has created a global health crisis that has a deep impact on the way we are living in this world. Not only the rate of contagion and patterns of transmission are deeply threatening, the safety measures put in place to contain the spread of the virus require social distancing. This is against the inherent human behaviour who finds solace in the company of others. Within this context of physical threat, social and physical distancing, as well as public alarm, different media channels are playing a significant role in our lives. Providing adequate information at individual, social and societal levels is one of the most important elements for disease prevention.

In India, the awareness spread through the web portals managed by government organizations like India Alliance (Figure 2), FM radio, News channels, and other means, enabled people to correctly understand and effectively comply with the guidelines issued by the government to deal with the situation of nCOVID-19. During lockdown situation and social distancing, the media has also arranged various public discussions and discourses that helped in disseminating information to a broader section of the people. The media has ensured that those discussions and discourses focus on creating awareness to the public on the spread of nCOVID-19, and the measures being undertaken by the government against its transmission. For example, airing of PM Modi's *Mann ki Baat*, addressing on issues related to nCOVID-19 and current situation, which is accessible to the remotest and rural areas. However, as the flip side of the coin, each media house has the preferred audience to reach out which has led to differences in reporting of nCOVID-19 related issues by several media platforms.

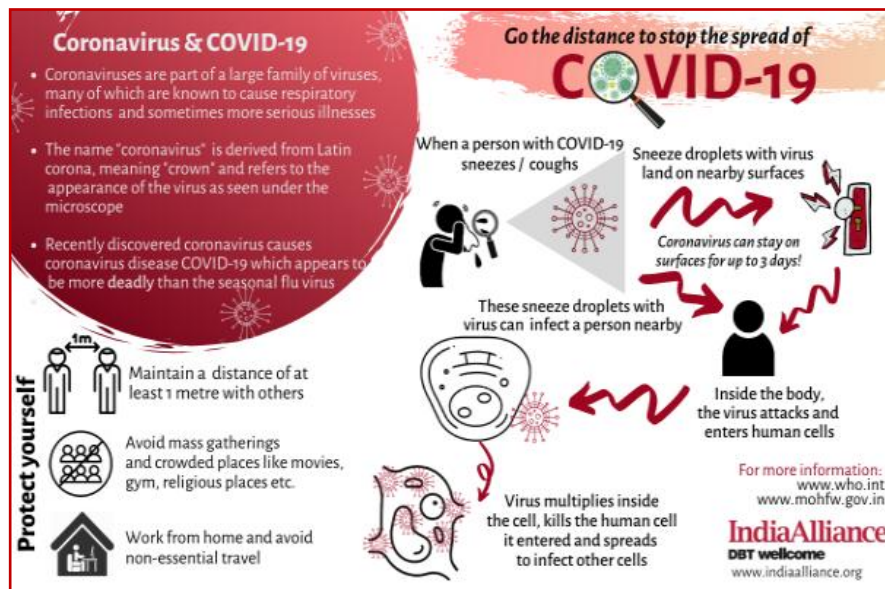


Figure 2 Infographics developed by India Alliance on the new coronavirus and nCOVID-19 preventive measures.

Role played by mass media in healthcare

Christian R M et al [3] have reported a study on the informative role of mass media in the face of nCOVID-19 disease. They have focussed their study on the role played by mass media in reporting 'Fear Perception' and 'Magnitude of the issue' (MED-COVID-19). Previous studies carried out in the face of the emergence of outbreaks and epidemics were found to fail in properly informing about protective measures. That had serious repercussions on the actions of different populations and greatly impacted global health. In their study, they have included 30 experts in the epidemiology field, a speciality in infectious medicine, internal or intensive medicine and over 400 people from different geographical locations (i.e. in cities located in east, west, north, central and south regions, coast, mountains and jungle). The instrumental method of MED-COVID-19 scale used for measuring 'Fear perception' and 'Magnitude' is a questionnaire containing 12 items. The responses have revealed that people by seeking information from non-medical sources, and dissemination of news on social networks and television which also generates disinformation are getting panic, fear, and collective hysteria. And, to dissipate this anxiety and fear, the media has to involve health personnel to create awareness through social networks, televisions and radio in urban and rural areas.

In this context, the media wings of various ministries in our country have created immediate content and acted on minute-to-minute events. For example, information dashboards are placed on to the several government website/web portals such as "My Government" *mygov.in*, Press Information Bureau's *pib.gov.in*, which provides necessary information on the situation of nCOVID-19. Aarogya Setu is an Indian open-

source cross-platform providing “Contact tracing, Syndromic mapping and Self-assessment” digital service (Fig. 3). It is a mobile app, developed by the National Informatics Centre under the Ministry of Electronics and Information Technology (MeitY). The app reached 100 million installs in 40 days.



Figure 3 An infographic prepared by MeitY on Aarogya Setu App

The stated purpose of this app was to spread awareness of nCOVID-19 and to connect essential disease-related health services to the people of India. It tells how many positive cases are likely in a radius of 500 m, 1 km, 2 km, 5 km and 10 km from the user.

Role played by mass media in the field of education [4,5]

Media in the classroom engage students in learning and provide a richer experience. It is a useful tool for illustrating a lesson, allowing students to see examples of what they are learning. Interactive media such as Smart Boards allow students to move items on a screen for illustrative purposes. Students view media as exciting learning aids, making learning entertaining, attracting and less monotonous. Although complete media integration is not yet common place in classrooms throughout the country, media's use in the classroom much like that of technology, is seemingly old hat. Although “movie day in the classroom” has shifted from slides and projectors to DVDs and YouTube as a result of rapidly changing technologies in the 21st century, media use in the classroom remains prevalent. John Dewey stated that education could not be limited within teacher and taught without social environment. So mass media is one such potent force in the social environment of education. Through modern electronic techniques and technologies mass media show that education is really comprehensive not confined within four walls of the classroom. Irrespective of caste, color, geographical, sociological, economical diversities mass media prove as an important means for the education to all.

The scholastic and academic loss to the school, higher education and most acutely to the disadvantaged groups during nCOVID-19, demands prompt thinking and expeditious

action. The academic cost to the student community necessitates a prompt and a curative action. In India, the ministry of human resource and development (MHRD) web portals and apps like ePathshala, National Repository of Open Educational Resources (NROER), Digital Infrastructure for Knowledge Sharing (DIKSHA), Study Webs of Active Learning for Young Active Minds (SWAYAM), Massive Open Online Course (MOOC), SWAYAM PRABHA (a group of 32 DTH channels broadcasting high quality educational contents), have the potential to address this predicament and the community of teachers and students as well as education administrators at all levels can benefit from these. Distance learning, e-classroom, online assessment, screen-to-screen interface between the students and teachers, etc, are going to be practiced extensively for some time now (Fig.4) The meeting apps like ‘ZOOM’ and ‘Google MEET’ have been widely used to handle this situation.



Figure 4 Learning through online classes



Figure 5 Online teaching

Social Media’s Role during COVID-19 Pandemic



Figure 6: Infographic of social media platform icons (Courtesy-Google images)

Social media platforms like Facebook, Twitter, WhatsApp, Instagram, YouTube and Messenger (Fig. 6) which did not exist or barely existed during the past major outbreaks,

have enabled us to stay connected in these times of “social distancing”. These platforms have enabled connectivity and helped individuals psychologically in times of isolation. Even though it cannot replace “in-person” contact, but it has helped people across the world staying more resilient and connected. Various organizations such as WHO and the Head of States of different countries have used the social media platforms also to create awareness and to guide their citizens to keep safe and agile in the times of crises.

Spreading Fake News on Social media

“False stories that often appear on social media, are usually created to influence political views or as a joke”. In the on-going situation, the fake stories about nCOVID-19 pandemic are being labelled as “infodemic”. In the digital era, where social media acts as an equal participant to spread information and shape perceptions, this media has reported content expressing hatred against the Chinese community and their eating habits. This misinformation and sensationalism have created fears and anxiety in the minds of millions. Amnesty International has warned against such kind of discrimination and anti-Chinese or anti-Asian xenophobia. In India, hatred-related incidents have also been reported. For example, a woman from Manipur was attacked in Delhi’s North Campus area, where a man spat on her and called her ‘Corona’.

Steps Taken to Curb Fake News both in Media and Social Media

The Government of India (GoI) approached the Supreme Court to “prevent fake and inaccurate reporting” in media, as the spread of fake news could create further panic in these times of crises in the society. The Supreme Court, however, declined to interfere with media’s free speech and expression to discuss the various issues, but at the same time urged media to “maintain a strong sense of responsibility”. For example, due to China’s control over its media, the reporting of the initial phases of the outbreak of nCOVID-19 was not shared with international media partners. On 20 March 2020, Government of India (GoI) issued an advisory to top social media companies, including Facebook (parent company for WhatsApp and Instagram), YouTube, TikTok, Share Chat, and Twitter, to contain the spread of fake news or misinformation about COVID-19 to remove the fake information from the respective platforms. In response to the advisory, WhatsApp Inc introduced a feature, which will allow users to verify forwarded messages on smart phones and web as well. However, as a limitation of this feature, not all forwarded messages could be verified on the application (WhatsApp), but only frequently forwarded messages.

Conclusion

While this difficult phase of global disruption can be overcome, the scars of this wild turbulent time will remain in the minds of the people for long time. More so also the role played by mass media. Before the outbreak of this pandemic, mass media with its modern techniques and technologies has converted this 'globe' into a 'village' and that essentially has helped it in playing an extremely pivotal role in the early stages in the dissemination of outbreak of the pandemic, its associated health problems, preventive and curative measures. And it is still continuing to help governments across the world in controlling the spread of this disease and managing healthcare emergencies, in managing economic crises, businesses, 'work from home' job needs of various professionals and educational needs of the students.

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Time to be Vocal for Local: Uplift Indian Economy Post Covid-19 Crisis.

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Abstract

Even before the Indian independence and post independence, people in India tried their might to push for swadeshi movement very hard and got meager success. But the novel corona virus has led and induced in the hearts of many Indian intellectuals to rethink about why we can't do something for ourselves to safeguard our interest and our country's economy. It may be preparing sanitizers, masks, or any other protective items related to health which is found to be necessary for survival during this pandemic situation. Through this paper, we would like to highlight a number of steps we can inculcate to boost up our economy post Covid situation.

Keywords: Independence, swadeshi movement, novel corona virus, intellectuals, economy. Etc.

Introduction

While 'Vocal for Local' has become the recent trending phrase in the last few weeks, it is an extension of the 'Swadeshi Movement' idea conceived by some great freedom fighters of the country, including the Father of the Nation, Mahatma Gandhi. The movement, which began in the early 19th century, called for the use of locally-made products. The trend was there for some years before Economic Liberalization started in the wake of the 1991 economic crisis, which led to a gradual rise in FDI with the introduction of global brands into the country. Now it is the right time to come back and make vocal for local our motto to promote our own people's product. "Global brands can start locally, when local people start marketing and branding outside the particular localities also, after sometimes they become global".

Every Indian should spread vocally for local to go up to global level. The idea is to create more local brands and take those to the global arena. It is only possible with a concentration on technology-based companies that can be scaled-up faster. We should focus on home-made and home-grown companies which would encourage investors to look for enterprises and other consumer brands as the idea is to not only increase domestic consumption but also intensify the export activities and rely less on imported

products and hence international brands. Even we can start back some local brands which were stopped due to one or the reasons, as we have now government support with many schemes like make in India, Atma Nirbhara Bharat and Swadeshi etc.

By adopting vocal for local, we are not denying globalization, but producing a new form of it. Atmanirbhar Bharat is the new vision for India is neither exclusionary nor isolationist. Local people helped us when we have the difficulty to get even basic needs during covid19 crisis, through this crisis and have helped us to survive and also our family. By improving our local manufactured products and its producing efficiency, we can compete with the world and at the same time we can help localities.

To Create Jobs

Necessity is the mother of invention. Or in this case, scarcity is the mother of invention as we saw there was scarcity of food shelter and clothes. During that time local people prepared food and supplied to the needy people, some helped for shelter and others helped for distributing clothes. If we continue the same in large scale for the sake of profit, after the crisis and market it we can extend the same even to global level. In situation like these, when jobs are hard to get, it is important to adapt to the situation positively by creating new jobs through ingenious new methods. This could mean finally starting up our own dream business via an online or even offline marketplace, starting an virtual and offline consulting business to help needy people in remote areas or any other such business idea on our mind!. With wonderful software solutions being developed, the opportunities are limitless. But people should have the mind to start such business by taking any organizations help. Even in education field, hotel, clothes each and every field we have got or found new way or path during these pandemic situation as necessity is the mother of invention. Some needy products like masks, sanitizers during the crisis to overcome also made new arena to produce such products as the demand for those products are very high. That has helped many to get job and even helped for those who lost job to find a new lease of life during this pandemic situation.

Some ideas to create jobs in small localities with their prioritized grown and usage of products at that particular locality.

- Divide the states as per their taste of food, culture, life style and the availability of natural recourses, agricultural products etc.
- Must work extensively on the resources available as per the demography.
- Micro industries are required at large scale at all districts to avoid the influence of capitalist businessmen.

- Micro industries will help to decentralize the growth and distribute products locally and hence reduce the cost of transportation, petroleum products and pollution and save environment at greater deal.
- Solar power generator is a must to produce electricity and extensive usage of water from canals must be limited to only agriculture as Indian economy largely dependent on agriproducts and agri markets.
- We need to improve digitalization of marketing right from vegetable vendors to any electronic products marketing.
- Small scale industries must be uniformly distributed to all the districts and chain market need to be developed using digital media to balance between demand and supply and hence we can create confidence in agriculturist, vendors and users.
- We need to create our own electric goods, auto parts and their expertise to be independent of threats of modernization in all fields and that knowledge must go to smallest of small cities and villages.

Best idea to go vocal for local in our business:

For an economically self-supporting India, we need to rise to the occasion and support our local businesses. We need to create products and services that are made in India, made for India, serve for India and also to serve the world larger extent. We need to refocus our strategies from being profit-driven to becoming more people-centric. There needs to be a greater concentration on supporting local products. Home-grown and home made products shouldn't merely be purchased but also liberally promoted and marketed and it should also be digitalized.

We should encourage local manufacturing to strengthen supply chains across the country and improve the economy. The strengths of our country when it comes to stepping up in times of distress. Creating an Atmanirbhar Bharat means having to be whole and soul self-sufficient and producing and supporting localities and their services. It is very different from the earlier isolationist and protectionist movements around the world. A few other measures include trying to reject imports and the procuring of domestic goods. Replacing import by an objective that drove nationalist economic policies in the 20th century is back.

We need to revive local industries that were earlier taken for granted. It is the right time to usher in economic policies that produce sustainable incomes, aid in creating job and boosting the local economy. With different apps like Yelo, you can create your own online marketplace to serve the needs of citizens across the country. Tookan allow you

deliver services to even the most village areas via contactless delivery to ensure complete safety during the COVID-19 times. Many such companies ensure the same policy during this pandemic situation and helped the public go out of their house and purchase, especially old people who do not have any support from their family and friends they are the most risky people according to WHO. The present COVID-19 pandemic has forced industries, companies and businesses to rethink their working strategies. Many businesses used this opportunity to boost production and exports.

Conclusion

Thought of vocal for local should be echoed everywhere as we are realizing that self-reliance is better than self-sufficiency to achieve Atmanirbhar Bharat.

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Contextualizing Ajrakh Textile Traditions on Contemporary Fashionable Protective Gloves during Covid-19

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Abstract

Amidst the global pandemic and after two consecutive lockdowns and one subsequent graded ease-down, when India's prime minister exhorted India to go vocal for local, it receives collective appreciation and acceptance. From time immemorial special care has been taken to bring about the talent and creativity of the local artisans to the market. Unfortunately these efforts haven't seen the light of the day because of no support from government as well as any organization. Government and institutional support will help harness India's diversity in which nondescript towns has products that are unique and have commercial viability. A craft that has a great history and is practiced from centuries in India is Ajrakh. It originally was done by Khattris and this textile block printing technique is still prevalent in Rajasthan and Gujarat. This highly skilled laborious work extensively uses natural dyes is recognizable by intricate geometrical motifs and designs. Each person should take the craft's value and worth as a honourable heritage which needs to be preserved and documented through visual style forms. Ajrakh prints are found in many styles like handloom sarees, blouses, waistcoats, etc. This study is about designing hand gloves which is innovative and unique. These are characterised by geometrical patterns, spiderweb, paisley, floral wines in elegant natural colours like indigo blue, rust orange and so on. It is aimed at the use of authentic Ajrakh Fabric, with cotton knit fabric and designing protective gloves. The objectives of this paper are combining traditional Ajrakh and create cotton knit coverage gloves which can be reused multiple times. It is durable as well as protective. First and foremost a survey is conducted to understand the market and consumer tastes and preferences. The designs of the gloves are created in various styles and patterns.. Stringent care is taken to regulate that these are sustainable, eco friendly and do not harm the environment. The gloves are produced according to the designs selected. Once the new products are finished a survey for feedback is conducted where it is exhibited to the consumers. Discussions are assessed through the Questionnaires and tabulated in the form of bar graphs and pie charts.

Key words: Pandemic, Ajrakh, Protective gloves

Introduction

Times have changed radically. India has a massive textile industry producing world-class textiles. Due to the present scenario many countries of the world along with our India's Textile industry is bleak, even then the future looks bright because of the amazing talents of the local craftsmen, business oriented population and the unflagging spirit of the Indian consumers. Now the need of the hour is a combined act called 'Swadeshi Movement' conceptualized in 1905 during the Indian Independence movement which highlights the need for "Vocal for Local". With this movement patriotism and nationalism bloomed though it gave way to a good economic business strategy. Industrial revolution may have brought in automatic machineries and artificially manmade fibers, yet if one needs to revolutionize swadharma and bring the rural and urban population into one umbrella, Vocal for Local is absolutely necessary. Today formal and technical organisation tries to emulate the brisk walking of Mahatma Gandhi and his volunteers surging on towards Dandi. Brands like Fabindia, Nicobar, and Doodlage are stressing on the act of wearing Indian goods as a symbol of national pride in the 21st century. Hence Ajrakh fabric is selected for this.

"Ajrakh, with its characteristic patterns made using only natural dyes like indigo, madder, etc is no doubt one among the ancient styles of fabric surface ornamentation. It is a block printing technique comprising of geometric motifs mostly exercised in Gujarat and Rajasthan even now. Traditionally Ajrakh printing was done exclusively on both the sides of cotton fabric, but nowadays silk is also used. Ajrakh lungis (sarongs) and pagadis (turbans). So the need of the hour is to create protective wear, accessories for post covid19 era.

First and foremost masks are adapted and universally used by everyone. A new unique concept of adopting protection for hands can be made by using gloves. Gloves are accessories for the hands often covering the whole hand. Gloves create a barrier between germs and your hands. Wearing gloves helps prevent the spread of germs. Gloves act as a shield and help one form a defence against germs one comes into contact with. Apart from following all the protocols of sanitization like washing hands with soad and water, using masks maintain distance, wearing gloves also is a preventive method of contacting germs. The designed ideas are both functional as well as decorative, since it showcases lively intricate motifs such as floral wines, spider web, wheel pattern, paisley styles etc in very subtle colours like rust brown, turmeric yellow, brick red, and indigo blue. Cotton and fabric gloves can keep hands clean and protected. Innovatively protective hand

gloves are to be conceptualized, distributed and marketed to create awareness.

Importance of the study

Gloves protect and comfort hands against cold or heat, damage by friction, abrasion or chemicals, and disease; or in turn to provide a guard for what a bare hand should not touch. Gloves can reduce the number of germs transmitted through cross infection and contamination. Protective gloves should be selected on the basis of the hazards involved in a particular surrounding, occupation and safety is essential. Staff people's safety and health is the highest priority to most. Ensuring everyone is wearing the correct safety garments are of course a big part of life post covid-19.

This study is aimed at the use of pure Ajrakh fabric superimposed with cotton knit to create protective hand gloves. The importance of this is to create awareness of vocal for local products thereby providing a measure of livelihood to rural Indian artisans, thus securing the hygiene and safety of all.

Objective of the study

1. To do research on local artisans and age old traditional printing form 'Ajrakh' and do the processing to co relate 'Vocal for Local' movement.
2. To design range of protective, comfortable as well as stylish Hand gloves of super imposed cotton and Ajrakh fabric. Creation of the design approved gloves, awareness of hygiene and marketing.

Scope of the Study

Vocal for Local campaign's prominent intention is that it provides opportunity to micro, small and medium enterprises a unique identity that has otherwise been the privilege of those who have deep marketing budgets. To amplify PM Modi's message of being 'Vocal for Local' and self-reliability as the country emerges from the shadows of Covid-19. For a country like India to become self-reliant and rebuild its economy a campaign likes 'Be Indian Buy Indian' is most necessary. Awareness to all Indians to use only 'Made in India' products and popularize it in various social media platforms. This will automatically tune customers to check for 'Made in India' tags along with MRP and expiry dates. Hence this study gives scope to offer an easy access point to use of local talent of artisans and procure a means of great momentum of their business. People can also get updated with style quotient during this bleak period of fashion using attractive protective gear.

Research Methodology

The data for any research methodology needs to be procured through two sources ie,

primary and secondary. A neatly formatted questionnaire is prepared for primary source. Books, magazines and journals is acquired for secondary source. Next for analysis of this research colour fastness through rubbing, perspiration, sunlight and rubbing is done.

Limitations of the Study

Every study has certain limitations some of them are inherent in the research design, while some others become part of the study during various stages of research process. The present study is subjected to the following limitations.

The study limitations are connected with the practicalities of traditional printing method and only natural dyes and ingredients. The samples are restricted to colour fastness test.

Methodology

First and foremost a survey is conducted to understand the market and consumer tastes and preferences. Next majorly the sourcing, procurement of raw materials which is pure cotton fabrics, natural dyes, blocks are done. Further for the surface ornamentation ie printing, finishing washes and curing treatments are done. The designs of gloves are created according to the latest trends. Ajrakh printing technique is a laborious and time consuming process and goes through various stages, the first is called 'Saaj' which is nothing but soaking the cloth in a mixture of castor oil, soda ash and camel dung throughout the night and dried to a semi-dry condition the next day, again it is soaked in the mixture, this procedure is repeated almost seven to nine times. After that it immersed in a solution of powdered nut of harde tree which is otherwise called myrobalan which changes the cloth to a beautiful yellow hue and acts as mordant in turn fixes the dye. The fabric is spread out in the sun to dry after calendaring it. This stage is said to be the Kasanu. Next stage is said to be the Khariyanu where a resist is printed to create outline of the design. The resist is a mix of gum Arabic and lime. This outlining is called as Rekh. This is again done on the other side of the fabric if a double sided cloth is to be made.

Black colour paste is made in a systematic way by first fermenting scraps of iron like nails, horse shoe etc, gramflour and jiggery for about a week or two resulting in a yellow liquid forming on the surface. This drained liquid which is ready to be used is mixed with tamarind seed powder and heated for an hour. This is used for printing as a black shade. For a beautiful red colour alum or aluminium sulphate is boiled along with red clay – which is known as Geru, millet flour, lime, gum Arabic, and tamarind seed powder to form a resist printing paste called Kan. This paste is used to print the red areas of the design and this stage is Gach stage. With this the work is dried properly for many days.

Indigo or a rustic blue shade is produced traditionally in a lengthy process taking almost a month. The best quality pigment is a yellowish solution acquired by fermenting natural indigo, lime, casiatora seed which is from the kuwada plant, a salt known as sagikhar, jaggery and water in a vat. A quicker method is just putting together natural indigo, caustic soda and hydrosulphate for two days. This is infused into the cloth, washed and dried thoroughly and this is the Viccharnu stage.

The next dyeing process is the madder dyeing. For this madder root powder and a solution of tamarix from the dhawri tree is boiled together, fabric dipped in it, washed and dried, resulting in the black and red coloured areas to develop revealing the resist areas white. This stage is the Rang stage. Though madder is used traditionally nowadays henna and rhubarb root is used. Further these above explained process is repeated again to get the perfect effect known as minakari or double. Inbetween saw dust is applied to avoid the print from smudging. Pomegranate peel water and turmeric solution is sprayed at intervals, washed and dried twice. This is the complete process of the craftsmanship of Ajrakh printing.

Conclusion

While it's the International brands that have shut shop right now, it is the small artisans and workers (most of them located in Asia) who are taking the brunt of it all. To add to it, small, home grown businesses face a huge crisis right now, especially the enterprises that rely on ethical and sustainable business practices for the production of their goods. Hence this study focuses both on protections during covid-19 period as well as using our own local products. Fashion has changed, not diminished when one talks of its value. And, now, more than ever it gives the consumers the power to change lives. Its high time all citizens to go for #vocalforlocal, a small thought that literally has the power to change lives, transform the fashion industry in India, and elevate it with purpose and meaning. Consumer awareness is most necessary in restoring our Culture and utilise our own traditional treasures. It is a responsibility and duty to renew the rich Indian heritage, appreciate the excellent craftsmanship of our skill artisans workmanship and hence identify their hidden talents, bring it forth to the present generation.

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Prospects of e-Commerce on Employment in the Challenging Time of Covid-19 Health Crisis

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Abstract

The ongoing health crisis around Covid 19 has affected all walks of life globally. During these challenging times, agriculture and allied sectors have also faced problems. Hence the present research studies, the impact of covid 19 on agriculture, actions taken, and challenges faced mitigation measures by Govt. and solution of e-commerce in the field of agriculture. The present study established based on secondary data and processed by descriptive statistics and paired t test. The study analysed the unemployment rate from March 2020 to August 2020 evaluated in many dimensions. The results of the study depicted that, there is fluctuation found in unemployment conveying March to May, 2020 showed increasing trend and May afterwards showed decreasing trend in the unemployment according date wise fluctuations and month wise fluctuations. State wise unemployment fluctuations compared to April 2020 and June 2020 depicted that, there is reduction in the unemployment rate in majority of the states in June 2020. This was because of the release of lockdown and e-commerce supplementation. The research concluded that, unemployment drastically fluctuated in the beginning of Covid 19 and now it is re-adjusting by neo-normal situation. E-commerce took a major role in balancing the lost jobs even though it has also affected by covid 19. With the help of e-commerce a nation can maintain social distancing as well as the trade to balance major unemployment situation in this covid 19 health crisis.

Introduction

The International Labour Organization stated that it predicted a 6.7 per cent loss of job hours globally in the second quarter of 2020, equivalent to 195 million full-time jobs. The lockdown in India has left tens of millions of migrant workers unemployed. As per CMIE's data, the monthly unemployment rate in April stood at 23.52 per cent. The corona virus (COVID-19) crisis has led to a spike in the country's unemployment rate to 27.11 per cent for the week ended May 3, up from the under 7 per cent level before the start of the pandemic in mid-March (CMIE). Soon after a central government directive in late March, state governments set up 21,000 camps to house over 6,60,000

migrants and stop the exodus. Over 500 hunger relief centres were set up by the Delhi government by the last week of March. By 5 April 75 lakh people were being provided food across the country in food camps run by the government and NGOs. As of 12 April, 37,978 relief camps and 26,225 food camps had been set up. Migrants in such camps in Kerala were provided with medical essentials such as masks, sanitizers, and medicines. Soon after the nationwide lockdown was announced in late March, FM Sitharaman announced a ₹1.7 lakh crore (US\$24 billion) spending plan for the poor. This consisted of cash transfers and steps to ensure food security. To help and provide jobs and wages to workers, the average daily wages under the MGNREGA were increased to ₹202 (US\$2.80) from the earlier 182 (US\$2.60), as of 1 April. On 14 May, FM Sitharaman further announced free food grains for the migrant workers, targeting 80 million migrant workers by spending ₹35 billion (US\$490 million). On 20 June 2020 the government launched the Garib Kalyan Rojgar Abhiyaan for the welfare of migrants. The government's 'Atal Beema Vyakti Kalyan Yojana', which provides unemployment insurance to workers who have subscribed to the Employees' State Insurance (ESI) scheme, will cover such workers during the pandemic.

To supplement this unemployment disturbance, govt. has initiated many programmes to cover atleast their food scarcity. But nation need to generate income to provide further. Hence unemployment problem need to be addressed with main interest to earn the income. E-commerce in this crisis can be helpful to supplement the unemployment problems. The global nature of COVID-19 and its impact on e-commerce may encourage strengthened international cooperation and the further development of policies for online purchases and supply. The pandemic has made it clear that e-commerce can be an important tool/solution for consumers. E-commerce can also support small businesses and, by making economies more competitive, be an economic driver for both domestic growth and international trade. The pandemic has highlighted the importance of digital technologies in general, but also several vulnerabilities across the world. In order to implement effectively the social distancing measures aimed at containing the further spread of COVID-19, several governments around the world have encouraged online purchasing as an alternative to physical shopping, and consumers have adapted their shopping patterns and behaviours to minimize risks of getting infected. This has resulted in spikes in business-to-consumers (B2C) sales and an increase in business-to-business (B2B) e-commerce. The increase in B2C sales is particularly evident in online sales of medical supplies, household essentials and food products. Hence the study is conducted to

know the unemployment fluctuations and e-commerce supplements. The research has the following objectives and methodology.

Objectives

1. To evaluate the impact of covid 19 on employment in India
2. To study the role of e-commerce on employment in India

Methodology

The present study conducted on secondary data and researcher used descriptive statistics and paired t test for the analysis of the data.

Result and discussion

To evaluate the impact of Covid 19 on employment in India

In the third week of March, Amazon announced that it would stop sale of non-essential items in India so that it could focus on essential needs. On 25 March, Walmart-owned Flipkart temporarily suspended some of its services on its e-commerce platform and would only be selling and distributing essentials. BigBasket and Grofers also ran restricted services, facing disruptions due to the lockdown. More than 45 per cent households across the nation reported an income drop as compared to the previous year. Various business such as hotels and airlines cut salaries and laid off employees. Revenue of transport companies such as Ola Cabs went down nearly 95 per cent in March-April resulting in 1400 layoffs. CII, ASSOCHAM and FAITH estimate that a huge chunk of the workforce involved with tourism in the country faces unemployment. Live events industry saw an estimated loss of ₹3,000 crore (US\$420 million). Due to the lockdown, daily-wage workers (the urban poor and migrant laborers) were left with no work. More than 45 per cent of households across the nation have reported an income drop as compared to the previous year. The Indian economy was expected to lose over ₹32,000 crore (US\$4.5 billion) every day during the first 21-days of complete lockdown. Under complete lockdown, Up to 53 per cent of businesses in the country were projected to be significantly affected. Major companies in India such as Larsen & Toubro, Bharat Forge, UltraTech Cement, Grasim Industries, Aditya Birla Group, BHEL and Tata Motors have temporarily suspended or significantly reduced operations. The researcher has examined the unemployment fluctuations in the covid 19 situation based on secondary sources available. The results were as following.

Table 1 Showed that approximate loss of the jobs due to covid 19 pandemic in major largest economy countries. Highest loss found in China. India lost 27 million jobs due to covid 19 stood in third position in loss of jobs.

Table 2 Showed the unemployment rate in G20 countries comparing unemployment during March 2020 and unemployment during July 2020. India's unemployment rate fell to 11 percent in June 2020 from a record high of 23.5 percent in the previous two months, as many businesses resumed operations following weeks of closures due to the coronavirus pandemic. The countries United states, France, china, Indonesia, Mexico and Japan also showed decrease in unemployment showing resuming their operations and generating employment again even in the presence of covid 19 pandemic to reset their economy.

Table 3 Depicted the state-wise unemployment rate of India as of March 2020 and June 2020. Unemployment in majority of the states had reduced. A paired t test was employed to know the difference of unemployment before and after corona effect. Test showed the significant difference between unemployment during March (24.39%) and June (9.88) 2020. [t stat (5.67) > T critical (2.05)]

Table 5 Showed that unemployment in urban areas were more than the rural areas. Because majority of the urban population were dependent on non agricultural activities.

Table 6 Analysed the Date-wise fluctuations of unemployment in India from May 30, 2020 to June 22, 2020. The peak period of corona pandemic (March to May, 2020) showed increasing trend (Fig 1) in unemployment. Now, the govt. had allowed majority of the sectors to resume their operations hence May to Aug 2020 showed decreasing trend in unemployment.

Table 7 Showed the month wise fluctuations of unemployment in India. Table showed April and May 2020 showed highest unemployment rate. June, July and proceeding months showing decreasing unemployment due to release of lockdown and restarted their employment activities.

To study the role of e-commerce on employment in India

The enforcement of social distancing, lockdowns and other measures in response to the COVID-19 pandemic has led consumers to ramp up online shopping, social media use, internet telephony and teleconferencing. From the year (FY16) estimate of USD 23 billion, e-tail is expected to reach USD 68.8 billion (67% of the total e-commerce market) by 2022, growing at a CAGR of around 31%. E-tail and allied ecosystem is expected to create ~1.45 million employment opportunities by 2021, led primarily by more than 1

million jobs projected to be created by logistics and warehousing sector. Among all the e-commerce segments, e-tail comprises of the largest share at USD 23 billion and is also the fastest growing segment. The other segments collectively contribute only USD 18 billion. E-tail is expected to grow to USD 68.8 billion by 2022 accounting for a share of ~ 67% of the whole e-commerce sector.

The primary factors that are expected to drive this growth are internet penetration projected to increase from current 32 per cent in 2015 to 59 per cent in 2022. Online shoppers (as a % of internet users) to grow from 12 per cent in 2015 to 40 per cent in 2022. Online spending per online shopper set to increase from USD 239 in 2014 to USD 299 in 2018.

E-commerce contributing in generating employment and improving socio-economic environment

E-tail and the allied sectors, like logistics, warehousing, IT/ ITeS, expected to create direct employment for around 1.45 million of workforce by 2021, a significant jump from the 23,500 jobs which existed in 2012.

E-tail logistics and warehousing leading the employment generation

The overall e-tail logistics and warehousing sector to directly employ more than 1 million people by 2021, becoming the largest contributor in terms of employment opportunities created by e-tail.

Opportunities for skilled jobs

E-tail expected to emerge as a destination for highly-skilled technology jobs employing nearly 0.3 million people by 2021. Besides technology, the regular corporate functions like HR, finance & accounts, administration etc. to add nearly 0.1 million workforce by 2021.

Change agent for sellers, craftsmen, and artisans from smaller towns

Encouraged by enhanced customer reach, higher profits, and improved employment opportunities, 70 per cent of the online sellers are expected to come from tier –II, tier III by 2018-19. Online trading platforms also providing fresh lease of life to artists and craftsmen engaged in traditional art forms.

Empowering women

E-commerce is providing opportunity to women to become independent entrepreneur and enabling them to perform both the roles of a homemaker and career women. Recently launched online portal, named Mahila-e-Haat, and is expected to benefit around 10,000 self-help groups and 1.25 lakh women.

Push for entrepreneurship

Startup ecosystem is attracting young entrepreneurs with 73 per cent of the startup founders are less than 35 years old, and 9 per cent are women. About 63 per cent of the e-commerce ventures have been started by first time entrepreneurs. E-mail employment to grow at CAGR of 58 per cent in less than a decade Logistics at ~55 per cent of e-tail jobs, expected to be the largest contributor at 0.8 million by 2021, driven mostly by the vast number of employees to provide last mile connectivity Core technology jobs expected to see the biggest growth at CAGR of ~64 per cent of e-tail jobs.

Conclusion

The unexpected corona pandemic disturbed the entire global economy by loss of health, loss of jobs, loss of human resources etc. With respect to unemployment, since March 2020, there is a series of drastic fluctuations in unemployment due to Covid 19. But, the data collected on different secondary sources depicted that, unemployment is recovering due resume of operations and e-commerce created employments to recover and rebuild the economy. There is a positive hope that, the slow generation of employment activities, will adjust back to normal situation in coming years.

Tables

Table 1: List of countries with approximate unemployment during covid 19, 2020

Sl .No	Country	Unemployment (March 2020)
1	China	80 million
2	U. S	47 million
3	India	27 million
4	Spain	9 million
5	France	4 million
6	England	7.6 million
7	Canada	2 million

Source: *Economic times, Hindustan times*

Table 2 List of countries with unemployment rate during covid 19, 2020.

Country	Last (July 2020)	Previous	Reference	Unit
South Africa	30.1	29.1	20-Mar	%
Spain	15.33	14.41	20-Jun	%
Brazil	13.3	12.9	20-Jun	%
Turkey	12.9	12.8	20-May	%
India	11	23.5	20-Jun	%
Canada	10.9	12.3	20-Jul	%
Argentina	10.4	8.9	20-Mar	%
United States	10.2	11.1	20-Jul	%
Italy	8.8	8.3	20-Jun	%
Euro Area	7.8	7.7	20-Jun	%
France	7.8	8.1	20-Mar	%
Australia	7.4	7.1	20-Jun	%
Russia	6.2	6.1	20-Jun	%
China	5.7	5.9	20-Jun	%
Saudi Arabia	5.7	5.7	20-Mar	%
Indonesia	4.99	5.28	20-Mar	%
Netherlands	4.3	3.6	20-Jun	%
Germany	4.2	4.1	20-Jun	%
South Korea	4.2	4.3	20-Jul	%
United Kingdom	3.9	3.9	20-Jun	%
Switzerland	3.2	3.2	20-Jul	%
Mexico	2.9	3.6	20-Mar	%
Singapore	2.9	2.4	20-Jun	%
Japan	2.8	2.9	20-Jun	%

www.statista.com

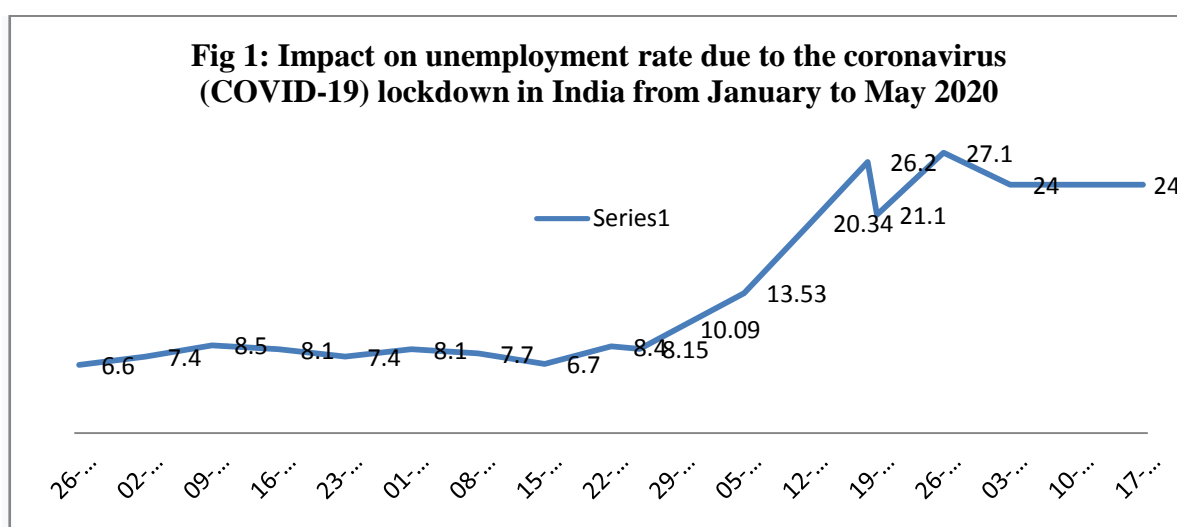


Figure 1 Impact on unemployment rate due to the coronavirus (COVID-19) lockdown in India from January to May 2020.

Table 3 State-wise unemployment rate of India as of April 2020 and June 2020

Unemployment Rate (%)			
Sl.No.	States (India)	March-20	July 2020
1	Andhra Pradesh	17.50	8.3
2	Assam	9.60	3.2
3	Bihar	46.20	12.2
4	Chhattisgarh	11.30	9.0
5	Delhi	44.90	20.3
6	Goa	21.20	17.1
7	Gujarat	13.60	1.9
8	Haryana	35.70	24.5
9	Himachal Pradesh	28.20	18.6
10	Jammu & Kashmir	5.20	11.2
11	Jharkhand	59.20	8.8
12	Karnataka	20.40	3.6
13	Kerala	26.50	6.8
14	Madhya Pradesh	27.50	3.6
15	Maharashtra	16.50	4.4
16	Meghalaya	5.90	2.1
17	Odisha	9.6	1.9
18	Puducherry	58.20	21.1
19	Punjab	33.60	10.4
20	Rajasthan	14.10	15.2
21	Sikkim	24.50	4.5
22	Tamil Nadu	33.00	8.1
23	Telangana	34.80	9.1
24	Tripura	15.30	16.4
25	Uttar Pradesh	20.80	5.5
26	Uttarakhand	8.00	12.4
27	West Bengal	17.40	6.8

Source: Centre for Monitoring Indian Economy

Table 4 Paired test for State-wise unemployment rate of India as of March 2020 and June 2020

	Apr-20	Jul-20
Mean	24.3963	9.8888889
Variance	221.7381	41.448718
Observations	27	27
df	26	-----
t Stat	5.678452	----
t Critical two-tail	2.055529	-----

Table 5 Unemployment rate in urban and rural area of India as of Jun 2020

Sl.No.	22 Jun 2020*	
1	India	14.00%
2	Urban	15.70%
3	Rural	13.20%
*30 day moving average		

Source: Centre for Monitoring Indian Economy

Table. 6: Date-wise fluctuations of unemployment in India from May 30, 2020 to June 22, 2020

Date	Unemployment Rate - 30 day moving average (%)						
Date	India	Urban	Rural	Date	India	Urban	Rural
30-May-20	23.55	25.81	22.56	19-Jul-20	7.95	10.81	6.64
31-May-20	23.49	25.63	22.57	20-Jul-20	7.94	10.69	6.68
1-Jun-20	23.19	25.22	22.3	21-Jul-20	7.9	10.62	6.66
2-Jun-20	22.79	24.84	21.89	22-Jul-20	7.84	10.53	6.62
3-Jun-20	22.7	24.43	21.95	23-Jul-20	7.88	10.47	6.7
4-Jun-20	22.42	24.16	21.65	24-Jul-20	7.79	10.4	6.6
5-Jun-20	22.06	23.48	21.43	25-Jul-20	8.02	10.38	6.96
6-Jun-20	21.72	23.36	20.99	26-Jul-20	7.97	10.39	6.87
7-Jun-20	21.6	22.9	21.01	27-Jul-20	7.78	10	6.77
8-Jun-20	21.33	22.43	20.84	28-Jul-20	7.69	9.85	6.72
9-Jun-20	20.75	21.82	20.26	29-Jul-20	7.57	9.79	6.56
10-Jun-20	20.32	21.16	19.95	30-Jul-20	7.54	9.7	6.55
11-Jun-20	19.7	20.45	19.36	31-Jul-20	7.59	9.76	6.6
12-Jun-20	19.25	19.96	18.93	1-Aug-20	7.64	9.7	6.71
13-Jun-20	18.38	19.47	17.89	2-Aug-20	7.72	9.74	6.8
14-Jun-20	17.9	19.22	17.31	3-Aug-20	7.75	9.7	6.86
15-Jun-20	17.62	18.74	17.12	4-Aug-20	7.73	9.74	6.82
16-Jun-20	17.19	18.37	16.65	5-Aug-20	7.63	9.64	6.71
17-Jun-20	16.82	17.94	16.31	6-Aug-20	7.67	9.69	6.73
18-Jun-20	16.51	17.41	16.1	7-Aug-20	7.64	9.74	6.67
19-Jun-20	15.94	17.13	15.4	8-Aug-20	7.65	9.67	6.72
20-Jun-20	15.4	16.65	14.82	9-Aug-20	7.86	9.72	6.99
21-Jun-20	14.7	16.1	14.05	10-Aug-20	7.93	9.72	7.1
22-Jun-20	14	15.67	13.23	11-Aug-20	7.93	9.65	7.13

Source: Centre for Monitoring Indian Economy

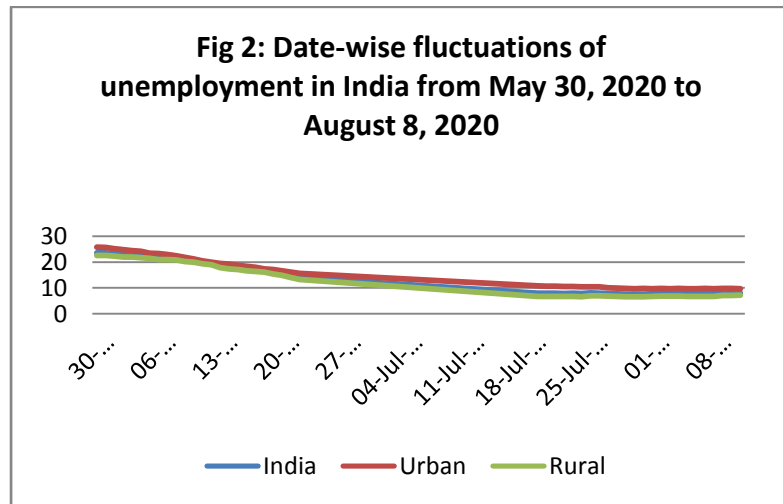
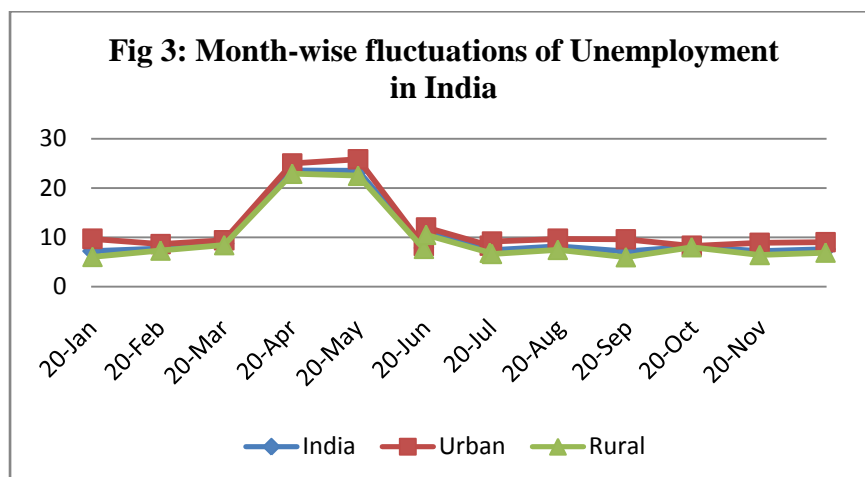


Table. 7: Month-wise fluctuations of Unemployment in India

Month	Unemployment Rate (%)		
	India	Urban	Rural
Jul-20	7.43	9.15	6.66
Jun-20	10.99	12.02	10.52
May-20	23.48	25.79	22.48
Apr-20	23.52	24.95	22.89
Mar-20	8.75	9.41	8.44
Feb-20	7.76	8.65	7.34
Jan-20	7.22	9.7	6.06
Dec-19	7.6	9.02	6.93
Nov-19	7.23	8.88	6.45
Oct-19	8.1	8.27	8.02
Sep-19	7.16	9.62	6
Aug-19	8.19	9.71	7.48
Jul-19	7.34	8.3	6.9
Jun-19	7.87	8.26	7.69

Source: Centre for Monitoring Indian Economy



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Agri-Preneurship in India during Covid-19

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Abstract

Over the years human beings have faced health issues related to the spread of viruses. After Spanish flu, Neepah, Ebola now COVID-19 has thrown a serious threat to society all over the world. The rate is increasing exponentially, on the flip side it has effects on agri-food sector, from the perspective of both food supply and food demand. Lal Bahadur Shastri once famously proclaimed, "Jai Jawan, Jai Kisan" [2]. Today, even as we hold our *jawan*, our soldiers in high esteem, the conditions of the farmers in India are deplorable. Agriculture may today contribute to just 15.5% of the GDP (as of 2017) as compared to 41.8% in 1960, but agriculture is the primary source of sustenance for about 58% of the Indian population [2]. 80% of what food we eat is produced by small hold farmers in the situation where challenges like climate change, pandemic attacks, urbanization, population increase which may reach upto 9.8-10 billion by 2050 living on this planet etc.,. According to UN by 2050 there will be food deficit affecting 300 million people. During these circumstances a shift from agriculture to agribusiness is an necessary path to revitalize Indian agriculture and to bring changes in the upset environment in aspect of business and agri-startups. Sherrie Silver who is Advocate for Rural Youth International Fund for Agricultural Development have quotes that "Farming is often seen as unglamorous but its not just about working in a field, its actually about entrepreneurship as well". So the entrepreneurship in the field of agriculture is footing its step to enhance productivity in farming and farmers income. Agripreneurship refers to entrepreneurship in agriculture where new innovations in the agriculture sector can be taken place with the help of technological adaptability. Agri-preneurship combines entrepreneurship and agriculture to help tackle some of the world present issues from climate change to pandemic attacks and overpopulation. Agripreneurship seek to create sustainable development jobs, empowering young people and protecting the environment. "Agripreneur is the entrepreneur whose main business is agriculture, Agriculture + Entrepreneur = Agripreneur" [1].

Key Words: Agripreneurship, Entrepreneurship, Employment, agri-preneuers, rural development;

Introduction

The outbreak of Corona virus disease 2019 (COVID-19) has become pandemic and resulting in catastrophe for humans. Its effect has also affected the Agriculture on various fronts. This research paper main intention is to know about the current status of knowledge on an Agri-preneurship i.e Knowledge on agriculture Entrepreneurship and using it as a major tool to solve food crisis, unemployment and also problems of farmers in Agriculture sector along with the country's development.

Agripreneurship for employment

In the current situation the Employment has fallen from 40.2% to 28.8%.It provides employment opportunities to the different category of people like:

- Progressive farmers
- Unemployed agri graduates
- Retired persons settled in their native regions
- Women cooperatives
- Self help groups etc.

Agribusiness provides employment opportunity right through from the farm from the food production through the food is actually produces and eaten as well as beyond that along. There are many areas in Agri-preneurship in which the employability can be provided such sericulture, dairy, goat rearing, rabbit rearing, fisheries, shrimp farming, vegetable cultivation, nursery farming, floriculture, sheep rearing and also farm forestry. In addition ,the agripreneurs can evolve initiatory such as agro-produce processing units in which rice and pulses mills need man power to run the process also agro-produce manufacturing units, agro-inputs manufacturing units, agro-service centres etc. An Agribusiness tends to be a large-scale business activity and may involve in farming, processing and manufacturing and the packaging distribution of products. A study by Accenture estimates the digital agriculture services market such as technologies cropping pattern, cropping intensity, drought assessment will hit \$4.55 billion by 2020 globally, thus pointing out to the fact that agri-tech start-ups are bound to grow which can reduce unemployment and increase the skill set of farmers to try out new things in farming. Agribusiness provides people with clothing, food and shelter. It also provides jobs for millions of people in research, science, education, advertisement, engineering, government agenda and their distribution to final trade organizations and commodity organizations.

Agri-preneurship in Economic Development

India as a developing country relies more on Agriculture sector thus the Indian economy is essentially an agrarian economy; it serves as a platform for, food process, agri-prenuership and other related activities. As India is an agricultural country it earns most of its revenues from agriculture. Rural entrepreneurship is a key figure in economic progress of a developing country like India. Rural upliftment through agri-entrepreneurship is the mode of converting developing country into developed nation. Agribusiness pertains to the public and private sectors .The public sector performs the economic and administrative functions of handling with the delivery of goods and services by and for the government. The private sector is not by the government instead it is the part of the economy associated with private profit. So both public and private sector economic development progresses. Agri-preneurship focuses on reducing food scarcity, rural poverty, upgrading farming techniques and saving the environment. Also the concept of agri-preneurship is trust to have essential consequences for poverty step-down in rural areas during COVID-19 as it has potential to increase income and create employment thereby it will have positive impact on country's economic growth. Agri-preneurship is a activity which intensifies on main economic works such as initiation, promotion and distribution of services and wealth also helps in rural development by involving farmers which contribute to overall creation of wealth in country.

Agri-buiseness is the platform where people are applying skills, technologies, knowledge to actually create buiseness to do good which can help increase in income level and employment opportunities in rural as well as urban areas.Thus,Agriprenneurship adds to the monetary framework like it helps in actuating efficiency gains by smallholder farmers and incorporating them into local, national and universal markets. It helps in reducing food costs, supply uncertainties and improving the eating regimens of the rural and urban poor in the nation. It also makes development, expanding and enhancing salary, and giving enterprising open doors in both country and urban regions.

Agri-preneurship impact on Farmers

The 70% of the population is dependent on Agriculture. The rate of farmers leaving agriculture is very high. On the other hand demand for food grains in the country is increasing due to the increase in the population. In this scenario encouraging the agri-preneurship on basis of shared economy principle will solve these problems to a great extent. The current circumstances of the country is directly / indirectly lead to changing markets and create risks for farmers ,especially for small holders ,youth and women.

Agri-preneurship is key in this regard, besides developing regional economics, reducing rural poverty and boosting agricultural yields, agri-preneurship also helps in including productivity gains by smallholder farmers and integrating them into national and international markets. This method also concentrates on opportunities for increasing its efficiency and effectiveness in reaching farmers. Women are involved in indirect activities of preservation and packaging which will reduce pressure of input cost to agripreneurs not only women they can involve other community members in business. As shown in figure 1, the model shows how agripreneurs can contribute to the rural development through different sectors.

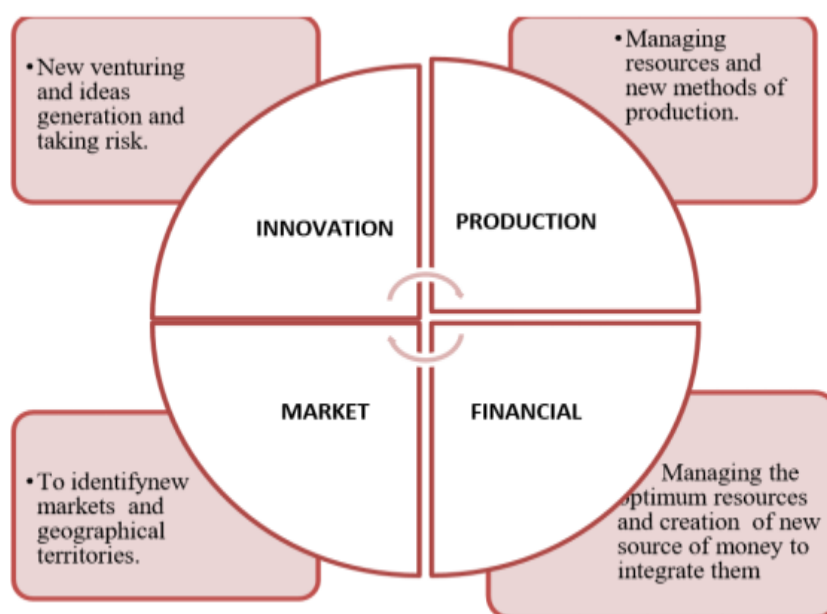


Figure 1: Exploring the rural development model through entrepreneurship in the agriculture sector.

Source-Edited by Christie Rudmann, Specific targeted research project SSPE-CT-2005-006500 [4].

Indian agripreneurs involve themselves to improve agricultural system by integrating with Remote Sensing (which provides bio-geophysical data for agriculture crop monitoring and agro based advisory services), Internet of Things (helps in monitoring agricultural field with the help of sensors that provide information on soil moisture, humidity, temperature and light. These measures will help in monitoring crop health, automating irrigation systems, etc.) and applying analytics can improve crop productivity, minimize farm wastage there by create profitable food based buiseness that can create wealth themselves and family and communities which they are part of as well as providing nutritious accessible and safe food to everybody around.

Role of government in Agri-preneurship

Noticing the importance of agri-preneurship development, a number of government and non-government organizations started promoting agripreneurship and educating agriculture graduates.

Some of the training centres and organizations are listed below:

Manage

The National Institute of Agricultural Extension Management a self-ruling society under the Ministry of Agriculture, Government of India, famously known as MANAGE, is the Indian reaction to the difficulties of management in a quickly developing agricultural division. The institute focuses on providing training, serves as a national level resource institute for accelerating the process of agri-preneurship development, also it supports in the research and documentation and in various other sectors which can be helpful for the successful implementation of the Agri-preneurship.

Morarka Foundation

The willful association which was set up by Mr.Kamal M.Morarka in 1993 which is centers around doing explore by including grass root benefits for sustainable agriculture development. Morarka Foundation has been into zones, for example, Organic Farming and Certifications, Agriculture Extension, Tourism Promotion, Waste Management, Vermi Compost, Conservation of Heritage etc..Today it is being perceived as a directional asset association offering answers for feasible horticulture in the world.In last five years Morarka Foundation has assisted over 500 youths to become agri-preneurs in India. Nearly about 150 youths trained under Agri-Clinic and Agribusiness Centre promotion scheme of Ministry of Agriculture for two months and 70 percent of them have taken up entrepreneurial activities.

Institutional Support for Agribusiness

NABARD is the institution started by RBI to contribute to agriculture, cottage industries and small-scale and cottage industries in rural sectors. It concentrates on agro based activities and also in managing RBI activities which pertains to rural development.

NCOSAMB (The national council for state marketing board)

NCOSAMB is the body of government of India which aids to provide the training centers throughout the country for training the people with skills and techniques with modern facilities to connect new technologies in the field of agriculture.

Incentives for the Agripreneurship and Agri-Business Development

There are some Government and Non-Government agencies supports the agripreneurship development through public-private partnership. Some of them are listed below:

1. To enhance the agriculture production and income of farmers The Ministry of Agriculture, Government of India have set up a specific programme to tap the expertise available in field of agriculture as graduates, irrespective of them being employed or not, fresher or not, can set up an Agri-clinic or Agribusiness centre to offer paid professional services for the upliftment of farmers by advancing agricultural methods.
2. “Small Farmers Agri-business Consortium (SFAC), New Delhi, here graduates in Agriculture or subjects which are related to Agriculture like Sericulture, Horticulture, Forestry, Dairy, Veterinary Sciences, Fisheries, Poultry Farming, etc are provided with free start-up training. Once Agri-entrepreneurs set up their agriclinics and agri-business centres, SFAC will also support in establishing linkages for sustainability” – Small Farmers Agribusiness Consortium.
3. “National Institute of Agricultural Extension Management (NIAEM), Hyderabad, is providing a two months training program for agribusiness people through chosen foundations the nation over. The course contains business management and enterprise skills, with skill improvement modules in the chosen regions of activities by the agri-business visionaries” – MANAGE, Hyderabad.
4. “National Bank for Agriculture and Rural Development (NABARD), this helps in providing loans for Agribusiness centers. An individual can avail loan for the outer ceiling project cost of Rs. 10.00 lakh and for joint/group projects, the ceiling is Rs. 50.00 lakh, pro-rata” – NABARD.
5. The Krishi Vigyan Kendra (PIRENS) Babhaleshwar provides unique vocational training for rural youths and also it has been designated as a recognized training centre by MANAGE, Hyderabad.

Conclusion

Agriculture business enterprise has its particular highlights because of the particular setting of the rural sector. During this pandemic there is an incredible breadth for business enterprise in agribusiness as there is an extraordinary need and this possibility can be tapped distinctly by successful administration of agri components and individual with hazard bearing limit and a journey for most recent information in farming area can end up being a privilege agripreneurs. The farming division has a huge potential to add to the

national income simultaneously giving direct work and pay to the numerically bigger and helpless segment of the society. Agripreneurship isn't just a chance yet additionally need for improving the creation and productivity in farming segment.

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Tourist's Threat Perception to Travel Due to Covid-19

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Abstract

Crisis is an extraordinary threat to the tourism industry that affects tourist's travel plan and causes a full-size drop in tourism demand. This study attempt to examine effect of COVID19 outbreak crisis on travellers' travel behaviour. The empirical results of the current research indicate that COVID-19 has drastically affected tourists travel decision and their perceptions of hygiene and safety. Tourists assume that pandemic has created anxiety and reduced their travel plans for the following subsequent one year. Current work contributes to tourism crisis research and provides future studies insights.

Keywords: Covid-19; tourist threat belief; visitor tour behaviour; hygiene and safety perception

Introduction

The sudden outbreak of novel coronavirus around the world once again proves that viruses have no borders. In December 2019, a coronavirus (COVID-19) case in Wuhan metropolis of Hubei Province China turned into suggested to World Health Organization (WHO), and as of 27 January, 2020 virus became detected in 12 countries. Therefore, WHO identified that the radical coronavirus (COVID-19) can be just like preceding coronavirus outbreaks Middle-East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS) and counseled to keep away from touch with people suffering from the virus and recommended 6ft social distancing (World Health Organization, 2020d). As of 11th March 2020, based totally on severity and outbreak in 114 countries, the WHO declared COVID-19 as a pandemic (World Health Organization, 2020a). The pandemic continuous to grow, and on 17 April 2020, the number of confirmed cases reached to 2074529 and 139378 deaths were confirmed (World Health Organization, 2020b). The crisis affects vacationers' cognitive behavior closer to tour (Wen, Huimin, & Kavanaugh, 2005). Tourists' perceived danger is an essential predictor in their behavior to keep away from tour to infected destinations (Cooper, 2008). Visitors experience of safety impacts their behavior to tour (Zou & Meng, 2019). Therefore, this has a look at targets to recognize the effect of COVID-19 outbreak on visitor travel behavior for next 12months.

Objectives of the study:

- To study the impact of COVID-19 on tourism industry
- To know the impact of COVID-19 pandemic on travelers perceptions
- To analyze the impact of COVID-19 on local residing people at the destination; and
- To eradicate the risk perception of travelers

Research methods:

The research methodology adopted for the study is DESCRIPTIVE and EMPIRICAL RESEARCH

Collection of data: The research work based on **secondary data**. Some data's may published or unpublished, the data's are collected from websites, Magazines, newspapers, journals and report from researches.

Findings

- The finding of the study shows that the pandemic has affected tourist mind-set towards journey. Tourists' notion of threat has a big bad impact on their tour choice.
- Hazardous and decreased tourists journey plan, especially to big crowded cities. However, if they travel, they will prefer to travel with family rather than travelling groups and likely to reduce the length of their stay. This specifies that tourists are sensitive to crises events or activities.
- The pandemic has made public to more attentive about hygiene and safety.
- The study indicates that travelers are more concerned about the hygiene and safety of public transports, recreational sites, and hotels. It indicates that safety and hygiene perception will be a significant factor in travel decision. Therefore, to re-increase tourism supply and demand the relevant organizations, including government and private, should ensure the safety and hygiene of tourists' spots, hotels and restaurants and in public transportation.

Discussion and Conclusion

This study is the first that attempts to research the effects of COVID-19 pandemic on tourists' travel behavior and on their perception of hygiene and safety. The effects indicate that pandemic has created global anxiety among the public, travelling is unsafe and it has decreased tourists travelling plans for the next 12 months. Further, it has aroused tourists concern about hygiene and safety. The pandemic crises have dramatically declined tourism supply and demand, and affected tourists travel behavior intensions.

Social media is one of the important factors that stimulate fear and anxiety (Yu, Li, Yu, He, & Zhou, 2020). For crises control, there is a need to attention on tourist's perception and need to ease their behavior toward crises. The current study suggests future research insights; First future studies can focus on the impact of pandemics on tourists' perception of cross-border tourism on the highly affected destination. Second, future studies can examine the impact of pandemics on tourism investment. Third, forthcoming studies can focus on the negative impacts of crises on hospitality services. Fourth, the impact of pandemics on Sustainable Development Goals (SDGs) 2030.

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Challenges in education and impact of COVID-19 pandemic

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Abstract

Our current education system has faced numerous challenges over time. But never has been threatened of its very relevance as has been the case in recent years. It has been criticized as not equipping students for present job market. This article looks at the challenges the present system is facing, how it is transforming and how the pandemic has accelerated that change. We do not talk here about accessibility of education or the matter of individualized attention needed by student, as that has been focus of many works and policies and we have seen considerable improvement in that regard. Present education system has three other main challenges today. The method or framework of imparting education, the speed with which it needs to adapt and improvement of quality to produce high skilled jobs. Today education has moved outside college and university campuses. They no more hold monopoly on imparting education. COVID-19 pandemic has furthered this change and introduced new major players. This article looks at this trend as well.

Keywords: Pedagogical changes in higher education, COVID-19, Educational Challenges

Introduction

Education is in crisis today. The challenges it faced has been enormous even before pandemics struck. There are many who question the very importance of college education. Many students and teachers are of the opinion that today's education does not prepare students for the world. To resolve these crucial issues facing us today it is imperative to closely analyze them.

Challenges in the current system

Our current education system and its framework were built during industrial revolution with the advent of steam engine and host of other innovations. Cities grew rapidly through industrialization. Industries needed workers. Back then, it was the ability to remember how all the components worked that was important. So the ability to memorize and reproduce was placed at high value. That is the reason our education system places so much emphasis on student's ability to memorize and parrot information for exams but this model has been shown to be outdated. Today we have computers working through AI which are far more efficient at this task than any human possibly can. The world runs on

innovation and creativity. It is not enough for students to just memorize their subjects but to build something on it. This is starkly seen in how students are recruited for jobs after graduate studies. Many are seen to land in jobs that have nothing to do with the specialized study they've done in undergraduate course. Only those are employed who can innovate in their field.

Another crucial challenge we are facing is the rapid development of society the century has seen. Human development has been exponential lately. Adoption of agriculture took centuries to materialize, industrial revolution took decades and the coming fourth industrial revolution is expected to pick up faster. Technologies are changing in a much faster way. This is most distinctly seen in computer education, a graduate computer course will be three to four years and this interval is too long to frame a stable syllabus. It can be seen at times that many technologies seen as relevant at the time of starting the course would have become obsolete by the time students have finished it. Such rapid development of society needs our education system that adapts in an equally rapid manner.

Lastly the threat of jobs being 'sabotaged' by computers. As technology develops more and more low-skilled repetitive jobs, primarily in factories, are being replaced by programmed machines. Though this trend decreases low skilled jobs, at the same time other high skilled jobs are created. This is a general trend seen in an economy. As countries get more developed skill of its citizens too increases.

We have for sometime worked on increasing literacy rate, making sure every child has access to education and we have had some success in it. World literacy rate at 2016 was estimated at 86.3% [1]. Now the focus must also be laid on improving the quality of that education. 60% of future jobs haven't been developed yet and 40% of nursery school children in schools today will need to be self employed to have any form of income [2]. Thus it is imperative to work on accessible and quality education that can prepare students for this future.

From these, we can safely conclude traditional education system is inadequate to meet the demands of this century.

Changing face of education and rise of online platforms

These drawbacks in our educational institutions have reflected in the changing trend we witness in how education is being gained by learners. In many cases we see students, after graduating, are pursuing other courses which are specialized to meet industrial demand. An excellent example of such a trend can be seen in engineering students, who

after graduating struggle to find a job as employers deem them as lacking skills. They often join other specialized courses to equip themselves with job skills required by the industry.

Recognizing these challenges many online platforms emerged to fill the gap. Offering students quality material and an opportunity to learn at their own pace, startups have proven to be very effective. Websites for courses has gained momentum. Many popular websites like Coursera offer courses to be learnt through video lectures and assignments. This has gained massive popularity among learners as learning is now very easy for working professionals as well. Premier institutions like MIT are also modernizing with release of open-courseware (MIT-OCW) material [3].

Challenges intensified due to COVID-19

COVID-19 pandemic led to closure of schools, colleges and universities. Governments worldwide closed all educational institutions as a measure to prevent of spread of pandemic. It is estimated approximately 1.3 billion learners are affected due to school closures [4]. To cope up, various online applications and platforms were used by school teachers and faculties. According national sample survey reported that only 23.8% of households had internet access. In urban areas only 42% had internet access and 15% had internet access in rural households [5].

Thus, reach of such fully online mode of education has been narrow. With COVID-19, existing trends in education transformation was amplified. Online platforms got massive influx of uses wanting to learn new things during lockdown. As academicians were forced to adapt a new way of teaching, their interactions were done through video conferences and messaging services. Video conferencing apps like Zoom, Google Meets and Cisco WebEx gained instant popularity and market. With this academic education has, to a large extent, moved online and it is unlikely that the trend fully reverses after lockdown. Scheduling classes, handing out assignments online and online assessment, though isn't without drawbacks, has a lot of advantages and potential. Students would be capable of learning of learning on their own pace, if videos are uploaded to be viewed anytime. This is more important than it would seem to be. Rather than forcibly sitting in a class facing lecturer and board for about an hour of long lecture, they can now listen at their leisure. If creative learning is made object of giving assignment and assessment, we can hope to see wonders in student development. Thus, teachers must see COVID-19 as an opportunity to revolutionize the way education is imparted. Teachers must strive to be more like

facilitators of knowledge, guiding students towards knowledge, rather than forcing it on them.

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Student Behavioural Stress and Psychological Resilience

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Abstract

Psychological disturbance is a function of many factors in one's life. Individuals witness many such traumas namely depression, obsession, anxiety etc... due to external circumstances and complex life styles. This paper focuses on the parameter 'Stress' acting on students which has up surged due to the outbreak of massive pandemic – COVID-19 globally. A questionnaire was prepared in Google forms based on the above theme comprising of 11 questions and was circulated among the students' community in and round Bengaluru district, Karnataka. 170 responses have been received from the students which are strongly indicating various impacts which are discussed in the following paper. The 3C model is extensively made use of to analyse its assistance for overcoming stress among students.

Key words: Behavioural Stress, Psychological Resilience, COVID-19.

Introduction

If we turn the pages of history, the world has faced many pandemics like Spanish flu; SARS etc. (1) Today we have a similar pandemic called COVID-19, which unfortunately has no known vaccines so far. This pandemic is believed to be man-made and was originated in Wuhan city of China in a small scale and now has spread globally. COVID – 19 has been the worst nightmare till date and known to be an invisible enemy that is creating an episode of world history. More than 7.5 million infections have been confirmed in 188 countries and territories including atleast 4,21,000 deaths. [2] It has created a sense of fear in people. Our life has been turned topsy-turvy. Many are working tirelessly which includes health workers, police, essential service providers, scientists, etc. to save us from the evil eye of this pandemic. We can help them reduce the spread of COVID – 19 by staying indoors and practising social distancing. COVID – 19 is known to be highly contagious and the present generation did not have any idea that they would face such a situation and so did not know how to respond to this pandemic. With the emergence of COVID – 19 we are exposed to many things such as lockdowns and social distancing which the current generation were not familiar with and are facing problems in negotiating with the crisis. During the lockdown period, people have been asked to stay inside their homes due to specific risks to not just themselves but

also their loved ones, if they move freely. Our country, India observed four lockdowns so far with various restrictions and is now observing phase 5 [only for containment zones]. Lockdown became a nightmare for millions of people which forced them to numerous challenges. Thousands of migrants were made to move out of major Indian cities and were left with no jobs and homes. While migrating, many people have died due to starvation, exhaustion, road and rail accidents, police brutality and denial of timely medical care. [3] Liquor shops, malls, entertainment sectors, IT-BT companies, Industries, business activities, etc. were shut down and the economy took a big hit.

Of the various problems created by COVID – 19 lockdown student stresses is of important matter of discussion as it can lead them to the darker end of life and may be fatal in some cases. Firstly, students are not matured enough to negotiate with this crisis and everyone are not prepared to face this and the kind of reciprocations are different too. Even though the initial stage of lockdown made them free birds later it became stressful for them. It also introduced them for online learning. Students faced many problems and found it as a lot in their plate. Students found online classes itself as stressful but it is important to cope up with the situation too. However there were many aspects which made them think so. Online tests, assignments and network issues had a major role in creating stress in them. There were logistical problems especially for rural students. Some are even not in a position to afford laptops or mobiles and comparing it with others itself can put them into stress, depression and even prove fatal. [Ex. Kerala student suicide case][4], these are one face of the problems.

On the other hand, we had students with behavioural changes. With no activity to distract them, negative thinking, anxiety and worries take over the mind. Fear of having forgotten something and negative expectations of forthcoming events, sufferers of stress often find difficult to switch off. When they get lost in their negative emotions, they may have difficulties in sleeping which have many negative impacts like affecting one's overall health and making them prone to serious medical conditions such as hormonal imbalance, obesity, high blood pressure, heart problems and diabetes [5].

When students get low, they may face problems of depression and anxiety. Anxiety triggers emotional and psychological changes in one's body to help them deal with pressure. These changes often affect the stomach and digestive tract and

can make them lose their appetite. If stress is the reason, their hunger usually returns once they are feeling more relaxed. So there may be change in their appetite.

During the lockdown period, some students do not involve themselves in any of the activities and productive work. Some students would have adapted to mechanical lifestyle and hence would spend their time merely in using mobiles and continuous use of mobiles makes them lazy and tries to avoid responsibilities. They start procrastinating things and find reasons for everything. This may further lead to physical and mental aggression. Once our routine changes, it affects our biological clock and behavioural changes are observed. Continuous exposure to electronic gadgets may result in addiction and also reduces our thinking ability.

Each and every individual is facing problems, reacting, coping and doing their best to adapt themselves to this situation. Be it a child or a student, adult or an older person, everyone are coping, struggling and suffering externally as well as internally. A person with a sound mind can lead his life peacefully and to have that mind we need to work on many aspects. One should be able to control their mind instead of being a slave to their mind and it is possible only when they are disciplined, sensible and hardworking and have a peace of mind. One should not be idle and alone especially in times of lockdown as it would take them to more sufferings, stress, hopelessness, depression and anxiety. Many models have been proposed to curb stress and anxiety of which 3C model is most popular amongst them. The 3 C's stands for Care, Connect and Create [6,7].

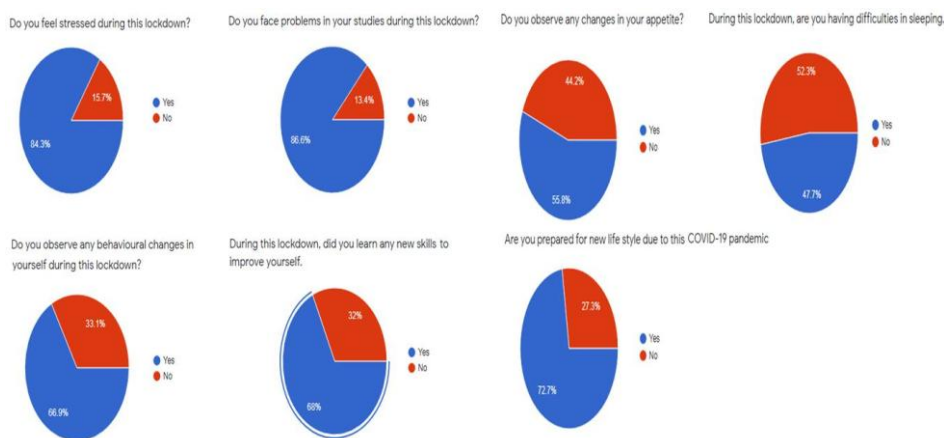
Care: Care is reflected in the belief that self-care practices are very much needed for personal well-being. People can indulge themselves in variety of activities keeping in mind about their favourite things, which would help them to lead a better life. Care could include physical exercises, spiritual practices, hobbies, learning new language, mentally challenging tasks etc. On the emotional front, one can actually make a list of things that they have taken for granted and a gratitude practice is an excellent antidote to anxiety. One should stop checking news and social media for the wonder to happen. Rather focus on positive things which can boost their mood. The practice of mindfulness possesses many psychological benefits like decreased stress and anxiety [7]. It can be mere eating in a mindful way enjoying every last morsel or meditating for hours focussing on breathing. So it all depends on the way we look, it can be forcing to practice self-compassion, mindfulness that we often overlook.

Connect: This refers to the importance of human contact and support which acts as an efficient resilience factor. Staying between four walls has become so hard especially for extroverts, for those who always enjoyed social gatherings, we are not able to socialize the way we are social beings and thus it is quite a challenge to stay at home. But we are leaving in a technological era which provides us with various ways to connect with our loved ones. There are many applications like WhatsApp, Duo, Skype, etc. which allow users to have video chat. This will help to decrease negative emotionality and increases positivity. One should talk, communicate, express and seek help from their loved ones when they are low and they should realise that they are not alone. Instead of complaining, it is the time to build a more intense, quality relationship with those leaving with us under one roof. It is very important to check on your friends, families and being in regular touch with them can help them as well as you to have positive thoughts and to create meaningful connections.

Create: This is all about, the way a student creates opportunities to upgrade him/herself. As we are all stuck in houses, we have got enough time to make use of it more efficiently. It is an excellent time to prepare for competitive exams, to take an online course, to read a book, to explore hidden talents, to watch movies and web series that you always wanted to watch but couldn't due to lack of time. The studies of neuroscience reveal that our brains can't stay creative or productive for long hours.

Methodology: A survey was conducted in Google forms and circulated among the students [8]. 11 questions were framed based on the theme and 170 responses were received. Based on the responses, the results were obtained, which is discussed in this paper.

Results and Discussion: The questions asked in the Google forms along with the response graph is shown below



Seven questions which are Yes/No type is analysed and discussed in detail.

SL No.	Google forms questions	Percentage of majority responses	Discussion
1	Do you feel stressed during this lockdown?	84.3% feel stress during lockdown.	Students feel stress during lockdown due to increase in covid-19 cases, online classes, online tests and assignments.
2	Do you face problems in your studies during this lockdown?	86.6% face problem in their studies.	Online classes are conducted due to the closure of schools and colleges, which is not effective due to technical constraints.
3	Do you observe any behavioural changes in yourself during this lockdown?	66.8% has observed behavioural changes during this lockdown.	Stress due to lockdown will impact on emotional status of a student which influence on the behaviour of the students.
4	During this lockdown, did you learn any new skills to improve yourself?	67.9% has learnt new skills to improve themselves.	Lockdown has given enough space and time for students to learn new skills.
5	Do you observe any changes in your appetite?	55.7% have observed changes in their appetite	Emotional and psychological changes affect the stomach and digestive tract which make to lose the appetite in students.
6	During this lockdown, are you having difficulties in sleeping.	52.7% have difficulties in sleeping	Due to lack of activity, anxiety and worries take over the mind which influences on the sleep cycle of an individual.
7	Are you prepared for new life style due to this COVID-19 pandemic?	72.6% are prepared for new lifestyle due to covid-19	Students are ready to cope with the covid-19 crisis which includes social distancing, taking precautionary measures like wearing masks, frequent sanitization, etc. which has to be followed to co-exist with this pandemic.

Conclusion

From the question asked in the survey, it is strongly evident that the prime reason for the students' stress is 'Staying between four walls'. From similar results we are able to clearly conclude that, students are experiencing significant levels of mental stress due to increasing number of online classes as a result of lock down due to COVID-19. To curb the above problem of stress, 3 C's model (Care, Connect and Create) is strongly recommended which elevates the students' morale and helps in cultivating resilience during COVID-19. Other than these models, it is also important for a student to know what actually uproots him / her from the stress. Parents also will have a significant role in preparing their children physically and mentally to face challenges. Parents should share a pearl of wisdom and expose their children to challenges instead of saving them in a cocoon always.

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The Impact of Mass Media during a Pandemic: Prevent the spread of Misinformation on Mainstream Media and Internet.

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Abstract

This study seeks the initiatives taken up by the mass media before the impact of pandemic and how the media was prepared to handle such a task. It also seeks the impact of large scale spread of misinformation during this period and how prepared was the world to handle this issue. We try to understand the measures taken to reduce the dissemination of falsified data released in media during the pandemic. By thematically placed information on media and quantitatively analyzing the misleading information put forth by the world and its media, the study also reveals the damages caused due to believing such information. We conclude that while countries and their leaders have different stances and political innuendos to oblige, the effects of the pandemic seem to surge. Yet few countries have effectively managed to handle this situation by limiting the fake news. We further discuss the measures taken by those countries to limit them.

Keywords: Dissemination; Mass media; Effect; Misinformation; Pandemic; Consumers

Introduction

Mass media is a platform to reach and communicate to people and share an ideology. It is the means of communication used to reach the large crowds of the general public. The most frequently used platforms for mass media are Internet, television, radio and speeches. The general public typically relies on the mass media to provide information regarding political issues, social issues and entertainment. The mass media play an important role in the circulation of verified and legitimate information on the nCOVID-19 pandemic, yet this has not been possible in today's Digital world due to massive platforms of mass and social media have very little regulation to contain the miss information on those platforms which has directly led serious consequences like death in most cases.

Review of literature

Ten decades after the disappearance of the infamous Spanish flu, its ghost is threatening again. Around the old people are panicking and buying drugs to the diseases that don't have existed yet. In September 2005, Dr. Nabarro, the World Health Organization's public health expert coordinating the response to avian influenza, told the Associated Press that a global avian influenza pandemic could kill 150 million people

worldwide. Study finds the risk of a pandemic and answers the question if stockpiling is the right answer? The study found that the perceived threat of a hypothetical pandemic of avian flu among human's fuels fear. The avian flu, winter flu, pandemic flu and Spanish flu were often confused and involved. The study also showed that the stockpiling antiviral drugs lacks an evidence base and is costly. The energy unleashed by the fear of an epidemic should be directed at tackling real health problems (Bonneux Luc and Van Damme Wim, 2006) [1].

Qualitative Analysis of the misinformation spread during the pandemic:

Covid-19 has resulted in the greatest accumulation of fake news or misinformation during the time of a pandemic. The misinformation was largely about:

- The Origin of the pandemic
- The scale of the pandemic
- Diagnosis
- Number Of infected people
- Treatment of the disease
- Number of casualties

On mass media, tabloid media and conservative media. It is also being claimed that this false information was spread through covert agencies to create distrust in the media by countries like Russia and China. Many journalists have also been arrested for the dissemination of misinformation during a pandemic. The Guardian (newspaper) [2] mentioned the early signs of misinformation spread as early as 31 January 2020. I have stated below a few topics of misinformation that were being spread around during that time. The dissemination of misinformation began with the origins of the pandemic which started by a video of a woman eating bat soup in Wuhan, to which she received death threats. Other conspiracy stated that the pandemic was in fact a bio weapon, which coincided with the impeachment trials of the president of the United States. The scale of the pandemic and the type of transmissions it is capable of were also lied to in the media. The diagnosis and the symptoms were called on by the media way before that 9 has had even begun they also lied about the number of people who are infected. In the case of treatment of disease, the President of United States made comments about a miracle drug called hydroxychloroquine which he claimed to be the cure of coronavirus. He also claimed during his press conference that drinking or injecting disinfectants into your body will kill the virus, he also stated that the virus could be killed by inserting a UV light into the body, which were completely false and led to a huge number of unnecessary deaths

and created a shortage of supply of the drug to people who actually needed them [3, 4]. Countries like Brazil have stopped giving out the number of people who are infected [5] and the number of casualties in the country if this isn't a suppression of freedom of speech and violating the ethical laws of humanity, I don't know what is. Many more instances have been recorded by BBC.

Research Methodology

Statement of the Problem: To find out why consumers claim the information available on mass media to be misinformation and how it affects the people who do. To analyze why consumer perceives misinformation as legitimate information.

- To study the Consumer's thought processes and how they can limit the spread of misinformation
- The study is how media as platform have taken the initiative to limit misinformation.

Scope and limitation of the study:

- The study helps to narrow down on the issues we face and gets us to the root source of the problem.
- The study shows what kind of changes must be implemented to improve the ultimately reaching a win-win situation

Limitations:

- Although most of the decisions we make are driven by the things we see and perceive on mass media. Sometimes there is an underlying issue that the consumer doesn't want to address about their thought process
- Often the misinformation dispersed on social media is done by BOTS and the issue of regulating them can be tough as the social media platform themselves use it as a trendsetter to engage more people in a conversation.

Methodology: In a span of 3 days I have conducted a survey with a wide variety of demographics. The geographic location of the survey mostly being Bangalore. This survey was conducted by two methods:

- Person to person interaction over call, video call through platforms such as Google Duo
- Survey conducted with the help of Google Forms helps gain a unique perspective.

The survey had a set of 17 particular questions that would help me understand the things I wanted to know for this study, these questions also helped me understand that majority of the consumers as to why they were not satisfied the way mass media handled the

pandemic situation they were also worried because the mass media chose to create fear and panic instead of creating awareness. Few of the responses on the survey had to be omitted due to exaggeration and unnecessary points.

Findings

The survey gives a unique perspective on the information we perceive. Here below I have compiled a list of all my findings obtained after doing the study

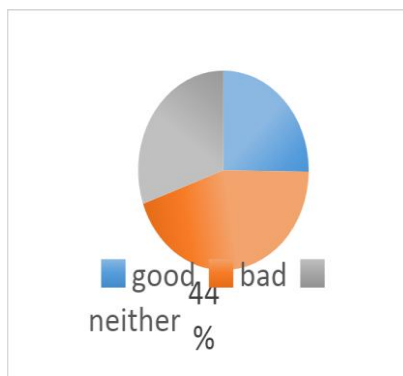
- Consumers often thought that the data they perceived from the media was legitimate.
- Most consumers unable to differentiate misinformation from the real information.
- Initiatives taken by the mass media platforms were not enough to limit the spread of misinformation.

Data Analysis

The findings made during the study/survey were based on the data presented here:

Parameter	No of responders	No of responders
Satisfied	29	25.21%
Not satisfied	51	44.34%
neither satisfied nor dis-satisfied	35	30.43%
Total	115	100%

Are you satisfied by the way the world media handled the pandemic situation?

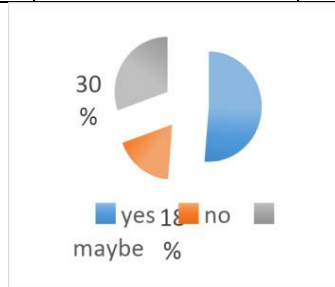


Analysis/interpretation: from the survey that most consumers (44.34%) were not satisfied by the way the pandemic was handled by the media. 30.43% of the consumers were neither satisfied nor dissatisfied and the rest were satisfied.

Was there any conflicting information you perceived from the mass media?

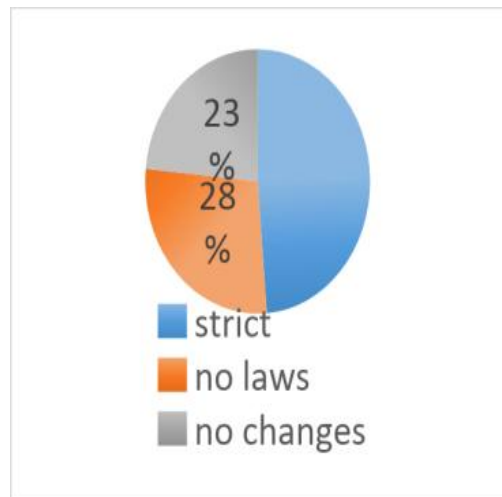
Analysis/interpretation: from the survey we can say that the majority of the people were confused by the conflicting information they perceived on mass media, the data suggest a strict call for regulations in the realm of the mass media as it’s clearly shown above that the people are deeply affected and can have grave consequences on their lives.

Parameter	No of responders	No of responders
Yes	59	51.30%
No	21	18.26%
Maybe	35	30.43%
Total	115	100%



Parameter	No of responders	Percentage
Strict laws	56	51.30%
No need of regulation	32	18.26%
Keep it as it is	27	30.43%
Total	115	100%

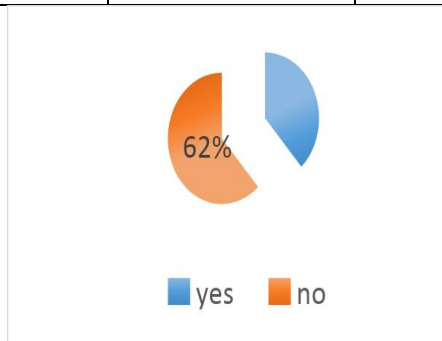
How likely would you prefer the government to impose more regulations on the mass media?



Analysis/interpretation: The consumers would like the government to impose stricter and more specific regulations to limit the spread of misinformation on mass media.

Do you think that the NEWS should use sensationalism, opinions and hypothetical scenarios while presenting them?

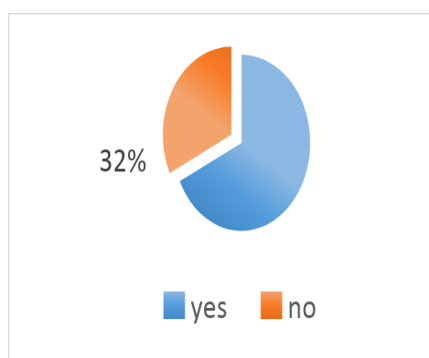
Parameter	No of responders	Percentage
Yes	44	38%
No	71	62%
Total	115	100%



Analysis and interpretation: majority of the consumers believe that sensationalism opinions and hypothetical scenarios must not be included in the news which is presented. They believe that it could be propaganda and misinformation which can be portrayed and perceived by them.

Parameter	No of responders	Percentage
Yes	78	68%
No	37	32%
Total	115	100%

Do you think the initiatives taken by the social media platforms are enough to limit the spread of misinformation?



Analysis/interpretation: although there are many fact checking systems available today most of them are ineffective and unable to do the job correctly most of the consumers according to the data suggest that more initiatives must be taken up to improve the system that limits the spread of misinformation.

Conclusions

What exactly is the role of a mass media during a pandemic? To inform its consumers with legitimate information by cross verifying it and present it at the earliest possible. The users of the mass media must also identify the false information and not fall prey to them, to the less fortunate members of the mass media, the people with the power to make change need to bring awareness regarding this subject.

Strength

Mass media becomes a collection of multiple sources of information for a consumer to choose from. The ease of access to information on the internet based on the consumer's preferences. Meaning, people can find what they are looking for. Huge trends on various demographics can be initiated. Analytics, SEO's help the creators to understand its consumers.

Weakness

A challenge to reach consumers and develop a culture is hard. Consumers often found themselves second guessing what they perceived on mass media due to the huge platform and virtually infinite sources of information. The data acquired through various means can be misused and can bring up privacy and trust violations among its consumers. As stated above the mass media is a double-edged sword, the media often takes a dive to the ratings for the greed of profits and ends up creating propaganda, False/doctored information and sensationalism to keep up with the market, this reduces the quality of the mass media.

Opportunities

Mass media has a lot of potential to evolve and as a developing industry they need to employ a lot of ethical journalists. They can also create new jobs for the programmers and the software developers who can help in creating software that helps in limiting the spread of misinformation. The social media platforms must also encourage the content creators to be more ethical and make sure they think of others and their perspectives before presenting it on the mass media and how it would affect them. Google analytics and other third-party services must be taught and encouraged to use as it helps them identify the inbound traffic.

Threats

Weaknesses can easily be exploits. For instance, Cambridge Analytica [6] who had a major role to play in the Brexit referendum which eventually led to a major polarization in the European union and the separation of Britain from the EU. As the dissemination of

the misinformation continues to grow many people fall prey to them and are physically affected by them. The major threat to a good mass media company is the ratings, the huge market and their competitors. Crimes on mass media like cyber bullying, hacking of private information, mob mentality and public shaming on social media still continues to grow.

Suggestions

- Stricter laws like the UK's GDPR laws
- A complete end to propaganda
- Large scale fact checking on all social media platforms.
- Strict surveillance to end the spread of false information and consequences.
- Rating to depend on the reputation of the provider and not on the number of views.
- Set up local news/media agencies to organize and present the information of even the most rural towns.
- Bring awareness in various communities regarding the spread of miss information.

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Hysteria in the Time of Covid-19

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Abstract

The criticism on mass media is not new but with the advent of rapidly going internet services and social media apps it has come to situation to question the news itself. Epidemic is not new to humans. But Covid-19 is the most discussed word in human history. Unfortunately, the news business has taken complete shift as we see daily it's no more reporting facts but giving "alternative facts" thus making news, untrustworthy filed with hysteria and confusions among people. What made this Covid-19 hysteria so much worse that people are no more to know what to believe in or no other than succumbing to fear and chaos which is available 24/7 on TV on internet. Taking vantage, it seems that this is not just the problems with mass media alone but rather human's curious nature towards exaggerated and exasperated lifestyle. The day of "News for nose" is over but rather news for sensationalism and profit is here. Thus, paper dwells into the study of how Covid-19 is wakeup call as well as anomalies which drives mass media.

Keywords: Culture; Social Media; Technology; COVID-19;

Introduction

Mass media on trial?

According to scholar Niklas Luhmann "Few people communicating with large people". All though it seems simple but it is not so with rapidly changing and growing in escapable internet age.

The way people consume the news elements has change drastically or rather dramatically it can have ripple effect at one go through out the society. Before internet, it was largely consumed through TV which can be easily differentiated from living room to personal room. What is the attitude of change mass media which is at the receiving end of the masses itself? There is also another argument that masses are also responsible for the acute behavior towards societal on-going issues to too personal issues of other people, in this case mostly celebrity.

Thus, going back to Luhmann, where he says "individuals takes things personally "which helps in thrives and sustains the business operations. But, the problem persisted even further in unbelievable manner during the pandemic covid-19. Human population suddenly sitting at home and nowhere to go but in order to kill the boredom he logs to mass media which did increase stress, anxiety as well as hysteria. Keeping above things

in mind this people especially explores the disinformation, hysteria and lies propagated through mass media in times of covid-19.

Chapter I

Critique of mass media is hardly exclusive to purely intellectual domains like academia. Even a moderately socially active ten-year old would know when the reporter cleanly clad in suit and tie is making a mountain out of a molehill. Sensationalism, questionable motives behind certain narratives and sometimes willingly peddling false news just because it is for an allegedly noble cause. These are a few criticisms of mass media often put forth by the common man. Often, the reason given for such irresponsible tactics is political – either an ideological loyalty or a financial one to the higher powers. Mass media is thus portrayed as a banal yet powerful brainwashing mechanism employed by the powers that be to mold the minds of the gullible hoi polloi. Although this sounds a tad condescending, studies do support such claims. Books have been written by the likes of Edward Bernays [1] and Noam Chomsky which details the methodology of media manipulations if it can be so harshly termed [2]; books which are now bestsellers and have engendered whole schools of thought. And yet, in the time of a raging pandemic, when arguably ideology and power ought to be set apart for the greater good, we are witnessing perhaps the biggest disservice being done to humanity by the fourth estate.

Reporting timely facts about a global pandemic in the age of the internet has both advantages and disadvantages. Primarily, not much is still known about the disease itself. Whether the blame for it should be laid on China's culture or politics, depending on whether it originated from a wet market or a virology lab a few kilometers away from said market is being debated by intelligence agencies and laboratories worldwide [3]. Chinese officials on social media will have you know that the virus actually originated in USA towards the fag end of 2019. On the other hand, WHO is engaged in a fatal game of delivering inaptly researched conclusions with regard to the virus and then withdrawing these statements after enormous public outcry? As often said by scientists: science is hard. This makes reporting the facts about the virus hard for the typical reporter as well. Added to this is the fact that governments worldwide, barring a handful, are trying to muddle the numbers when it comes to victims of the virus, either to avoid panic or to just paint a pretty picture of a catastrophe.

All of these circumstances give rise to grey areas in the facts surrounding the pandemic. Such grey areas will be pondered over and investigated by a typical, dutiful reporter looking to bring as many facts about the virus into the light as possible [4]. These

grey areas are ostensibly challenges to a reporter. However, it is exactly these grey areas that several news organizations are using to their advantage in order to grab as many eyeballs as possible, regardless of the veracity of the “facts” being reported. Needless to say, this is especially inimical to humanity at large because of the direct, possibly deadly, consequences of such reporting [5].

Chapter II:

Students of journalism these days are taught a sacrosanct principle of journalism: its business. Media houses are brands worth millions, even billions with ties to the elite across all sectors. They are businesses. The monetary aspects of reporting news have demonstrably swelled in importance, perhaps now reaching a zenith or a nadir depending on how you look at it. Smartphones have transformed every single user into a consumer of information. Apps are tailored to deliver information to users based on their search history and preferences are deduced from their time online. Information has been monetized and there’s a fit for everyone. Even when it comes to ideologies, it is hard to demonstrate if following a particular ideology would be more profitable to a news organization. However, being known for having an ideological bent would translate into more readers from that particular ideology. Ideally, news organizations would prefer to be deemed impartial and devoted only to the pursuit of facts and this would guarantee more readers irrespective of political or social preferences [6]. Facts are facts. Failure to stick to these impartial ideals would make earning trust more difficult and hinder growth. However, it appears that news organizations have managed to turn this problem on its head.

Today, we find that news organizations openly indulge in political warfare and flaunt various ideologies. Accusations of being owned by leftists, rightists, libertarians, billionaire X, intelligence agency Y, country Z are constantly levelled at these organizations by the loyal customers of a rival. Here, a little backtracking is in order. It was proposed above that reporting facts about an event should be simple enough [7]. However it is quite clear now that the press doesn’t function to merely report facts. In fact, reporting facts now serves at least a secondary function especially when it comes to the mainstream media. Gone are the days of the romanticized conception of a roving journalist, the only thing standing between an uninformed public and unprincipled power. Much of journalism work now consists of “narrative-building”, selective social justice and gas lighting – which are different ways of saying ‘lying’. So, journalism has flourished, not suffered, by being partial and biased because it now functions not to report

facts, but to distort or reject them. Does this mean that all journalism is bad? Clearly not, since what these organizations do isn't strictly journalism. It's business, and herein lies another grave problem: vested interest. To recycle an abused comic book quote: "Who watches the watchmen?"

It could well be that media houses are the weapons of battling billionaires who in turn have political interests of their own. But, with respect to the contents of this paper, we attempt to ascertain how such an atmosphere of normalized information manufacture is now posing a threat to a humanity already pulverized by a pandemic.

To follow our thread, journalism is now little more than business. This means that news-making translates to money-making alarmingly well. Even during a raging pandemic. In fact, as stated above, a raging pandemic provides a golden opportunity for newsmakers. Deaths scare people. They would like to not be dead. The government is invested with the duty of ensuring that its citizens stay alive. And the government relies on the press to communicate timely warnings, statistics, information and suggestions to the public⁸. The press rises to the occasion and does a remarkable job of reporting news that even the government doesn't have access to which could help save lives. However, a banal presentation of news related to the pandemic wouldn't suffice. The virus itself is a sensational phenomenon. It spreads across a population in geometric progression and has proven to kill in a myriad of ways. A few die agonizingly slow deaths while many others collapse spontaneously. And the public has been weaned on bestselling paperbacks and blockbuster movies about how such viruses will absolutely, positively kill you in a second. Added to this is the history of plagues and other pandemics which were not as grave as 'Contagion', but still excruciating. This splits the reception of news of such a virus largely into two: optimistic dismissal and pessimistic panic. The optimistic camp is perhaps murderously cautious while gauging news about the danger of the virus. The pessimistic camp will only have to report the already chilling facts in a gruesome fashion. A good example is how a linear graph and a log graph for the same data can be used to either soothe or scare readers who may go just by the steepness of the curve without assessing the nature of the graph [7]. Both of these camps will attract more members based on motives stemming from political and financial interests. Even in the long run, when one could expect only one of these camps to have gotten the facts about the situation right, it probably won't happen. There is so much data being compiled by both camps to show how the other camp is exaggerating its claims that an honest appraisal of it all would take months on its own. Some of that data is bound to be utterly false, but most

of it will fall in that grey area which the virus so kindly graces us with. If these facts in themselves aren't enough to distort the truth, news organizations take things to a different level with their presentation.

Chapter III

With most people being locked in their homes, TV news probably sees the brightest silver lining on this virus-laden cloud. Additionally, all other programming including sporting events and cartoon shows has halted temporarily. Bored people almost have no choice but to watch TV news. Even in such favorable conditions, news channels can't help but ensure beyond a doubt that their viewers will tune in regularly no matter what. The only way this can be done is by increasing the drama surrounding this phenomenon. For example, Karnataka has fared relatively well in keeping the disease at bay despite being positioned between two virus hubs of Maharashtra and Tamil Nadu [9]. It also has a huge population of migrants in its cosmopolitan capital and other large cities. Still, the death toll so far is in two figures which are incomparable to the numbers in the two neighboring states. However, if you were to tune into a regional news channel, you would get the impression that the virus is scheduling a personal visit to your home in a couple of days. You will be greeted by jarring soundtracks from action and horror films, graphic design befitting some dystopian RPG, and, narration and editing which would make the most ambitious TV soap producer blush. Vocabulary used to describe the virus includes terms for bomb, explosion, murderer, predator, devil and so on. Also under discussion will be a plethora of WhatsApp forwards and information gleaned from questionable sources with egregious headlines. News anchors have been seen in hazmat suits interviewing public health workers as the interviewees watch on in simple masks and ordinary uniforms, nonplussed. Any information about a new case is treated with extreme melodrama, making it seem as if the victim and their neighbors were all in on some secret conspiracy on behalf of the virus. A deep stigma is created around the issue of infection which could only hinder any efforts to encourage as many people as possible to disclose symptoms. The same phenomenon occurred at the time of the emergence of AIDS epidemic but, at least the conservative activists then had "dirt" on those infected – they possibly engaged in restricted sex practices or indulged in drug use. Whence the need to create stigma and cry doom over a Covid-19 infection, which even an unlucky infant can catch by simply being in the wrong cradle at the wrong time? A disease which is admittedly deadly but can be cured in otherwise healthy individuals (the cure itself would cost the patient upwards of a couple of lakh rupees, besides the abundant social

stigma). The need to create awareness is understandable and even governments have brought out apps to inform people about regions with coronavirus cases which can be avoided. But this does mean that we need to construct a geopolitical analysis of each residential area with new cases. This simply reduces news to what it has oft been accused of being under its venerable veneer – entertainment. Perhaps these channels are only dancing to their viewers’ tunes. Perhaps they feel it is their duty to present news in such a fashion in order to brighten their viewers’ otherwise dull locked down lives. But whatever it is, it is not commendable reporting.

Around February and March, WHO was asking people to avoid wearing masks if they were not infected? With the benefit of hindsight, WHO has now (last week, at the time of writing this) taken a U-turn on this statement. Many countries initially took WHO’s word for it and advised their citizens to avoid masks in public if they were not already sick [10]. This resulted in a massive media campaign parroting WHO’s ill-conceived “measures”. Reporters and news anchors stressed repeatedly how wearing a mask wouldn’t actually protect you, and how it is more important to wash hands. Both of those things are important, but what does stressing that “masks don’t help” get you? A lot of infections even during lockdown. Of course, once countries started figuring out on their own that masks actually help in the case of a virus transmitted via the air, damage control was initiated. But out of the hundreds of thousands of lives lost so far, how many can be attributed to this snafu? No single news organization may be singled out for propagating this factoid, since they were merely repeating what prestigious medical organizations were telling them [13]. However, isn’t it the duty of a journalist to question exactly such statements? If it isn’t, then why were dozens of anonymous accounts on social media doing the same and pointing out that countries which masked up early like Japan saw no sharp increase in new cases [11]. To notice patterns out of paranoia is no great journalistic achievement, but that’s exactly what modern reporting makes it look like [12]. One could attribute at least a handful of lives saved to such muckrakers online but, can the same be said about the press on the same issue? Is it expecting too much?

Chapter IV

Another popular way to spread false information under the guise of credibility is to cite studies. Scientific studies which have been published usually can be relied upon, with caveats and disclaimers. Most studies openly notify these caveats and disclaimers, however a single fact extracted from the study is enough to write new scripts for the virus. A recent antibody-related study in New York asserted that perhaps close to 20% of

the population there had already caught and cured itself of the virus [13]. Without mentioning a key caveat, this would mean that probably 20-25% of the whole population of every country has already been infected and gained immunity. That's a number running into the billions, while the number of confirmed cases at that time was around 3 or 4 million [14]. Now, what was the key caveat that was withheld above? That the samples were obtained in grocery stores from people who were invited to participate if they thought they already had the virus. Grocery stores are great for spreading the virus and if one were to invite people who were experiencing symptoms, there's nothing surprising about that 20% number. A few weeks later, Spain, USA and France conducted nationwide studies and found that number of infected is closer to somewhere between 8 to 14% in virus hubs and close to zero elsewhere [15]. But, news channels and newspapers invited speakers and columnists spreading this obviously fake news, vociferating how everyone has been conned by a virus that is less harmful than the common cold [16]. Did the editors or anchors who wax eloquent on all socio-political issues under the sun question the veracity of these claims? All one has to do is asking a simple question: if so many have caught it then why are so few testing positive? Not a question of epidemiology, but common sense. Studies are studies, however and if the man citing them looks reasonably bookish and confident, common sense is vanquished [17].

Chapter V

It is perhaps impossible to broach this subject without bringing up social media platforms. They are simply treasure troves when it's any matter related to news. Perhaps every reader of this has received messages and videos proclaiming how religion A already has the cure for the virus and that it is only being spread by community B, or that political party C is intentionally hiding numbers or country D is now just a mass grave¹⁷. Some say that the vaccine has already been manufactured but only a group of billionaires are being allowed access to it, while others show how the virus looks eerily similar to an ancient painting of a demon. News channels again refuse to be left behind here and provide conveniently edited videos to be forwarded immediately to all and sundry. The same social media which probably saved dozens is guilty of causing so much more strife and needless tension in a global society which is already at wits' end. People already frustrated by job losses and pay cuts are looking for something which isn't microscopic and possibly harmless without comorbidities, to put the blame on for this unfortunate state of events. Now social media allows them that pleasure by pointing out that that something that they are looking for is indeed that particular person or group that they

have always resented. Liberals blame conservatives gathering for worship. Conservatives blame liberal protestors [18]. Politicians blame citizens and news anchors play footage of politicians of getting too lively at weddings on repeat. The virus alone has nothing to complain about.

The role played by mass media in misinforming the world on the virus is thus made clear. We can go so far as to say that it was a disservice, but would anyone say that it is a failure? Not without being censured for attacking the freedom of the press. Freedom of speech it seems is simply freedom to be incompetent and dishonest. And when the people themselves are happy to enjoy and share such “news” items, can the blame be laid entirely on the media? There do exist sources of information which are highly more competent and principled. The viewership stat however is where these sources lack. This could possibly mean that there are few takers for news delivered as is, or actual investigative journalism. People just like all these negative aspects of modern day mass media too much, because if it’s little more than business now then, the fact that it is booming means that the audience love it. There is no shifting of blame here. It must be noted rather that the whole phenomenon of propagating fake news and causing unwarranted hysteria isn’t a simple newsroom conspiracy. It is a complex mechanism relying on the sensibilities of the consumers even as it shapes them. Emphasizing just the one aspect wouldn’t solve the whole problem. But can this problem be ‘solved’ in any meaningful way? WhatsApp and Facebook regularly run ads discouraging their users from sharing information of questionable nature [19]. Twitter has a fact-check function which automatically blocks any posts containing proven fake news about the coronavirus. But, once again we face the same problem of “watching the watchmen”. Outright censorship or de-legitimization of views at odds with the official narrative would choke the few channels open to genuinely insightful perspectives working from outside of the power structures. At best what can be suggested is a “toning or cooling down” of the influential powers of the news brokers; a return to the banal normalcy of news [20]. Less sensationalizing in this manner would at least reduce the burden of the blame on the media and at least let people draw their own connecting lines. But would the media be willing to give up their powers, or argue that people’s thoughts have to be thought up for them in order to maintain social order or, increasingly, disorder?

Conclusion

Having discussed the various shortcomings, it is surely not redundant to stress the importance of a properly functioning news reporting apparatus. In the absence of the

same news and social media, word about the virus wouldn't have reached us until much later than it did. And the Media apparatus has undeniably played the biggest role in spreading awareness. Compare the present scenario with that during the Spanish flu a century ago and one obvious fact sticks out: Covid-19 is the most widely discussed epidemic in the history of epidemics whereas the Spanish flu was heavily censored. Governments controlled news about the 1918 flu so much that it made barely a fraction of the impression that Covid-19 has on the zeitgeist. The press has clearly evolved past such complicity with Draconian measures, and to our benefit since that flu claimed about 50 million lives. Therefore as much as a critique of the media is required; it is heartening to conceive of such criticism not as a vain endeavor but as part of an ongoing progress of the press towards fulfilling its true functions to an ever-increasing degree. And it is hoped that this conception shapes the reception of this work.

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Biological Therapies on COVID-19: The Reality and Challenge

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Abstract

COVID-19 is a one of the most common ongoing pandemics in the world. SARS-CoV-2 is zoonotic, originated from infected bats and is the seventh member of enveloped RNA corona virus. The outbreak has lead to severe impact on social health and the economy at various levels. The incidence rate of COVID-19 is high in individual carrying previous medical histories and having older age underlying 70. Prevalence rate is varying according to age, sex and medical history. The incidences of the disease is due to epigenetic and some genetic factors. This review is mainly focused on challenges occurs during biological treatment of COVID-19. Several studies have identified a few structural proteins are responsible for development of COVID-19. All of these taken under consideration showed variable susceptibility in global population. The disease has worst feature that to transmit from person to person and as there is no proven treatment or medicine or vaccines are available to overtake SARS and MERS. From this study we concluded that above all factors show considerably susceptibility to COVID-19. Their Susceptibility is to be studied in regional population. There are various antiviral drugs, therapies like plasma have been developed and one among these is not having that much of confidential result so there is need to develop trustable treatment and vaccine in response to outbreak of COVID-19.

Key words- COVID-19, risk factors, burden, molecular and serological testing, treatment vs. challenges.

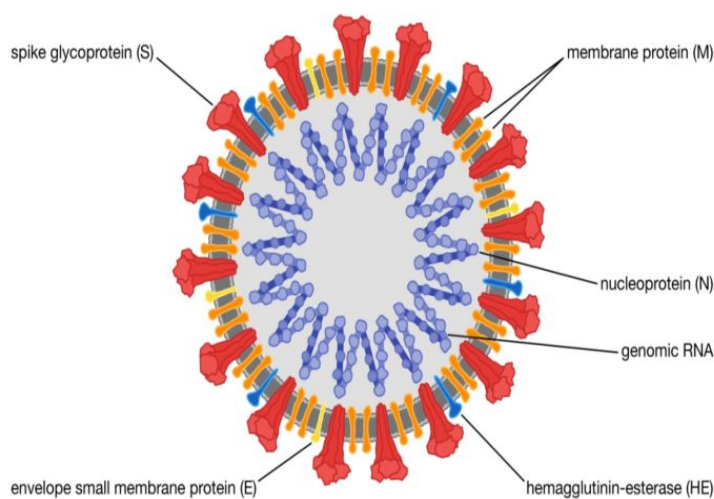
Introduction

Corona virus disease is the most serious respiratory disease in the world. It has been estimated that more than 8.18 million cases have been reported across 188 countries followed by 443,000 deaths rates in 2019s. The first case has been reported in 17th November 2019 in Wuhan, China and resulted in an ongoing pandemic globally [6]. Globally COVID-19 is the most common severe respiratory disease caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) [8]. According to the recent

research the COVID-19 is the principal respiratory disease in the world followed by other heart, lungs, kidney, cancer, diabetes, and asthma etc [13]. Present approach is mainly focused on surveillance, diagnostics, clinical treatment, research, to combat against COVID-19 [27].

Epidemiology

Corona viruses are not new infectious pathogens in the world. COVID is an enveloped positive-sense RNA virus. Envelope bears club shaped glycoprotein's or sometimes hemagglutinin-esterase protein which possesses largest genomes (26.4-31.7KG (see Fig.1).Virus belongs to the family of Coronaviridae and subfamily Coronavirinae.



The viruses show their pathogenic activity by infecting vertebrate's hosts and can be characterized by their club like spikes protruding from the surface [23].International Committee on Taxonomy of Viruses in reference to WHO n-Cov-19 is labeled as SARS-CoV-2.

However past studies did not show much more clear evidences regarding treatment and prevention of SARS-CoV-2 [25]. The people having weakened immunity system along with respiratory, enteric, hepatic or neurological disease are to be at high risk [13].

SARS-Co V

SARS-COV is zoonotic, which leads to an outbreak of pneumonia in some areas of china on November 2002. After 2003s epidemic in China, showed that the SARS-COV is found in wild or farmed civets. The mortality rate of 8000 cases revealed that the masked palm civets are the natural reservoir host of SARS-COV in china. Along with this in Southern china, some studies showed that increased consumption of bat or bat based products might be the host for SARS-COV. Subsequent studies proved that horseshoe bats were the primary host for SARS-COV with other intermediate host such as civets and eventually to humans [23, 26].

MERS-Co V

On 2012 in Jeddah, Saudi Arabia, some patients were suffering from acute pneumonia and renal failures were discovered the MERS-COVs clinical resemblances to COVID.

Later studies in South Korea and Arabia on 2012, reveal that MERS-COV is severe outbreak of COVID-19 followed by 35% mortality rate in worldwide. Similar to SARS-COV, MERS-COV is zoonotic, which was transmitted from dromedary camels. However there are no clear evidences about origin of MERS-COV and it is believed that it may have originated from bats that had transmitted the virus to dromedary camel [23].

SARS-CoV-2

In Wuhan on January 2020, 99 patients with confirmed cases of SARS-COV-2 were studied in Jinyintan Hospital and studies showed that 49% of them were had some seafood. Later, Whole genome and nucleotide sequencing of SARS-COV-2 revealed that it belongs to SARS-COV species and 88% of nucleotide were similar with bat-SARS coronavirus. The SARS-COV-2 is one of the corona virus species which potentially transmitted from animals to human host and having both zoonotic as well as pathogenic properties [23]. SARS-COV, MERS-COV and MERS-COV are belongs to the same subfamily Coronavirine and are zoonotic, displaying the ability to transfer to an intermediate human host from Bats, Camels and seafood [7].

Burden of COVID-19

COVID-19 is a pandemic, people who are having high blood pressure, high cholesterol level, elevated complications of cardiovascular, lung diseases and depression are more susceptible to the COVID-19 [20]. Most form of COVID-19 has no permanent cure like diabetes, but COVID-19 can be controlled with frequent sanitation, hygiene maintenance, avoid close contact with infectious patients [1]. A recent epidemiological study in China CDC showed that, 49% of mortality rate of COVID-19 patients are at high risk which needs significant clinical awareness and management [21]. Studies conducted in china suggested that men are more significantly and frequently affected to SARS-COV-2 as comparing with women which followed by death rates 2% for males and 1.7% for women respectively 2003 [22]. Research conducted in china showed that around 52% men often have unhealthier life due to smoking but not even 3 % of all women have it. Smoking which is injurious to heart, lungs is more susceptible to respiratory infection [8]. However older age people carrying some medical histories like heart, lungs, cancers etc are more prone to SARS-COV-2 comparing with younger age. In Columbia, S.C. (WIS), just 27% of South Carolinians are black and 68% are white out of that more than half of the test positive in white as compared with that of people with the virus are black. This is one of the major genetic variability of skin coat color which is more susceptible to viruses [2]. In most countries like Spain, France, Portugal, Italy men have been 50-80% more likely to

die following diagnosis than women. The guardian reports in South Korea showed that ration of male to female SARS-CoV-2 death is close to 2:1, the male smoking rate is the highest among all OCED countries, while female smoking rate is the lowest [5]. Prevalence of SARS-CoV-2 is likely to be vary according with age, sex, previous medical histories (see Fig. 2 and 3) .Comparative studies in some costal countries showed that vegetarians are at low risk comparing with that of non-vegans [22]

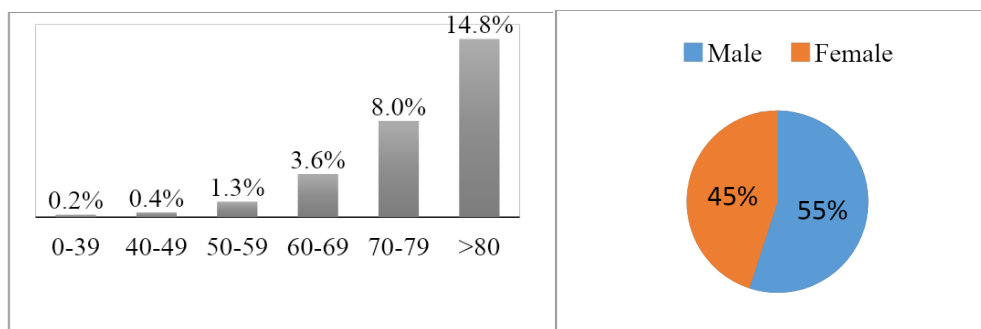


Figure 2 (a) Incidence of COVID-19 according to age [22]; (b) Incidence of COVID-19 according to sex [8]

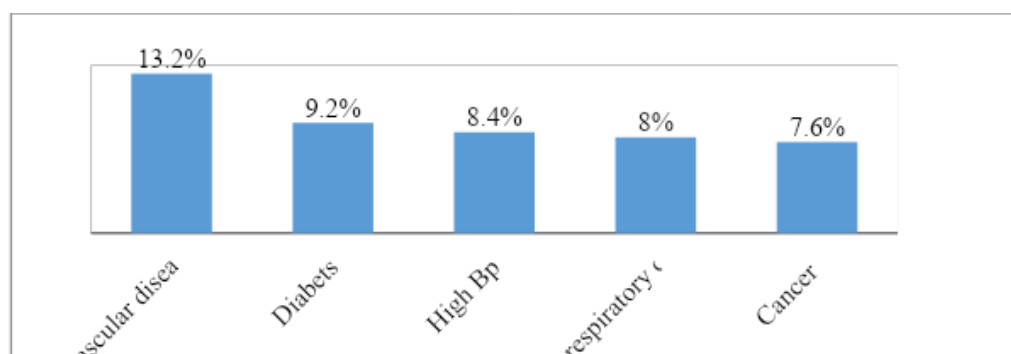


Figure 3 Incidence of COVID-19 according with previous medical history [22]

Risk Factors

SARS-COV-2 are due to some health problems such as high cholesterol level, obesity, having underlying heart, lung ,liver and kidney disease among this Hearth problems are more susceptible. The co-existence of some respiratory syndromes and SARS-COV-2 are significantly increasing the risk for COVID-19[9].

The major risk factors for COVID-19 includes-

- Life style- In life there are many things, through which people suffer from COVID-19.
- Cigarette smoking- Smoking is known factor for many respiratory infections and increase the severity of respiratory diseases [22].

- Tobacco consumption- Consumption of Tobacco is also a major risk factor for non-communicable diseases like cardiovascular, cancers, respiratory diseases etc. WHO constantly evaluates new research including link between tobacco use, nicotine use and COVID-19 [22].
- People aged 65 years and older are at higher risk for severe illness and death from COVID-19. 8 out of 10 death reports in the U.S. have been in adults 65 years or older; risk of death is highest in among those 85 years or older due to lower immune system[8].
- Medications and treatment- People are suffering from many disorders during life, the medical treatment and drug related with some diseases effects on several organs. These include-
- Asthma- COVID-19 can affect your respiratory tract (nose, throat, lungs), cause an asthma attack, and possibly lead to pneumonia and serious illness so moderate to severe asthma which may put people at high risk for COVID-19[9].
- Chronic kidney disease being treated with dialysis- Kidney patient with Dialysis is more prone to infection of COVID-19 because they are having weakened immune systems [9, 25, and 26].
- Chronic Lungs Disease- Such as Chronic Obstructive pulmonary disease (COPD), idiopathic, pulmonary fibrosis and cystic fibrosis, may put people at higher risk for severe illness from COVID-19 which causes flare-up of lungs [9].
- Diabetes- People having Diabetes are at high risk due to elevated levels of their blood sugar as compare with normal healthier person blood sugar levels. This leads to weakened the immune system and more susceptible to infection [9].
- Hemoglobin Disorders- Like sickle cell disease and thalassemia need treatment of hydroxyurea, chelation therapy which will form multiple organ damage and may increase the risk for severe illness from COVID-19 [9].
- Immunocompromised- Immunocompromised including cancer, HIV Immune thrombocytopenic purpura (ITP) having low CD 4 cell count due to the over medications which will lower the immune system. Recently, ITP has been diagnosed in several COVID -19 Patients [7].
- Liver Diseases- Previous history of liver disease may lead to increase in COVID-19 infection because treatment used in COVID-19 also cause strain on liver which will lead to severe liver damage [9].

- Serious heart conditions (in TB / Pneumonia) - serious heart conditions including heart failure, coronary artery disease, congenital heart disease etc may put people at high risk because in COVID-19 viral illness such as the flu can also damage respiratory system and it make harder for your heart to work [9].
- Un-hygiene maintenance - People who are not maintaining the hygienic conditions at home, kitchens or working places are more prone or susceptible for COVID-19 infection[9]
- Meat or Meat based product - Corona virus originated from seafood in Wuhan china. Seafood market people sell all kinds of meats like chicken, sheep, bats, pig or even snakes so it leads to high risk on people who are non-vegans because coronavirus in zoonotic disease [3].

Challenges in Biological therapies of COVID-19

Globally the spate of COVID-19 has had a major brunt on Microbiological and Molecular laboratories in past several months. Certain milestones have been encountered in diagnosis and treatment of infections caused by SARS-COV-2. Studies conducted in U.S public Health believed that community transmission of this infection are the main source of these pandemics [19]. The current controversies mainly focused on challenges occurs during preanalytical, analytical and data interpretation [28].

Pre-analytical issues

Initial specimen collection from upper and lower respiratory for screening of COVID-19 with pneumonia

COVID-19 positive detection will be conformed after viral load on their upper and lower respiratory system within 5-6 days of the onset symptoms. For screening purpose usually nasopharyngeal (NP) or/and oropharyngal (OP) swabs were recommended. Precaution should be taken during the collection of swab samples because risk of transmitting airborne SARS-COV-2, has been investigated during outbreaks of COVID-19 [3]. So during swab collection personal protective equipment (PPE) should be in necessity otherwise one alternative option is that collecting an upper tract specimens will be evaluated with suspected COVID-19 pneumonia is self-collected saliva specimens[4]. In order to obtain proper swab from specimen the swab must be inserted deeply in the cavities otherwise patients will likely flinch but that means swab has it the target. Wang et al., have suggested that NP and OP swab collections was used only in early diagnosis of COVID-19. To overcome these problems researchers has suggested collection of only NP swab and later studies also proved that viral load is more in NP (63%) as compared with

that of OP (32%) [3], after swab collection viral load is immediately transported into the transport media to diagnosis [7]. As mentioned below NP or OP swab detections are used only in early diagnosis so repeated testing may be particularly important if a patient has a clinical picture of viral pneumonia, a potential exposure history, and radiographic finding consisting with COVID-19 pneumonia [6].

Late detection and monitoring of patients with severe COVID-19 pneumonia

For COVID-19 diagnosis ideally sputum or broncho alveolar lavage (BAL) should be used for collecting lower respiratory tract specimens due to highest viral load [29]. Patients with both severe pneumonia and acute respiratory distress syndrome require more safety precaution as they were having highest viral load of SARS-CoV-2 RNA. However, enteric and fecal material involvement with high viral RNA load of SARS-CoV-2 in patient with COVID-19 has been demonstrated in delayed screenings of detection. Some studies showed that inside enterocytes and stool samples also used for detection of viral load. Thus, to overcome this problem direct respiratory sampling should be preferred for SARS-CoV-2 detection in advanced COVID-19 cases along with rectal swab and real-time (RT-PCR) [25].

Safety measures for specimen processing for PCR

The main issue is that some researchers suggest that Biosafety cabinet III (BSL-III) with negative-pressure room is safe for sample collection and processing that was also used in case of mycobacterium culture [4]. But for nucleic acid extraction before RT-PCR BSL-II is preferred in some laboratories which are safe for the activation of chemicals. The lysis buffer is used for specimen storage which contains guanidinium based inactivating agent as well as a non-denaturing detergent which should be performed usually in BSL-II cabinet [30]. RT-PCR requires quick transfer of specimen sample to buffer to disinfect the specimens as well as to stop degradation of the corona virus RNA. The swab should not be heated as it inactivates viable corona virus [29]. During handling of this all procedures care should be taken that spills of samples not to follow otherwise decontamination should be performed quickly.

Analytical issues

Assay selection

Serological testing is the host for rapid detection on SARS-CoV-2 and previously has had an important role in the epidemiology of SARS and outbreaks of other corona virus [21]. The lateral flow assays detect antigen such as SARS-CoV-2 virus or for detecting antibodies (IgM and IgG) against COVID-19 and having low cost detection. Poor

sensitivity, low infection and sampling, in early detection may miss cases to detect antigen but Rapid lateral flow assay for both IgG and IGM antibodies play crucial role in COVID-19 outbreak. Cell culture is not used in diagnostic purpose of COVID-19 [3].

Assay selection for molecular detection of SARS-COV-2

U.S. Center for Diseases Control and Prevention, Hong Kong University and Institute of Virology in Berlin, Germany used most of the Molecular diagnostic techniques like RT-PCR for diagnosis of COVID-19. However other molecular methods like Random amplification-deep sequencing, next gene sequencing and metagenomics will continue to be needed to determine future mutations of SARS-COV-2 but currently impractical for diagnosis COVID-19 [28]. CRISPR (clustered regularly interspaced short palindrome repeats), microarray and isothermal amplification these techniques are being developed and evaluated worldwide [26].

Target selection for RT-PCR

In molecular techniques RT-PCR is one of the most useful methods for amplification as well as for analysis purpose. Corona virus causes both the respiratory and intestinal infection in humans and having number of targets sequences within their positive strand of single stranded RNA genome that can be used for RT-PCR [5]. These targets include genes encoding for structural genes like glycoprotein spike (S), envelope (E), transmembrane (M), helices (H), and nucleocapsid (N) [3]. There are some species-specific structural genes which encode for these genes for viral replication like RNA-dependent RNA-Polymerase (RdRp), hemagglutinin esterase (HE), and open reading frame 1a(ORF1a)[17]. To avoid potential cross reaction with other endemic coronavirus as well as potential genetic drift of SARS-COV-2 at least two targets should be included in the assay. To date, studies conducted in Germany, China, United States stated that there has been no indication that any one of these sequences offers to identify unique clinical diagnosis testing [5].

However to prevail over these pre-analytical problems as on 29 February 2020 the FDA issued new guidance for laboratories include standard validation like specimen type, ideal design for at least one conserved region and one specific region for amplification of PCR and standard PPC kit [5].

Post analytical issues

Interpretation of molecular results

The country wise data interpretation varies due to the genetic variability in people. However for COVID-19 CDC assays (nucleocapsid proteins N1 and N2) and a cycle

threshold (CT) values are considered. Studies conducted in United States initially showed both nucleocapsid are positive in case of COVID-19. While in China A CT value less than 40 for only one of the two nucleocapsid protein are required by confirmation testing [30]. However viral load determined by RT-PCR assay should not be used yet to indicate COVID-19 severity or to monitor therapeutics response but low CT values indicating high viral loads may be used as an indicator of transmissibility [14].

Test of cure and test of infectivity

Monitoring Patients with COVID-19 pneumonia is very crucial after their recovery. If discharged patients are still having some feasible corona virus they likely to infect other people therefore self quarantine for around one month is necessary after recovery [15]. Only NP or OP swab detections are not fruitful for detection but also two consecutive negative RT-PCR tests from rectal swab are needed for outbreak of SARS-COV-2. The rectal swab positive results indicate that patients still sheering some viable SARS-COV-2 in their stool [6].

Serology of COVID-19

Out of the four structural proteins (S, M, E, N) two are involved in antigenic determination site for serological testing of COVID-19. Spike(S) protein is mainly responsible for receptor binding, fusion and determines host tropism and transmission capability [10]. S protein functionally divided into two proteins likely S1 and S2 domains one is for receptor binding and another one is for fusion. SARS-COV and SARS-COV-2 bind to human angiotensin converting enzyme 2, which is found in the respiratory cell, renal cell and gastrointestinal cells [23]. Along with this, N protein is also play crucial role in replication, pathogenesis and RNA packaging, and suggesting that N protein is one of the immunodominant antigens in the early COVID-19 detection [29]. However serology may be used in confirming COVID-19 [24].

Treatment of COVID-19; Reality and Challenges

An outbreak related to COVID-19 was first reported in Wuhan, China in December 2019. According to the investigation, COVID-19 is mainly due to the viral load, To et al., concluded that early use of potent antiviral agents might be beneficial in controlling COVID-19 severity [10]. Herein some antiviral agents, some antibiotics and anti-inflammatory agents have been explore their efficacy in combating the SARS-CoV-2.

RNA-dependent RNA polymerase inhibitor (RdRp)

Remdesivir- Several antiviral drugs have been tested to their efficacy in treatment of SARS-CoV-2 among these, Remdesivir shows most promising and fruitful effect. It is one

of the inhibitor of RdRp shows its effect by formation of premature termination of viral RNA transcription by activating its phosphoramidate activity. Studies conducted on rhesus monkey revealed that 10mg/kg of dosage could lead high intracellular concentration of active triphosphate in peripheral blood mononuclear cell within 24 hrs, with supporting clinical potential in treatment of SARS-CoV-2. Followed by this U.S also got success in treating COVID-19 pneumonia patient within 7 days. The clinical efficacy of Remdesivir with 200mg on 1 day shows high in vitro potency against SARS-CoV-2 followed by some adverse effect in some patients like nausea, vomiting, rectal hemorrhage and hepatic toxicity [10].

Favipiravir- Favipiravir is one of the active antiviral drugs against influenza virus. Recent studies in China showed that Favipiravir having promising potency in treatment of SARS-COV-2 and have been approved to treat people in China on March 2020 [10]. Followed by Remdesivir and Favipiravir, Rabavirin and interferon's like IFN β -1b also used to treat SARS-COV and MERS-COV respectively. Rabavirin activity with combination of Lopinavir/ritonavir are most promising and IFN β -1b having some uncertain effect on SARS [10].

Protease inhibitor (PIs)

Lopinavir/ritonavir (LPV/RTV) - The comparative studies in between Lopinavir and Remdesivir showed that alone LPV/RTV does not shows superior effect against MERS-CoV. LPV/RTV is important agent in the contemporary treatment of patients with chronic immunodeficiency (HIV) infection. The activity of this PIs on orthocoronavirinae can be measured by inhibiting papain like protease and 3C-like protease. Despite discouraging results, is that dosage of LPV/RTV shows some gastrointestinal effect and in some extend pathological changes in lung tissue. The regimen of LPV/RTV plus ribavirin was shown to be effective against SARS-CoV in patients and in tissue culture [10].

Chloroquine, hydroxychloroquine and azithromycin- Chloroquine is an antiviral drug shows its activity by increasing endosomal pH, which prevents virus/cell fusion and interferes with glycosylation of cellular receptors of SARS-CoV. Officially Chloroquine is an active drug against malaria and autoimmune diseases like arthritis, lupus etc [10, 11]. Hydroxychloroquine is significantly potent than Chloroquine and controls the cytokine storm occurs in critically ill SARS-CoV-2 infected people. Studies in Taiwan CDC declared that hydroxychloroquine is an important drug against SARS-CoV-2. However, hydroxychloroquine have some limitations to people with retinopathy,

deficiency of glucose-6-phosphate and also the pregnant or breastfeeding women likely they shows some allergen with these deficiency [11-12].

Azithromycin shows promising effect against Ebola virus in USA, New York, but recent studies showed that it also having some emerging effect towards recovery of respiratory tract infection in pre-school children's. According to one recent study conducted, suggested that regimen of hydroxychloroquine in combination with azithromycin is an alternative for Remdesivir for treating people with SARS-COV-2 infection [10].

Teicoplanin and other glycopeptides-Teicoplanin are active against Ebola virus. The main activity of Teicoplanin is that it inhibits the viral genome exposure to cytoplasm. In case of SARS-MERS it able to blocks the pseudotyped viruses as well. In case of Ebola, the activity of Teicoplanin is that it inhibits host cells cathepsin L and cathepsin-B which are responsible for cleaving viral glycoprotein allowing exposure of the receptor binding domain of its core genome and subsequent release into the cytoplasm of host cells may be it will likely to same in SARS-CoV-2 [8,10].

Convalescent plasma- Passive immunization with convalescent plasma involves transfusing the cellular portion of blood from recovered individual to who are infected with or at risk of infection. Which may improve survival rate of patients with various viral infections such as SARS, avian influenza etc. It has been suggested that plasma donor have developed sufficient amount of antibodies against offending pathogen, on note that conferred immunity is short term [1]. Shen et al conducted a study in five positive SARS patients and treated them with convalescent's plasma along with methylprednisolone and antiviral agent. Improvement were observed in patients including normalization of body temperature within 3 days, decreases multiple organ failure and decline in viral loads became negative in 12 days and decreases in SARS-COV-2 specific ELISA and neutralizing antibody titers. Out of 5 patients 3 were discharges and 2 were in stable condition. So researchers have been suggested that convalescent plasma transfusion is beneficial even through the sample number in the study is small in case of SARS-CoV-2[10-13]. Another treatment like Monoclonal or Polyclonal antibodies in the treatment of SARS-CoV-2is under investigation.

Discussion

On December 2019, COVID-19 has been emerged in China and within Three months it creates massive pandemic overall world. The main findings of the above literature of review are that challenges occur during biological therapies of COVID-19. The footprints

of developing pandemic have created crisis and serious health threat in developing and poor countries like Asia, Saudi Arabia [23]. As we facing terrible problems of this pandemic the studies conducted showed that, globally more than 3 million people are infected with COVID-19 and over 2 lakh have died. Countries like Italy, USA and Spain have facing uncertainty of unpredictable results of COVID-19. To dated, over 1.3 million total identified cases and over 50% of death have been reported in these three countries together. Severity is high in Countries like Italy, China, Portugal, South Carolin and smoking is associated with that increasing risk of SARS-COV-2. Along with this further studies conducted showed that men are more likely to be infected to this disease as compared with women [18]. Epidemiological studies by United Kingdom showed including all adults aged over 70 and the people having underlying previous medical histories like respiratory diseases, cancer, fever, fatigue, diabetes, lung problem, TB, asthma are getting at high of COVID-19[11]. A comparative studies in China CDC showed that mortality rate of COVID-19 patients is about 49% which requires a significant awareness in clinical managements [18]. Prevalence of COVID-19 is about 9.3% and 0.2% in over aged i.e.80years and under aged 60 years people respectively. Evidences showed that the frequency of disease is varying according with age, sex and also on the basis of any previous medical history [8]. The ongoing pandemic is to be worst day by because it has nastiest feature to transmit from person to person and still there is no significant vaccine is available. Medical biotechnology playing crucial role in development of vaccine against COVID 19 disease [23].

Antiviral drugs like, Favipiravir and combination therapies with hydroxychloroquine plus azithromycin are to be useful in some extent and are alternative for Remdesivir for treating patient of COVID-19 [10]. However some studies explore the epitopes bases vaccine development for COVID-19, because the structural proteins of SARS-CoV and MERS-CoV plays important role in receptor binding and fusion of cell. As studies reveled epitopes based vaccine development targeting S protein potential B and T cell S protein epitopes that may promote an immune response in host were identifies [23]. Comparative studies with plasma it has been suggested that it is one of the most powerful therapy against COVID-19 but it has some drawbacks like it need high antibody titers and the only highly active plasma preparation should be reinforce and that timing may be critical [1]. Monoclonal or polyclonal antibody treatments are still under investigation due to insufficient case studies [10]. So, for development of vaccine against COVID-19, further studies should be conducted son large scale population. And equally there is need

of screening with molecular or serological testing in order to determine the true mortality rate as well as other epidemiological markers [6]. However one study suggested that around 28.6% patients were recovery followed by 7% death rates globally without any proper medication [18]. Hence, it has been concluded that along with variants in population genes of each countries, life style and immune system also mainly associated with developing pandemics of COVID-19.Hence thats why it is important to identify and estimate such risk factors to predict the sever complication of the patients for avoiding or to minimize the severity.

Conclusion

At present there are valid vaccines against SARS-COV-1 and little is till known about the post effect of COVID-19. On the basis of present review of literature provided, it can be stated that a cluster of surface proteins are also associated with COVID-19.According to WHO studies there is also confirmation that compared with vegans, non-vegans are more susceptible for COVID-19 infection. There are many risk factors which causes COVID-19 in general population. The proteins associated with SARS-COV and their surface epitopes may increases the susceptibility of COVID-19.

The structural proteins involved in SARS-COV are susceptible to COVID-19 may not be necessarily being susceptible in another set of population. It is very apparent that individual suffering from COVID-19 usually because of having some medical histories regarding cardiovascular disease, heart problems, cancer, diabetes, high cholesterol, obesity, TB, asthma and more likely to pneumonia. The prolonged incidence of COVID-19 in an individual increases the risk of secondary complications such as liver and kidney failure. Considering the prevalence of disease, every first person is diabetic and second person suffering from COVID-19 on present day.

COVID-19 is a viral disorder but sometimes how significant association with some metabolic syndromes. Considering the prevalence of disease men are more likely to be having at high risk compared to female patients. Continued efforts from across the world will be needed to fully understand the Coronavirus family in order to outbreak of this pandemic.

With the available literature collected it can be safely assumed that age, sex, and medical history, and in some extent life style would be play major role in COVID-19 infection and the susceptibility of disease was different in different population. So it is important to conduct a work on different population to screen which factor is highly susceptible to COVID-19. After confirmation of risk factor potential biomarker should be

developed for early diagnosis, identification of individual at high risk and planning for treatment or management is necessary.

However there is limited research that has been done on association of COVID-19 in India as compared with other countries. Therefore, it is not confirmed that which factor is more susceptible to the COVID-19. So for further research it is important conduct study on large population and requires additional medical attention for patients with higher risk from the very beginning of the treatment. Also assist that finding of this literature may helpful in understanding of what challenges occurs during biomedical therapeutics and development of vaccine.

Appendix

A. COVID-19	Coronavirus Disease-19
B. SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus 2
C. MER	Middle East Respiratory Syndrome
D. WHO	World Health Organization
E. CDC	Centers for Disease control
F. FDA	Food & Drug Administration
G. TB	Tuberculosis
H. PPE	Personal Protective Equipment
I. NP	Naso Pharyngeal
J. OP	Oro Pharyngeal
K. BSL	Biosafety Cabinet
L. BAL	Bronchoalveolar lavage
M. PCR	Polymerase Chain Reaction
N. RT-PCR	Real Time Polymerase Chain Reaction
O. ELISA	Enzyme Linked Immune Sorbent Assay
P. CRISPR	Clustered Regularly Interspaced Short Palindrome Repeats
Q. CT	Cycle Threshold
R. RdRp	RNA Dependant RNA Polymerase Inhibitor
S. Pls	Protease Inhibitor
T. LPV/RTV	Lopinavir/Ritonavir

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Properties of *Gracilariasalicornia*in Therapeutic Role

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Abstract

Marine algae are also called Seaweed; used in various industries such as food, pharmaceutical, cosmetic, biotechnological industries. Red algae with carrageenan have been used for ages as treatments for respiratory ailments, specifically for intractable sinus infections and lingering pneumonias. Many *Gracilaria* Sp. (red algae) are consumed as protein rich seaweeds in the form of salad, soup, etc. The aim of this work was to study the phytochemical, antioxidant, antibacterial properties of *G. salicornia*in therapeutic role. Extracts of *G. salicornia*were subjected to phytochemical evaluation. To identify the chemical constituents and total phenolic content phytochemical screenings was performed. Algal extracts were tested for antibacterial activity against Gram positive and Gram negative bacterial isolates. Antioxidant activity was executed by DPPH assay. Analysis revealed the presence of terpenoids, steroids, saponins and quinons in the algal extracts and shows a moderate activity in response to the standard for antioxidant and antimicrobial activities. According to our study *Gracilaria* species including *G. salicornia*are rich in terpenoids, steroids, saponins, quinons which can be used in therapeutics. Other *Gracilaria* species with similar phytochemical properties have the important therapeutic uses such as antimicrobial, antifungal, antiviral, antihyperglycemic, anti-inflammatory, antioxidants, immunomodulatory and antiparasitic. Thus further studies are required to explore this activity in *G. salicornia*in Indian sub-continent.

Keywords: *Gracilariasalicornia*; Antioxidant properties; therapeutic; Antimicrobial assay

Introduction

Ocean is rich in biodiversity and about 90% of ocean biomass includes microflora and microalgae. Marine floral resource leads to identify discovery of new drugs [27] and has a long fossil history with extraordinary medicinal value [5]. From ages carrageenan from Red algae have been used for respiratory ailments, specifically for intractable sinus infections and lingering pneumonias. Macro Algae (Seaweed) Seaweeds contain iodine and minerals sources and hence, metabolites of seaweed have shown activities against

cancer [25] and also used to treat iodine deficiency, build up the immune system, eliminating toxic substances and as anthelmintics [19]. Chemical composition of edible seaweeds varies with species, habitats, maturity and environmental conditions like climate [15]. Seaweeds perform various ranges of functions such as antioxidant, antitumor, anticoagulant, and antimutagenic. It also plays role in lipid metabolism in the human body [25]. From ages plant medicines are in practice by the manhood in order to treat the diseases in past and present days. Several phytochemicals with unique chemical composition are isolated which can cure various forms of disease [26]. In times of great challenges scientists rely on natural sources for identification of novel molecules to combat with life threatening diseases [5]. *Gracilaria* Sps is distributed worldwide which is key source for large scale production of food grade agar and phycocolloids. Among few countries Taiwan can harvest more than 30,000 tons of per annum [24].

Gracilaria Sps are distributed worldwide as a key source for large scale production of food grade agar and phycocolloids. Among few countries Taiwan can harvest more than 30,000 tons of per annum [28]. The *Gracilaria* species are important for the industrial and biotechnological uses because they have phycocolloids, the key source of agar α -(1,4)-3,6-anhydro-L-galactose and β -(1,3)-D-galactose with little esterification in cell wall. Carbohydrates such as agar and other polysaccharides are present in *G. confervoides*, *G. dura*, *G. chilensis* and *G. secundata* [3]. Macroalgae are rich source of iron for human diets. The *Gracilariopsis* sp. and *Sargassum* sp. had considerably higher iron content and highest iron content was in spring and summer and lowest in fall and winter. β -carotene (pro-vitamin A) in *Gracilariachilensis* can exceed those measured in carrots [27].

Gracilariasalicornia species belongs to genus *Gracilaria*, because of its large growth in sea water. *G. salicornia* has become the single-most dominant benthic species in Hawaiian region. *Gracilariasali cornia* varies in color from a bright yellow at the tips to orange, green or brown at the base. The thallus is cylindrical (0.5cm in diameter) and dichotomously branched with constrictions at the base of each dichotomy. *G. Sali cornia* tightly adherent to hard substrata and can be up to 25-40cm in thickness. Reproduction takes place in *G. salicornia* by fragmentation and vegetative propagation. *Gracilariasalicornia* is used for food purpose because of its nutritional value. Pigments produced in *G. salicornia* vary in concentration with portions of its thallus, the bright orange-yellow is the tips of the thallus which are rich in carotenoids, whereas dark purple color is the base rich in phycobilins. The center section of the thallus is green; rich in chlorophyll than the other portions.

Classification of Gracilaria Salicornia

Kingdom	: Plantae
Phylum	: Rhodophyta
Subphylum	: Eurhodophytina
Class	: Florideophyceae
Order	: Gracilariales
Family	: Gracilariaceae
Genus	: Gracilaria
Species	: G.salicornia

Distribution

Covers wide span of the world. It is found in Asian and South Asian countries like Taiwan, Japan, China, etc. Arabian Gulf, India, Iran, Kuwait, Oman, Sri Lanka. Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam. And it covers Indian Ocean and Pacific Islands such as Aldabra Islands, Andaman Islands, Laccadive Islands and Nicobar islands.

Phytochemical properties of Gracilariaspecies

Generally marine algae are rich in sulfated polysaccharides, proteins and amino acids, lipids, sterols, terpenes and terpenoids, carotenoids, pigments, bromophenols, phlorotannins [1]. Gracilariafoliifera contains nutrition such as minerals (micro and macro), carbohydrates, protein, fatty acids, lipids, agar, amino acids etc. 8 elements were quantitatively determined in the Gracilariafoliifera. This included the 4 macro-elements Magnesium (Mg), Calcium (Ca), Phosphorus (P), Potassium (K), and the 4 micro-elements Manganese (Mn), Copper (Cu), Iron (Fe) and Zinc (Zn). Gracilariafoliiferafrom the Red sea coast of Sudan contained 16 amino acids Valin, Luecine, Isoluecine, Phenylalanine, Threonine, Lysine, Histidine, Methionine, Asparatic acid, Glutamic acid, Tyrosine, Alanine, Glycine, Serine, Cystin, Proline, Arginine. In total 5 fatty acids were identified in G. foliifera, saturated fatty acids (SFA) included lauric acid, myristic acid and palmitic acid. The mono unsaturated fatty acids (MUFA) were represented by oleic acid. The poly unsaturated fatty acids (PUFA) were represented by linoliec acid. G. foliifera contains the qualitative and quantitative content of alkaloids, flavonoids, and tannins [17]. Balakrishnan et al also reported similar Phytochemical substances present in Gracilariacorticata (methanol, ethanol, petroleum ether and acetone extracts). It contains elements such as Mg, Na, Ca, Si, K, C etc. Maximum carbon was present in thallus region

of *Gracilariacorticata* [2]. Chloroform: methanol (3:1) extracts of *G. salicornia* showed the presence of sterols such as 22-dehydrocholesterol, cholesterol, oleic acid, and stigmasterol [16]. Amount for total amino acids and crude protein is high in *Gracilariasalicornia* whereas the amount of lipid present is low [26]. Carbohydrate, heparin, agar, mannaualide A, mannaualide B, mannaualide C, palmitic, palmitoleic, oleic, lauric and myristic acids, steroids and alkaloids malyngamide were found in species of *G. foliifera*, *G. coronopifolia* and *G. edulis* [4].

According to Feroz 2018 saponins has the ability to enhance the body's immune response by generating immune-stimulatory effects in contradiction of antigen and integrating large molecules when taken orally [7]. Ghannadi et al. has analyzed the cytotoxic, phytochemical, and anti-oxidant properties of *G. salicornia* (Methanol extract) from Persian Gulf. Phytochemical screening illustrated the presence of tannins, saponins, sterols, and triterpenes followed by alkaloids, flavonoids, and cardiac glycosides [9]. Nasir et al. has reported the presence of Sterols in *Gracilariasalicornia* from Persian Gulf. *G. salicornia* from chloroform: methanol (3:1) extract. 2,2-dehydrocholesterol, cholesterol, oleic acid, and stigmasterol were the sterols reported by Nasir et al. from Persian Gulf [16]. Sasidharan et al., has reported the study on invitro and insitu activity of *Gracilariachangi* on *Candida albicans*. Methanol extract of *G. changii* was subjected to Fungicidal activity with disk diffusion method. Minimum Inhibitory Concentration was determined by broth dilution assay with MIC value of 1.56mg/mL. In situ antiyeast activity was reported by observations under scanning electron microscopy (SEM) and transmission electron microscopy (TEM) where abnormalities of the cells were observed with the internal shrinkage of cell, in competence inside the cell cytoplasm and after 36 h of exposure complete disintegration of the yeast cells [23].

Antioxidant assay

Marine algae are exposed to extreme environmental circumstances and phototrophic mode of growth, which undergoes high oxidative stress and free-radical exposure. These issues have developed the microalgae in building natural defense system in the form of antioxidants and pigments [12]. Algae have protective enzymes (superoxide dismutase, peroxidase, glutathione reductase, catalase) and oxidative molecular (phlorotannins, ascorbic acid, tocopherols, carotenoids, phospholipids, chlorophyll related compounds, bromophenol, catechins, mycosporine-like amino acids, polysaccharides, etc). Reactive species (ROS) (e.g., superoxide anion (O₂⁻), hydroxyl radical (OH[•]), hydrogen

peroxide (H₂O₂), and singlet oxygen (1O₂) are formed as a result of normal metabolic activity and exogenous sources.

Antimicrobial assay

Bioactive compound from red marine algae may be beneficial in inhibiting bacteria, viruses, fungi and other epibionts, Seaweed or macroalgae provide a great variety of metabolites and natural bioactive compounds with antimicrobial activity, such as polysaccharides, polyunsaturated fatty acids, phlorotannins and other phenolic compounds, and carotenoids, Antimicrobial activity of 2:1 Chloroform: methanol extract of *Gracilariadura* was carried out against *V. ordalii*, *V. alginolyticus*, Antimicrobial activity of 2:1 Chloroform: Methanol extract of *Gracilariagracilis* was carried out against *V. salmonicida*, Antimicrobial activity of aqueous extract of *Gracilaria ornate* was carried out against *E. coli*, Antimicrobial activity of ethanol extract of *Gracilariasubsecundata* was carried out against *S. aureus*, *S. pyogenes*. The antimicrobial activity was carried out through disc diffusion method [18]. Rasooli et al. studied the Antimicrobial activity from Methanol, chloroform and aqueous extracts of *Gracilariasalicornia* against *Aeromonashydrophila* [20]. Saeidnia et al, collected the *Gracilariasalicornia* from Persian Gulf to know the biological activity. The extracts of ethyl acetate, methanol and water-methanol (50%) were evaluated for antibacterial and antifungal activities. As a result Ethyl acetate extracts of *G. salicornia* showed a significant growth inhibition of *Artemiasalinanauplii* [21]. Kandhasamy et al. has evaluated the Antibacterial property of *G. folifera*. Agar diffusion method was performed; as a result broad spectrum of antibacterial activity in Methanol extract of *G. folifera* was reported [10]. Shanmughapriya et al., has reported that *Gracilariacorticata* was showing highest activity against *Proteus mirabilis*, which was a Gram negative pathogenic bacterium by Antimicrobial assay as per Selvin and Lipton (2004) [24].

Materials and Methods

Preparation of the extracts by Cold Extraction: *Gracilariasalicornia* alga was procured from Annakkili Amma Research Institute (AARI) Chennai, India. Algae sample were shade dried for 8 days and roughly grinded into smaller particles. About 150gm of sample was first dissolved in Ethyl acetate solvent with continuous agitation for 72 hours. The extracts were filtered through layers of cotton fabric and concentrated using rotary evaporator (60-700c). The remnant was evaporated at room temperature to get a dry filtrate, which was stored in sterile vial used for further phytochemical, antioxidant, antibacterial studies. Similar procedure was carried out for methanol extract with

evaporating temperature (50-60⁰c). At the end of methanol evaporation crystals of salts were formed which were eliminated by adding chloroform and washed with distilled water to separate the extract from salts. Both salted and de-salted extracts were further analyzed. Phytochemical Characterization: Algal extracts were subjected to phytochemical analysis by standard method as described by Deyab et al. [6]. Screening was performed to categorize the major natural chemical groups such as alkaloids, terpenoids, steroids, tannins, saponins, flavonoids, phenols, coumarins, and quinones. General reactions in this analysis disclose the presence or absence of the above compounds in the extracts. 20mg of extracts (Ethyl acetate, Methanol salted and Methanol De-salted) were dissolved in 1ml of respective solvents was Stock solution and working standard was prepared from 50 μ l of stock in 950 μ l of Ethyl acetate and Methanol solvents.

Antioxidant Assay

The antioxidant activity of algal extracts was determined by DPPH Assay according to Sanger et al. [22]. Stock was prepared by adding 5mg of ethyl acetate and methanol algal extract in different tubes to that add 4.975ml of distilled water and 0.025 μ l of DMSO. Different volume of distilled water was added (2980, 2960, 2920, 2880, 2840, 2800 μ l) in all test tubes, then 1 mL of DPPH working solution was added to all tubes (0.5mM) to this different concentrations (25, 50, 100, 150, 200, 250 μ g/ml) of algal extract and the standard (Ascorbic acid) solution were added and incubated for 30 minutes in dark at room temperature. The absorbance was measured at 517 nm (Labman UV Visible Spectrophotometer). The percent antioxidant or radical scavenging activity was calculated using the formula %Antioxidant activity = [(Ac - As)/Ac] \times 100. Ac and As are the absorbance of control and sample, respectively.

Antibacterial activity: Extracts were evaluated by agar well diffusion method according to Kolanjinathan et al., [11]. Different solvent extracts of *Gracilariasalicornia* (100 μ l and 150 μ l) were placed in two different wells of LB agar and 100 μ l of both standard and control in different wells were added. All plates were incubated at 37 $^{\circ}$ C for 18 to 24 h. The antimicrobial activity was estimated by measuring the radius of inhibition zone (cm/mm). Each test was performed in triplicate hence results were shown in mean value.

Results

Algal extraction: Extraction yield of *G. salicornia* using solvents Ethyl acetate, Methanol Desalted and Methanol salted yielded 300mg, 150mg and 250mg respectively (Table1). Extraction of ethyl acetate gave a gelatinous green color extract on evaporation.

The yield obtained in Methanol Desalted extract was 150mg and in Methanol salted was 250mg. The yield obtained in EA, MED and MES were 300mg >250mg> 150mg respectively.

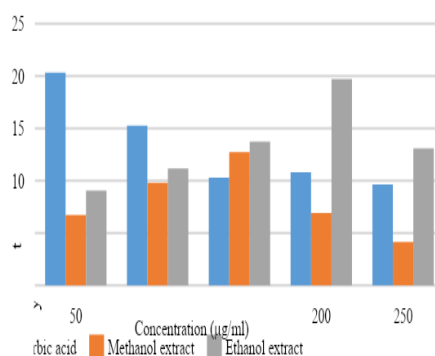
Table 1 Extraction yield of *G. Salicornia*.

Sl.No.	Algal extract	Yield (mg)
1	Ethyl acetate extract	300mg
2	Methanol desalted extract	150mg
3	Methanol salted extract	250mg

Phytochemical characterization: Algal extracts revealed the presence of Terpenoids, Steroids, Saponins, Quinons in Ethyl acetate, Methanol desalted and Methanol salted extracts. Flavanoids were present in both methanol salted and desalted algal extract but absent in ethyl acetate extract. Algal extracts showed the absence of Alkaloids, Tannin, Phenol, Coumarins.

Table 2 Phytochemical characterization of *G. Salicornia*.

Phytochemical tests	Ethyl acetate extract	Methanol desalted extract	Methanol salted extract
Alkaloids	-	-	-
Terpenoids	+	+	+
Steroids	+	+	+
Tannin	-	-	-
Saponins	+	+	+
Flavanoids	-	+	+
Phenol	-	-	-
Coumarins	-	-	-
Quinons	+	+	+



Antioxidant Activity: Antioxidant activity of algal extract and standard were determined using concentrations 25, 50, 100, 150, 200, 250 µg/ml using DPPH solution. Percentage

antioxidant activities for standard (Ascorbic acid). At varying concentrations 50, 100, 150, 200 and 250 µg/ml was found to be 20.31, 15.24, 10.30, 10.79 and 9.63 % respectively. However, Methanol and ethyl acetate extracts at concentrations 50 and 100 µl/ml has showed 6.73 and 9.81 % activity. Further, at 150, 200 and 250 µl/ml has shown 12.72, 6.91 and 4.14% activity in Methanol extract. Similarly in Ethyl acetate % activity was 9.05, 11.2, 13.7, 19.7 and 13.0 % in per ml of DPPH.

Antimicrobial Assay: In the present study, the Ethyl acetate, Methanol (Salted and Desalted) extracts of *G. salicornia* were evaluated for their antimicrobial activity using well diffusion method against *S. aureus*, *P. aeruginosa*, *K. pneumonia*. The test was performed in triplicates for EA, MED, MES extracts. Mean value of zone of inhibition for Ampicillin (1mg/ml), methanol, ethyl acetate extracts were considered (Table 3). Among the algal extracts and Ampicillin, only standard possessed antimicrobial activity against the *S. aureus*, *P. aeruginosa*, *K. pneumonia*. Respective solvents were used as the positive control, which did not show any zone of inhibition.

Table 3 Antimicrobial assay

Zone of inhibition (mm)				
Name of the organism	Std	EA extract	MED extract	MES extract
<i>S. aureus</i>	20	-	-	-
<i>P. aeruginosa</i>	30	+	+	+
<i>K. pneumonia</i>	20	+	+	+

Discussion

In this study phytochemical analysis showed the distinct patterns of chemical compositions in constituents of Ethyl acetate and Methanol (Salted and Desalted) extracts. The patterns of composition differed considerably in their quantitative values (Table 2). Alkaloids, Tannin, Phenol and Coumarins were absent in both Ethyl acetate and Methanol extract. Steroids, Terpenoids, Saponins and Quinons are present in all the extracts. Flavanoids were present in methanol extract and absent in ethyl acetate extract. However these few studies showed promising results regarding the biological activity of *G. Salicornia*. In future, *G. salicornia* can be recommended to patients as an effective multi-amino acid, multi-mineral, multi-protein tool in the form of a food or drug with further studies in comparison with our studies reported. Mineral such as Potassium, Copper, Cobalt, Calcium, Sodium, Iron, Manganese, Nickel were present in *G. salicornia* and potassium is highest concentration with 2414.02 mg 100 g⁻¹ [26]. Amino

acids such as Gly, Arg, Ala, Tyr, Met as well as Leu and Lys were reported in *G. salicornia* [26]. Feroz 2018 has described the presence of saponins in *Gracilaria* species with the ability of saponins to enhance the body's immune response by generating immune-stimulatory effects against an antigen and assimilating large molecules when given along with orally administered vaccines. Similarly *Gracilariachangi* contains Vitamin C in equal amount when compared to vegetables like lettuce and tomatoes. Levels of β -carotene in *Gracilariachilensis* were reported to be more than that of carrots [6]. β -carotene has the ability to enhance the cell-mediated immune responses, essentially in the elderly [3]. The Antioxidant assay of the seaweed extracts was measured on DPPH free radical scavenging activity of the standard to the test extract (Figure 3). The extracts of the ethyl acetate and Methanol Salted were found to have no significant use as a biological active compound. Antimicrobial analysis did not show any significant results (Table 3).

Conclusion

According to our study *Gracilaria* species including *G. salicornia* are rich in terpenoids, steroids, saponins, quinons which can be used in therapeutics. As other *Gracilaria* species with similar phytochemical properties have the important therapeutic uses such as antimicrobial, antifungal, antiviral, antihyperglycemic, anti-inflammatory, antioxidants, immunomodulatory and antiparasitic. *Gracilaria* species are rich in nutritional value such as proteins, carbohydrates and polysaccharides. It exhibits a broad spectrum of nutritional compositions which make it excellent candidate for a healthy food for human nutrition. It is used as edible seaweed in many countries such as Hawaii, Japan, China and Korea. Further research needs to be explored to study the bioactive compounds of *G. salicornia* in Indian sub-continent region with different approach such as hot extraction method use of higher concentration and for the successful implication of them as a potent immune booster and therapeutic agent.

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Pedagogical Changes on Higher Education System during COVID-19

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Abstract

Education is a key tool for our better future. It helps us to achieve our goals and come up with finer earning opportunities. But the Covid -19 pandemic has redesigned all our lives, the sudden conversion to online platforms, everybody anxious about its impact on the higher education. Online education is not about one model of learning, but an amalgamation of different models of teaching. It combines learning psychology, behavioural studies, content delivery, etc. to analyse students' progress. The old pedagogy, chalk-talk teaching model is transformed into a different one which is led by technology. In this paper, I tried to present the importance of acquired knowledge of every teacher concerning pedagogy to perform well in his/her teaching profession. Teaching is an active and interactive process and the method of teaching is a master plan of what is to be done by a teacher in the classroom.

Keywords: pedagogy; digital learning; teaching; higher education; covid-19; effective teaching;

Introduction

“Education is the manifestation of divine perfection already reached in man”, by Swami Vivekananda. It is the process of acquiring knowledge, skills, values, beliefs, habits and it makes a human being into being a human. To complete formal education we need a perfect pedagogy or art of teaching as it includes effective interaction between teacher and students, organized curriculum, structured group work, guided learning and individual activity. Pedagogy has to focus on three main points:

- Curriculum
- Method of teaching
- Create meaningful experiences for students

In education we cannot neglect higher education as it allows you to pursue a career to be a successful being in the society. It offers final stage of formal education, offered by Universities, academics, colleges, seminaries, and institutes of technology that award degrees. Higher education includes teaching, research and social service activities of universities.

Purpose of Higher Education

The main purpose of higher education is to scaffold individuals through the development of abilities and aptitudes to attain their goal and make them to be successful in their life. It

also helps you to get freedom to choose a good career. Higher education contributes directly as well as indirectly to the wellbeing of a nation. Ultimately higher education provides wisdom, knowledge and love for higher values of life and training for leadership too. Around the whole world India stands third position in higher education. India has 50 central universities, 402 state universities, 334 private universities and 4000 colleges. The main objectives of higher education are given below:

- Sense of wisdom
- Exciting life
- Freedom
- Comfortable life
- Socio-cultural development
- Better employment benefits
- Sense of fulfillment
- Leadership training
- Inculcate nationalism
- Develop democratic idealism.

Challenges in Higher Education

Shortage of faculty and high student ratio: UGC always focus on quality teaching and learning process. Various reports say that 30-40% of faculty positions are unfilled. Many faculties have no idea about teaching methodology. High student ratio, outdated and rigid curricula also cause challenges in higher education system. Most of the graduates are attracted towards other sectors to pursue their career as they are attracted to the perks that they gain in corporate sectors.

The supply demand gap: Despite an average growth of over 7% in the last decade, India's position in higher education is very low. India needs to drastically increase the number of places at universities and enrolment through distance learning programs. More and more competitive courses have to be implemented in the curriculum. Over the last decade, the diversity of courses offered by universities and colleges has become less.

Inadequate infrastructure and facilities: In most of the rural areas the Education centers possess poor infrastructure like old and unfurnished buildings many institutions are running without proper infrastructure and basic facilities like library, hostels, transports, labs, sports facility etc. which is desirable to rank the quality institution.

Role of Pedagogy in Higher Education: 'Pedagogy' is a more complicated and powerful term than 'teaching' as it is a mix of knowledge and skills that is essential for successful

teaching from teachers and facilitating development in students. Pedagogy is the science of teaching i.e., a master plan which includes the details of what is to be done by a teacher. Good teachers use an array of teaching methods because there is no single approach towards teaching. Various methods used in different combinations with different group of students improve their potentiality in learning. Pedagogical practice promotes the well-being of students, teachers and the school community; it helps to enhance confidence in the quality of teaching and learning in the college. Effective teaching through pedagogy display skills at creating curricula designed to build on students' present knowledge and understanding and move them to more sophisticated and in-depth abilities, knowledge, concepts and performances. Effective teaching necessitates making difficult choices, exercising careful evaluation and carries the technical knowledge of educational mission.

Objectives of the Study

- To find out the pedagogical changes during pandemic in higher education.
- To assess the various tools for digital classrooms.
- To understand the importance of pedagogy in higher education.
- To find out the better pedagogy during Covid.

Pedagogical changes during COVID-19: The horrified and grave impact of COVID-19 has shook the world to its core, this pandemic has forced to close universities and colleges around the world; it has led education in digital mode. Most of the Governments around the world have temporarily closed educational institutions in an attempt to stop the spread of COVID-19 pandemic. In India too, the government as a part of the nationwide lockdown has closed all educational institutions, as a consequence of which, learners ranging from school going children to postgraduate students are affected. No one can assure about how long these closures are likely to last. Though initial measures are taken by many countries from March yet the threat is persisting. The undergraduate students are in confusion and without a clear idea of how long this pandemic would last. It is stated that social distancing can help to keep away the virus and reduce fatalities. But in this crucial situation the teaching learning process has changed from chalk- talk model to one driven by technology. In this scenario, this paper highlights the immediate effects of Covid-19 on the higher education sector. First, we will see the immediate shift in imparting knowledge through e-learning. It is clear that “teachers will not be replaced by technology, but teachers who do not use technology will be replaced by those who do”. Secondly, we will look into the tools available for teachers to teach online. Finally we can consider various observations and systems on the higher education sector. The institutions cannot predict their future as students may force themselves to drop out or new

admissions may not happen. Along with the pandemic impact on students, teachers too significantly suffer the impact at workplace. First, the temporary contract may be terminated. The teachers who do not have knowledge in virtual teaching method may face great difficulty. So, in this status, the training should be provided to teachers through videos to use technology to facilitate virtual classes. Some institutions provide pre-recorded videos of syllabus. Ironically covid-19 pandemic triggered a new education revolution around the world to get the education from constructivist classroom to virtual classroom by using both human and technical support.

In a pre-Covid 19 world online classes were considered as a method of learning for working people or distance learners. But this Covid 19 pandemic led us sit at home and teach. So, let us see what the available tools for e-learning are. Through E-learning we can use typed documents, video or audio clips, upload notes and evaluate assignments, conduct tests and giving feedback. In this virtual world of education, we can comply some teaching learning tools.

Virtual class rooms: It's an online teaching process that provides a live interaction between teacher and students through video conferencing or meetings. By this we can share assignments, contents, video clips etc. Virtual class rooms allow teachers and students to communicate, collaborate, explain, and share their ideas.

Digital library: Digital library or e-library is a website which provides books to be displayed on the screen. The advantage of e-library is its accessibility for multiple users at the same time. They offer educational resources to everyone. It provides free copies of books, journals, etc.

Info graphics: Info graphics is a combination of "information and graphics". Visual representation of information, data, content, meant to present information rapidly and accurately. In newspapers, info graphics are shown to represent weather maps, data etc. It can be used according to the potentiality of students, subject matter and other factors. Info graphics is effective because of their visual element as it helps to enhance knowledge retention and recollection.

Student digital dashboards: It allows people to create beautiful and attractive documents to enhance effective and interesting teaching learning process. It helps to access organized information and manage students in a meaningful way. Documents, photos, videos and music can be used to make the information attractive and lively. These are little alternative pedagogy that uses technological tools to facilitate academic activities.

Conclusion

After Covid 19, about 1.3 billion learners would not be able to attend classes but this pandemic has set to change the teaching learning process which is merely technology based. Creating high quality digitalized learning material would become 'byte sized' and it helps in making learning interesting and participating. In classical pedagogy, the teacher was the centre and the knowledge transaction was done through constructed way. This will not be possible in digital class room. Virtual class room is not about one pedagogy but a collaboration of different modes of teaching. It combines students' psychology, behaviour, content delivery, pre-requisites and assessments to measure students' progressiveness. But while moving forward, the use of technology in teaching or recruiting will make a new era where the best faculty will be available to the students. The social distancing measures and stay home ideology orders during pandemic may get an opportunity for students to adapt to the new 'classroom scenario' which needs mutual support and understanding. The pandemic pedagogy offers huge opportunity for experts from various field of teaching. Based on the advanced developments in pedagogy, teaching has become more than an activity that conserves valued knowledge and skills by transmitting them to succeeding in generations. In this time of pandemic an all-round and effective educational strategy is required for the endogenous development of students. It will develop skills that will guide their employability, productivity, health and well-being that ensure the overall advancement on our academic platform. With the right approach, and right pedagogy teachers can motivate and lead their students towards the right future.

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Covid 19 and Its Impact on Travel and Tourism

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Abstract

The travel and tourism companies have been hit harder by (Covid-19) pandemic. The various sectors like flights, buses, Trains, lodges, resorts, restaurants and tourist places have been closed. Most of the employees have lost their jobs. International tourism economy in 2020 has declined to 60-80 %. The countries have come up with measures to support tourism. They are thinking of slowly lifting the ban travel restriction, develop confidence in traveler and to restore tourism and travel in future.

Key words: Covid-19; Impact; Travel; Tourism.

Introduction

Over the past tourism is one of the major contributors for economic growth of the country [1]. Provides numerous job opportunities. COVID- 19 called as Corona virus came into existence on 11 February 2020. On 30 January 2020 the outbreak was declared as International health emergency. This disease was first diagnosed in China (Wuhan), when a patient was suffering from pneumonia of unknown cause. It is pandemic about 155 countries have become the victim of this disease. The tourism sector is hardly hit in china, Asia and Europe [3]. High mortality rates are observed in Asia, Europe and the Americas. Italy, China, the US, Spain and France. Many of them have died especially the old people are more prone to the disease. But the disease is not fatal. Italy, china, Spain, Germany and of course US have lost many lives. The pandemic has created fear in the minds of People. Due to fast spreading and increasing COVID 19 cases travel and tourism has totally stopped in all the countries. The boundaries of respective countries are sealed. The flights are cancelled. Trains are stopped. The Bus transportation is halted. The cruise ship sailing is stopped. Tourist places like Kathmandu, Berlin, Rome, Paris, New York, Thailand, Malaysia etc has stopped people entering to these places. In Spain, Italy about 14% of the GDP is contributed by tourism [5]. The tourism agency and the employees have lost their job. About 50% of the jobs are reduced in tourism. The employees are given 50% of the salary. In the month of April and May India lost the revenue of Rs. 69,400 crore in travel and tourism [2]. No doubt online work is in progress in travel and tourism agencies but with fewer employees.

Effect of covid-19 on transportation and tourism

At present special flights are flying for the people staying in other countries and are eagerly waiting to come to their native countries. But maintain the distance, hygiene, sanitation and limited passengers are allowed to travel for their native places. The tour package to other countries is totally stopped. The countries like Thailand, Malaysia, Nepal, Dubai etc are dependent on tourism are economically badly affected. In India Darjeeling, Masoori, Nainital, Goa etc which are all dependent for income source are very badly hit. Around 10.5 million foreigners travelled to India, from other countries, Indian tourist around 1.8 billion travelled within the country. 26 million tourists from India travelled overseas. At present restricted flights have started but the fare is too high because of social distancing in flights seating arrangements should be maintained.

Even if the bus, trains, flights, hotel, restaurants, Lodges, resorts and home stays starts the people may not travel because of fear of infection. The travel and the tourism should come up with new ideas to overcome the problem. At the present situation the govt. cannot start the scope for international tourism but within the country at local region it is possible by following the rules and regulation. Hotels, resorts and lodges have reduced their tariffs to attract tourist.

Business travelling to other countries is totally stopped, the business-related work is under progress through internet and zoom video and conference. The number of employees is reduced to 50%.

The International symposiums, conference, workshops and seminars have come to halt. But at national level the institutes are managing national conference and seminars through webinars, zoom app, Google meet etc. Face book F8, Google I/O, ITB Berlin, Expo 2020, NAB Show, Geneva Motor show, Wimbledon and Olympic is also postponed.

Tourism in religious places is totally stopped. Amritsar, Tirupati, Shirdi, Vaishno Devi, Puri, Ajmer, Kashi Vishwanath etc has stopped the entry of tourist visiting. The government has started in few states to visit the religious places like Karnataka but maintaining the rules and regulation. But increasing infection of COVID 19 the govt. may stop the permission given. Globally also Mecca and Medina has also stopped the tourist visit.

Wedding destinations are seriously affected. Especially some places in Italy and Thailand are famous for wedding destinations. In India Udaipur, Kerala and Goa are famous for wedding destinations which are closed totally.

Road trips are favored in nearby city areas with short vacations in week end days. The tourists are searching for comfort and hygiene rather than luxury.

Statement of problem

The present status of the tourism, visit to national and international tourist places is restricted. Travelling by means of Bus, train, ship and flights are limited and used only during emergencies. Because of this about 75% of the of employment in hotels, restaurants, resorts, lodges, travelling agencies, cruise ships, private flights, tourist buses, religious places etc have lost their jobs. Hence it is the prime duty of respective government and policy makers to come up with new ideas to boost tourism globally.

Objectives

- Initiate tourism sector during covid-19 pandemic.
- To protect employees from losing their jobs.
- New rules, regulations and polices implementation to boost Tourism.

Suggestions to restart travel and tourism:

- Distance maintaining between the Individuals.
- Face Mask wearing is mandatory.
- Compulsory medical check-up for covid-19.
- Maximum of two in one cottage in resorts or lodges.
- Only above 25 age to 50 age category people can travel and stay in lodges.
- Start travelling to the places like resorts in isolated jungle lodges where the crowd is less at present.
- Proper sanitation and keeping hygiene in tourist travelling and staying places.
- Reduce the number of travelers in vehicle.
- Focus should be on domestic tourism to gain some profit [4].
- Reduce cost of tourism packages.

The above rules and regulation will definitely help to start travel and tourism in India.

Conclusion

Corona virus pandemic have made travel and tourism completely halt. But it has not yet defeated the spirit of people working in the sector. It may be a big blow but it is not the end and there is hope of restoring and building the confidence of the people to bring back to its original status. Maintaining distancing, hygiene, and following the suggestions mentioned above will to some extent will boost travel and tourism industry globally. The

request to the people not to give up domestic tourism. It is a hope for the tourism to flourish at present. As the bad phase comes and passes in life, This Too shall pass [6].

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Ideating Restyled Bamboo Bags on Local Market during Covid-19

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Abstract

A startup is to be one's own boss and to create employment to others which warrant a lot of endurance and sacrifice. Fashion Design in India has changed over the years and is thriving successfully. India always had a rich culture towards a craft tradition. Changing styles in handicraft gave an elevation to the Indian market and fashion industry. A reusable shopping bag, sometimes called bag-for-life in India is a type of shopping bag which can be reused many times. Restyled reused shopping bags are definitely superior for the environment than throwaway plastic bags, but not all bags are the same and safe. Bags manufactured from bamboo provide an unparalleled level of sustainability and eco-friendliness. Few analyses have been carried out with bamboo fibers despite its high strength, biodegradability, and low cost. The overall objective of this work was to survey the restyled bamboo bags in local market during covid-19 for all class of people and to create opportunity for startups. A bamboo fiber has natural functions of anti-bacteria, bacteriostasis & deodorization. Even after fifty times of washing, bamboo fiber fabric still take over excellent function of anti-bacteria, bacteriostasis this majorly adds more strength in quality of bamboo bags to prevent present situation of covid-19 adding Textile finishes like Antiviral & Anti-microbial to stop the spread of viruses. Restyling bamboo bags with surface ornamentation creates a classic look in fashion market.

Keywords: Fashion, Culture, Employment, Make-in-India', Startup.

Introduction

A startup venture could be defined as a new business that is in the initial stages of operation, beginning to grow and is typically financed by an individual or small group of individuals. It is a young entrepreneurial, flexible business built on technology and newness where the designer develops a product or service for which they expect demand through the separation of existing or by setup entirely new markets. Startups are nothing but an idea that demonstrates into commercial empathy. In Indian traditions and crafts provide a wonderful backdrop and inspiration towards looking at and understanding modern design. Changing styles in handicraft gives encouragement to the Indian market and fashion industry. India's heritage in exotic handicrafts has naturally added to the current potential for more creative approach to get larger in the field of fashion. The scope of fashion design is not limited to designing outfits; it also covers a wider area of design

which also include of footwear, jewelry, accessories, handbag, luggage, etc. As the fashion industry is an ever-expanding sector, its growth is the evidence that the industry is here to stay. A reusable shopping bag, sometimes called bag-for-life in India is a type of shopping bag which can be repeat innumerable times. It is an alternative to single-use paper or plastic bags. It is oftentimes a tote bag made from fabric such as canvas, natural fibers such as Jute, bamboo, woven synthetic fibers, or a thick is more durable than disposable plastic bags, allowing multiple uses. Surface ornamentation is an important component of free form on bamboo products it is a great style and skills to your work and putting your own stamp on your project. The bamboo bag might be the perfect replacement for single-use plastic. It is understood that reusable bags are safer on the environment, but once you decide to make the moving to reusable bags your decisions do not end there. Reusable shopping bags are surely preferable for the environment than disposable plastic bags, but not all reusable bags are the same. Bags produced from bamboo attempt an incomparable level of sustainability and eco-friendliness. Combining fashion and bamboo new styles bags give modern look in local market of India which creates opportunities for startups. The market is fragmented, and the degree of fragmentation will accelerate during the forecast period. New startup ventures and few of the major market participants are the increasing fashion consciousness will extend immense growth opportunities. To make the most of the chance, market merchants should target more on the growth prospects in the booming segments, by maintaining their positions in the growth slowdown segments. Increasing fashion consciousness has been instrumental in driving the growth of the market. The 'Make-in-India' initiatives and other government schemes have also given a boost to startups with many individuals entering the fray. Starting a own venture should a well-planned and disciplined exercise with due consideration of both internal and external factors that may influence the sustainability of the enterprise. The idea behind the venture, revenue, market segments, competitor and profit are some of the important aspects that need to be clearly defined before initiating on the journey. Time, partnership unity and determination are important factors that decide entrepreneurial success. Place, infrastructure, government rules-regulations and availability of fund investing at various stages of growth will be some of the challenges for startups.

PM Narendra Modiji have launched the GaribKalyanRojgarAbhiyaan on 20th June 2020 to encourage livelihood opportunities in rural India and the huge rural public worker scheme 'GaribKalyanRojgarAbhiyaan' is aimed to empower and provide employment

opportunities to returnee migrant workers and rural resident. The Startup India scheme has played a significant role in galvanizing entrepreneurial spirit and easing the compliance burden faced by startups in India.

The new Seed Startup Fund of INR 20K Cr should dedicate at least 25% of its corpus towards credit lines for Indian startups. If Silicon Valley created the digital ecosystem of the first billion people, India can create it for the remaining 6 Bn people worldwide. The COVID-19 crisis has taught India to be self-reliant. India will reduce its helplessness on imports to make India self-dependent in all district sector, a major step is being taken. Prime Minister Narendra Modiji said while addressing the launch event through video conferencing. Prime Minister Narendra Modi has also announced the Atma-nirbhar Bharat Abhiyan (or Self-reliant India Mission) which helps all the youth to startup their own sector of field interested.

Bamboos are the large woody grasses and over 1200 species of bamboo are known to remain exist all around the globe, with sizes starting from tiny to giants stems of over 60 meters. Bamboos are among the rapid growing plants on the earth and are an essential part of the social, cultural, and economic heritage. The traditional use of Bamboos to create a household piece of furniture items like stools, decorative craft things like wall-hanging, flowers, utility things like pen stands, photo frames, baskets and mud bins. Engaging convenient and eco- friendly products made out of cane and bamboo are fruit and vegetable baskets, beer mugs, hair clips, flower vases, containers etc. Cane and bamboo craft is one of the various crafts that are found in Sikkim. The articles created are mainly for day to day use. Bamboo is a smart substitute for plastics, steel and cement for housing, furnishings construction and agricultural tools and implements together with new styles and improved technologies. It's additionally an ecological property raw material that can offset the exploitation of our forest.

Bamboo based products are produced from thin strips of bamboo. There are a wide range of such products which they have been closely connected with the evolution of civilizations in bamboo growing places of the world for many years. The products are primarily planned for agricultural use, such as baskets for vegetables or animals and winnowing trays for cereals and some household products such as baskets, jars, case, trays, lampshades, mats and fans. The techniques require substantial skill and practice on the part of the weavers and the designs require newness on the part of the designers. A bamboo made product unit provides profit generation and skills development to those that it employs. Weaving can be done on plant or at home in leisure time or full time.

Increasing the use of bamboo resources in local market also encourages their sustainable management and has benefits for bamboo cultivators.

The production of bamboo products is traditionally practiced for more than a thousand years and is widely spread across. Making up bamboo based products combines traditional weaving techniques with modern technology. The majority of the bamboo based industries are uniting as cottage and small-scale enterprises.

There are various bamboo based products including sofa, dining tables, baskets, trays, jars, boxes, cases, vases, folding screen, models of animals and figures, building, furniture, lamps and lanterns, bags, toys, fans and mats. Some are elegant pieces of art for ornamentation or enjoyment and some of them are 75 indispensable products. The design and style of the products often vary according to place of manufacturing. This natural support system plays a major role in the employment of rural people and in rural industry. This green gold bamboo is sufficiently cheap and ample to meet the vast needs of human populace from the “Child’s cradle to the dead man’s bier”. So, sometimes it is known as “poor man’s timber”.

Objective of the study

The long term goal of the research is to Ideate Restyle Bamboo Bags on Local Market during Covid-19. Design and developing Stylized Bamboo Bags to common people in local market defined herein as the process of identifying, classification and modeling for present market scenario. The objective of the study is to provide a comprehensive review of literatures industry practice in relation to limitation analysis and outline a conceptual framework. The study has the following sub objectives:

- To identify the awareness of bamboo bags among local market/retail market
- Predictions on upcoming trends and changes in consumer behavior
- To study detailed information on factors that will assist bamboo bags market growth during the next five years.
- To restyle and recreation of bamboo bag according to the selected niche market.
- Create a sample study on opportunities for startups as make-in-India.

Scope of the Study

The study constructively for the analysis of local market acceptance of newly designed bamboo bags for low cost and to replace the plastics. Reusable shopping bags provide an eco-friendly environment and create employability for startups, Make-In-India products during Covid-19.

Research Methodology

The primary aim of this research work is to create and build awareness among fashion companies and other members of the whole value chain of fashion products to use sustainable bamboo materials in the manufacturing of bags. It will ensure a check of source and originality of the product from its raw form to the finished product form until it reaches the ultimate consumers. The project represents the study and research of eco-friendly sustainable bamboo bags to local market. In this research, we provide a vision of extraordinary uses and applications of bamboo in fashionable bags to get a competitive advantage in the market. Opportunities for startups during Covid-19. The data required for this study collected from primary and secondary sources. The primary data are collected through a well-structured questionnaire. The secondary data are collected from the books, research papers, magazines, journals and other electronic data sources. Restyling, finishes and market study are used for Analysis.

Importance of the Study

- Study the unique properties of bamboo and its application on fashion products.
- To recreate the bag style and reach a population of the target market and evaluate the acceptability.
- Understand the techniques involved in making bags.
- Study job opportunities for startups and support systems by the Indian government to overcome un-employability during Covid-19.

Materials & Methods

A survey is conducted to understand the market and consumer tastes preferences. The method/technique used to make bamboo bags is at most important to restyle the designs. The Bamboo is familiar as one of the materials more versatile of the handicraft production because it is a raw material of easy acquisition, low-cost and demands simple tools in preparation. The traditional method continues to be used for processing the raw materials and for creating products. Designing and developing the bags with some basic techniques like Cutting, Scraping, Marking, Splitting are used and machines like Bamboo processing machine, Splitting machine, Polishing machine, Drilling machine, Glue Mixing and Weaving machine, Pressure machine is used for these process. Use of jigs & fixture to make uniform size & reduce production cost. Identify finishing materials & apply different methods of finishing of bamboo products.

Designing

Designing is a very vast subject and had different meanings for item to item, source to source and product for academic and practical purposes separately. The designing can be categorized in five types viz.,: Natural design, Decorative & stylish Design, Structural Design, Geometrical Design, Abstract Design:

- In natural design the ideas and motives are taken from nature flora and fauna. These designs should not be tinkered to preserve the esthetic beauty and essence of the design.
- The source of decorative and modish ideas in designs is also nature and detailed which are manufactured facilitating simple imagination and are meant for general customers.
- In constructional shapes called structural design frame work is the main topic of the design.
- In geometrical design the motif are integrated from the geometrical patterns.
- In abstract design the idea is hidden in the pattern itself and the composer is the only person to express the idea, meaning and beauty.

Operation Techniques

Cutting: Cutting of bamboo is two-hand operation with a crisscross saw, the right hand is used to hold the saw and push against the bamboo, while the left-hand holds the bamboo firmly resisting the movement because of saw, a groove is made through the periphery of bamboo using saw before cutting it.

Scraping: Scraping is the method of removing the outer skin of the bamboo using a scraper. Usually, a scraping tool is a simple bolo, the sharp edge of bolo is rubbed against the bamboo skin to scrap it off.

Marking: To prevent unnecessary wastage while processing bamboo into smaller required pieces, bamboo is first properly marked as per the requirement and divide the bamboo for convenient sizes.

Splitting: Splitting is a method of processing bamboo into a thin strip. Splitting is done with the help of a bolo tool, where bolo is wedged between the bamboo strips and is dragged to create thin long strips of bamboo. To process large pieces of bamboo, a wooden mallet is used to hit the bolo to split the strong bamboo.

Splinting: Splinting is another technique of cutting bamboo into thin long strings for the weaving process. As in splitting, a bolo tool is also used for this process.

Width Sizing: Width sizing is a method of creating uniform-sized bamboo strips, a tool call width sizer is used in preparing uniform width-sized bamboo strips.

Thickness Shaving: To make bamboo strips uniform, uneven thickness of bamboo strips are shaved to get uniform thickness, a tool is used for this purpose where bamboo splints are passed through it to get uniform thickness.

Bleaching: Bleaching is treatment given to bamboo splints by the boiling method. The main intention of bleaching bamboo is to remove resinous substances which are unfavorable for weevils. Bleaching is done by boiling bamboo in a boiling pan.

Dyeing: Dyeing is the process of coloring the material by boiling it in the color dye. Adding a little salt while boiling makes them colorfast. Dyed materials should be washed in freshwater to remove the excess dyes.

This research briefly describes the present use of bamboo for different applications. It will help the designers and companies to change their way of thinking and develop new products with the vision and aim of reusing bags to save the environment and create employability. The above data is used for the analysis of the concerned areas as mentioned in this research, and it is assessed and discussed for the summary below.

Limitations

- The Sample market place selected doesn't represent the entire population.
- Sample designs are subjected to change with evolving customer's behavior.
- As the study was done for a limited period, the suggestions and findings may not hold good.

Summary

The bamboo plant usually used for making handicrafts in suburban and rural areas of India. It is also as raw materials of different household products, production of paper and useful handicraft. Bamboo is used in the production of different products in different countries. Research has proved that bamboo has desirable natural anti-bacterial properties and also process deodorizing property, these property does not demise even after repeated washing for several times. This makes bamboo to be an excellent material for the clothing fabric. This majorly adds more strength in the quality of bamboo bags to prevent present situation of covid-19 adding textile finishes like antiviral & anti-microbial to stop the spread of viruses. So, it is necessary to cultivate bamboo through suitable techniques. And it is necessary to verify the results of the plant extract by using modern methods. Eco-friendly products have become a necessary aspect of textiles and clothing industry, transforming the textile industry into a more feasible one is need for present times. Using

bamboo in textiles is also a part of this process and a step towards the milestone. The environment is the main driver for both industrial and governmental sectors, and the requirement for this driver is to give it eco-effective products because future survival depends on it. Therefore, this study is all about saving the environment and reuse of bamboo bags to prevent the use of plastic. The ideas of making high-quality re-usable carry bags from bamboo waste/raw. In longer-term, reuse based initiatives hold a profoundly different emphasis from the present-day status that unquestioningly accepts the presence of re-useable bamboo bags at low cost. There are top four entrepreneurial attributes according to the research findings they are social networking, resiliency, innovativeness and risk taking. Innovativeness is most necessary for in the fashion field to come up and acquire new processing methods, marketing process and problem solving, considering the challenges of the fashion market for startups. Using Government schemes like Atma-nirbhar Bharat Abhiyan (or Self-reliant India Mission) which helps all the youth to startup their own sector of field interested this will also help to overcome the employment problem during COVID-19 crisis.

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The Tactical Plans for Consumption of Local Products in India during Covid-19

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MLA Academy of higher learning

Abstract

The unpredictable pandemic appeared to the world which brought huge damages to our country. India has been stuck into the bad evil and fighting against Covid-19 pandemic. This disease gave us big break to the life of people and its effects on all living creatures of our country. Many industries, academic institutions, MNC's, IT companies, small scale industries, MSME's and also political programs were faced many challenges to overcome the Covid-19. Every citizen of the country should take responsibilities to fight against the deadly disease. We know that this deadly disease was first found in China at Wuhan place in the month of December 2019. After WHO declares about global emergency, India was in high alert and took major decisions in various states of Indian country. These decisions were affected majorly to all living beings. Many citizens of our country were very much panic to use the foreign products such as China, America, Brazil, Russia and Iran. They were afraid much on China products because the virus was first existed there. People of India should develop our country products and should give high importance to local products. This paper shows us the usage of Indian products, pros and cons, percentages and also the steps of 'Vocal to Local'. Here we are looking into differences between Indian products and China products. It gives us an immense opportunity to raise a voice on local products. We as Indians should raise a voice on Indian products.

History on importation from China to India

India-China trade relationship started from 1984, in this year they entered into the trade agreement and in the year 1992 involved in full fledged trade relation. The year 1994 was marked as conservative year to India-China economic relations. This is the year where 'double taxation' agreement has been signed between them. They mainly entered into bilateral trade relations. Both the countries were also shown interest towards multilateral trade and in the year 2003, they signed the Bangkok agreement which states that some trade preferences to both the countries. India was given 217 products to export on tariff basis, Later both the countries that are India-China entered into the agreement to initiate open border trade via the silk route.

As per the WHO commitments the two countries were shown interest to take part also in multilateral trade and this would help them to enrich their trade relationship with

different multinational countries. In the year 1991 it was 127.03 Billion dollar, it reaches to the high in September 2018 to 467.49 billion dollar.

Now at present scenario China was extremely high rated with Indian trade relationship and India stands tenth position in importing goods/products from china. From the earlier these two countries were dealing with many other products like automobile equipments, home appliances, furniture, mobiles, toys etc. As India have chance to import the products to china or any other foreign countries even they have opportunity to export the goods like textile garments, gems / jewels and also some agricultural products. But now, due to this pandemic the rate of importation have been decreased to 3219800 dollar on April 2020. Where as in March 2020 it was 5838500 dollar has china exports to India.

Now, let us see the import sources from China

Top Ten Import sources of India

Country	Export value (2018-19) US\$ Billion	% Share(2018-19)
China	70.32	13.68
USA	35.55	6.92
United Arab Emirates	29.78	5.79
Saudi Arab	28.48	5.54
Iraq	22.37	4.35
Switzerland	18.08	3.52
Hong-Kong	17.99	3.5
Korea	16.76	3.26
Singapore	16.28	3.17
Indonesia	15.85	3.08

The above table shows us the details on various countries, its Export value and its percentage of share. So it clearly tells that china has got a biggest import duty to India that is 70.32 US Dollar followed by USA and other countries. Indonesia has got very low import rate that is 15.85 US Dollar when compared to other countries. Even when we observe the percentage of shares china got highest % of 13.68 and lowest was 3.08% in case of Indonesia. These data are related to the year 2018-19. Therefore china is the first country where India imports more products/goods from there.

There are ten major products that are exported from china to India. They are:

1. Electronic equipment
2. Machines, engines, pumps
3. Organic chemicals

4. Fertilizers
5. Iron and steel
6. Plastics
7. Toys
8. Gems, precious metals
9. Ships, boats
10. Medical and technical equipments

Till then we discussed about the history of trading between China and India but at current situation had been completely changed due to Covid-19. Current percentage of imports from China is 13.5% in the year 2020. This year was very bad evil on Chinese products because most of Indians were literally afraid to use their commodities. The mindset of Indians were very sensitive in nature, they may completely stop buying Chinese goods in future days. So, now it's time to take a major step to India to start manufacturing goods inside our country and starts exporting it to other countries. Recently India's Prime Minister gave a call on 'Vocal on Local' to encourage on Swadeshi commodities.

Why do India import from china?

As mentioned about the trade activity between the two countries began in the year 1992, they were signed into the agreement further buying and selling activities. Their trade relationship was good enough and our Indians started accepting their goods. In China the manufacturing unit is double when compared to India, their items/goods look attractive and the price is also being very feasible. They produce smart phones, automobile materials and many more which is low in cost and all kind of family can offer it easily. The main reason why Indians go with Chinese products is, their products are offered in immoral prices, they produce many varieties of goods which looks attractive and will be innovative, their use of technology is better when compared to other countries. Even though they were low in quality of products their quantity will be higher and prices are feasibility.

But we need to look up some important reasons of importing from china:

- China's manufacturing cost was very low and also labour cost is also cheap
- The manufacturing quantity is high due to this their production cost is low and this leads to sell the products in best price
- To expand their global market India and many other countries were invested in China
- Transportation is also one of the reasons to import from them. Via sea, air

- Government given land for very immoral rates for rent for all factory
- Most of people having a knowledge of importing and exporting
- Custom duty is also a reason
- Their materials were easily accessible
- China products will be having better designs

Therefore these are some reasons where can see to that why Indians import from China. To avoid some amount of import activity, our country should take initiative and responsibilities to develop manufacturing the products with latest technology and well equipped machineries.

Contrast between Indian products and Chinese products

There are some differences between Indian products and Chinese products. These differences give us better idea about going with local products than foreign one.

Basis	Indian Goods	China Goods
Quality	Indian products and materials got the best quality in nature.	Chinese materials has low quality rate
Price	This products have got higher price	This got low price and feasible rates
Quantity	Manufacturing quantity was low in number	High number of manufacturing quantity
Technology	Less technology used	Technology was used highly
Innovations and Research	India spends more money and time on innovations and researches due to this reason their product price goes up	China spends less time and money in case of innovations and researches due to this reason their products can be easily intimated
Import rates	Import from China will be always higher, in worth of dollars	Indians import to China will be lower rate always
Durability/Capacity	The capacity will be more and the products have long lasting power	The capacity will be less and are non-durability

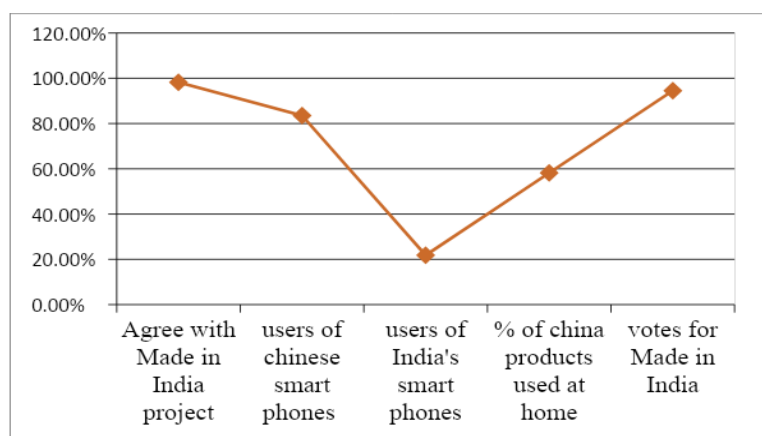
The differences may be differing from one to another but we, as Indians we need to buy Indian products and need to give supportive hands as well as uplift to local products. As we go on using our Country's commodities, we can improve our manufacturing style; improve our cost, quality and even labour charges. Year 2020 had provided us a wonderful opportunity to boycott china products and adopt our country's well equipped machineries to manufacture products better than them. As we all know that this year was chiefly known to be pandemic year, literally China made us to suffer from covid-19 and due to this Indian economy facing 'U' recession period, this will cause huge loss to all

kinds of lives of people. India is in still developing country; here we have poor background people as well as middle class people too so this will going to be a big hit to them. Now it's time to take a step more on entrepreneurship development and sudden charges to start-ups.

Data analysis in case of ‘Made in India’ concept:

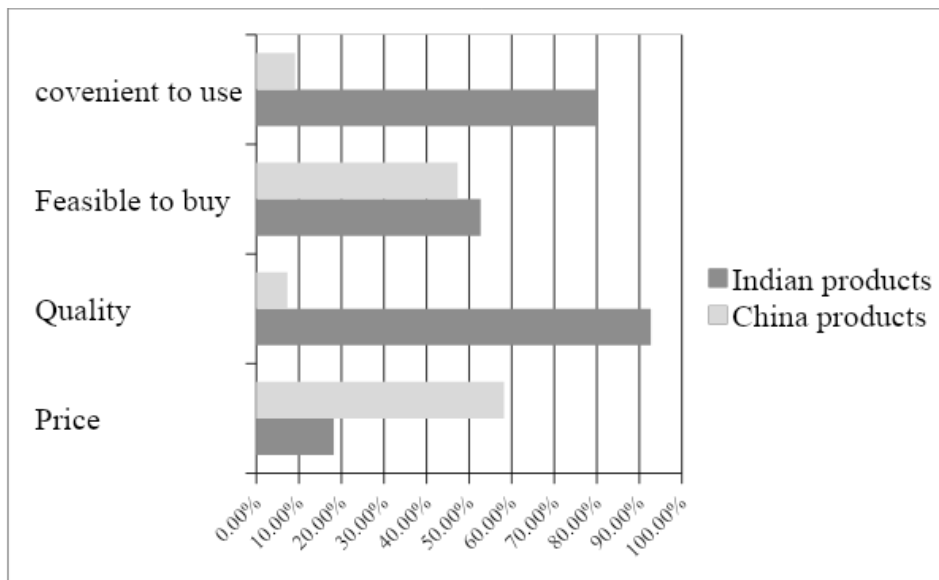
“Made in India” concept is an open call to all foreign investors to invest in our country to set-up a manufacturing industries. Basically it's a campaign specifying about the investment plan, which have been called by India's government. The concept is all about manufacturing each and every item from India and this should be exported to other countries as well as it should be useful to our own country. ‘Made in India’ concept got exists in the year 2014, 25th September as type of ‘Swadeshi’ movement which covers 25 sectors of the Indian economy. The main objective of this concept is to encourage manufacturing units and loyal investments to manufacture goods in India.

Let us look into the clear picture of data regarding India v/s China products



The above line chart shows the results of ‘Made in India’ project. Most of Indians were agree to this campaign. It's shows 98.2% of agreeing results. In India there are 83.5% of china smart phone users when compared to local smart phones users. There were many Indian families who utilize Chinese home appliances like plastic toys, window screens, kitchen wears and furniture. We have 60% of Chinese product users. Even though they were choosing china products, our Indians will always supports and votes for local products. Now, let us look into another similar data

Basis	Indian products	China products
Price	18.20%	58.20%
Quality	92.70%	7.30%
Feasible to buy	52.70%	47.30%
Convenient to use	80%	9.10%



This data gives us clear image on price, quality, feasibility and convenience in usage of local products and china products. Here we can observe that in case of price, Indian products got 18.2% whereas china products have 58.2% of price. So china has got low rate of price and this would help people to buy their products at affordable price. But when we look into the quality china has got very low quality percent say around 7.3% and India has 92.7% of quality percent. It makes huge difference in this case. When we come to the point of feasibility and convenient to buy the products, India had sustained its percentage whereas china has very low percentage.

Therefore Indians though buy the Chinese products they were not satisfy to use it optimally because of the low quality and non durability. Every Indians uses china products just for a time purpose (short duration) but most of them look for good quality and warranty of the product.

Strategic plans to be implemented to develop local economy:

Local economic development refers to the process of developing our economical activities by which civil society, business and public sector works together for growth of economy and generating employment to our Indians. Its objective is to build quality of life of people in local area and to improve economic capacity in future lives of people.

Local economic development was mainly focused on economic sustainability growth, growth inclusiveness and increase in the level of competitions. Therefore local economic development is all about sustainability in market growth in the cases of gender-sensitivity, sound environmental and economical viable and contributing to reduction on poverty. We need to take steps to develop our country's economic growth, those steps are mention below:

There are eleven steps

1. In India there are 100% of people who uses smart phones so, we need to start mobilizing marketing websites which will be convenient to users and this helps us to develop product manufacturing.
2. In websites we need to mention our product area keyword as local specification. We need to optimize with geo-terminology in case of local buyers. Also identify the targeted people in the area of rural and urban places.
3. It's necessary to go local in social media for example, facebook and instagram which allow us for advertizing our products.
4. We need to list our business in online directories this helps us in great way to advertise our brand and product with a specific location and geographic address.
5. Buyers may go for reviews before purchasing a product so it's necessary to add testimonials of a brand.
6. We need to localize our paid ads which have got good design and creativity.
7. Get out from the community based advertising.
8. Consider partnering up with same businesses in our area this would help with similarity in sharing the clientele.
9. Local marketing is one the best way to boost up our marketing strategy and helps in drawing the new customers so we need to enhance e-commerce.
10. Using of local media like television, local newspaper and magazines, local radio and blogs which helps us to keep connecting with local people.
11. Link building is also one of the strategies.

Looming large to 'Vocal for Local'

The concept 'Vocal for Local' existed in the era of the Swadeshi movement which started in 1905 as a part of Indian Independence. To develop Indian nationalism economic strategy had helped at the time. After independence, in the year 1950's and 60's Indian's followed a conscious pattern of socialistic development to create a growth for domestic big industries. This would help in competition and encourages protectionism. India saw liberalization of the economies in the year 1990's this led to an infusion of foreign direct investment and other huge investments from MNC's and corporate house and several joint ventures which made India very competitive.

As per Indian Prime Minister's call on 'Vocal for Local' in this year, it would be a lead step to take forward to encourage our Indian brands and products. We can observe that recently 'Kamdhenu paints' started its new social media to defeat against covid-19

pandemic. Self-sustainability emerges our country to uplift our local products. The campaign is all about “Be Indian, Buy Indian”. As youths of a country we need to develop our Indian brand, we need to encourage our Indian companies. We need to stop going towards ‘Videshi’ and start cheering ‘Swadeshi’ products.

Effects and Impact in employability

When India starts manufacturing in Home United States with none second idea Indian youths gets employment opportunity. All we need to do as a youth is to encourage the marketing campaign and update ourselves toward the new technology. We want to research the things from the scratch and strive exercise the same. In current years the employer who's going to recruit the candidates will mainly search for the updated model in them. The candidates who've completed their graduation should also have a realistic understanding about their related specialization. According to me, ‘education having with certificates or marks card will no longer deliver any practical inputs. It’s critical to have consciousness approximately the subject’. If ‘Vocal for Local’ found fulfillment in our country then automatically employment fee will increase. Candidates or employees who have been running in foreign countries had been fired out because of covid-19 pandemic so they have been returning again to their motherland. At this case they had been seeking to any other job without any other option. So this would assist them to grab the opportunity.

Conclusion

The year 2020 was really very unpleasant year, where our country India has to face the corona pandemic and due to this widespread of disease we need to give more importance to our country’s product and try to enhance Indian companies. Now, people were frightened to buy foreign stuffs especially China commodities because their products will be exported or dumped in our country through sea transportation and through airlines, this would be very terrific about spreading of covid-19. So, being youths and citizen of India we should raise a voice against the foreign products and need to push up our local products. There are all types of commodities available in our country for an example: we use body soaps like dove, pears, hamam etc these products were made in foreign country but we have alternative product which made in our own country. There are: medimix, santoor, cinthol, Mysore sandal soaps etc. we get ‘n’ number of products which is made in India. Not only in the case of soaps but also there are each and every brands which is made in India. Starting from eatable items to home appliances, day to day usage of products everything will be made in our India but we were never knew about it because

there was a lack of advertisements and lack of awareness towards the products. Most Indians were like to use local products but foreign products have been attracted them very quick. Now it's a time to develop our Indian companies and it's a time to give big bang to the products. Owners of the company should take an initiative steps in developing their machineries towards the latest technology and try to use some strategies while marketing. If this campaign was successfully developed then India would recover from economic loss and it would helps in employing the unemployment people and also increases economic growth. We know that India's GDP rate came down around 1.5% but if we accept and support this campaign it would be helpful and slowly we can come out of the losses due to covid-19.

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The unprecedented global lockdown: A boon or a bane to biodiversity?

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Abstract

Although the globally compelled lockdown made necessary by the nCOVID-19 pandemic has posed adverse effects on various economic sectors, industries, professional services, business etc., it has also proved to be a blessing in disguise to the environment. It has resulted in the massive amelioration in the water quality, replenishment of the nature and wildlife along with a considerable enhancement in the purity of air due to reduction of air pollution and greenhouse emissions. The enriched air quality is mainly due to the extensive reduction in factory and road traffic emissions of carbon dioxide (CO₂), nitrogen oxides (NO_x) and particulate matter. The National Air Quality Index (NAQI) data indicates the decrease in potential pollutants in metropolitan cities. Another prominent effect includes the improvement in the water quality due to the notable drop in the amount of water utilized by the industries and marked reduction in the disposal of industrial effluents in the nearby water bodies. Furthermore, the animals which are seldom seen in the public places, have come out of their natural habitat due to the prevailing peaceful and calm environment in the cities and residential areas owing to the significant decrease in noise, air and water pollution. However, it cannot be relied on the present situation to conclude that this environmental improvement will be long lasting since the emissions are more likely to rise back to the previous levels when the economic activity picks up to its original level once this crisis is resolved.

Keywords: National Air Quality Index; Particulate matter; Water quality; Wildlife; NO₂ emissions

Introduction

The infectious disease was first identified in Wuhan, China during late December, 2019 and named as COVID-19, which transmits among humans through respiratory droplets [1, 2]. The outbreak soon turned into an epidemic (Fig 1) which forced the global lockdown as a control measure to prevent the further spread of the disease [3]. The industrial activities impeded globally due to the lockdown with the adverse effect on the road and air transport sector [4]. According to estimates, the highly affected sectors of global economy includes food and accommodation, retail and wholesale, administration, business and manufacturing accounting to 37.5 % of global employment [5].

Although, there has been a negative impact on human health and world economy, there has also been a considerable decline in environmental pollution due to reduced social and economic activities. Although, the global lockdown is the only safety measure to be embraced without any question, the detrimental impacts it has on a developing economy like India is quite disquieting [6]. The Air Quality Index (AQI) has improved and the pollution levels have dropped considerably in Delhi. Clean air also facilitates the fresh air circulation in metropolitan cities of India such as Bangalore, Chennai and Mumbai [7] [Fig 2].

The decrease in levels of air pollution has attracted animals like deers and monkeys for their entry in the cities. The lesser human activity, reduced noise and air pollution has also led to the marked increase in the breeding levels of resident birds. The level of pollution in water bodies have reduced considerably due to declined sources of industrial pollutants such as crude oil, heavy metals and plastics [8].

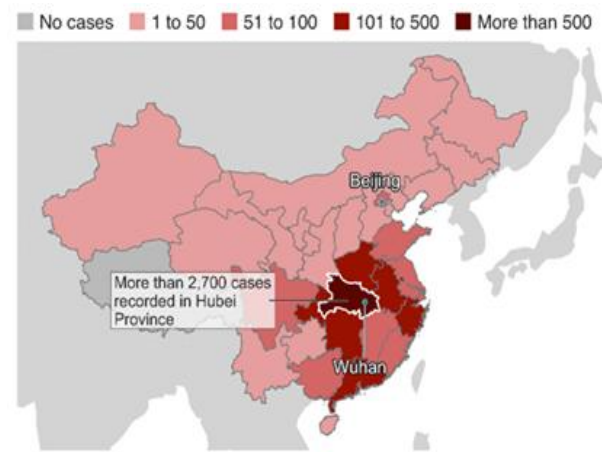


Figure 1: Emergence of coronavirus in China indicating the number of positive cases. (Source: China National Health Commission, BBC Research, January 28th, 2020).

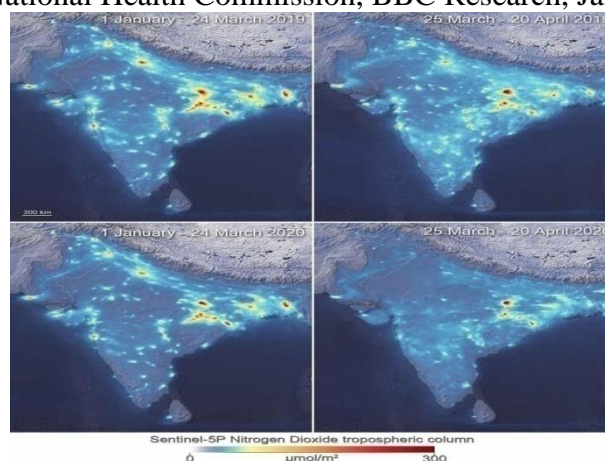


Figure 2: Comparison of nitrogen dioxide levels in India during the periods of pre-lockdown and lockdown. (Source: NASA, European Space Agency)

In addition to the constructive impacts of global lockdown on the environment, there are innumerable inimical effects due to problems with disposal of local wastes, usage of plastic bags to avoid the spread of virus through recyclable bags, trouble with maintenance and monitoring of natural ecosystems and ceasing of tourism activities to natural areas. These problems have created acute challenges for the waste management industries which have halted their regular activities due to lockdown. Natural ecosystems and protected species are at risk during the coronavirus crisis. In addition, the environmental protection workers at national parks, land and marine conservation zones are required to stay at home in lockdown, leaving these areas unmonitored. Their absence has resulted in a steep upsurge of illegal deforestation, fishing and wildlife hunting. The stoppage of ecotourism activity has also left natural ecosystems at risk of illegal harvesting and encroachment.

Most of the environmental threats induced by the coronavirus crisis will gradually resolve on their own as soon as the crisis comes to an end and previous levels of economic activity will recapitulate. But it is also an acceptable fact that the benefits of abatement of air pollution will also be expunged.

Methodology

Air quality index (AQI) is based on the calculation of the concentration of pollutants where the deliberation of an individual pollutant is converted into a sole index using suitable aggregation method [7]. Bawana was reported to be the most polluted area in Delhi with the highest recorded AQI (Air Quality Index) of 497. The deleterious effects of the increased AQI levels in the cities have been elucidated in Table 1.

Table 1 The deleterious effects of different AQI levels on human health (Source: CPCB online portal)

AQI	Quality of air	Health effects
0-50	Good	Minimal impact
51-100	Satisfactory	Minor breathing discomfort to sensitive people
101-200	Moderate	Breathing discomfort to the people with respiratory disorders
201-300	Poor	Breathing discomfort to most people on prolonged exposure
301-400	Very poor	Respiratory illness on prolonged exposure
401-500	Severe	Affects healthy people and causes serious impact on those with existing diseases

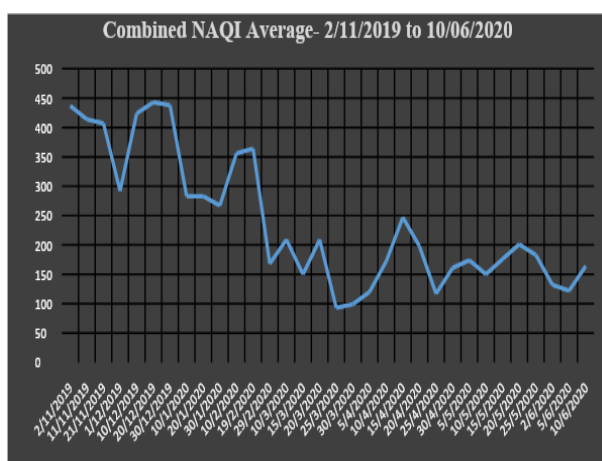


Figure 3a: Combined National Air Quality Index (NAQI) data of Bawana, Delhi showing the considerable drop in the pollution levels due to lockdown.

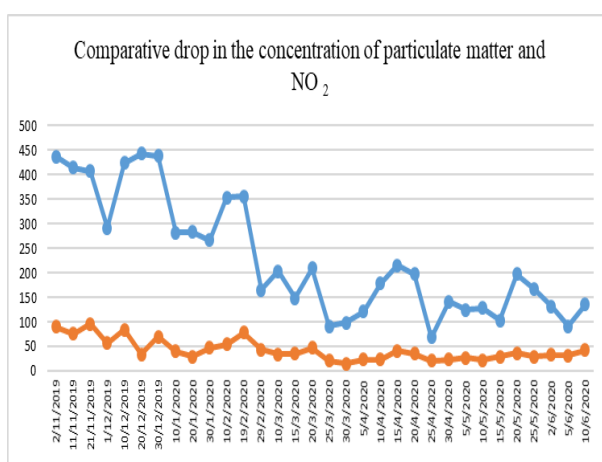


Figure 3b: Comparative graph depicting the decrease in the levels of particulate matter and NO₂ in Bawana, Delhi based on AQI data.

The concentration of seven air pollutants including particulate matters (PM), sulphur dioxide (SO₂), nitrogen dioxide (NO₂), carbon monoxide (CO), ozone (O₃) and ammonia (NH₃) have been obtained from the Central Pollution Control Board, CPCB online portal for air quality data dissemination for the period of November 2nd 2019 to 10th March 2020 with the approximate intervals of five days (Pre-lockdown period). The AQI data was also obtained for the period between 15th March 2020 and 10th June 2020 with the approximate intervals of five days. The combined AQI data has been represented in Figure 3a which gives a clear picture of the overall drop in the pollutant levels in Bawana area due to the impact of lockdown. The particulate matter which represent the term for a mixture of solid particles and liquid droplets in air can cause harm to the human health since they can enter deep into the lungs. The high AQI index in the area of Bawana was largely contributed due to elevated levels of particulate matter. Hence a comparative

graph of the decrease in the levels of particulate matter and NO₂ levels [Fig 3b] clearly depict the overall drop in the pollution levels due to lockdown.

Discussion

Among the various effects brought about by the pandemic, the immediate effect the virus has had on the climate is the lowering of NO₂ concentration and global CO₂ emission. One amongst the most prominent effects brought about by the lockdown, is the considerable drop in pollution. This was evident from the satellite images shared by NASA which observed the drastic decrease in pollution levels over China, by the lockdown caused by the pandemic [Fig 4]. The considerable drop in the global air traffic has led to a temporary dip in CO₂ emissions, reassuring that our global society may be able to reduce greenhouse emissions substantially over a long period.

Several schemes have been launched for cleaning Ganga with the inception from January 14th, 1986. Since then, many attempts have been initiated for cleansing the river with the recent announcement of an outlay of Rs. 800 crores for Namami Gange, a flagship programme of the Union Government for cleaning the river. But, the closure of saree dyeing units, automobile workshops, hotels, reduction of cremation and dumping of solid wastes into the water have automatically reduced the pollution levels in the water brought about by the nation-wide lockdown. The water quality has increased due to the closure of industries and increase in flow of water in river.

The Central Pollution Control Board (CPCB) analysis of pollution pointed out that the water of River Ganga is found to be suitable for bathing at most of the areas after monitoring the water quality during pre-lockdown and lockdown periods. On April 27th, 2020, the Board has also suggested that river Ganga can support aquatic life and also there has been a remarkable decrease in the nitrate concentration and faecal coliform count (FCC) in the water. The river water has become so transparent that the aquatic life including fish and tortoise are visible deep in the water. There are also reports indicating the increase in dissolved oxygen (DO) and decrease in biochemical oxygen demand (BOD) during the lockdown period, which represent higher water quality and lower amount of decaying organic matter in water respectively [9].

The lockdown has proved to be a boon for the Bangalore city's heavily polluted Bellandur Lake which had made headlines due to its extreme frothing. This lake is also being naturally healed due to the shutting down of industries and minimal human interference [10] [Figure 5].

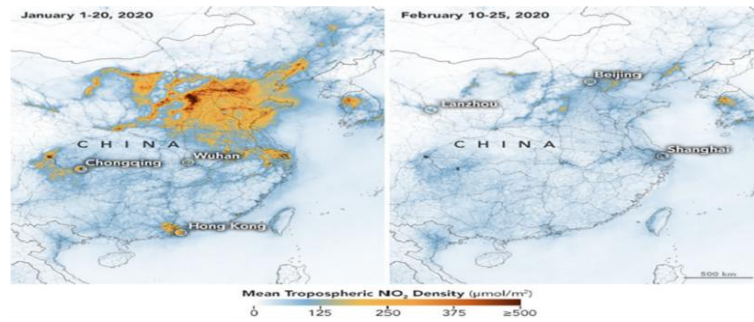


Figure 4: NO₂ emissions in China before and after lockdown (Source: Tropospheric Monitoring Instrument (TROPOMI) on ESA's Sentinel-5 satellite)



Figure 5: Bellandur lake (a) before and (b) after lockdown (Source: Deccan Herald)

Ever since the lockdown has been imposed, people have been witnessing several wild animals on the streets [Fig 6a, 6b, 6c]. Animals such as deers, nilgai and leopards were seen in various parts of India. Since the pandemic is thought to have emanated at a market selling wild animals in China, the New York-based Wildlife Conservation Society is compelling the global ban on live animal markets including trafficking and poaching of wild animals [11].

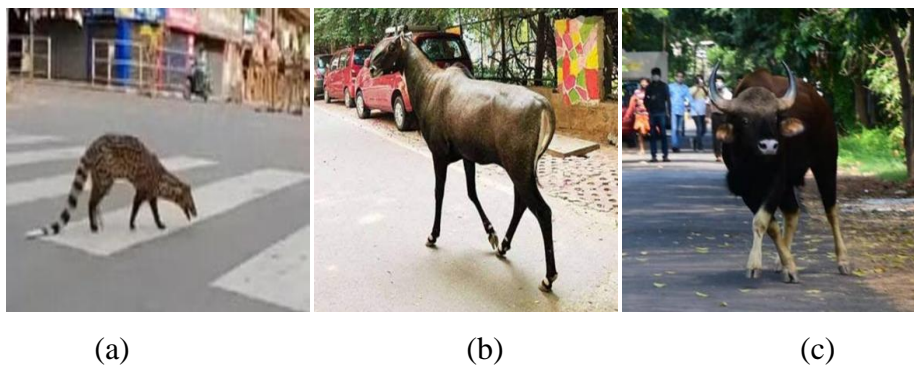


Figure 6: (a) Small Indian civet spotted in Meppayur, Kozhikode district, Kerala (Source: ndtv.com); (b) Nilgai spotted in Noida sector 18, Uttar Pradesh (Source: Times of India); (c) Wild bison spotted in Alake, Mangaluru (Source: The Hindu)

Some of the wild life species which were considered to be extinct are reappearing. There are also reports indicating the reduced pressure on wild animals due to humans. This has also reduced stress on sensitive animal species thriving in park closures and zoological parks due to decline in the number of visitors caused due to travel restrictions [12]. The lockdown has resulted in a sharp escalation in the population of birds in India. They also tend to increase their flight since the aircrafts are grounded due to the situations prevailing in the lockdown.



Figure 7: Observed sharp increase in animal poaching cases in India (Source: The Hindu)

Although the prevailing situation has helped the wildlife in various ways, it has also posed a lot of negative impact on the animal kingdom. For some species, lockdown may undeniably be a good news, whereas, that couldn't be true for some of the species. That's because lockdown enforces various conditions: in the cities of rich countries, it results in lesser traffic on the roads and less pollution, which can provide wildlife space to thrive. But in rural parts of poor countries, it means some people are being impelled to finance themselves through poaching [Fig 7]. On April 6, a tiger at the Bronx Zoo in New York was tested positive for COVID-19 which is presumed to be the first recorded case of a human infecting an animal with the disease in the U.S [13].

Conclusion

Overall, the crisis may thus have no perpetual environmental effects since it is too early to evaluate the comprehensive effects of the pandemic on the biodiversity. It has been found that innumerable places seem to be safe and pollution-free due to reduced human activities. There are also reported evidences of threats to wildlife as a resultant of economic instability. The rise in unrecyclable wastes, accumulation of organic wastes due to decrease in the export of agricultural products and problems with disposal of local wastes have added to the negative impacts of the lockdown on the environment. Since each aspect has its own pros and cons, it can neither be concluded that the nCOVID-19

pandemic lockdown has only brought in positive influence on the surroundings. So, only time can decide the long term consequences due to the conditions brought about by the lockdown on the environment, water bodies, flora and fauna on the planet earth. However, the knowledge we have accomplished about the environmental benefits and risks of sharp deterioration in global economic activity will certainly benefit us to better evaluate the logistics of environmental conservation and sustainability, societal consumption patterns and the means of reducing environmental degradation in a future crisis-free world.

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Impact of Global Lockdown on Biodiversity

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Abstract

As we know that the corona virus cases are increasing rapidly. Along with India, many countries around the world have implemented quarantine and lockdown to slow down the spread of the infectious corona virus. Many of the environmental challenges caused by the coronavirus crisis will gradually resolve on their own once the crisis comes to an end and previous levels of economic activity resume. Overall, the crisis may thus have no permanent environmental effects. However, what we have learned about the environmental benefits and risks of sharp drops in global economic activity will certainly help us to better understand the mechanics of environmental sustainability, societal consumption patterns, and how we can reduce environmental degradation in a future crisis-free world.

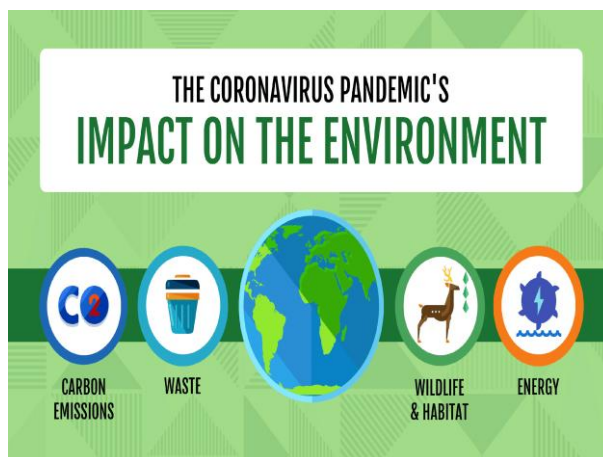
Keywords: Crisis, environmental effects, global economic activity, sustainability, environmental degradation.

Introduction:

Pandemics in general are not merely serious public health concern, rather these trigger disastrous socio-economic and political crises in the infected countries. COVID-19, apart from becoming the greatest threat to global public health of the century, is being considered as an indicator of inequity and deficiency of social advancement. As is implied in the name COVID-19, 'CO' stands for 'corona,' 'VI' for 'virus,' and 'D' for disease, and 19 represents the year of its occurrence. Corona virus is a single stranded RNA virus with a diameter ranging from 80 to 120 nm. The first modern COVID-19 pandemic was reported in December 2019, in Wuhan, Hubei province, China and most initial cases were related to source infection from a seafood wholesale market (Huang et al., 2020). Since then, the disease rapidly circled the globe and has eventually affected every continent except Antarctica. It has been categorized as a pandemic by the World Health Organization (World Health Organization, 2020).

International Committee on Taxonomy of Viruses (ICTV) named the virus as severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) (Gorbalenya et al., 2020). According to WHO, in 2002–2003, more than 8000 people suffered and 774 died of a

corona virus, called SARS. In 2012, MERS-CoV pandemic broke out infecting more than 2494 persons and killing over 858 lives worldwide (World Health Organization, 2004, World Health Organization, 2013). Corona viruses belong to a large diverse family of viruses. These can be categorized into four genera namely, α -, β -, γ -, and δ . All the previously discussed corona viruses responsible for worldwide spread of pandemic, namely SARS, MERS-CoV and SARS-CoV-2 are β -corona viruses.



Apart from COVID-19, the human civilization has witnessed at least five pandemics in the current century, e.g. H1N1 in 2009, polio in 2014, Ebola (out broke in West Africa in 2014), Zika (2016) and Ebola (Democratic Republic of Congo in 2019). Subsequently COVID-19 outbreak has been declared as the sixth public health emergency of international concern on 30 Jan 2020 by the WHO. These worldwide outbreaks triggered a large number of fatalities, morbidities, and cost billions of dollars (Allocate al., 2016; Fan et al., 2019). Compared to other diseases and their respective burdens, COVID-19 is likely to cause as much or greater human suffering than other contagious diseases in the whole world. In addition, other global environmental changes such as soil degradation, ozone layer depletion, pollution, and urbanization, changing environment creates an indisputable threat to our planet and human health.

Global warming has its roots in industrial development, with the huge release of CO₂ during the industrial revolution and beyond, finally allowing the greenhouse effect to take place. To some extent COVID-19 outbreak may be considered as an indirect consequence of global environmental changes. Besides its upsetting effects on human life, the novel corona virus disease (COVID-19) has the potential to significantly slowdown the economy not only of China, USA, or India but also of the world as a whole. Therefore, healthcare personnel, governments and the public in general need to show solidarity and fight shoulder to shoulder for prevention and containment of the pandemic (Yoo, 2020). In the present paper, our main focus is to highlight the impacts of

COVID-19 on environment & society, and attempt has been made to point out the preventive routes for minimizing the risk factors. Before the start of the COVID-19 pandemic, the air around us had been deemed very toxic to breathe in due to the amount of greenhouse gases that had been emitted over the centuries. The Earth faced rising temperatures, which in turn led to the melting of glaciers and rising of sea levels. Environmental degradation was happening fast due to the depletion of resources such as air, water and soil. But after the corona virus lockdown commenced, there have been slight changes in the environment.

Impacts of covid 19 lockdown on the environment

Air quality



After the lockdown was put in place in many countries, there was lesser travelling done by people, whether it be by their own cars, or by trains and flights. Even industries were closed down and not allowed to function. This in turn led to the pollution in the air dropping significantly, as there was a marked decline in nitrous oxide emission. Due to the corona virus outbreak's impact on travel and industry, many regions and the planet as a whole experienced a drop in air pollution. Reducing air pollution can reduce both climate change and COVID-19 risks but it is not yet clear which types of air pollution (if any) are common risks to both climate change and COVID-19.

The Centre for Research on Energy and Clean Air reported that methods to contain the spread of corona virus, such as quarantines and travel bans resulted in a 25 per cent reduction of carbon emission in China. In the first month of lockdowns, China produced approximately 200 million fewer metric tons of carbon dioxide than the same period in 2019, due to the reduction in air traffic, oil refining, and coal consumption. One Earth systems scientist estimated that this reduction may have saved at least 77,000 lives.

Effect on vegetation



Plants are growing better because there is cleaner air and water, and because yet again there is no human interference. With everything at a standstill, plants are allowed to thrive and grow and produce more coverage and oxygen. Less litter also means lesser clogging of river systems, which is good in the long run for the environment. The disruption from the pandemic provided cover for illegal deforestation operations. This was observed in Brazil, where satellite imagery showed deforestation of the Amazon rainforest surging by over 50 per cent compared to baseline levels.

Clean beaches

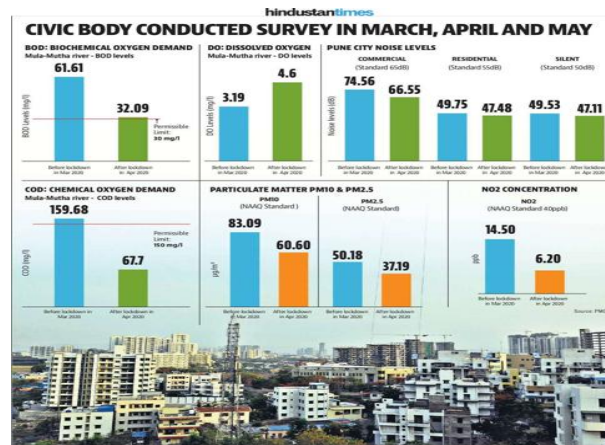


Beaches are one of the most important natural capital assets found in coastal areas. They provide services (land, sand, recreation, and tourism) that are critical to the survival of coastal communities and possess intrinsic values that must be protected from overexploitation. However, non-responsible use by people has caused many beaches in the world to present pollution problems.

The lack of tourists, as a result of the social distancing measures due to the new corona virus pandemic, has caused a notable change in the appearance of many beaches in the world. For example, beaches like those of Acapulco (Mexico), Barcelona (Spain), or Salinas (Ecuador) now look cleaner and with crystal clear waters.

Reduction on environmental noise level

Noise levels in the city have come down in all the three categories which are commercial, residential and silence zones. The noise level came down below those prescribed by the pollution board.



Environmental noise is defined as an unwanted sound that could be generated by anthropogenic activities (for instance, industrial or commercial activities), the transit of engine vehicles, and melodies at high volume. Environmental noise is one of the main sources of discomfort for the population and the environment, causing health problems and altering the natural conditions of the ecosystems.

The imposition of quarantine measures by most governments has caused people to stay at home. With this, the use of private and public transportation has decreased significantly. Also, commercial activities have stopped almost entirely. All these changes have caused the noise level to drop considerably in most cities in the world.



Water Quality

Since there were no boats, whether they be fishing or pleasure ones, plying on the rivers and waterways, the water has cleared up. In areas like Venice, the water became so clear that the fish could be seen and there was better water flow. No doubt, because of the lesser human footfall even the oceans are recovering and marine life is thriving. In

Venice, water in the canals cleared and experienced greater water flow. The increase in water clarity was due to the settling of sediment that is disturbed by boat traffic and mentioned the decrease in air pollution along the waterways.



Effect on wildlife

Again where fish is concerned, the lockdown has seen a decline in fishing, which means that the fish biomass will increase after over-fishing almost depleted it. Apart from that, animals have been spotted moving about freely where once they would not dare to go. Even sea turtles have been spotted returning to areas they once avoided to lay their eggs, all due to the lack human interference. As people stayed at home due to lockdown and travel restrictions, some animals have been spotted in cities. Sea turtles were spotted laying eggs on beaches they once avoided (such as the coast of the Bay of Bengal), due to the lowered levels of human interference and light pollution.

Conservationists expect that African countries will experience a massive surge in bush meat poaching. Matt Brown of the Nature Conservancy said that "When people don't have any other alternative for income, our prediction -- and we're seeing this in South Africa -- is that poaching will go up for high-value products like rhino horn and ivory. On the other hand, Gabon decided to ban the human consumption of bats and pangolins, to stem the spread of zoonotic diseases, as the novel corona virus is thought to have transmitted itself to humans through these animals.

Rising the use of domestic energy

Domestic energy consumption is the total amount of energy used in a house for household work. The amount of energy used per household varies widely depending on the standard of living of the country, the climate, and the age and type of residence. Households in different parts of the world will have differing levels of consumption, based on latitude and technology.



In the whole world, more and more people are at their homes due to the lockdown. So in this situation, the use of domestic energy is increasing. This also becomes one of the major effects of lockdown on environment. Now many people are working from home, so the domestic energy consumption is anticipated to have increased rapidly. Due to the lockdown, all the family members are at home, and they also consume the lot of domestic energy. This will eventually save energy as the rise in domestic use is more than recompensed by the huge drop in educational and commercial building uses.

Conclusion

Better air quality, healthy riverine and flourishing ecosystems during lockdown give me a soothing touch as an environmentalist, but I can't rejoice it. These environmental benefits are temporary and post-lockdown 'as usual scenario' may even pose greater threat to environment. These positive environmental changes are seen as a result of compulsive lockdown under the threat of pandemic outbreak, which have claimed a number of lives. This sudden lockdown has already coasted lakhs of jobs, social security and mental peace of fellow citizens. Lakhs of poor and marginalized population are suffering despite the concerted efforts of states and central government's machineries. Therefore, we can't celebrate these temporary environmental benefits, but certainly can learn lessons from this lockdown.

This lockdown provides a natural laboratory condition of environment to gather baseline data for different environmental parameters. The academic/research institutions may use this scenario to build a nationwide baseline data for environment by collecting measurements of various atmospheric, hydrological and ecosystem parameters. These baseline data can be helpful in determining the shares of different sectors in environmental pollution. Further, it can be used by stakeholders and policy makers to build.

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Start Up Opportunities and challenges -Post covid-19

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Abstract

Whole world's economy has drastically affected due to nCovid-19 which has created havoc in all the continents which started in China. Situation is not different in India. But, because of no modernization like in other developed countries, the small scale manufacturing industries have not met with such a loss though there is a concern to attract the old customers like earlier. In fact, in India there is a large scope for new start-ups especially in the direction of health sector, manufacturing health related materials, supply of chain market, transportation, digitization of educational sector, etc. These are quite challenging for all the technocrats and to implement in a short period requires hard effort. Through this paper, we would like to emphasize on some of the issues, challenges and opportunities related to start-ups in India, post this nCovid -19 pandemic situation.

Keywords: Start-ups, inCovid-19, pandemic situation supply chain markets etc.

Introduction

All start-ups are driven heavily by the ideas, innovations and research. The following entities play a vital role at every stage of start-ups. Many Indian start-ups have done business for a short period and lost interest to continue to do business due to shortage of ideas for enhancement or due to shortage of liquid money to sustain the pressure of doing business for long time. They might have failed to do business because of the peer pressure due to potential competitors. They could have excelled into different horizons instead of quitting if they have planned to diversify their business with the help of experts in their specific areas and with proper marketing. We have come across many angel investors who have put in their money in the business which has attracted them very early stage of start-ups. Driving force for this ecosystem comes from Universities, research organisations, support organisations, funding organisations, big companies, service providers as shown in the figure 1

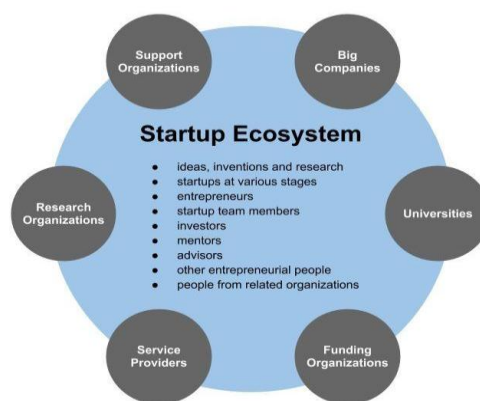


Figure 1 Driving force for startup eco system

Angel Investors for start-ups

Post Covid -19 situations is very bright in India for any start-ups as the government is spending more than Rs 80,000 crore on MSME from this fiscal year and tax relaxation is given for next three years which is praiseworthy. In addition to this we have seen many big business which are now investing in start-ups as they find the beneficial returns in start-ups and the risk maintenance of HR and office space that never existed.

Table-1. The Torchbearers of start-ups in India

Name of Start up	Founder(s)	Funding (US\$)	Key Investors	Industry
PepperTap	Navneet Singh	US\$46 million	Sequoia Capital, SAIF Partners, and Inn oven Capital.	Groceries, Ecommerce
PolicyBazaar	YashishDahiya	US\$78.3 imillion	Tiger Global, Stead view, Ribbit, Temasek and InfoEdge.	Fintech (Financial Technologies)
Hike	KavinBharti Mittal	US\$86 million	Tiger Global Management and Bharti Softbank	Social networking
Freecharge	Kunal Shah	US\$117 million	Sequoia Capital, Tybourne, Sofina, Valiant Capital and RuNet.	Ecommerce
Practo	Shashank ND	US\$124 million	Tencent, Sofina, Sequoia Capital, Altimeter Capital, and Matrix Partners.	Healthcare
Delhivery	SahilBarua	US\$126.5 imillion	Times Internet Group, Nexus Venture Partners, and Tiger iGlobal.	Logistics
OYO Rooms	RiteshAgrawal	US\$130 million	SoftBank, Lghtspeed, and Sequoia Capital	Ecommerce, Travel
Redbus	PhanindraSama	US\$140 million	Helion Venture Partners, Seedfund and Inventus Capital	Travel, Ecommerce

Table 1 shows one such where investors were found so far in many start-ups. Government is targeting the talented people who migrated from India to other countries by giving those policies for ease of doing business and for next three years they are not required to pay tax until they achieve first 50lacs they are not even required to give returns. The government is also trying to woo some of the large companies to set up their firms in the proposed 100 smart cities with the aim of improving infrastructure, roads, transport, electricity and water in these cities. As a result, components, smart materials, solar cells, polymers, jute and other sectors will have a huge attraction to invest in India. There are many companies who have invested in Indian companies.

Challenges ahead of any start-ups

Insufficient multi skilled talent

Skilled personals are huge in India. Start-ups cannot afford many of them at times. Multi-skilled workers can change the fate of start-ups but found it difficult at initial stages as their demand is high. As a result, the success stories are found very rare for many start-ups. This may not be the problem for start-ups during this Covid -19 scenario as many companies are playing waiting game.

Nonexistence of risk-taking

Because of inadequate liquid money, many start-ups even after having plenty of talent could not excel in business. This is because timely risk was not taken and manage to win the situation and could not exploit the opportunity in front of them. This difficulty will be more during or post Covid-19 time as we cannot predict how long this pandemic continues to act as spoilsport.

Financing

Now the banks are relentlessly working hard to find some avenues to lend their money. But, without any surety and guarantee for the start-ups, it is difficult for start-ups to get money. But they need to search for angel investors how normally lend money if and only if the innovation and the product is sellable quickly in the market. This is because of their experience. Novelty in the new product always attract many investors. Hence the start-ups need to think on the products which will change the demands in the market.

Management

In the initial stages of business, the flow will be smooth as the competitors will be less. But as the business take shape, start-ups need to be aware of the potential competitors and must have feedback mechanism to assess the quality of product and service, customer

relationship, building further goodwill, increase the horizons to enter new areas to expand business and diversifying the business. It requires huge management skills; otherwise the business may not sustain the pressure

Recruitment

Many start-ups in India at initial stages could not recruit many talented personals as their experience of doing business was very poor and were not confident of managing good and talented personals. This was not corrected even after first three years. Suddenly, when pressure of demand and supply was not met, they could not continue to do the business. So the start-ups need to plan for business for more than ten years and the market area they are targeting for which they need to draw up a scalable business and to build human resource to meet the expectation. This may not be the problem during this covid-19 situation as 9 out of 10 companies who were doing start-ups business stopped working as their liquid money got exhausted between March-May 2020.

Right Mentor

Every start-up needs to have a right and sensible mentor who are aware of market fluctuations and give appropriate suggestions to keep the momentum for the start-ups. He should also have the knowledge of user sentiments and must be a seasoned business fellow who can help the start-ups to make maximum profit with less resources and may even help to diversify business to compete with other operators. Mentor must have the right perception on the feedback and to give solution to the doubts raised in the clients and help to sustain pressure from the peers. Find such talent may become one of tough challenge during this Covid-19 period. To avoid such scenario, a relative or a friend who is an achiever may be contacted for some time as they will be trust worthy and be with the start up.

Lack of marketing strategies

Market in different states is different and the strategies to be adopted need to be carefully drawn. Many a times we need to recruit the fellow who knows the demographic of that place and also the regional language. Sometimes it plays a vital role especially to build a brand early and to get the grip over the local market. Post Covid -19 scenario is totally difficult and this becomes a very important challenge on where to set a business and how to proceed whom to target as every city, family and organizations are affected financially.

Government's Involvement

Though the government is encouraging the start-ups enormously since 2014, it is still lacking that momentum for every start-up as the processing of documents in government office takes from 21 days to three months or even six months. They keep sending the documents from department to departments to get clearance from environment to water and electricity related issues. Therefore a parallel working need to be practiced with investor support.

Peer pressure

This is one important challenge any start-ups is going to play as many of the start-ups reinvent or reengineer the existing product to do the marketing and make profit. Covid - 19 will add further pressure as no one is having confidence to do good business. But as the situation demands, some business related to health, masks and sanitizer may give the mental boost. Even the well planned digital class business gives confidence to the first timers.

Investment Prospects

This will also play one challenge as the investors will put their money behind winning ventures. Post covid-19 will become a worst hit area for start-ups to attract good investors as the market is not doing well across all countries. But in India, Government is taken a stride to make India a five trillion economy and hence trying to woo large number of talented Youngers with huge sum of money towards MSME's in the next three years and thereby called for Aatma Nirbar Bharat. So there is a huge opportunities in India for all the good idea's especially in the sectors of Health, agriculture, Industry, society and water.

Conclusion

India is still a country with a huge population comprising of 65% of youths and also possess large chunks of raw material that can be useful in the preparation of required items for the societal betterment at present. With the initiations of the central Government and the support of youths, this country can achieve anything in the near future and take the economy to five trillion and become the strong economic force in the world. This may even enhance the job creation, income tax, tourism, infrastructure, road and transportation and hence make people to live with better status and also motivate to setup more and more start-ups.

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