Prabandhan Guru
प्रबन्धन गुरु

(A Research Journal of Management & Information Technology)

ISSN 2321-4295
RNI No. UPENG/2010/38376

Volume : XIV, Issue : 1
January - June 2023

Shri Ram Group of Colleges
Muzaffarnagar U.P. (INDIA)

PRABANDHAN GURU

A RESEARCH JOURNAL OF MANAGEMENT & INFORMATION TECHNOLOGY

(ISSN 2321-4295, RNI No. UPENG/2010/38376)

Volume : XIV, Issue : 1, January - June 2023

In Association with IQAC, Shri Ram College, Muzaffarnagar (U.P.)

EDITOR-IN-CHIEF

"PRABANDHAN GURU"

Shri Ram Group of Colleges, Muzaffarnagar (UP)-251001

Phone: 9917160786, e-mail : journalsrgc@gmail.com

Parbandhan Guru

प्रबन्धन गुरू

(A Research Journal of Management & Information Technology)

ISSN : 2321-4295, RNI : UPENG/2010/38376

Vol-XIV : Issue : 1, January-June 2023

Shri Ram Group of Colleges

Muzaffarnagar, U.P. (India)

Shri Ram Group of Colleges

Muzaffarnagar, U.P. (India)

Shri Ram Group of Colleges was established under the leadership of eminent educationist Dr. S. C. Kulshreshtha by forming 'Shri Ram Charitable Trust' with an aim to promote quality education at an affordable fees. SRGC stands for going beyond the established standards and for nurturing technocrats and managers that have a global vision and insight in their chosen field and are globally employable in emerging areas, with a special focus on the 21st century professional requirement. SRGC focuses on developing well rounded communicators with business communication being the core component throughout the period of study. The curriculum in the SRGC is designed in consultation with the industry and academic experts drawn from premier management & technical institutes in India and abroad. To cater the needs of professional education, education, highly qualified academicians, prestigious bureaucrats & renowned industrialists, SRGC is running 11 distinct campuses in Muzaffarnagar, Saharanpur and Bulandshahar district.

- **SHRI RAM COLLEGE, MUZAFFARNAGAR, U.P.**
  (Affiliated to Maa Shakumbhari University, Saharanpur, Approved by NCTE and Accredited by NAAC)
- **SHRI RAM COLLEGE OF LAW, MUZAFFARNAGAR, U.P.**
  (Affiliated to Maa Shakumbhari University, Saharanpur and Approved by Bar Council of India)
- **SHRI RAM GIRLS' COLLEGE, MUZAFFARNAGAR, U.P.**
  (Affiliated to Maa Shakumbhari University, Saharanpur)
- **SHRI RAM GROUP OF COLLEGES (IC), MUZAFFARNAGAR, U.P.**
  (Affiliated to Dr. APJ Abdul Kalam Technical University, Lucknow and BTE Lucknow and Approved by AICTE, PCI)
- **SHRI RAM COLLEGE OF ENGINEERING, MUZAFFARNAGAR, U.P.**
  (Affiliated to Dr. APJ Abdul Kalam Technical University, Lucknow and Approved by AICTE)
- **SHRI RAM SCHOOL OF ARCHITECTURE, MUZAFFARNAGAR, U.P.**
  (Affiliated to Dr. APJ Abdul Kalam Technical University, Lucknow and Approved by AICTE, COA)
- **SHRI RAM COLLEGE OF PHARMACY, MUZAFFARNAGAR, U.P.**
  (Affiliated to Dr. APJ Abdul Kalam Technical University, Lucknow and Approved by PCI)
- **SHRI RAM POLYTECHNIC, MUZAFFARNAGAR, U.P.**
  (Affiliated to Board of Technical Education, Lucknow and Approved by AICTE)

SRGC offers M.Sc. Mathematics, M.Sc Chemstiry, MBA, M.Com., MCA, M.Sc. (Computer Science), M.Ed., M.P.Ed., M.Sc (Biotechnology), M.Sc (Microbiology), M.Sc. (Home Science in Food & Nutrition, Clothing & Textile & Home Management), MFA (Fashion Designing Applied Art, Textile Designing, Drawing & Painting), MEd, MPEd, MJMC, B.Arch., B.Tech. (ME, CE, EE, ECE, CSE), BBA, BCA, B.Com, BTC (DEIEd), B.Ed., B.P.Ed., BPES, BVoc (Yoga), BFA, B.Sc (Biotechnology), B.Sc. (Microbiology), B.Sc. (Home Science), B.Sc. (Agricultre), B.Sc. (PCM), B.Sc (CBZ), LLB, BA LLB, BComLLB, BJMC, B.Com., BPharma, DPharma, Polytechnic (ME,CE,EE,E&C,CSE), ITI (Electrician, Fitter, Turner, Machinist, Welder) courses. Moreover B.Com, Biotechnology, Microbiology and LLM courses are under process of affiliation.

students to explore and engage with educational content. Virtual classrooms, simulations, and collaborative learning spaces can enhance the learning experience, making education more accessible and engaging for learners of all ages.
Cultural and Artistic Expression: The metaverse can become a hub for cultural and artistic expression. Artists, musicians, designers, and creators can showcase their work in virtual galleries, concert venues, and interactive experiences. It opens up new possibilities for creativity, collaboration, and the preservation of cultural heritage.

EDUCATION LANDSCAPE IN INDIA

The Indian education system is one of the largest and most complex in the world. It is governed by both the central government and the individual states, resulting in a diverse and varied landscape. Here is an overview of the Indian education system:

- Pre-primary Education: Generally starts at the age of 3-4 years and includes nursery and kindergarten classes.
- Primary Education: Compulsory education for children aged 6 to 14, comprising grades 1 to 8.
- Secondary Education: Grades 9 to 12, typically divided into two stages: lower secondary (grades 9 and 10) and higher secondary (grades 11 and 12).
- Higher Education: Includes undergraduate, postgraduate, and doctoral programs offered by universities, colleges, and institutions.
- Central Board of Secondary Education (CBSE): The most prevalent national board, following a centralized curriculum.
- Council for the Indian School Certificate Examinations (CISCE): Offers the Indian Certificate of Secondary Education (ICSE) and Indian School Certificate (ISC) examinations.
- State Boards: Each state has its own board responsible for curriculum and examinations.
- International Baccalaureate (IB) and Cambridge Assessment International Education (CAIE): Offer internationally recognized curricula in select schools.

Challenges:

Access and Equity: Disparities in access to quality education between urban and rural areas, as well as among different socio-economic groups.

Infrastructure: Insufficient infrastructure and resources in many schools, particularly in remote areas.

Teacher Shortage: Shortage of qualified and trained teachers, affecting the quality of education.

Examination Pressure: High-stakes board examinations at the end of secondary education leading to intense competition and stress among students.

Recent Developments:

Emphasis on Skill Development: Initiatives to bridge the gap between education and employability by promoting vocational training and skill development programs.

Digital Education: Increased focus on e-learning and online education, particularly during the COVID-19 pandemic.

Education Reforms: Ongoing efforts to introduce reforms in curriculum, assessment methods, and teacher training to improve the quality of education.

It's important to note that the Indian education system is vast and diverse, with variations in infrastructure, quality, and access across different regions of the country.

UNDERSTANDING THE METAVERSE

The Metaverse refers to a virtual universe that encompasses a collective space where individuals can interact with a computer-generated environment and other users in real-time. It is a concept inspired by science fiction and is often described as the next evolution of the internet, combining virtual reality (VR), augmented reality (AR), and the internet to create a shared digital space.

Key Characteristics of the Metaverse include:
Immersion: Users can experience a sense of presence and immersion through realistic graphics, 3D audio, haptic feedback, and other sensory inputs.

Interactivity: Users can actively engage and interact with the virtual environment, objects, and other users.

Persistence: The Metaverse is persistent and constantly evolving, allowing users to build and create within the virtual space.

Socialization: Users can connect, communicate, and collaborate with others, blurring the lines between real and virtual social interactions.

Scalability: The Metaverse is designed to accommodate a large number of users simultaneously, enabling mass participation and shared experiences.

Key Technologies and Platforms:

Virtual Reality (VR): VR technologies, such as headsets, motion controllers, and haptic feedback devices, provide an immersive experience within the Metaverse.

Augmented Reality (AR): AR technologies overlay digital content onto the real world, enhancing users' perception and interaction with their physical surroundings.

Blockchain: Blockchain technology can provide decentralized ownership, secure transactions, and interoperability of virtual assets within the Metaverse.

SpatialComputing: Spatial computing enables the understanding of the physical environment and the placement of digital objects within it, allowing for more seamless integration of the virtual and real worlds.

CloudComputing: The Metaverse relies on cloud infrastructure for processing power, storage, and seamless distribution of content to users across different devices and locations.

Potential Applications in Education:

The Metaverse holds significant potential for transforming education by providing immersive and interactive learning experiences. Here are some potential applications:

VirtualClassrooms: Students and teachers can gather in a shared virtual environment, enabling remote learning with real-time interaction, collaborative projects, and access to digital resources.

SimulationsandExperiments: The Metaverse can offer realistic simulations and virtual laboratories for conducting experiments, exploring scientific phenomena, and practicing skills in a safe and cost-effective manner.

HistoricalandCulturalExploration: Students can virtually visit historical sites, museums, and landmarks from different time periods and cultures, enhancing their understanding and appreciation of history and art.

PersonalizedLearning: The Metaverse can adapt to individual learners' needs and preferences, offering personalized educational content, adaptive assessments, and tailored feedback.

CollaborativeProjects : Students can collaborate on projects within the Metaverse, working together in shared virtual spaces, designing and building prototypes, and fostering teamwork and creativity.

Career and Vocational Training: The Metaverse can provide immersive training simulations for various professions, allowing learners to gain hands-on experience and develop practical skills.

BENEFITS OF METAVERSE IN EDUCATION

Indeed, the emergence of the metaverse has the potential to revolutionize education in numerous ways. Here are some of the benefits of the metaverse in education:

Enhanced student engagement and motivation: The metaverse offers immersive and interactive learning experiences that can captivate students' attention and foster their engagement. By creating virtual environments that simulate real-world scenarios or abstract concepts, students can actively participate in their learning process, leading to increased motivation and deeper understanding.

Immersive and interactive learning experiences: The metaverse allows for the creation of highly immersive learning environments where students can explore and interact with digital content in three-dimensional spaces. This immersive nature enables experiential learning, enabling students to gain practical skills, experiment with different scenarios, and learn from their mistakes in a safe and controlled environment.

Access to global educational resources: The metaverse can serve as a gateway to a vast array of global educational resources. Students and educators can access digital libraries, virtual museums, educational simulations, and other digital learning materials from anywhere in the world. This democratizes access to education, especially for those in remote areas or with limited resources.

Collaborative and social learning opportunities: The metaverse fosters collaboration and social learning by enabling students and educators to connect and interact with others from diverse backgrounds and geographical locations. Students can collaborate on projects, engage in group discussions, and share ideas within virtual spaces. This collaborative aspect promotes teamwork, cultural exchange, and the development of important social skills.

Personalized and adaptive learning experiences: The metaverse can facilitate personalized and adaptive learning experiences. By leveraging artificial intelligence and data analytics, educational platforms within the metaverse can assess students' learning styles, preferences, and progress to tailor content and learning activities accordingly. This personalized approach optimizes learning outcomes by catering to individual needs and strengths.

Expanding learning beyond traditional boundaries The metaverse breaks free from the constraints of physical classrooms and traditional teaching methods. It enables education to take place anytime and anywhere, allowing for flexible learning arrangements. Students can attend virtual lectures, participate in discussions, and complete assignments at their own pace and convenience, accommodating different learning styles and individual circumstances.

Innovative teaching methods: The metaverse encourages educators to explore innovative teaching methods that leverage the capabilities of virtual environments. For instance, they can employ gamification techniques, simulations, virtual reality (VR), and augmented reality (AR) to create engaging and effective learning experiences. These novel approaches can enhance information retention, problem-solving skills, and critical thinking abilities among students.

Career preparation and skills development: The metaverse can serve as a platform for career preparation and skills development. By integrating virtual internships, job simulations, and vocational training programs, students can gain practical, hands-on experience in various fields. This equips them with the skills and knowledge necessary to thrive in a rapidly evolving digital landscape.

The metaverse offers a wide range of benefits for education, including enhanced engagement, immersive experiences, global access to resources, collaboration, personalized learning, flexibility, innovation, and career readiness. These advantages hold the potential to transform the way we teach and learn, creating more inclusive, dynamic, and effective educational experiences.

CHALLENGES AND CONSIDERATIONS

Challenges and considerations in implementing technology in education include: Infrastructure and Connectivity: One of the primary challenges is ensuring that schools and educational institutions have adequate infrastructure and reliable internet connectivity. Many regions, especially in rural areas or developing countries, may lack the necessary technological infrastructure for seamless integration of digital tools in classrooms. This can hinder access to online educational resources and limit the effectiveness of technology-driven teaching methods.

Affordability and Accessibility: The cost of technology devices, such as computers or tablets, can be a significant barrier to access for students and schools with limited financial resources. Ensuring affordability and accessibility of devices and internet services is crucial to bridge the digital divide and provide equal opportunities for all students. Government initiatives, partnerships with technology companies, and community-based programs can help address this challenge.

Cultural Sensitivity and Localization: Technology should be adapted and tailored to suit the cultural context and linguistic diversity of the students. Educational content and digital tools should be localized, considering the cultural norms, values, and language of the target audience. It is important to avoid cultural biases and ensure that the technology used respects and reflects the diversity of the student population.

Teacher Training and Digital Skills: Integrating technology effectively requires adequate training and support for teachers. Many educators may not be familiar with the latest tools, platforms, and digital teaching methods. Providing comprehensive training programs to enhance teachers' digital skills and pedagogical understanding is crucial. Teachers should be equipped with the knowledge and resources to effectively incorporate technology into their teaching practices and leverage it for student engagement and learning outcomes.

It is worth noting that while technology can greatly enhance education, it should be seen as a complement to traditional teaching methods rather than a replacement. The effective integration of technology requires careful planning, consideration of the specific needs and context of the educational institution, and ongoing evaluation and adaptation of the approaches used.

RECOMMENDATIONS FOR INDIA

Recommendations for India to embrace and leverage the metaverse : Infrastructure Development and Digital Connectivity: To enable the adoption of the metaverse, India should focus on improving its infrastructure, including robust internet connectivity and reliable power supply. This would ensure seamless access to virtual worlds and immersive experiences for individuals across the country. Investments in high-speed internet, data centers, and cloud infrastructure are essential to support the metaverse ecosystem.

Training and Upskilling of Teachers: To effectively incorporate the metaverse into education, it is crucial to train and upskill teachers in leveraging immersive technologies and virtual platforms. Educators should be equipped with the necessary knowledge and skills to create engaging virtual learning environments, design interactive educational content, and facilitate immersive experiences for students. Teacher training programs should be developed to familiarize them with metaverse technologies and their applications in various subjects.

Research and Development Efforts: India should invest in research and development efforts focused on the metaverse. This includes exploring areas such as virtual reality (VR), augmented reality (AR), virtual economies, virtual social interactions, and security and privacy frameworks for the metaverse. Collaborations between academia, industry, and research institutions can foster innovation and drive the development of indigenous metaverse solutions.

Public-Private Partnerships: Public-private partnerships play a vital role in the development and adoption of metaverse technologies. The government should foster collaborations between public entities, private companies, and startups to create a thriving metaverse ecosystem. These partnerships can involve joint initiatives for infrastructure development, funding research projects, supporting metaverse startups, and creating policies and regulations that enable responsible and inclusive metaverse growth.

Digital Literacy and Inclusion: Promoting digital literacy and ensuring inclusivity are crucial for the widespread adoption of the metaverse. India should focus on initiatives that provide equal access to metaverse technologies, platforms, and educational opportunities, particularly for marginalized communities and rural areas. This can be achieved through initiatives like digital skills training, affordable access to devices, and awareness campaigns about the benefits and responsible use of the metaverse.

By considering these recommendations, India can position itself as a frontrunner in the metaverse, leveraging its vast talent pool, technological capabilities, and diverse culture to drive innovation, economic growth, and social development in the digital realm.

FUTURE DIRECTIONS AND CONCLUSION

Future Directions and Anticipated Growth in the Metaverse: The metaverse is expected to witness significant growth and advancements in the coming years. As technology continues to evolve, virtual and augmented reality experiences will become more immersive, realistic, and accessible.

This will lead to the creation of vast virtual worlds, virtual economies, and social interactions that closely resemble the physical world. Advancements in artificial intelligence, blockchain, and 5G connectivity will further enhance the capabilities and possibilities of the metaverse.

Potential Impact on Education in India: The metaverse has the potential to revolutionize education in India. It can provide immersive and interactive learning experiences, transcending the boundaries of traditional classrooms. Students can explore virtual environments, engage in collaborative projects with peers from different parts of the world, and access a wealth of educational resources and simulations. The metaverse can also support personalized learning, adaptive assessments, and skills development in emerging fields such as artificial intelligence, robotics, and data science. It has the power to bridge educational gaps, increase access to quality education, and foster a culture of lifelong learning.

CONCLUSION AND CLOSING REMARKS:

The metaverse presents India with immense opportunities for economic growth, social development, and educational transformation. By embracing the metaverse and taking proactive steps, such as infrastructure development, teacher training, research and development, and public-private partnerships, India can position itself as a leader in this emerging digital realm. However, it is crucial to approach the metaverse with a focus on inclusivity, digital literacy, and responsible use to ensure that its benefits are accessible to all sections of society.As India navigates the path towards the metaverse, it must also address challenges such as privacy, security, ethical considerations, and the potential digital divide. By doing so, India can harness the full potential of the metaverse to shape a future that is technologically advanced, inclusive, and equitable.

This research paper aims to contribute to the understanding of how the metaverse can be effectively utilized in the Indian education system. By examining the benefits, challenges, and implementation strategies, it provides valuable insights and recommendations for educators, policymakers, and researchers interested in leveraging metaverse technologies to revolutionize education in India.

Prabandhan Guru, ISSN : 2321-4295
Vol: XIV, Issue: 1, Jan-June 2023
RNI : UPENG / 2010 / 38376

THEORIES, FACTORS INFLUENCING AND TYPE OF NANO EMULSION: A REVIEW ON NANO EMULSION FORMULATION

Akansha Nirwal
Shri Ram Group of Colleges, Muzaffarnagar, Uttar Pradesh, India
Naved Alam
Ass. Prof., Department of Mathematics, Gochar Mahavidyalaya, Rampur Maniharan, Saharanpur

ABSTRACT

The emergence of metaverse technologies has opened up new possibilities in various sectors, including The Nano emulsion considers a new system of administration of drugs which allows a release of controlled or sustained drugs. It is considered a dispersion that consists of a surfactant, oil and a clear, kinetics or thermodynamically stable aqueous phase with a diameter of droplets 10-100 N.Nano applied to increase the solubility and bioavailability of lipophilic drugs; Nano emulsions have many types of advantages for the delivery of drugs. It can be applied for many delivery routes, thus providing a faithful effect for many areas such as cosmetics, therapies and biotechnology. Nano emulsions are dispersions of oil and water in which the scattered phase droplets (20-500 nm) can be stabilized by an active film on the surface which includes surfactant and non-ionic. As nano emulsions have been considered acting as a super solvent vehicle that is capable of solving both hydrophilic and lipophilic drugs. A system based on the nano emulsion is capable of passing hepatic metabolism to a certain extent, because it has been reported that nano particles can be directly absorbed into the blood by paracellular route and enter the blood circulation, thus demonstrating a sequence systemic drug.

Keywords : *Nano emulsion, Formulation, Lipophilic, Thermodynamic*

INTRODUCTION

Nano emulsions/ Sub-micron emulsions (SMEs)/Mini-emulsions /Ultrafine emulsions are dispersions of oil and water where the dispersed phase droplets are in nanosized range and stabilized with surface active film composed of surfactant and co surfactant, Nano emulsions are transparent or translucent systems that have dispersed phase droplet size range of typically 20-500 nm.[1] The terms sub-micron emulsion (SME) and miniemulsion are used as synonyms. [2]

Nano emulsions are attractive as pharmaceutical formulations because they form spontaneously, are kinetically and thermodynamically stable, and optically transparent. The nanosized of the droplets prevent creaming or sedimentation form occurring on storage and droplet coalescence. Nano emulsions provide much longer oil- water contact area due to the nano size droplet compared to classical emulsions, which facilitates drug release from the dispersed droplets.The droplet size is very small that the interaction of matter with light is negligible and they appear transparent or translucent with bluish coloration.[3]

The design of effective formulations for drugs has long been a major challenge, because drug efficacy can be severely limited by instability or poor solubility in the vehicle. One of the most promising technologies is the nano emulsion drug delivery system, which is being applied to enhance the solubility and bioavailability of lipophilic drugs.[4] The bioavailability of drugs was reported to be strongly enhanced by solubilization in small droplets (below 0.2μm), for example, submicronic emulsions were found to increase the bioavailability of cefpodoxime proxetil from 58 to 98 %, compared to other oral formulations. The nanosized droplets leading to an enormous increase in interfacial areas associated with nano emulsion would influence the transport properties of the drug.

Three types of Nano emulsions [3] are most likely to be formed depending on the composition:

- Oil in water Nano emulsions wherein oil droplets are dispersed in the continuous aqueous phase;
- Water in oil Nano emulsions wherein water droplets are dispersed in the continuous oil phase;
- Bi-continuous Nano emulsions wherein microdomains of oil and water are interdispersed within the system.

In all three types of Nano emulsions, the interface is stabilized by an appropriate combination of surfactants and/or co-surfactants.

The key difference between emulsions and Nano emulsions are that the former, whilst they may exhibit excellent kinetic stability, are fundamentally thermodynamically unstable and will eventually phase separate. Another important difference concerns their appearance; emulsions are cloudy while nano emulsions are clear or translucent. In addition, there are distinct differences in their method of preparation, since emulsions require a large input of energy while Nano emulsions.

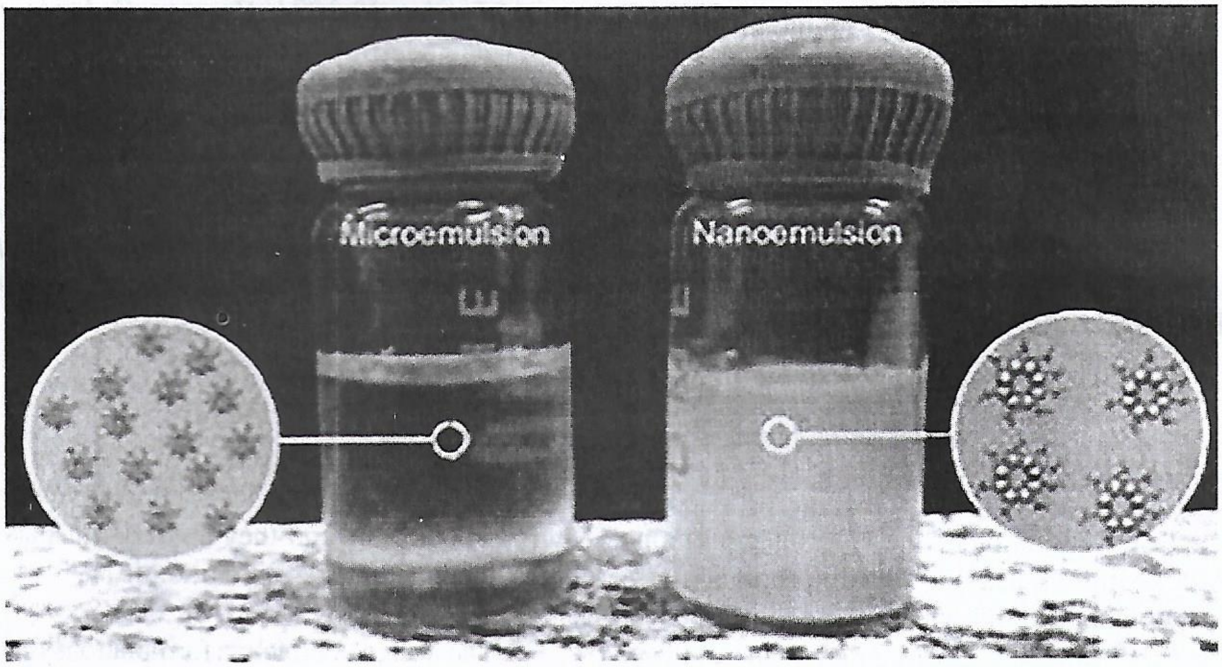


Fig.(A) Nano emulsionand (B) Macroemulsion with Droplet Diameters of Less Than 100 Nm and More Than 1000 Nm, Respectively

ADVANTAGES OF NANOEMULSIONS :

The attraction of nano emulsions for application in personal care and cosmetics as well as inhealth care is due to the following advantages:

1. Lower surfactants concentration; between 3-10% may be enough.
2. The small size of the droplets for cutaneous use allows them to deposit uniformly on the skin.
3. They are suitable for efficient delivery of active ingredients through the skin.
4. The large surface area of the emulsion system, the low surface tension of the whole system and the low interfacial tension of the O/W droplets allow enhancing penetration of the active agents.
5. Due to their small size, nano emulsion can penetrate though the rough skin surface and this enhances penetration of actives.
6. The fluidity nature of the system (at low oil concentrations) as well as the absence of any thickness may give them a pleasant aesthetic character and skin feel.

7. Nano emulsion can be applied for delivery of fragrant, which may be incorporated inmany personal care products. This could also be applied in perfumes, which are desirable to be formulated alcohol free.
8. Nano emulsions constitute the primary step in nano capsules and nanospheres synthesis using nanoprecipitation and the interfacial polycondensation combined with spontaneous emulsification. These are techniques require the spontaneous emulsification step in the same optimized conditions.
9. The small droplet size prevents any flocculation of the droplets. Weak flocculationis prevented and this enables the system to remain dispersed with no separation.[5]
10. Nano emulsion may be applied as a substitute for liposomes and vesicles (which are much less stable) and it is possible in some cases to build lamellar liquid crystalline phases around the nano emulsion droplets.
11. Improve the solubility of lipophilic substances.
12. The very small droplet size causes reduction in the gravity force and Brownian motion may be sufficient to overcome gravity so; nano emulsions do not cream on storage. This allows to formulate liquid products which are sprayable and do not show a phase separation during storage.
13. Use the administration of medicines through different routes such as I.V, oral, and topical.
14. It provided efficient and fast medication penetration through the skin and GIT.[6]

DISADVANTAGES OF NANOEMULSIONS

1. Mixed film theories : Schulman considered that the spontaneous formation of nano emulsion droplets was due to formation of a complex film at the oil-water interface by the surfactant and co-surfactant. This leads to reduction in the oil-water interfacial tension to very low values (from near zero to negative). The equation below represents this-

$y_i = y_{0/w} - \pi_i$

Where, $y_{0/w}$= Oil-water interfacial tension without the film present

π_i =Spreading pressure

y_i = interfacial tension [8]

2. Solubilization Theories : Considered nano emulsion to be approaching thermodynamically stable monophasic solutions of water swollen (w/o) or oil-swollen (o/w) spherical micelles The relationships between reverse micelles and w/o nano emulsion were illustrated with the aid of phase diagrams. The regions are composed of water solubilized reverse micelles. [9]

3. Thermodynamic Theories : Oil, surfactant and energy are needed to prepare emulsions. This can be considered from an examination of the energy required to expand the interface, ΔAY (where ΔA is the increase in interfacial area when the bulk oil area A, produces a large number of droplets with area A_2: A_2>> AΔ, y is the interfacial tension). Since y is positive, the energy to expand the interface is large and positive. This energy term cannot be compensated by the small entropy of dispersion TΔS (which is positive) and so the total free energy of formation of an emulsion. ΔG is positive, ΔG-AΔY-TΔS

Thus, emulsion formation is non-spontaneous and energy is required to produce the droplets The high energy required to form nano emulsions can be understood in terms of the LaPlace pressure p (the difference in pressure between inside and outside the droplet).

P=y [1/R1+1/R2]

Where Rland R2 are the principal radii of curvature of the drop. For a special drop, R1-R2 and

P=2 y/R [09]

To break up a drop into smaller ones, it must be strongly deformed and this deformation increases "P". Consequently, the stress needed to deform the drop is higher for a smaller drop Since, the stress is generally transmitted by the surrounding liquid via agitation, higher the stresses needed more vigorous agitation, hence more energy is needed to produce smaller drops (Tadros *et al,* 2004).[10]

1.6 FACTORS INFLUENCING TYPE OF NANOEMULSION

There are following factors which influence the type of nano emulsion:

1.6.1 Packing ratio

The Hydrophilic-Lipophilic Balance (HLB) affects the surfactant behaviour. The HLB takes into account the relative contribution of hydrophilic and hydrophobic fragments of the surfactants molecule and thus it determines the type of nano-emulsion through its influence on molecular packing and film curvature. The concept of packing ratio or critical packing parameter considers that the amphiphilic molecule (polar head and hydrophilic tail) results in film geometry which depends on their intrinsic geometry.

Critical packing parameter, CPP - V/al

Where, V is Volume of surfactant, a, is Head-group surface area and I length.

If CPP= between 0-1, interface curves towards water (positive curvature): o/w system favoured.

If CPP>1. interface curves spontaneously towards oil (negative curvature): w/o system favoured.

If CPP-1, either bi-continuous or lamellar structure (zero curvature) HLB isbalanced.[11]

1.6.2 Property of surfactant, oil phase and temperature

The type of emulsion depends on the nature of surfactant. Use of hydrophilic surfactant forms oil-swollen -type or oil-in-water (O/W) nano emulsion, whereas lipophilic surfactants produce water - swollen -type or water -in-oil (W/O) nano emulsion. When hydrophilic -lipophilic types of surfactants are used in combination, anano emulsion co-exists with excess water and an oil phase. The use of non-ionic and ionic surfactant system makes the three-phase system to reach the maximum solubilization capacity.

1.6.3 Temperature

Temperature is extremely important in determining the effective head group size of non-ionicsurfactant. At low temperature, they are hydrophilic and from normal o/w system. At higher temperature, they are lipophilic and from w/o system. At an intermediate temperature, nano emulsion coexists with excess water and oil phases and forms by carbonate structure.

1.6.4 The oil phase

The oil components also influence curvature by its ability to penetrate and hence swell the tail group region of the surfactant monolayer. Short chain oils, suchas, alkanes, penetrate the lipophilic group to a great extent than long chain alkanes and so swelling of this region to a great extent results in an increased negative curvature. [11]

1.7 FORMULATION OF MICRO-EMULSION AND PHASE BEHAVIOR

1.7.1 Phase diagram

When oil, water and surfactant are mixed, nanoemulsions are one of a number of association structures including ordinary emulsions, and cubic and various gels and mesomorphic phases gels and oily dispersions which can form depending on the chemical nature and concentration of each of the components at prevailing temperature and pressure. Preparation of a stable, isotropic, homogenous, transparent and nontoxic nano emulsion requires consideration of a number of variables. Phase diagram help to find nano emulsion region in ternary or quaternary system and also minimum amount of surfactant for nano emulsion formation.

1.7.2 Ternary system

The phase behaviour of surfactant -oil-water (SOW) is best explained by using ternary diagram. Here, two composition variables are sufficient, since third one is complemented to 100% [12] the phase diagram help in determine the ratio of oil: water: surfactant -co- surfactant at the boundary of nano emulsion region. To plot the composition of four components system, a regular tetrahedron composed of for equivalent triangles can be used, but the quaternary diagram is time consuming to prepare and often difficult to interpret. So, it is more common to investigate planner sections of tetrahedron by plotting a pseudo ternary phase diagram. That means either byKeeping the composition of one component fixed and varying the other three, or by using a constant ratio of two component (Surfactants and co-surfactants or co-solvent).

1.7.3 Winsor's phase diagram

Winsor reported the relationship between the phase behaviour if amphiphile -oil-water and nature of the different ternary system. He classified the phase behaviour into following types [13]

Winsor's type 1: System (o/w nano emulsion), in which oil is solubilized within micelles in an aqueous continuous phase.

Winsor's type 2: System (w/o nano emulsion), in which the aqueous phase is solubilized within micelles in an oil phase.

Winsor's type 3: System (nanoemulsion), in which the aqueous and oil phase are in equilibrium with a third, surfactant-rich, phase called the middle- phase nanoemulsion, which can contain bi-continuous emulsion.

Winsor's type4: System shows single phase with oil, water and surfactant, which are homogenously mixed.

1.7.4 Quaternary phase diagram.

Nanoemulsions are generally quaternary systems. To study their phase behaviour. pseudo ternary phase diagram consisting of oil-water amphiphile is commonly drawn in which amphiphile is surfactant/co-surfactant ratio. Optimization done by using pseudo-ternary diagram is not accurate. Therefore, it is better to use quaternary phase diagram for such systems.

1.8 FORMULATION OF NANOEMULSION [3]

Nano emulsion is difficult to form as compared to ordinary emulsions because the composition of formulation is highly specific and involves spontaneous interactions among the constituent molecules.

The general composition of nano emulsion includes the following:

a) **An oil phase:** Oils such as Caprylic/Capric triglycerides (Miglyol 812, Myritol 318). castor oil, Cremophore EL etc can be used as oil components.

b) **An aqueous phase:** This phase may contain hydrophilic active ingredients and preservatives for example, ethanol, tetrahydrofuran, purified water etc. Buffer solutions for example, Dulbecco's phosphate buffered solution, have been used as aqueous phase by some researchers.

c) **A primary surfactant:** The surfactant is generally ionic, non-ionic, or amphoteric, but the non-ionic surfactants are generally preferred because they can be rapidly absorbed in the alimentary canal. Rest both are for specific cases. For example, Span. 80, Span 85, Tween 20, Tween 80, Pluronic F68

CONCLUSION

The Nano emulsion considers a new system of administration of drugs which allows a release of controlled or sustained drugs. It is considered a dispersion that consists of a surfactant, oil and a clear, kinetics or thermodynamically stable aqueous phase with a diameter of droplets 10-100 N. Nano applied to increase the solubility and bioavailability of lipophilic drugs; Nano emulsions have many types of advantages for the delivery of drugs. It can be applied for many delivery routes, thus providing a faithful effect for many areas such as cosmetics, therapies and biotechnology. Nano emulsions are dispersions of oil and water in which the scattered phase droplets (20-500 nm) can be stabilized by an active film on the surface which includes surfactant and non-ionic. As, nano emulsions have been considered acting as a super solvent vehicle that is capable of solving both hydrophilic and lipophilic drugs. A system based on the nano emulsion is capable of passing hepatic metabolism to a certain extent, because it has been reported that nanose particles can be directly absorbed into the blood by paracellular route and enter the blood circulation, thus demonstrating a sequence systemic drug.

Acknowledgement - All authors have equally contribution

Source of Funding - None

Conflict of Interest - None

REFERENCES :

1. Wang L, Li X, Zhang G, Dong J and EastoeJ,oil in water nano emulsion for pesticide formulations,J of colloid and interface science:2007,vol.314, page no.230-235, DOI:10.1016/j.jcis.2007.04.079.
2. Tadros, Th. F., Vandamme, A., Levecke, B., Booten, K., Stevens, C.V. (2004) 'Stabilization of emulsions using polymers surfactants based on inulin. Adv. Colloid Interf. Sci. 108/109, pp.207-226.
3. Jain N.K. (2006) Pharmaceutical Product Development', CBS Publishers. pp. 58
4. Nabi S.U., Shakeel F., Talegaonkar S., Ali J., Baboota S., Ahuja A., Khar R.K., Ali M. (2007) Formulation Development and Optimization using nano emulsion technique: A Technical Note, AAPS Pharma SciTech. vol.8 Issue 2: article 28.
5. Bouchemal K., Briancon S., Perrier E. and Fessi H. (2004) Nanoemulsion formulation using spontaneous emulsification: Solvent. oil and surfactant optimization', Int. J. Pharm., Vol. 280, pp.241-251.
6. Zainab SA, Review on Nanoemulsion: Preparation and Evaluation, International Journal of Drug Delivery Technology:2020:10(1):188-189.
7. Lawrence M.J. and Rees G.D. (2000) Microcmulsion based media as a novel drug delivery system', Adv. Drug Del. Rev., Vol.45, pp.89-121.
8. Vyas, S.P. and Khar, R.K. (2005) Targeted and Controlled Drug Delivery Systems', CBS Publishers & Distributors, New Delhi, pp 284.
9. Tadros, Th. F., Vandamme, A., Levecke, B., Booten, K., Stevens, C.V. (2004) 'Stabilization of emulsions using polymers surfactants based on inulin. Adv. Colloid Interf. Sci. 108/109, pp.207-226.
10. Tadros, Th. F., Vandamme, A., Levecke, B., Booten, K., Stevens, C.V. (2004) 'Stabilization of emulsions using polymers surfactants based on inulin. Adv. Colloid Interf. Sci. 108/109, pp.207-226.
11. Vyas, S.P. and Khar, R.K. (2005) Targeted and Controlled Drug Delivery Systems', CBS Publishers & Distributors, New Delhi, pp 284.
12. Salvager JL, Emulsion and Emulsion stability, second edition, pp200-203.
13. Schramm L.L., (2005) "Emulsions Foam and Suspensions fundamentals and application, wiley-VCH Publisher, pp.97.
14. Kriwet, K and Müller-Goymann, CC (1995), "Diclofenac release from phospho- lipid drug systems and permeation through excised human stratum corneum", Int J Pharm, Vol. 125: 231-242.

Prabandhan Guru, ISSN : 2321-4295
Vol: XIV, Issue: 1, Jan-June 2023
RNI : UPENG / 2010 / 38376

"THE METAVERSE'S IMPACT ON EDUCATION : INTEGRATING CONTENT AND BIBLIOMETRIC PERSPECTIVES"

1 Ruchi Rai , 2 Abhishek Rai
1 Assistant Professor, 2Assistant Professor,
1Computer Science & Engineering , 2Department of Information technology
1 Shri Ram Group Of Colleges , Muzaffranagar 2 S.D.College of Engineering

ABSTRACT

The metaverse, a virtual collective space where users interact through avatars and digital environments, has emerged as a transformative technology with potential implications across various domains, including education. This research paper presents a comprehensive investigation into the impact of the metaverse on education, utilizing a combined content analysis and bibliometric approach.The content analysis involved the systematic examination of a diverse range of sources, including academic papers, articles, reports, and online discussions, to identify prevailing themes and perspectives related to the metaverse's integration in educational settings. Key themes encompassed its effects on learning experiences, accessibility, privacy concerns, collaboration, and pedagogical implications. Simultaneously, the bibliometric analysis focused on the quantitative assessment of academic publications in the field of metaverse-based education. This involved examining publication trends, citation analysis of influential works, and the identification of key authors and institutions contributing to the research domain.

The findings from the content analysis showcased a diverse range of opinions, with some considering the metaverse as a blessing for education due to its potential to enhance learning experiences, global accessibility, and personalized learning opportunities. However, concerns were also raised, highlighting potential challenges such as the digital divide, privacy issues, and the depersonalization of learning experiences.

This research paper concludes by integrating the qualitative insights from the content analysis with the quantitative data from the bibliometric analysis to present a balanced assessment of the metaverse's impact on education. The paper's insights contribute to a more nuanced understanding of the metaverse's role in educational contexts and offer implications for educators, policymakers, and future research directions.

***Keywords :** metaverse, education, virtual reality, content analysis, bibliometric analysis, impact, learning experiences, accessibility, privacy concerns, collaboration, pedagogy.*

INTRODUCTION

Metaverse in education

The concept of the metaverse, a virtual universe where users can interact and engage with digital environments through avatars, has rapidly evolved from science fiction to a tangible reality. As advancements in technology continue to shape our digital landscape, the metaverse has emerged as a powerful platform with the potential to revolutionize various aspects of human life, including education.

In the traditional education system, students typically gather in physical classrooms to receive instruction from teachers and engage in learning activities. However, the metaverse presents a paradigm shift, offering a novel approach to educational experiences. With its immersive and interactive nature, the metaverse holds promises of enhancing learning outcomes, fostering collaboration, and transcending geographical boundaries.

In this context, this paper aims to explore the integration of the metaverse in education and its potential impact on learners, educators, and educational institutions. We delve into the opportunities and challenges that arise with the adoption of metaverse technologies in diverse educational settings. Additionally, we seek to identify prevailing sentiments and opinions on whether the metaverse in education can be considered a blessing or a curse.

The metaverse's transformative potential lies in its ability to create virtual environments that simulate real-world scenarios, providing learners with experiential and contextual learning opportunities. By incorporating elements of ramification, simulation, and interactivity, the metaverse has the potential to enhance student engagement, knowledge retention, and critical thinking skills.

Moreover, the metaverse's accessibility can transcend physical limitations, enabling learners from different geographical locations to collaborate and exchange ideas seamlessly. This inclusivity has the potential to democratize education, making high-quality learning experiences available to a broader and more diverse audience.

On the other hand, the integration of the metaverse in education raises important concerns. Privacy and security become critical issues, as learners engage with digital environments that collect and process vast amounts of personal data. Additionally, there is a risk of exacerbatingexisting socio-economic disparities, as not all students may have equal access to the necessary technology or reliable internet connections.

Furthermore, there is a need to strike a balance between the virtual and physical realms to ensure that the metaverse does not depersonalize education, but rather complements and enriches human interactions in the learning process.

In light of these opportunities and challenges, this research paper aims to provide a comprehensive analysis of the metaverse in education, examining both qualitative and quantitative data through a combined content and bibliometric approach. By integrating insights from existing research and academic publications, we seek to contribute to a holistic understanding of the metaverse's impact on education and inform discussions on its implications for the future of learning.

In the subsequent sections of this , we delve into the content analysis, which explores prevailing sentiments and opinions related to the metaverse's integration in education. Simultaneously, the bibliometric analysis examines the academic landscape to identify key trends, influential works, and the trajectory of research in this emerging field. The integration of these perspectives will offer a balanced assessment of whether the metaverse in education is regarded as a blessing or a curse, providing valuable insights for educators, policymakers, and researchers alike.

RESEARCH GAP AND STUDY OBJECTIVES

Research Gap:

Despite the growing interest in the metaverse and its potential impact on education, there is a notable research gap in understanding the comprehensive implications of its integration in educational settings. While some studies have explored specific aspects of the metaverse in education, there is a lack of comprehensive analyses that integrate both qualitative and quantitative perspectives. Few studies have combined content analysis to examine prevailing sentiments and opinions with bibliometric analysis to assess the academic landscape in this emerging field. As such, there is a need for a holistic approach that synthesizes these two perspectives to provide a more nuanced understanding of the metaverse's impact on education.

Study Objectives:

The primary objectives of this research study are as follows:

To Explore Prevailing Sentiments and Opinions: The study aims to conduct a content analysis of diverse sources, including academic papers, articles, reports, and online discussions, to identify the prevailing sentiments and opinions regarding the metaverse's integration in education. This will provide insights into the perceived benefits and concerns associated with adopting metaverse technologies in educational contexts.

To Quantitatively Assess Research Trends: The study seeks to perform a bibliometric analysis of academic publications related to the metaverse in education. This analysis will focus on identifying publication trends, influential works, prolific authors, and key institutions contributing to the research domain.

To Integrate Qualitative and Quantitative Insights: By combining content analysis with bibliometric analysis, the study aims to integrate qualitative and quantitative insights. This integration will provide a comprehensive assessment of the metaverse's impact on education, helping to identify areas of convergence and divergence between prevailing sentiments and academic research trends.

To Address Research Gap: The research study aims to fill the existing research gap by providing a comprehensive and holistic analysis of the metaverse in education. By adopting a combined content and bibliometric approach, the study intends to offer a deeper understanding of the opportunities and challenges associated with metaverse integration in educational settings.

To Inform Educational Stakeholders: The study aims to provide valuable insights for educators, policymakers, and researchers to inform decision-making and discussions surrounding the metaverse's role in education. By identifying potential benefits and concerns, the research findings can guide the responsible adoption and implementation of metaverse technologies in educational contexts.

To Contribute to Future Research Directions: The study seeks to contribute to the scholarly discourse on the metaverse in education and stimulate further research in this area. By identifying gaps and areas for further investigation, the study aims to inspire future research endeavors that delve deeper into specific aspects of the metaverse's impact on learning and teaching.

METHODS

To achieve the research objectives and address the research gap, the study employs a combined content and bibliometric analysis approach. This section outlines the specific methods and steps undertaken for both types of analyses:

1. **Content Analysis:**
   - **Data Collection:** Gather a diverse range of sources related to the metaverse's impact on education. Sources may include academic papers from relevant journals, articles from reputable sources, reports from educational organizations, online discussions, blog posts, and social media posts.
   - **Keyword Identification:** Develop a list of relevant keywords related to the metaverse and education to guide the content search and data retrieval process.
   - **Data Selection:** Screen and select relevant sources that align with the research question and objectives. Include a range of perspectives to capture a comprehensive view of prevailing sentiments and opinions.
   - **Coding Framework:** Develop a coding framework that encompasses key themes, such as learning experiences, accessibility, privacy concerns, collaboration, and pedagogical implications. The coding framework will serve as a guide for categorizing and analyzing the content.

2. **Bibliometric Analysis:**
   - **Data Collection:** Retrieve academic publications related to the metaverse and education from reputable databases, such as Google Scholar, Web of Science, or Scopus. Use the identified keywords to ensure comprehensive coverage of relevant literature.
   - **Publication Trends:** Examine the publication trends over time to understand how the research domain has evolved and identify periods of increased interest in the metaverse in education.
   - **Citation Analysis:** Analyze citation counts to identify influential works that have significantly contributed to the research field. Explore the citation networks to understand the

interconnections between influential papers and researchers.

• **Author and Institution Analysis:** Identify key authors and institutions that have made notable contributions to the research domain. Analyze author collaborations and institutional affiliations to understand research networks.

3. **Integration of Content and Bibliometric Insights:**

   • **Qualitative Insights Integration:** Synthesize the findings from the content analysis to identify prevailing sentiments and opinions related to the metaverse in education. Categorize the qualitative data according to the themes identified in the coding framework.

   • **Quantitative Insights Integration:** Combine the findings from the bibliometric analysis, such as publication trends, influential works, and author affiliations, to provide a quantitative overview of the research domain.

   • **Comparison and Alignment:** Compare the qualitative and quantitative insights to identify areas of convergence and divergence. Examine how the academic landscape aligns with prevailing sentiments in the content analysis.

Through the achievement of these objectives, this research study intends to advance the understanding of the metaverse's integration in education and provide evidence-based insights for the effective and responsible use of metaverse technologies in the realm of teaching and learning.

RESULTS AND DISCUSSION:

Results : The results of the research study, based on the combined content analysis and bibliometric analysis, provide valuable insights into the metaverse's impact on education. The following key findings emerged from the study:

1. **Content Analysis Insights :**

   • **Positive Learning Experiences:** The content analysis revealed that the metaverse offers unique and engaging learning experiences for students. Immersive simulations, virtual field trips, and interactive learning environments were cited as examples of how the metaverse enhances learning engagement and comprehension.

   •**Accessibility and Inclusivity:** Participants in the content analysis highlighted the metaverse's potential to democratize education by providing access to learning opportunities for students from diverse backgrounds and geographical locations.

   • **Privacy and Safety Concerns:** Despite the benefits, concerns were raised regarding data privacy and online safety in the metaverse. Participants expressed apprehensions about potential risks associated with students' interactions in virtual environments.

   • **Collaborative Learning:** The content analysis indicated that the metaverse fosters collaborative learning experiences, enabling students to work together on projects and share knowledge in virtual teams.

   • **Pedagogical Adaptation:** Educators' perspectives in the content analysis emphasized the need to adapt teaching methodologies to effectively integrate the metaverse into the curriculum and leverage its potential for student-centered learning.

2. **Bibliometric Analysis Findings:**

   • Increasing Research Interest: The bibliometric analysis revealed a rising trend in research publications related to the metaverse in education over the past few years, indicating the growing significance of the topic in the academic community.

   • Influential Authors and Works: Several key authors and influential research papers were identified through citation analysis, highlighting researchers' contributions and seminal works that have shaped the field.

Discussion :

The discussion section critically interprets the research findings and provides in-depth insights into the metaverse's impact on education. Key points addressed in the discussion include:

1. Optimizing Learning Experiences: Building upon the positive learning experiences reported in the content analysis, the discussion emphasizes the importance of leveraging metaverse technologies to design innovative and effective educational content. It discusses the potential of virtual reality (VR) and augmented reality (AR) applications in delivering immersive and context-rich learning experiences.

2. Equity and Access: While the metaverse's accessibility potential was recognized, the discussion delves into the need for addressing digital inequalities to ensure equitable access for all students. It discusses strategies to bridge the digital divide and make metaverse-based education more inclusive.

3. Data Privacy and Safety Measures: Acknowledging the privacy and safety concerns expressed in the content analysis, the discussion explores the importance of robust data protection measures and guidelines for educators, institutions, and platform developers. It emphasizes the need for responsible data handling and student protection in virtual environments.

4. Promoting Collaboration and Social Learning: The discussion highlights the role of the metaverse in fostering collaborative learning experiences. It delves into the benefits of social learning in virtual spaces, including the development of teamwork, communication, and problem-solving skills.

5. Teacher Professional Development: Considering the pedagogical adaptation highlighted in the content analysis, the discussion emphasizes the significance of continuous teacher professional development. It explores the need to equip educators with the skills and knowledge to effectively integrate metaverse technologies into their teaching practices.

6. Future Directions and Research Implications: The discussion identifies avenues for future research in the metaverse and education domain. It suggests exploring the long-term effects of metaverse-based education on student learning outcomes, investigating the effectiveness of various instructional designs, and understanding students' cognitive processes in virtual learning environments.

Overall, the results and discussion section of the research paper presents a comprehensive analysis of the metaverse's impact on education. By combining qualitative and quantitative insights, the study provides evidence-based insights for educators, policymakers, and researchers, paving the way for responsible and effective integration of metaverse technologies in education.

Types of Metaverse used in education

the Metaverse on education often discuss various types of Metaverse applications, including:

1. Virtual Worlds: Immersive and interactive computer-generated environments that allow users to interact with digital objects and other participants in real-time, creating engaging learning experiences.
2. Augmented Reality (AR) Metaverse: Overlays digital content onto the physical world, providing supplementary information and interactive elements that enhance traditional educational materials.
3. Virtual Reality (VR) Metaverse: Completely computer-generated environments that users can experience through VR headsets, enabling realistic simulations and virtual field trips for educational purposes.
4. Social Virtual Reality: Platforms that enable students and educators to meet, communicate, and collaborate in a virtual environment, fostering a sense of community and social interactions in the learning process.
5. Gamified Education Metaverse: Integration of gamification elements into educational experiences within the Metaverse to motivate and engage students, making learning more enjoyable.
6. 3D Virtual Laboratories: Metaverse-based virtual laboratories that allow students to conduct experiments and practical activities in a safe and cost-effective manner.
7. Immersive Language Learning: Language learning platforms within the Metaverse that provide immersive environments for students to practice speaking and interacting with native speakers or AI-powered language tutors.

Conclusion, implications, and future research

In conclusion, this research study provides a comprehensive analysis of the metaverse's impact on education through a combined content and bibliometric approach. The findings from the content analysis revealed that the metaverse offers positive learning experiences, enhances accessibility and inclusivity, fosters collaborative learning, and requires pedagogical adaptation. However, concerns were raised regarding data privacy and safety. The bibliometric analysis highlighted the increasing research interest in the topic and identified influential authors and works shaping the field.

The integration of qualitative and quantitative insights paints a nuanced picture of the metaverse's role in education. The metaverse holds immense potential for transforming learning experiences, promoting collaboration, and democratizing access to education. However, addressing data privacy and equity issues is crucial to ensure its responsible implementation.

Implications:

The research findings have several implications for educators, policymakers, and researchers:

1. **Educators :** Educators should explore the possibilities of using metaverse technologies to create immersive and engaging learning experiences. Professional development opportunities should be provided to enable educators to adapt pedagogical approaches for effective integration.
2. **Policymakers:** Policymakers need to develop guidelines and regulations to safeguard data privacy and ensure online safety in virtual learning environments. Efforts should be made to bridge the digital divide and promote equitable access to metaverse-based education.
3. **Educational Institutions:** Institutions should invest in infrastructure and resources to support the integration of the metaverse into their educational offerings. Collaborative initiatives can be encouraged to foster knowledge exchange and best practices.
4. **Platform Developers :** Developers of metaverse platforms should prioritize data security and user privacy in their designs. User-friendly interfaces and intuitive tools can enhance the user experience for educators and learners.

Future Research:

Building upon this study, future research endeavors can explore the following areas:

1. **Long-Term Impact:** Longitudinal studies can be conducted to understand the long-term effects of metaverse-based education on students' academic performance, motivation, and learning outcomes.
2. **Pedagogical Strategies:** Further investigations can explore effective pedagogical strategies for integrating metaverse technologies in different educational disciplines and age groups.
3. **Social and Emotional Learning:** Research can delve into the potential of the metaverse to foster social and emotional learning skills, such as empathy, emotional intelligence, and collaboration.
4. **Virtual Assessment :** The development and validation of innovative assessment methods within the metaverse can be explored to evaluate students' knowledge and skills effectively.
5. **Teacher Training and Support:** Studies can focus on the impact of ongoing teacher training and support in effectively utilizing the metaverse for instructional purposes.
6. **Ethical Considerations :** Ethical implications of using the metaverse in education, such as informed consent, content moderation, and data ethics, warrant further exploration.

REFERENCES :

1. https://www.chathamhouse.org/2022/04/what-metaverse?gclid=CjwKCAjwq4imBhBQEiwA9Nx1Brm0HQ4DNR4mZN4DxrojLu1WJlr7UX2viGKAkZZXLjxEx09xp UACGBoCdusQAvD_BwE2.
2. https://link.springer.com/article/10.1186/s40561-022-00205-x
3. https://www.emerald.com/insight/content/doi/10.1108/LHT-10-2022-0467/full/html
4. https://www.computer.org/csdl/proceedings-article/big- data/2022/10021004/1KfT4Lj5RDi
5. https://www.blockchain-council.org/metaverse/technologies-powering-metaverse/
6. https://mudrex.com/blog/types-of-metaverse-explained/

Prabandhan Guru, ISSN : 2321-4295
Vol: XIV, Issue: 1, Jan-June 2023
RNI : UPENG / 2010 / 38376

REVIEW OF CLINICAL SYMPTOMS, DIAGNOSIS, AND MANAGEMENT OF PEDIATRIC CONJUNCTIVITIS

Avi Dubey
Assistant Professor, Indraprastha Institute of Management & Technology, Saharanpur, U.P. India
(Department of Pharmacy)
Author Email Address: avikadubey69@gmail.com

ABSTRACT

Pediatric patients frequently experience conjunctivitis, which has infectious and non-infectious etiologies. The majority of instances of bacterial conjunctivitis in children typically present with purulent discharge with mattering of the eyelids. In simple cases, antibiotic use is supportive with a tailored approach because it may minimize illness duration, but it is not without dangers. The other infectious cause is viral conjunctivitis, which is primarily brought on by adenovirus and manifests as a burning, gritty sensation and watery discharge. Supportive care is provided. The symptoms of allergic conjunctivitis, which typically manifests as bilateral irritation and watery discharge, are seasonal. Topical lubricants, topical antihistamines, and systemic antihistamines are all possible forms of treatment. Foreign objects and non-allergic environmental factors are some more conjunctivitis causes. Wearers of contact lenses should always receive treatment for bacterial conjunctivitis and be referred for a corneal ulcer evaluation. Conjunctivitis in newborns necessitates specialized treatment due to specific infections and factors. When evaluating conjunctivitis patients, the primary care pediatrician will need to know the information covered in this review.

Key words: *pink eye, pediatric ophthalmology, and pediatric conjunctivitis*

INTRODUCTION

The term "pink eye" (conjunctivitis) describes an infection or inflammation of the conjunctiva. The thin mucous membrane that covers the surface of the eyeball up to the limbus, where the sclera and cornea converge, is known as the conjunctiva. The bulbar portion, which covers the globe, and the tarsal portion, which covers the lids, are the two parts that make up this structure. It is typically clear, but when inflamed, it can turn injection and pink or red, giving the term "pink eye" its common usage. From modest redness and tearing to subconjunctival hemorrhage with purulent discharge and edema of the conjunctiva or eyelid, conjunctivitis can range in severity varying from hardly noticeable redness brought on by tears to subconjunctival hemorrhage with purulent discharge and edema of the conjunctiva or eyelid.

The majority of pediatric conjunctivitis cases are bacterial or viral infections. Allergic conjunctivitis, as well as conjunctivitis brought on by foreign objects, the environment, or excessive contact lens wear, are examples of non-infectious conjunctivitis. Pink eye can also be caused by cellulitis, uveitis, endophthalmitis, and acute glaucoma, among other, more serious conditions. Instead of eye specialists, general care physicians handle the majority of pediatric conjunctivitis cases. [1]

There are no acknowledged standards for treating conjunctivitis in kids, and different doctors' techniques can be very different from one another [2].

2. Developing a Diagnosis

The evaluation of a child who has "pink eye" should begin with a review of the history, symptoms, and indicators in order to identify the etiology. It's crucial to find out details like the duration of the symptoms, whether one or both eyes are affected, and, if any, a description of any eye leakage. If there are concurrent viral symptoms such a cough, sore throat, fever, or rash, the associated symptoms may also provide a clue as to the cause. Asking the child if they have observed any changes in their vision or if they feel a foreign body may be appropriate, depending on the child's age.

Every physical examination should start with a vision test using a Snellen chart to measure each eye's vision individually. Children who are too young to take part in a Snellen chart test can still have their near vision evaluated by checking if they can focus on a book, a toy, or their caregiver. A referral to a pediatric ophthalmologist should be sought for additional testing if visual acuity seems to be compromised.

Continue the physical examination while using a penlight. The size of the pupil and whether it reacts to light should be taken into consideration while inspecting the anterior segment and pupils. It is crucial to take note of the consistency, color, and volume of any discharge if it is present. Additionally, the conjunctiva should be checked to see whether there is a specific spot that is more erythematous or if the entire conjunctiva is affected. Inverting the eyelid can also give professionals who are familiar with it hints about the etiology. The various etiologies cannot often be distinguished by a fundoscopic examination. Clinical signs and symptoms cannot reliably distinguish between viral and bacterial conjunctivitis, according to a 2003 meta-analysis [3].

A more recent meta-analysis from 2022 discovered that bacterial conjunctivitis may actually be the more frequent cause of conjunctivitis in kids [4], accounting for as many as 70% of conjunctivitis cases in kids. Adults with bacterial conjunctivitis were the subjects of a multi-center investigation that revealed a wide range of symptoms. 65% of patients felt burning, 58% had itching, 35% had serous discharge, and 38% had no discharge at all. These patients showed positive bacterial cultures. [5]

2.1 Infectious conjunctivitis

Children frequently develop acute bacterial conjunctivitis, with bacterial infections accounting for more than 50% of conjunctivitis cases [6, 7]. Haemophilus influenzae, Streptococcus pneumoniae, and Moraxella catarrhalis are common pathogens. In up to 70% of cases, H. influenzae, the most prevalent non-typeable H. influenzae, continues to be the leading cause of bacterial conjunctivitis [8]. Eye redness and considerable mucopurulent discharge, frequently yellow to green in hue, are the most prevalent symptoms to present. Eyes that are mattered and glued in the morning are a common complaint among patients with acute bacterial conjunctivitis [3]. When examined, patients frequently have mucopurulent discharge at the lid margins that returns fast, generally within minutes of wiping the lids.

2.2 Virus-induced Conjunctivitis

Adenoviruses account for the great majority of viral conjunctivitis cases, which account for a sizeable fraction of acute conjunctivitis cases. A burning or gritty feeling with watery discharge is a common presentation. This often develops suddenly, affects one eye first, and spreads to the other within 24 to 48 hours. A viral prodrome with fever, lymphadenopathy (especially preauricular), pharyngitis, and/or an upper respiratory tract infection may accompany this. On a clinical examination, the tarsal conjunctiva typically has a follicular look and significant conjunctival injection with watery discharge.

Although adenoviruses are responsible for the majority of these cases, there are additional viral factors that need to be taken into account. Herpes simplex virus (HSV) frequently co-occurs with adenoviral conjunctivitis and can manifest in a similar way with wet eyes.9 On the cornea's surface, fluorescein imaging will show a number of tiny, branching epithelial dendrites [10]. Lesions on the eyelid may be a sign of the poxvirus Molluscum contagiosum, which is known to cause skin-colored, umbilicated papules and can cause follicular conjunctivitis [11]. Several pandemics, particularly in underdeveloped nations, have been caused by picornaviruses including Enterovirus 70 and Coxsackievirus A24, which can cause acute hemorrhagic conjunctivitis [12].

In the past, ocular symptoms from coronaviruses were not reported; nevertheless, the novel coronavirus illness 2019 (COVID-19) resulted in viral conjunctivitis. According to a meta-analysis, COVID-19 affected the eyes in about 1 in 10 instances, with the most common symptoms being dry eye, redness, and weeping [13]. Conjunctivitis is the most typical ocular symptom of COVID-19 in pediatric patients. In a study of 15 infants with COVID-19, chemosis (conjunctival edema) and hemorrhagic conjunctivitis were seen in more than 70% of the cases [14].

2.3 Allergic conjunctivitis

A type I hypersensitive reaction, allergic conjunctivitis is most frequently brought on by airborne allergens including pollen, dander, dust, or mold. Histamine and other inflammatory mediators are released as a result of the mast cell degranulation that results from this IgE-mediated response. With a peak age between late childhood and adolescence, this affects roughly 1 in 5 kids [15]. The most frequent ocular complaint to a pediatric healthcare professional is actually allergic conjunctivitis [16]. It typically presents bilaterally in the morning with watery discharge, chemosis, and crusting on the lid margins. When allergen levels, such pollen, are at their highest, it frequently happens. Itching, which occasionally coexists with other atopic symptoms such nasal congestion, coughing, or sneezing, is the main distinguishing feature. The results of the clinical examination are consistent with viral conjunctivitis, including watery discharge and follicular tarsal conjunctiva. A 2017 evaluation of clinical algorithms included factors that could be used to rule out allergic conjunctivitis [17]. For instance, allergic conjunctivitis is not expected to cause photophobia, eye pain, or hazy vision, which should trigger a referral to an eye doctor. Blepharitis and meibomian gland dysfunction are two conditions that can mimic allergic conjunctivitis. [18]

Table:1

Conjunctivitis	Clinical Signs	Physical Examination
Bacterial	acute purulent discharge, either bilaterally or unilaterally, with mattering and adhesion	Unusually large discharge, usually green or yellow
Viral	A sudden feeling of burning or grit that is frequently accompanied by prodromal symptoms including fever, oughing, and rhinorrhea	Conjunctiva has a follicular look and a watery discharge.
Allergic	Bilateral itching of the eyes, usually persistent and seasonal, accompanied by atopic symptoms	Conjunctiva has a follicular appearance, chemosis, and a watery discharge
Foreign Body	acute eye discomfort with a feeling of a foreign body and light sensitivity	Fluorescein staining allowed for the visualization of a foreign bodyand/or a corneal abrasion.

2.4 Unknown Body

Eye pain, a foreign body sensation, and light sensitivity are all potential symptoms of foreign bodies in the eye. In the US, these injuries affect 2 out of every 1000 people, and 31% of eye-related ER visits result in these diagnoses [19]. In the presence of recent eye damage, ocular foreign bodies are more common [20]. Wood, sand, and dust account for over half of eye foreign bodies in pediatric patients, and high velocity injuries from

BB, paintball, and airsoft guns are particularly prevalent in adolescent males [21].

2.5 Contacts worn over the lens

Any patient who uses contact lenses and develops conjunctivitis requires additional testing. Uncomfort and dry eyes, which can result in red, irritated eyes, are frequent side effects of contact lens use. These are frequently caused by corneal hypoxia. Giant papillary conjunctivitis, an inflammation brought on by various reasons such as mechanical rubbing from the contact lens on the upper eyelid, corneal hypoxia, and cellular mitosis, can develop as a result of excessive lens use. The use of contact lenses can cause two major side effects, including corneal ischemia that can cause neovascularization and infectious keratitis that can cause a corneal ulcer [22].

2.6 Environmental Factors That Aren't Allergic

Unspecific conjunctivitis of unknown origin (UCUO) is a general term used to describe conjunctivitis that is not allergic or infectious in nature. Eye redness and a feeling of a foreign body are common symptoms. There seems to be a direct correlation between environmental contamination and the incidence of UCUO. According to a study of 132 kids, people who live in locations with greater levels of air pollution have a significantly higher frequency of UCUO than people who have conjunctivitis overall [23]. High concentrations of particular air pollutants, such as ozone, nitrogen dioxide, particulate matter, and sulfur dioxide, were shown to significantly increase the prevalence of outpatient visits for non-specific conjunctivitis in Taiwan, according to a study [24].

2.7 Ophthalmia neonatorum

Sometimes referred to as neonatal conjunctivitis, is conjunctivitis that develops within the first 28 days of life. Neonates with bacterial conjunctivitis frequently have purulent discharge, similar to conjunctivitis in older children, but those with viral conjunctivitis more frequently have watery discharge [25]. The majority of newborn conjunctivitis cases (around 40% of all instances [26]) are caused by Chlamydia trachomatis, which is a bacterial infection. Unilateral or bilateral conjunctival redness and watery discharges are the typical symptoms of chlamydial conjunctivitis five to two weeks after delivery [27]. With time, this might advance to purulent discharge and the development of pseudomembranes, which are membranes that are yellow-white and visible on the tarsal conjunctiva [28]. Another bacterial conjunctivitis culprit is Neisseria gonorrhoeae, which causes pronounced redness and swelling, lid edema, and purulent discharge. This develops between two and five days after birth, which is earlier than chlamydial conjunctivitis [27]. On physical examination, signs of HSV conjunctivitis include vesicular eruptions on the face, conjunctival injection, and a cloudy cornea as a result of edema [29]

The frequency of neonatal chemical conjunctivitis has considerably declined since silver nitrate was phased out of use in the 1980s [30]. The use of preventive antibiotics, such as erythromycin ophthalmic ointment or drops and gentamycin drops, is now regarded to be a major contributing factor in the majority of neonatal chemical conjunctivitis cases in the United States [31]. Through the lacrimal canaliculi and the puncta in the eye, the nasolacrimal duct transports tears to the nasal cavity. Depending on whether the proximal or distal segment of the duct is compromised, congenital nasolacrimal duct blockage can result in a purulent or watery discharge and generate what is known as a "overflow of tears" [32].

3. Therapy

3.1 Bacterial Conjunctivitis

Bacterial conjunctivitis is often self-limiting, lasting 7 to 10 days without therapy. Antibiotics have been proven to shorten the duration of symptoms, but no distinctions in sight-threatening outcomes between treatment and control groups have been found. There was a 10% greater rate of clinical improvement for patients who got early antibiotic treatment compared with the placebo group in a meta-analysis that included 11 randomized clinical trials and 3673 participants [33]. A recent Finnish study that compared the use of antibiotic eye drops to a placebo treatment showed a faster clinical cure in these individuals, going from a mean of 4.0 days to a mean of 3.8 days [34].

Antibiotics carry some risk; 8% of individuals who use ophthalmic antibiotics report experiencing an adverse medication reaction [35]. Additionally, research suggests that infants who were given antibiotics developed acquired resistance to harmful germs in their conjunctiva [6, 36]. In light of this, treating suspected simple bacterial conjunctivitis with no treatment, a delayed treatment approach, or immediately is all suitable [37].

Antibiotic overuse is a typical occurrence, especially when the etiology is unclear. This was made worse by the COVID-19 epidemic, probably as a result of the rise in children receiving care digitally or over the phone rather than in person [38]. Antibiotics shouldn't be necessary for patients to return to treatment, according to the American Academy of Pediatrics [2,39]. Erythromycin ointment or trimethoprim-polymyxin B ophthalmic drops would be the first line of treatment if it were desired. It would be anticipated that symptoms will become better in one to two days.

3.2 Conjunctivitis Virus

Cool compresses and lubricating artificial tears are the main symptomatic treatments for viral conjunctivitis, particularly COVID-19 conjunctivitis. The majority of times, adenoviral conjunctivitis is self-limiting and extremely contagious. A single drop of 5% povidone iodine was used to treat 56 people with adenoviral conjunctivitis in clinics, and the results showed a lower viral load and more quick symptom recovery [40]. Although not yet common practice, if larger trials can show a similar symptomatic improvement in the future, this therapy is likely to emerge. Patients should be instructed on how to stop the spread of viral conjunctivitis, including how to avoid sharing towels or bed linens and how often to wash their hands. In fact, adenovirus cultures generated from hand swabs of 26 persons with conjunctivitis showed that 46% of them had positive results [41]. For 10 to 14 days following the onset of symptoms, patients should be urged to make every effort to limit contact with others [37].

3.3 An allergic eye condition

The goal of treating allergic conjunctivitis is to reduce exposure to the allergen while managing symptoms. To physically wipe away the irritating allergens, apply topical lubricants like fake tears or saline. Topical antihistamines, mainly second generation topical H1-receptor antagonists, can be used to treat mild allergic conjunctivitis [42]. If the condition is severe, ocular drops with azelastine or olopatadine, which have both antihistamine activity and mast cell stabilizing qualities, may be administered. Starting with topical lubricant, moving on to topical antihistamines, and concluding with topical steroids may be useful [17]. It should be noted that topical steroids should only be administered for no more than seven days at a time.

3.4 Unknown Body

Despite being superficial and benign, many foreign entities can cause severe pain. Every patient with suspected corneal foreign bodies ought to have a thorough eye exam. It has been demonstrated that oral analgesics and topical NSAIDs like ketorolac can lessen pain and increase a patient's tolerance for the exam [43]. A foreign body should be removed as soon as it is discovered, usually within 24 hours. An ophthalmologist should perform urgent foreign body removal if accessibility to the foreign body is restricted [44].

3.5 Conjunctivitis in newborns

Ocular prophylaxis with 0.5% erythromycin ophthalmic ointment against newborn conjunctivitis is a standard technique in the United States. Although prevalence of gonorrhea in pregnant women have consistently declined since the 1970s, there is still debate concerning the necessity of ocular prophylaxis [45]. Since all expectant mothers have screenings throughout their pregnancies, most newborns receive prophylactic treatment even though there is very little chance that they will contract gonococcal conjunctivitis [31]. There are few studies on the effectiveness of erythromycin ointment in treating gonococcal conjunctivitis, and it is possible that N. gonorrhoeae will acquire erythromycin resistance in the future [31]. One adverse effect of erythromycin ophthalmic ointment that doctors should be aware of is that it can cause a type of chemical conjunctivitis within the first 24 hours of life [31]. Whether caused by silver nitrate or erythromycin, neonatal chemical conjunctivitis usually cures on its own within two to four days [30]. The course of treatment for various conjunctivitis instances depends on the underlying cause. Erythromycin oral suspension and ocular drops are frequently used in the treatment of conjunctivitis brought on by C. trachomatis for a total of two to three weeks [37].

4. What to Refer To

It must be underlined that clinical manifestations are non-specific and that there is significant overlap in actual clinical practice even if certain symptoms and clinical exam findings tend to match with particular causes of pink eye. Primary care physicians shouldn't be reluctant to send patients to ophthalmology when necessary.

The American Academy of Ophthalmology suggests that some signs and problems be referred for additional assessment [37]. Moderate to severe pain, vision loss, ongoing hazy vision, and severe purulent discharge are signs that should urge further testing. Additionally, if photophobia is present in cases with allergic conjunctivitis or is out of proportion to other symptoms, it should be evaluated further. Additionally, anyone experiencing symptoms that continue longer than two weeks should be sent to a doctor.

CONCLUSIONS

An often-reported condition in pediatric primary care is conjunctivitis. In order to determine the likely etiology, a physician can use diagnostic cues from the patient's history and exam. Most pediatric conjunctivitis instances are caused by bacteria, which typically manifests as purulent discharge and mattering of the eyes. A gritty sensation and watery discharge are signs of viral conjunctivitis, which is frequently accompanied by other upper respiratory symptoms. Typically bilateral and related to seasonal allergen levels is allergic conjunctivitis. In certain populations, such as contact lens wearers, those who live in high-pollution settings, and people who experience symptoms other than conjunctivitis, there are additional causes of conjunctivitis. The majority of cases are supported by topical lubricants; however, antibiotics may be necessary in some circumstances.

REFERENCES :

1. Kaufman, H.E. Adenovirus Advances: New Diagnostic and Therapeutic Options. Curr. Opin. Ophthalmol. 2011, 22, 290-293.
2. Sebastian, T.; Frost, H.M. A Qualitative Evaluation of Pediatric Conjunctivitis Medical Decision Making and Opportunities to Improve Care. J. Am. Assoc. Pediatr. Ophthalmol. Strabismus 2022, 26, 113.e1-113.e6.]
3. Rietveld, R.P. Diagnostic Impact of Signs and Symptoms in Acute Infectious Conjunctivitis: Systematic Literature Search. BMJ 2003, 327, 789.
4. Johnson, D.; Liu, D.; Simel, D. Does This Patient With Acute Infectious Conjunctivitis Have a Bacterial Infection?: The Rational Clinical Examination Systematic Review. JAMA 2022, 327, 2231.
5. Rietveld, R.P.; Riet, G.T.; Bindels, P.J.E.; Sloos, J.H.; Van Weert, H.C.P.M. Predicting Bacterial Cause in Infectious Conjunctivitis: Cohort Study on Informativeness of Combinations of Signs and Symptoms. BMJ 2004, 329, 206-210.
6. Buznach, N.; Dagan, R.; Greenberg, D. Clinical and Bacterial Characteristics of Acute Bacterial Conjunctivitis in Children in the Antibiotic Resistance Era: Pediatr. Infect. Dis. J. 2005, 24, 823-828.

7. Gigliotti, F.; Williams, W.T.; Hayden, F.G.; Hendley, J.O.; Benjamin, J.; Dickens, M.; Ford, R.; Gleason, C.; Perriello, V.A.; Wood, J. Etiology of Acute Conjunctivitis in Children. J. Pediatr. 1981, 98, 531-536.
8. Hu, Y.-L.; Lee, P.-I.; Hsueh, P.-R.; Lu, C.-Y.; Chang, L.-Y.; Huang, L.-M.; Chang, T.-H.; Chen, J.-M. Predominant Role of Haemophilus Influenzae in the Association of Conjunctivitis, Acute Otitis Media and Acute Bacterial Paranasal Sinusitis in Children. Sci. Rep. 2021, 11, 11.
9. Esra, N.; Hollhumer, R. Herpes Simplex Virus-Related Conjunctivitis Resistant to Aciclovir: A Case Report and Review of the Literature. Cornea 2021, 40, 1055-1058.
10. Richards, A.; Guzman-Cottrill, J.A. Conjunctivitis. Pediatr. Rev. 2010, 31, 196-208.
11. Sheng, J.; Joshi, M.; Williams, K.J.; Herce, H.H.; Allen, R.C. Epidemiologic Differences and Management of Eyelid Lesions in the Pediatric Population. J. Pediatr. Ophthalmol. Strabismus. 2022, 59, 405-409.
12. Chen, P.; Lin, X.-J.; Ji, F.; Li, Y.; Wang, S.-T.; Liu, Y.; Tao, Z.-X.; Xu, A.-Q. Evolutionary Phylogeography Reveals Novel Genotypes of Coxsackievirus A24 Variant and Updates the Spatiotemporal Dynamics in the Population with Acute Hemorrhagic Conjunctivitis. Int. J. Infect. Dis. 2022, 124, 227-239.
13. Nasiri, N.; Sharifi, H.; Bazrafshan, A.; Noori, A.; Karamouzian, M.; Sharifi, A. Ocular Manifestations of COVID-19: A Systematic Review and Meta-Analysis. JOVR 2021, 16, 103.
14. Pérez-Chimal, L.G.; Cuevas, G.G.; Di-Luciano, A.; Chamartín, P.; Amadeo, G.; Martínez-Castellanos, M.A. Ophthalmic Manifestations Associated with SARS-CoV-2 in Newborn Infants: A Preliminary Report. J. Am. Assoc. Pediatr. Ophthalmol. Strabismus 2021, 25, 102-104.
15. Bielory, L.; Delgado, L.; Katelaris, C.H.; Leonardi, A.; Rosario, N.; Vichyanoud, P. ICON:Diagnosis and Management of Allergic Conjunctivitis. Ann. Allergy Asthma Immunol. 2020, 124, 118-134.
16. La Rosa, M.; Lionetti, E.; Reibaldi, M.; Russo, A.; Longo, A.; Leonardi, S.; Tomarchio, S.; Avitabile, T.; Reibaldi, A. Allergic Conjunctivitis: A Comprehensive Review of the Literature. Ital. J. Pediatr. 2013, 39, 18.
17. Berger, W.E.; Granet, D.B.; Kabat, A.G. Diagnosis and Management of Allergic Conjunctivitis in Pediatric Patients. Allergy Asthma Proc. 2017, 38, 16-27.
18. Lindsley, K.; Matsumura, S.; Hatef, E.; Akpek, E.K. Interventions for Chronic Blepharitis. Cochrane Database Syst. Rev. 2012.
19. Smadar, L.; Dotan, G.; Abumanhal, M.; Achiron, A.; Spierer, O. Demographic, Clinical Features, and Outcomes of Pediatric Non-Penetrating Ocular Foreign Bodies. Graefes Arch. Clin. Exp. Ophthalmol. 2020, 258, 1469-1474.
20. Loporchio, D.; Mukkamala, L.; Gorukanti, K.; Zarbin, M.; Langer, P.; Bhagat, N. Intraocular Foreign Bodies: A Review. Surv. Ophthalmol. 2016, 61, 582-596.
21. Upshaw, J.E.; Brenkert, T.E.; Losek, J.D. Ocular Foreign Bodies in Children. Pediatr. Emerg. Care 2008, 24, 409-414.
22. Kates, M.M.; Tuli, S. Complications of Contact Lenses. JAMA 2021, 325, 1912.
23. Nucci, P.; Sacchi, M.; Pichi, F.; Allegri, P.; Serafino, M.; Dello Strologo, M.; De Cillà, S.; Villani, E. Pediatric Conjunctivitis and Air Pollution Exposure: A Prospective Observational Study. Semin. Ophthalmol. 2017, 32, 407-411.
24. Chang, C.-J.; Yang, H.-H.; Chang, C.-A.; Tsai, H.-Y. Relationship between Air Pollution and Outpatient Visits for Nonspecific Conjunctivitis. Investig. Ophthalmol. Vis. Sci. 2012, 53, 429.
25. Khan, A.; Anders, A.; Cardonell, M. Neonatal Conjunctivitis. NeoReviews 2022, 23, e603-e612.
26. Manasseh, G.S.L.; Amarakoon, S.; Photiou, V.; Arruti, N.; Borman, A.D. Approach to Conjunctivitis in Newborns. BMJ 2022, 376, e068023.
27. Bothun, C.E.; Mansukhani, S.A.; Xu, T.T.; Hendricks, T.M.; Hodge, D.O.; Mohney, B.G. Incidence and Clinical Characteristics of

Infantile Conjunctivitis in a Western Population. Am. J. Ophthalmol. 2022, 241, 145-148.
28. Boffa, M.M.; Spiteri, A. Haemolacria: A Case of Pseudomembranous Conjunctivitis in a Neonate. BMJ Case Rep. 2020, 13, e235110.
29. Maqsood, N.; Mahmood, U. Herpes Simplex Ophthalmia Neonatorum: A Sight-Threatening Diagnosis. Br. J. Gen. Pract 2020, 70, 513-514.
30. Kapoor, V.S.; Evans, J.R.; Vedula, S.S. Interventions for Preventing Ophthalmia Neonatorum. Cochrane Database Syst. Rev. 2020, 2020, CD001862.
31. Franco, S.; Hammerschlag, M.R. Neonatal Ocular Prophylaxis in the United States: Is It Still Necessary? Expert Rev. Anti-Infect. Ther. 2023, 1-9.
32. Weatherby, T. Relative Frequencies of Ophthalmia Neonatorum and Congenital Nasolacrimal Duct Obstruction. Br. J. Gen. Pract. 2021, 71, 59.
33. Sheikh, A.; Hurwitz, B.; Van Schayck, C.P.; McLean, S.; Nurmatov, U. Antibiotics versus Placebo for Acute Bacterial Conjunctivitis. Cochrane Database Syst. Rev. 2012.
34. Honkila, M.; Koskela, U.; Kontiokari, T.; Mattila, M.-L.; Kristo, A.; Valtonen, R.; Sarlin, S.; Paalanne, N.; Ikäheimo, I.; Pokka, T.; et al. Effect of Topical Antibiotics on Duration of Acute Infective Conjunctivitis in Children: A Randomized Clinical Trial and a Systematic Review and Meta-Analysis. JAMA Netw. Open 2022, 5, e2234459.
35. Silverstein, B.E.; Allaire, C.; Bateman, K.M.; Gearinger, L.S.; Morris, T.W.; Comstock, T.L. Efficacy and Tolerability of Besifloxacin Ophthalmic Suspension 0.6% Administered Twice Daily for 3 Days in the Treatment of Bacterial Conjunctivitis: A Multicenter, Randomized, Double-Masked, Vehicle-Controlled, Parallel-Group Study in Adults and Children. Clin. Ther. 2011, 33, 13-26.
36. Asbell, P.A.; Colby, K.A.; Deng, S.; McDonnell, P.; Meisler, D.M.; Raizman, M.B.; Sheppard, J.D.; Sahm, D.F. Ocular TRUST: Nationwide Antimicrobial Susceptibility Patterns in Ocular Isolates. Am. J. Ophthalmol. 2008, 145, 951-958.
37. Varu, D.M.; Rhee, M.K.; Akpek, E.K.; Amescua, G.; Farid, M.; Garcia-Ferrer, F.J.; Lin, A.; Musch, D.C.; Mah, F.S.; Dunn, S.P. Conjunctivitis Preferred Practice Pattern®. Ophthalmology 2019, 126, P94-P169.
38. Frost, H.M.; Sebastian, T.; Durfee, J.; Jenkins, T.C. Ophthalmic Antibiotic Use for Acute Infectious Conjunctivitis in Children. J. Am. Assoc. Pediatr. Ophthalmol. Strabismus 2021, 25, 350.e1-350.e7.
39. Lee, T.; Kuo, I.C. Survey of State Conjunctivitis Policies for School-Age Students. J. Am. Assoc. Pediatr. Ophthalmol. Strabismus 2022, 26, 115.e1-115.e5.
40. Than, T.; Morettin, C.E.; Harthan, J.S.; Hartwick, A.T.E.; Huecker, J.B.; Johnson, S.D.; Migneco, M.K.; Shorter, E.; Whiteside, M.; Olson, C.K.; et al. Efficacy of a Single Administration of 5% Povidone-Iodine in the Treatment of Adenoviral Conjunctivitis. Am. J. Ophthalmol. 2021, 231, 28-38.
41. Azar, M.J.; Dhaliwal, D.K.; Bower, K.S.; Kowalski, R.P.; Gordon, Y.J. Possible Consequences of Shaking Hands With Your Patients With Epidemic Keratoconjunctivitis. Am. J. Ophthalmol. 1996, 121, 711-712.
42. Castillo, M.; Scott, N.W.; Mustafa, M.Z.; Mustafa, M.S.; Azuara-Blanco, A. Topical Antihistamines and Mast Cell Stabilisers for Treating Seasonal and Perennial Allergic Conjunctivitis. Cochrane Database Syst. Rev. 2015.
43. Heath Jeffery, R.C.; Dobes, J.; Chen, F.K. Eye Injuries: Understanding Ocular Trauma. Aust. J. Gen. Pract. 2022, 51, 476-482.
44. Algarni, A.M.; Guyatt, G.H.; Turner, A.; Alamri, S. Antibiotic Prophylaxis for Corneal Abrasion. Cochrane Database Syst. Rev. 2022, 2022.
45. US Preventive Services Task Force; Curry, S.J.; Krist, A.H.; Owens, D.K.; Barry, M.J.; Caughey, A.B.; Davidson, K.W.; Doubeni, C.A.; Epling, J.W.; Kemper, A.R.; et al. Ocular Prophylaxis for Gonococcal Ophthalmia Neonatorum: US Preventive Services Task Force Reaffirmation Recommendation Statement. JAMA 2019, 321, 394.

Prabandhan Guru, ISSN : 2321-4295
Vol: XIV, Issue: 1, Jan-June 2023
RNI : UPENG / 2010 / 38376

A REVIEW ON NOVEL DRUG DELIVERY SYSTEM

Tarannum Fatima
Shri Ram College of Pharmacy, Muzaffarnagar, Parikrama Marg, 251001, India
E-mail:fatimarajput843@gmail.com

ABSTRACT

The performance of an existing medicinal molecule in terms of patient compliance, safety, and efficacy can be greatly enhanced by evolving it from a traditional form to a unique delivery mechanism. An old medication molecule can be given new life as a Novel medication Delivery System. A significant improvement in the ability to release a drug at a specified spot and rate is possible with a novel drug delivery system that is properly developed. Pharmaceutical companies are working to create novel drug delivery systems in order to give medications to patients effectively and with fewer side effects. The basics of novel drug delivery systems are covered in this article, along with other variations on the theme.

Keywords : *Novel drug delivery system, Drug release, Dosage forms, Novel methods,*

INTRODUCTION

The way a medicine is administered can significantly affect how effective it is. Some medications have an ideal concentration range where the greatest benefit is obtained; dosages outside or inside of this range can be harmful or have no therapeutic benefit at all [1]. The very modest improvement in the effectiveness of treating serious diseases, on the other hand, has indicated an increasing need for a multidisciplinary approach to the delivery of medicines to targets in tissues.

This led to the development of fresh concepts for managing the pharmacokinetics, pharmacodynamics, non-specific toxicity, immunogenicity, biorecognition, and efficacy of medications. These innovative approaches-often referred to as drug delivery systems (DDS)-combine polymer science, pharmaceutics, bioconjugate chemistry, and molecular biology. Various drug delivery and drug targeting systems are now being developed to reduce drug degradation and loss, to prevent negative side effects, to boost medication bioavailability, and to raise the percentage of the drug accumulating in the necessary zone [1]. Previously simply a pipe dream or at most a potential, controlled and novel drug delivery is now a reality. Pharmaceutical and other experts have conducted considerable and rigorous study in this area of drug development during the past 15 years.

Novel drug delivery systems provide a step forward in our understanding of the pharmacokinetic and pharmacodynamic behaviour of drugs, and they provide a more logical method for creating the best possible drug delivery system. The new drug delivery system (NDDS) is a class of carriers that keeps medication concentrations in therapeutic ranges for a longer period of time. Novel drug delivery systems have a number of benefits over traditional medication delivery, including the following.

1. Over a lengthy period of time, the circulatory system or a tissue's optimal therapeutic medication concentration may be maintained.
2. A drug's predetermined rate, which aids in extending its action.
3. A medication with a short half-life might be increased.
4. The risk of adverse effects may be reduced by focusing on the location of action.
5. Less frequent dosing and medication waste could be achieved.
6. Increased patient adherence.

NOVEL DRUG DELIVERY SYSTEMS

Various drug delivery systems have been created, and some are still being worked on, with the goal of reducing drug loss, preventing negative side effects, increasing drug bioavailability, and also encouraging and facilitating the accumulation of the drug in the necessary bio-zone (site). A variety of novel carriers have been demonstrated to be effective for controlled and sustained medication delivery. It is crucial to examine the various terminology employed in the various novel drug delivery system broad categories.

- Sustained- or controlled-drug delivery systems administer drugs at therapeutically effective levels in the blood at a predetermined pace through a prolonged or constant (zero-order) release, respectively.
- Localised drug delivery systems deliver medication by regulating the rate of release of the medication close to the target.
- Pre-determine rate of medication delivery provides pharmacological action by adjusting drug molecule release through system design that regulates drug molecule molecular diffusion in systemic circulation.
- Targeted drug delivery works by using carriers for passive or active diffusion, one base approach, or self-programmed approach. This method is typically employed in conjunction with appropriate sensing devices that recognise their receptor at the targeted site.

Table 1. Classification of sustained or controlled release system based on their rate - controlled mechanism

Type of System	Rate control Mechanism
Diffusion - controlled	
Reservoir systems (Occuserts)	Diffusion through membrane
Monolithic systems (Transdermal drug)	Diffusion through membrane
Delivery system- Nitro -dur)	
Water penetration controlled	
Osmotic systems (Oros, Alzet osmotic pump)	Osmotic transport of water through semi-permeable membrane
Swelling system (hydrogel)	Water penetration into glassy polymer
Chemically - controlled	
Pendent systems	Combination of hydrolysis of pendent group diffusion from bulk polymer
Ion - exchange resins	Exchange of acidic or basic drug with the ions present on resins

On the basis of their nature, drug release mechanism, and drug nature, carrier systems for the purpose of targeted and sustained drug delivery may be categorised (Table 1.0). When a bioactive chemical that is hydrophilic (loves water) flows through a polymer, the fundamental component of the controlled release idea, diffusion takes place.

Many systems that respond to the environment are also built to hold onto their content until they are properly positioned in biological systems and are activated by an internal or external signal to release drugs. Display the medication release mechanism from each drug delivery method.

Reservoir- Type drug delivery system

The drug is enclosed in the drug reservoir compartment in reservoir-type drug delivery systems, and the drug-releasing surface is protected

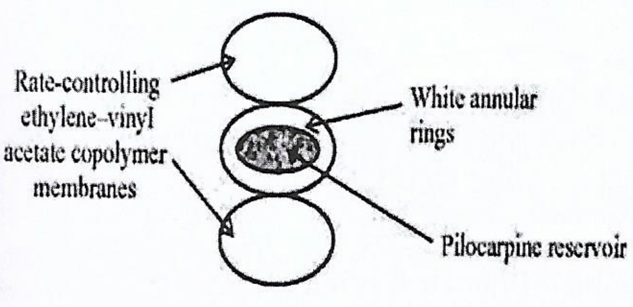
by an embryonic polymer membrane with rate-controlling properties.
The medication in the reservoir compartments may be either a liquid or a solid dispersion of the medication in a dispersion medium. The non-porous, homogeneous or heterogeneous polymeric material or semi-permeable membrane can be used to create the polymeric membrane. This kind of drug delivery system produces drug release at a relatively constant rate (Q/t).

Occuserts

Ocusert was used to achieve a completely continuous, controlled-release, and zero-order kinetic release. The pilocarpine ocusert, first commercialised by Alza Corporation in California, reduced pilocarpine's non-compliance issues, low intra-ocular medication absorption, and potential systemic side effects. The systems are made up of two transparent rate-regulating ethylene-venyl acetate co-polymer-based thin membranes and a pilocaroine-aliginate core of (drug). The pilocaroine molecules are released through the rate-controlling membranes at a predetermined rate when this is positioned behind the upper eyelid after being dissolved in the lachrymal fluid.

Pilocarpine and alginic acid are combined in the drug reservoir, which releases the medication for up to a week. The reservoir is surrounded by a thin ethylene venyl acetate (EVA) co polymer membrane on both the top and bottom. The drug reservoir is encased circumferentially by a retraining ring made of the same material but impregnated with titanium dioxide (fig. 1.1).

Fig 1.1: Schematic representation of Occuserts. (Borase VA et al., 2020)



NOVEL CARRIER FOR CONTROLLED & TARGETED DRUG DELIVERY

As our understanding of the pathophysiology and molecular basis of diseases has grown, more therapeutically precise and goal-specific drugs are being produced. These recently developed drugs needed to be localised to a specific location of action due to their great potency (limited therapeutic window). The majority of medications are administered using typical immediate-release dose formulations. They freely circulate throughout the systemic circulation, aggregate in an unfavourable way in non-specific organs, and hence result in negative side effects. These slides should be delivered to their respective sites of action in order to diminish them and increase their therapeutic advantages; hence, appropriate carrier systems become a requirement.

For this, numerous innovative carriers have been created. One of these colloidal carriers is a supramolecular material such as liposomes or nanoparticles. Micelles, a system, have increased impact in the realm of targeted and regulated medication delivery. new recently Carriers like dendrimers, liquid crystals, aquatones, carbon nanotubes, and inorganic particles are also used investigated for the targeted objective. These carriers are summarised in the section that follows.

Colloidal carrier

Liposomes

Early in the 1960s, Bingham and his colleagues developed liposomes, which went on to become the most thoroughly researched drug delivery method. They were initially employed to research the behaviour of in vitro-simulated biomembranes, but they have since emerged as potent therapeutic tools, particularly for drug delivery and drug targeting.

Liposomes are membranous lipid bilayer-enclosed phospholipid-based colloidal vesicular particles that have a hydrophilic core. They can be categorised based on their preparation process, structural parameters, or particular functions.

Nanosomes

Niosomes, also known as non-ionic surfactants vesicles, are being extensively researched as a native alternative to liposomes. The self-assembly of hydrated surfactant monomers yields non-ionic surfactant vesicles. Non-ionic surfactants come in a wide range of structural kinds, and they have been discovered to be effective substitutes for phospholipids. Niosomes have physical characteristics that are comparable to those of liposomes, which are generated from phospholipids, despite the terminology suggesting differences between niosomes and liposomes, with the former having chemical variances in the monomer's units. As implied by the name, components containing non-ionic surfactants are typically used to create non-ionic surfactants vesicles. They can also be made using different ionic amphiphiles such dicetylphosphate, stearylamine, etc. for the purpose of achieving steady vasicular suspension. The fundamental structural components of NSVs must be recognised and understood, whereas an amphiphilic head group. Alkyl ether lipids predominate among the non-ionic chemicals that form vesicles. Based on the nature of their hydrophilic head groups, these can be roughly divided into two main classes: alkyl ethers with repeat glycerol subunit hydrophilic head groups, related isomers, or larger sugar molecules, and those with repeat ethylene oxide subunit hydrophilic head groups.

The elements shown in Fig. 1.2 determine any niosomal system's final identity and, hence, its characteristics. It follows that the design of a niosomal drug delivery system must carefully regulate each of these factors.

Despite the fact that pharmaceutical niosome formulations have not yet seen widespread commercial success, numerous research have shown how effective niosomes may be at delivering drugs. Niosomes have been shown to be effective at delivering anti-infective, anti-cancer, anti-inflammatory, and, more recently, adjuvants for vaccines.

These systems may be used as diagnostic imaging agents because it has been demonstrated that they target specific regions of the mammalian anatomy.

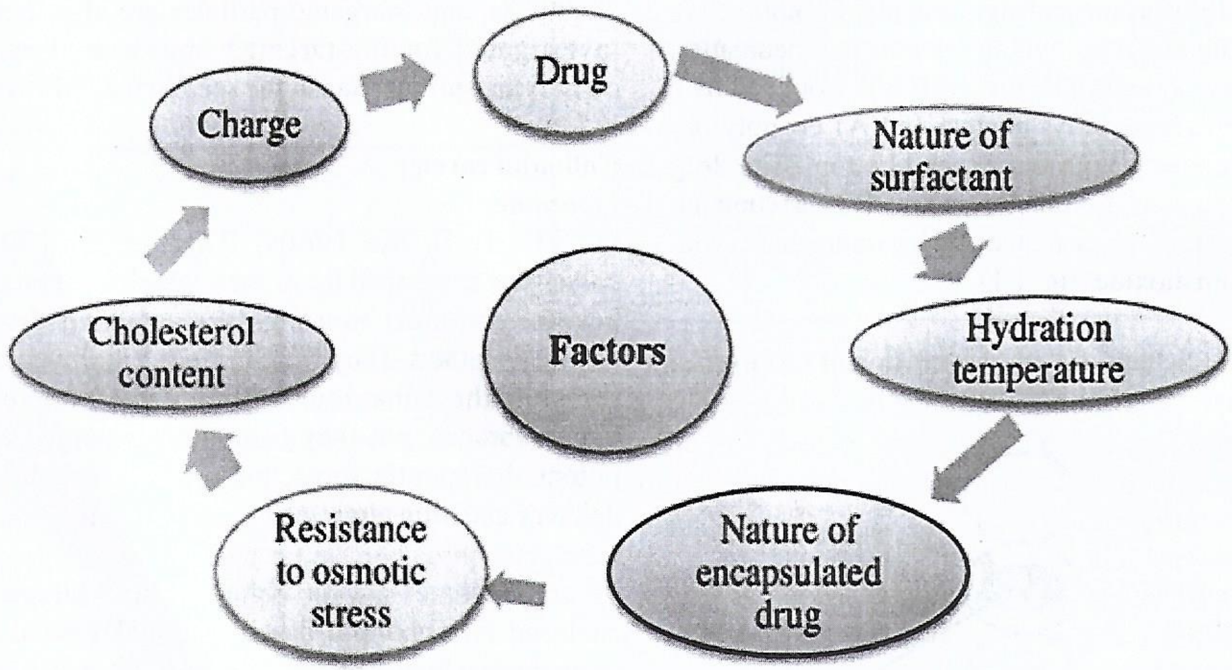


Fig. 1.2: factors Influencing Physical stability of niosomes (Dhanvir K et al., 2018)

The highest drug levels after IV niosome delivery are discovered in the liver, according to a review of the literature. There were, however, certain exceptions. In the case of solution administration, DOX liver levels are initially modest (10 nm after dosing, 0.5% of the dose), whereas they are larger for noisy formulation. Even while smaller DOX niosomes are observed to collect in the liver after IV injection, the reason for this non-liver uptake is unclear.

APPLICATIONS OF NOVEL DRUG DELIVERY SYSTEMS

Sustained and controlled- drug delivery

NDDS should be used to achieve controlled release of medication or bioactives that are encapsulated. Desired release pattern will unquestionably enhance the drug's pharmacokinetic and pharmacodynamic effects. Contrary to conventional methods, the regulated distribution of antibiotics used in the treatment of H. pylori by NDDS is effective.

Similar to this, gradual and prolonged medication release from implants prevents regular drug administration and hence guarantees patient compliance. There are many uses for NDDS that include regulated and sustained drug administration. Some of them have previously been covered in the sections before this one. Utilising microparticle technology, novel formulations of short-acting peptides have been created effectively. These peptides include the lutenizing hormone-releasing hormone agonists leuprorelin acetate and triptoreline. Advancement prostate cancer, endometriosis, and other hormone responsive disorders may be treated with monthly and three-monthly dosage formulations of leuprorelin polylactided acid co-glycolide microspheres. These microspheres, which are marketed as prostap SR, successfully stop the spread of endometeriosis or prostate cancer in patients.

The immunosuppressant drug cyclosporin A, salmon calcitonin for the treatment of hypercalcemia or postmenopausal osteoporosis, and the angiotensin receptors- antagonist L - 158809 for the treatment of hypertension are other peptides that have been formulated as sustained release microparticles. There isn't. of the products indicated in Table 1.1 that are commercially accessible for clinical research

Table 1.1: list of various marketed formulations based on novel drug delivery systems.

DRUG	INDICATION	COMPANY NAME
Amphotericin B	Kaposi's sarcoma	SEQUUs
Amphotericin B	Advanced kaposi'sarcoma	NeXstar
Dexorubicin	Systemic fungal infection	NeXstar
Daunorubicin	Systemic fungal infection	SEQUUS
Leuprolide acetate	Prostate cancer	Takeda-Abott
Triptorelin	LHRH agonist	Novartis

CONCLUSION

The Novel Drug delivery System (NDDS) combines cutting-edge methods with newly created dosage forms that are much superior to traditional dosage forms. The benefits of a novel drug delivery system include optimal dosing at the proper time and place, economical use of expensive medications, excipients, and production cost reduction, benefit to patients in the form of better therapy, increased comfort, and an overall higher standard of living. Targeted Drug Delivery System, Controlled Drug Delivery System, and other basic types of new drug delivery systems.

Innovative methods for drug delivery and targeting are employed in pharmaceutical science. such as the commercial development of novel carriers (liposomes), vaccine administration, gene therapy, and targeted medicinal molecules.

Future prospects

The main focus of current research is on targeting medicine delivery. Only a handful focused formulations were able to enter the market after the concept of the magic bullet. The practical fundamentals of biomolecule targeting are frequently brought to the forefront of discussion by the discoveries made in the fields of molecular biology, biotechnology, and pharmacogenomics.

Like the most desired therapeutic need for the foreseeable future is tumor-targeted drug/gene delivery

REFERENCES :

1. Reddy. P.D., Swarnalatha D.Recent advances in Novel Drug Delivery Systems. IJPTR, 2010; 2(3): 2025-2027.
2. Muller.C.C. "Physicochemical characterization of colloidal drug delivery systems such as reverse micelles, vesicles, liquid crystals and nanoparticles for topical administration", European Journal of Pharmaceutics and Biopharmaceutics. 2004; 58(2): 343-356.
3. http://www.azonano.com/oars.asp
4. Sharma A. International Journal of Pharmaceutics. 1997;154; 123-140.
5. Lau JR, Geho WB, Snedekar GH, Inventors; SDG INC, An Ohio Corporation, Assignee; Targeted Liposomal Drug Delivery System. US Patent 20100209492. 2010 Aug 19.
6. Takagi A, Yamashita N, SonobeT,Inventors; Astellas Pharma INC Tokyo, Assignee; Intracellular Drug Delivery Improving Liposomes. US Patent 20070286898. 2007 Dec 13.
7. Lau JR,Geho WB, Snedekar GH, Inventors; Targeted Liposomal Drug Delivery System. US Patent 20070104777. 2007 May 10.
8. Zhang Y, Luo B, Iyer L, Inventors; Liposomal Delivery Vehicle For Hydrophobic Drugs. US Patent 20070014845. 2007 Jan 18.
9. Yamauchi H, Morita H, Kikuchi H, Inventors; Daiichi pharmaceuticals Co.LTD, Assignee; Liposomes And Liposomal Dispersion. US Patent 20020182248. 2002 Dec 5.
10. Rajan K. Verma and Sanjay Garg, "Current Status of Drug Delivery Technologies and Future Directions, Pharmacutical Technology On-Line, 25 (2), 1-14 (2001).
11. Aminabhavi T.M. JCR. 2001; 70; 1-20
12. Manivannan R. Recent Advances In Novel Drug Delivery System. IJRAP. 2010; 1(2); 316-326
13. Turos E, Cormier R, Kyle DE, Inventors; University of South Florida FL, Assignee; Polyacrylate Nanoparticle Drug Delivery. US Patent 20100278920. 2010 Nov 4.
14. Sung H, liang H, Tu H, Inventors; Nanoparticle For Protein Drug Delivery. US Patent 20090155374. 2009 June 18.
15. Jacobson GB, Zare RN, Markides KE, Shinde RR, Inventors; Encasulated Nanoparticle For Drug Delivery. US Patent 20080095856. 2008 Apr 24.
16. Lobl TJ, Schloss JV, Nagy AI, Pananen JE, Inventors; Neurosystec corporation, Valencia CA, Assignee; Nanoparticle Drug Formulation. US Patent 20080145439. 2008 June 19.
17. O'Neil, Jacklyn, "Controlling drug delivery for the application of extended or sustained-release drug products for parenteral administration". Chemistry Master's Theses. 2010; Paper 14.
18. Wu D, Chu CC, Carozza J, Inventors. Injectable Microspheres. US Patent 20110151004. 2011 June 23.
19. Sah HK, Inventor; SK Chemicals CO LTD KR, Assignee; Method For Producing Microspheres Loaded with Drugs And Microspheres Loaded With Drugs Produced Thereby. US Patent 20090318569. 2009 Dec 24.
20. Shah S. Novel Drug Delivery carrier:Resealed Erythrocytes. IJPBS. 2011; 2(1); 395-406

Prabandhan Guru, ISSN : 2321-4295
Vol: XIV, Issue: 1, Jan-June 2023
RNI : UPENG / 2010 / 38376

DIABETES MELLITUS: A COMPREHENSIVE REVIEW OF CLASSIFICATION, ETIOLOGY, EPIDEMIOLOGY, DIAGNOSIS, CLINICAL AND NON-CLINICAL MANAGEMENT

Himanshu Sharma
Shri Ram College of Pharmacy, Muzaffarnagar, Parikrama Marg, 251001, India
E-mail:shceuticals@gmail.com

ABSTRACT

One of the most prevalent non-communicable diseases in the world is "diabetes mellitus". India faces a number of difficulties in managing diabetes, including a rising incidence of the condition in both urban and rural regions, a lack of public awareness of the disease, a lack of adequate medical facilities, a high cost of treatment, subpar glycaemic control, and an increase in the frequency of diabetic complications. Subcutaneous injections can be used to administer insulin therapy for diabetes up to four times per day. Long-term insulin therapy has a negative impact on patient outcomes because of issues with patient compliance and the invasiveness of its administration. Type 1 diabetes is becoming more common, but type 2 diabetes mellitus, which accounts for more than 90% of all instances of diabetes, is the main cause of the epidemic. A dangerous and widespread chronic disease, type 2 diabetes is caused by a complicated interaction between genes, environment, and additional risk factors like obesity and sedentary behaviour.

Keywords : *Diabetes mellitus; Classification;Diagnosis;Cause;Treatment.*

INTRODUCTION

A chronic condition of the metabolism of proteins, lipids, and carbohydrates is known as diabetes mellitus. One defining hallmark of diabetes mellitus is an inadequate or insufficient insulin secretory response, which results in impaired utilisation of carbohydrates (glucose) [1]. The most prevalent endocrine illness, diabetes mellitus (DM), is frequently caused by an insufficient or absent supply of insulin or, less frequently, by an impairment of insulin function (insulin resistance). Diabetes mellitus is also known as "sugar" in popular culture. According to the International Diabetes Federation (IDF), there are currently 40.9 million diabetics in India, and that figure is expected to increase to 69.9 million by the year 2025 [2].

Both the hormones insulin and glucagon are released by the pancreas. The beta (ß) cells in the islets of Langerhans secrete insulin, and the alpha cells in those same organelles secrete glucagon. By facilitating glycogenesis and delivering glucose to the muscles, liver, and adipose tissue, insulin lowers blood sugar levels. While alpha cells play a significant role in managing blood glucose by generating glucagon, which raises blood glucose levels by speeding glycogenolysis, erythrocytes and neural tissue do not require insulin to utilise glucose [3].

Along with a higher risk of obesity, metabolic, and cardiovascular diseases, a foetus's future life after delivery also has a higher risk of cancer. 80% to 90% of all instances of diabetes mellitus are caused by type II diabetes. Geographical differences can affect the severity of the issues as well as total morbidity and mortality. Additionally, those with diabetes who engage in modest levels of physical exercise have a negligibly lower chance of passing away than those who are sedentary. It is now widely accepted that a particular genetic makeup is necessary for such an occurrence to occur. One of the biggest health obstacles to the development of the economies of WHO African Region states is the rising prevalence of diabetes and other noncommunicable diseases [4]. Refer to figures 1

Diabetes is characterised by an abnormality in the production or secretion of insulin, as in Type 1 diabetes mellitus (IDDM) and pancreatic duct stenosis, or by the emergence of insulin resistance or abnormal insulin production, as in Type 2 diabetes (NIDDM) and some secondary diabetes.

CLASSIFICATION OF DIABETES MELLITUS

The World Health Organisation (WHO) released the first categorization of diabetes mellitus in 1980; it was updated in 1985. The primary or idiopathic form of diabetes mellitus, which is the subject of our discussion, is the most prevalent and significant type. It must be distinct from secondary diabetes mellitus, which includes hyperglycaemia with known causes in which the destruction of pancreatic islets is triggered by inflammatory pancreatic diseases, surgery, tumours, specific drugs, iron overload (hemochromatosis), and specific acquired or genetic endocrinopathies [5].

The classification includes various types of hyperglycaemias as well as the clinical phases and aetiological subtypes of diabetes mellitus.

A person's type of diabetes is frequently determined by the conditions that existed at the time of their diagnosis, and many diabetics do not neatly fall into one category. Hyperglycaemia is thought to be a prevalent characteristic of a variety of illnesses, including primary diabetes mellitus [6].

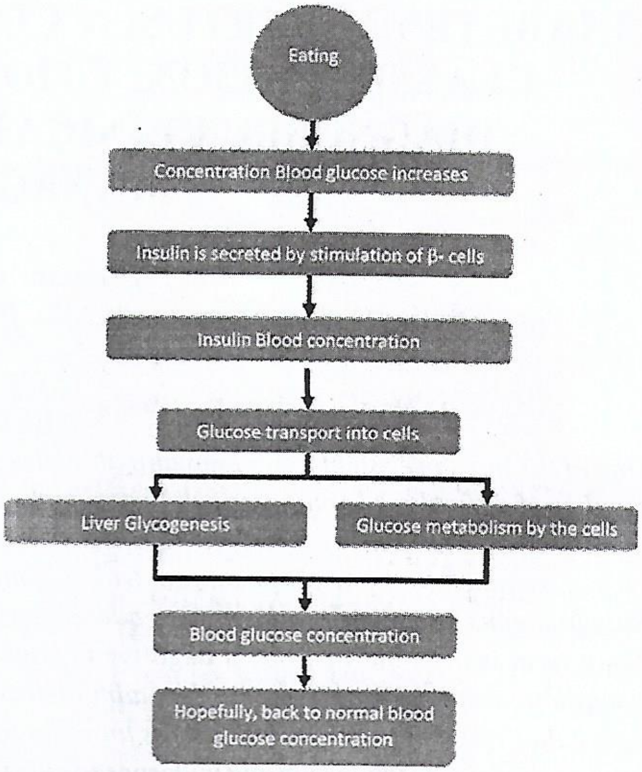


Fig 1: Glucose Metabolism of dietary product

The most recent classification of DM includes stages that reflect the different levels of hyperglycaemia in unique patients with any disease processes that may result in diabetes mellitus.

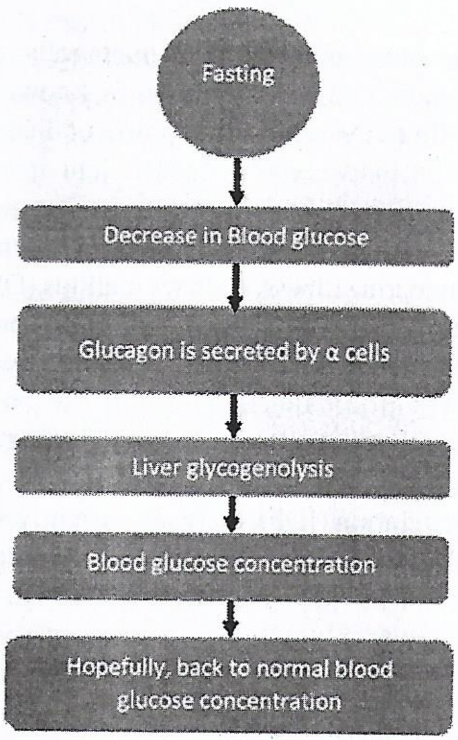


Fig 2: Nominal response towards fastinga

The terms of the new classification system, which identify four types of diabetes mellitus, have replaced the outdated terms of insulin-dependent (IDDM) or noninsulin-dependent (NIDDM), which were proposed by the WHO in 1980 and 1985, respectively (WHO Expert Committee 1999) [7]. These were included in the next International Classification of Diseases (ICD-10) in 1992 and the International Nomenclature of Diseases (IND) in 1991, respectively. As a result, diabetes mellitus is classified as follows:

1. Insulin Dependent Diabetes Mellitus (Type1 IDDM)

Formerly known as juvenile-onset or ketosis-prone diabetes, this type of diabetes mellitus is now classified as autoimmune diabetes. The person may also seek treatment for other autoimmune diseases such Addison's disease, Graves' disease, and Hashimoto's thyroiditis. Insulin-dependent diabetes mellitus (IDDM), often known as type I diabetes, primarily affects children and young adults. Its onset is typically abrupt and can be fatal.Antibodies against glutamic acid decarboxylase, islet cells, or insulin, which identify the autoimmune mechanisms that result in beta-cell death, are typically present in type 1 diabetes [8]. Diabetes type 1 (caused by the death of b cells, which typically results in a complete lack of insulin) (American Diabetes Association, 2014). Beta-cell degeneration occurs at a very varied rate; in some people, it happens quickly while in others, it happens slowly.The loss of the pancreatic ß-islets cells results in a significant lack or absence of insulin production. Insulin injections are necessary for treatment. When fasting diabetic hyperglycaemia is first identified, 85-90% of people with Type 1 diabetes mellitus have markers of immunological damage, such as autoantibodies to glutamic acid decarboxylase (GAD), islet cell autoantibodies, and/or autoantibodies to insulin. Although most persons show signs of an autoimmune mechanism involving auto-antibodies that kill the beta islet cells, the precise origin of diabetes mellitus is still unknown [9].

2. Non-Insulin Dependent Diabetes Mellitus(Type2 NIDDM)

Adult-onset diabetes is another name for type 2 diabetes mellitus. Insulin resistance and the increasing insulin secretion malfunction (American Diabetes Association, 2014). Insulin activity is typically inhibited in people with this kind of diabetes. Both types of long-term problems in the blood vessels, kidneys, eyes, and nerves are the main contributors to morbidity and mortality from diabetes. The causes are complex, and predisposing factors include obesity, sedentary behaviour, growing older (affecting middle-aged and older persons), and genetics (Ross and Wilson 2010). As a result, these patients are more likely to experience macrovascular and microvascular problems [10].

3. Gestational Diabetes Mellitus

Gestational diabetes mellitus (GDM) is the term used to describe glucose intolerance that develops for the first time or is diagnosed during pregnancy. Gestational Diabetes Mellitus (GDM) is a term used to describe women who develop Type 1 diabetes mellitus during pregnancy as well as women who realise they have undetected, asymptomatic Type 2 diabetes mellitus during pregnancy. Pregnancy-related diabetes that is not definitely diabetic is known as gestational diabetes mellitus (GDM). In the long run, children born to mothers with gestational diabetes mellitus (GDM) are at increased risk of obesity and type 2 diabetes in later life, a condition related to the consequences of intrauterine exposure to hyperglycaemia. Gestational diabetes mellitus may develop during pregnancy and may resolve after delivery [11].

4. Other Specific Type (Monogenic Types)

Hepatocyte nuclear factor (HNF)-1a is a hepatic transcription factor that develops mutations on chromosome 12 in the most prevalent form of monogenic kinds of diabetes. They were also referred to as beta cell genetic deficiencies. Early onset of hyperglycaemia (often before the age of

25) is a common feature of several types of diabetes. People with diseases of the exocrine pancreas, such as pancreatitis or cystic fibrosis; people with dysfunction associated with other endocrinopathies (such as acromegaly); and people with pancreatic dysfunction caused by drugs, chemicals, or infections are also referred to as having maturity-onset diabetes of the young (MODY) or having maturity-onset diabetes in youth or with defects of insulin action [12].Some medications are also used following organ transplantation or in conjunction with HIV/AIDS treatment. A few families have been found to have genetic defects that prevent proinsulin from being converted to insulin; these features are inherited in an autosomal dominant manner. Less than 10% of DM cases involve them.

Some Common Sign and Symptoms

Cells with diabetes mellitus virtually starve because they are unable to metabolise glucose normally. The long-term effects of diabetes mellitus include the gradual emergence of retinopathy, which may result in blindness, nephropathy, which may cause renal failure, and neuropathy, which increases the risk of foot ulcers, Charcot joints, and features of nerve dysfunctions and sexual dysfunction. Diabetes raises a person's risk for disease [13]. Look at table (1).

Other, various symptoms are observed due to.

i. The production of glucose from amino acids and body proteins results in muscle atrophy, tissue destruction, and an increase in blood sugar levels.
ii. Body fat is broken down, releasing some of its energy, and an excessive amount of ketone bodies are produced. [14].

DIABETES MELLITUS: ETIOLOGY

The Greek term "aetiologia" is the source of the word "aetiology." Consequently, aetiology is described as the discipline of determining the causes and genesis of disease,it includes -

1. The juvenile-onset (insulin-dependent) variant is thought to have an auto immune aetiology at this time.
2. The aetiology of diabetes may also be influenced by viruses like coxsackie-B.
3. It has been established that the islet-cell structure alters morphologically in response to the mumps and rubella viruses.
4. It's debatable whether genetics played a part in the development of diabetes. It's possible that a person's pancreas is predisposed to one of the aforementioned viruses due to a hereditary characteristic [15].

Causes of Diabetes Mellitus

ß cell gluco-receptor disturbances or abnormalities that cause them to respond to greater glucose concentrations or a relative ß cell deficit. In either case, there is a reduction in insulin secretion, which could lead to ß cell failure. The direct effects of hyperglycaemia on neuronal metabolism and the idea of primary in micro vascular disease-causing neural hypoxia.

1. Reduction in the number of insulin receptors and 'down regulation' of insulin receptors, which results in decreased sensitivity of peripheral tissues to insulin. Numerous cases of abdominal obesity, dyslipidaemia, and hyperinsulinemia with normal blood sugar levels are also present. As a result, there is some insulin resistance, especially in the liver, muscles, and fat. Angiopathy has been linked to hyperinsulinemia.
2. An excess of the hyperglycaemia hormone (glucagon, etc.) or fat; this results in a relative lack of insulin; the ß cells are left behind. According to two theories, changes in the metabolism of nitric oxide cause altered perineural blood flow and nerve injury.
3. various uncommon types of diabetes mellitus (type 3) include "maturity onset diabetes of young" (MODY), various endocrine illnesses, pancreatectomy, and gestational diabetes mellitus (GDM), which are caused by specific genetic abnormalities.
4. A particular receptor imbalance can result in diabetes mellitus. Glucagon-like peptide-1 (GLP-1) receptor, peroxisome proliferator-activated receptor (PPAR), beta3 (ß3) ardent-

receptor, and some enzymes like -glycosidase and dipeptidyl peptidase IV enzyme are various examples of specialised receptors.

5. Protein kinase C, oxidative stress, advanced glycation-end products, and the polyol pathway are the main topics of current diabetic neuropathy research [16].

DIAGNOSIS OF DIABETES

Mellitus Never base a diabetes diagnosis in an asymptomatic patient on a single abnormal blood glucose reading. The clinician must be certain that the determination of diabetes is done with complete certainty because the repercussions for the patient are severe and lifelong. Urine sugar, blood sugar, glucose tolerance test, renal glucose threshold, diminished glucose tolerance, raised glucose tolerance, renal glycosuria, raised glucose tolerance curve, cortisone stressed glucose tolerance assessment, intravenous glucose tolerance test, and oral glucose tolerance test are all used to diagnose diabetes mellitus.

CLINICAL AND NON-CLINICAL MANAGEMENT OF DIABETES MELLITUS

In addition to eliminating the triggering cause, high doses of regular insulin are administered as a treatment. Once the illness is under control, the need for insulin returns to normal. The goals of managing diabetes mellitus can be attained by:

1. *to get the diabetic's erratic metabolism as close* to normal as possible while yet maintaining comfort and safety.
2. To prevent or slow the progression of the disease's short- and long-term risks.
3. To supply the patient with the information, drive, and resources necessary to carry out this independent, enlightened care [17].

A. Diabetes Mellitus: Types of Therapy

1. Stem cell therapy

Monocytes and macrophages may have a major role in these chronic inflammatory conditions and resistance to insulin in T2DM patients, according to research. A cutting-edge method called stem cell educator treatment aims to prevent or treat immunological dysfunctions. The procedure involves drawing blood from the patient's circulation using a closed-loop system, separating lymphocytes from the whole blood, co-cultivating them with adherent cord blood-derived multipotent stem cells (CB-SCs), and injecting the educated lymphocytes into the patient's circulation-but not the CB-SCs.

2. Antioxidant therapy

For the treatment of oxidative stress in T2DM *patients, a variety of antioxidants, including* vitamins, supplements, active ingredients derived from plants, and medications having antioxidant activities, have been employed. The best vitamins against oxidative stress and its side effects include vitamin C, vitamin E, and beta-carotene.Lowering the risk of acquiring diabetes and its complications is made possible by antioxidants

3. Anti-inflammatory treatment

The modifications show that inflammation is a key player in the development of T2DM and associated consequences. Adipose tissue, pancreatic islets, the liver, the vasculature, and circulating leukocytes are particularly affected by T2DM, as are the numbers and states of activation of various leukocyte populations, enhanced apoptosis, and tissue fibrosis. Immunomodulatory medications are offered.

B. Dietary Management

sufficient caloric value Both diabetic and non-diabetic patients should practise adequate dietary control, such as: 1. Balanced in terms of protein, carbohydrates, and fats; under all circumstances, carbohydrate consumption must be limited. 2. Should adhere to norms as nearly as possible 3. Meals should be spaced out regularly and be of a comparable size. 4. Cut back on both fat and carbohydrate intake to lower total calorie intake. 5. The patient needs to be instructed to maintain his daily eating habits.

C. Newer Insulin Delivery Devices

Numerous advancements have been achieved to increase the simplicity and precision of administering insulin as well as to achieve tight glycaemia control. These include insulin pens, insulin syringes, insulin pumps, implantable pumps, and various insulin delivery methods.

D. Oral Hypoglycaemic or Antidiabetic Agents

In 1957, biguanide phenformin was created in parallel with sulfonylureas for clinical use. Thiazolidinediones, meglitinide analogues, -glucosidase inhibitors, and most recently dipeptidyl peptidase-4(DPP-4) inhibitors are the results of recent efforts to develop newer methods [18].

Important Features of Oral Hypoglycaemic Agents

Diabetes mellitus can be regarded as a modern disease with significant effects on morbidity, morality, and the type of person affected. Cushing syndrome is brought on by repeated exposure to glucocorticoids and is characterised by a number of clinical symptoms, including central obesity, proximal muscle weakness, hirsutism, and neurophysiological disturbance, macro-vascular complications, autonomic neuropathy, digestive issues, dental issues, etc.

CONCLUSION

In conclusion, diabetes mellitus, particularly type 2 diabetes, has emerged as one of the most significant non-communicable diseases affecting people globally. India, in particular, faces numerous challenges in effectively managing this epidemic. The country experiences a rising incidence of diabetes in both urban and rural areas, compounded by a lack of public awareness about the disease, inadequate medical facilities, high treatment costs, suboptimal glycaemic control, and an alarming increase in diabetic complications.

While insulin therapy through subcutaneous injections can be effective, its long-term administration poses challenges due to patient compliance issues and the invasive nature of the treatment. Furthermore, the increasing prevalence of type 1 diabetes adds to the burden, but it is type 2 diabetes that accounts for the vast majority of cases and drives the epidemic. This complex condition results from a multifaceted interplay between genetic predisposition, environmental factors, and additional risk elements such as obesity and sedentary behavior.

Addressing the diabetes epidemic in India requires a comprehensive approach that encompasses public health awareness campaigns, improved access to medical resources, affordable treatments, and lifestyle interventions. Researchers, healthcare providers, policymakers, and the community must work collaboratively to promote prevention, early detection, and better management of diabetes, ultimately alleviating the burden of this dangerous and widespread chronic disease. By adopting a multi-faceted strategy, India can strive towards better patient outcomes and a healthier future for its population in the face of the diabetes challenge.

REFERENCE

1. Zimmet PZ, (1991). Kelly West Lecture-challenges in diabetes epidemiology - from West to the rest: Diabetes Care 15(2),232-52. https://doi.org/10.2337/diacare.15.2.232
2. Kumar CR,(1992) Basic Pathology, Prism PVT. Limited Bangalore, 5th edition,569-587.
3. Mukherjee PS, Ghosh S, Mukhopadhyay P, Das K, Das DK, Sarkar P, Bhattacharya D, Mazumdar S, Chatterjee K, (2020). A diabetes perception study among rural and urban individuals of West Bengal, India: are we ready for the pandemic?: International Journal of Diabetes in Developing Countries, 40,612-618.
4. Chia YC, Ching SM, Chew BN, Devaraj NK, Siti Suhaila MY, Tay CL, Kang PS, Verna Lee KM, Kong SZ, Teoh SW, Nurjasmine AJ, (2019). May measurement month 2017 blood pressure screening: findings from Malaysia - SouthEast Asia and Australasia: European Heart Journal Supplements, 21,77-79.

5. Atkinson MA, Eisenbarth GS, (2001) Type 1 diabetes new perspectives on disease pathogenesis and treatment: Lancet, 358,221-229.
6. Geldsetzer P, Manne-Goehler J, Theilmann M, Davies JI, Awasthi A,Vollmer S, (2018). Diabetes and hypertension in India: a nationally representative study of 1.3 million adults: JAMA Internal Medicine, 178(3),363-372.
7. Bansal V, Kalita J, Misra U (2006). Diabetic neuropathy:Journal of Postgraduate Medicine, 82(964),95-100.
8. Betterle C, Zanette F, Pedini B, Presotto F, Rapp LB, Monsciotti CM (1983). Clinical and subclinical organ- specific autoimmune manifestations in type 1 (insulin- dependent) diabetic patients and their first-degreerelatives:Diabetologia, 26,431-36.
9. Verge CF, Gianani R, Kawasaki E, Yu L, Pietropaolo M, Jackson RA (1996). Predicting type I diabetes in first- degree relatives using a combination of insulin, GAD, and ICA512bdc/IA-2autoantibodies: Diabetes, 45,926-33.
10. Zimmet PZ, Tuomi T, Mackay R, Rowley MJ, Knowles W, Cohen M (1994). Latent autoimmune diabetes mellitus in adults (LADA): the role of antibodies to glutamic acid decarboxylase in diagnosis and prediction of insulin dependency: Diabetic Medicine 11,299-303.
11. DeFronzo RA, Bonadonna RC, Ferrannini E, Zimmet P (1997). Pathogenesis of NIDDM, International Textbook of Diabetes Mellitus, 635-712.
12. American Diabetes Association. (2014, April 27). Diagnosis and classification of diabetes mellitus.
13. Mooy JM, Grootenhuis PA, de Vries H, Valkenburg HA, Bouter LM, Kostense PJ (1995). Prevalence and determinants of glucose intolerance in a Dutch population: Diabetes Care, 18,1270-1273.
14. Lillioja S, Mott DM, Spraul M, Ferraro R, Foley JE, Ravussin E (1993). Insulin resistance and insulin secretory dysfunction as precursors of non-insulin-dependent diabetes:TheNew England Journal of Medicine, 329,1988-1992.
15. Harris MI, (1993). Undiagnosed NIDDM, clinical and public health issues: Diabetes Care, 16,642-52,
16. Jun SK, Yoon YW, (2002). A new look at viruses in Type 1 diabetes: Diabetes/Metabolism Research and Reviews, 19,8-31.
17. Boney CM, Verma A, Tucker R, Vohr BR (2005). Metabolic syndrome in childhood: association with birth weight, maternal obesity, and gestational diabetes mellitus:Paediatrics, 45(4),115-118.

"A COMMUNITY BASED ANALYSIS OF OSTEOPOROSIS PROBLEM IN HINDU & MUSLIM WOMEN BY CALCIUM & VITAMIN D TEST"

Ms. Alina Siddiqui
Assistant Professor, Department of Home Science, Shri Ram College, Muzaffarnagar;

ABSTRACT

Osteoporosis can be broken down into two words "Osteo" means bone and the term "porosis" means porous or having pores. Osteoporosis refers to a disease causing the bone structure to become more open and porous resulting in fractures. World Health Organization (WHO) has proposed diagnostic guidelines for the interpretation of a bone mass measurement. -1 is normal, -1 to -2.5 is Osteopenia, < 2.5 is Osteoporosis. There typically are no symptoms in the early statges of bone loss. The exact cause for Osteoporosis unknown. A number of factors can increase the likelihood that you will develop Osteoporosis including Age, race, lifestyle choices, and medical conditions & treatments. The aims of this study to comparative analysis of Osteoporosis problem in Muslims and Hindu women by Calcium & Vitamin D test. . Methodology was used in this study was to examine women's regarding Osteoporosis and their perception related to screening for the disease, in a community by utilizing the theoretical framework. The research approach adapted for this study is descriptive survey. The study was conducted in Muzaffarnagar to collect the data of respondents' prefer Ortho hospital at Muzaffarnagar. Sample consist of 100 (50 Muslim and 50 Hindu women's) who are residing in Muzaffarnagar. A random purposive sample techniques were used to selects the subject as the sample. Questionnaire was used to collect the data. Calcium & Vitamin D test used for analyzation of Osteoporosis disease. Structured Interview Schedule was used for data collection. Data was analyzed with the help of descriptive and inferential statistics. Further the results shows that there were minor difference between Muslims and Hindu Women's. Parda is not main cause of Osteoporosis. Other variables like age, milk & milk product, sun Exposure any disease etc. may also causes of Osteoporosis.

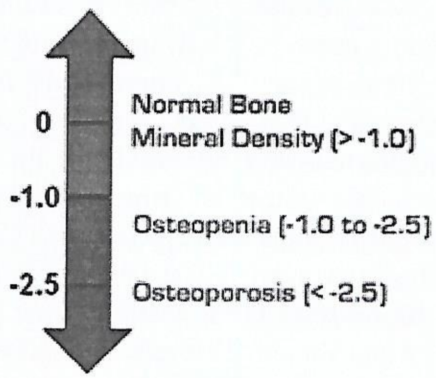
Keywords: *Religion, Lifestyle, Calcium & Vitamin D test.*

INTRODUCTION

Osteoporosis means "Porous bone" Viewed under the microscope, healthy bones looks like a honeycomb. Our bones contain collagen (protein), calcium and other minerals. Each bone is made up of a thick outer shell known as cortical bone and a strong inner mesh of trabeculae which look like a honeycomb. When osteoporosis occurs, the holes and spaces in the honeycomb are much larger than in healthy bone. Osteoporotic bones have lost density or mass and contain abnormal tissue structure. Osteoporosis is often known as "The silent thief" because bone loss occurs without symptoms. People with osteoporosis may not get any symptoms. Some may have pain in their bones and muscles, particularly in their back. Sometimes a collapsed vertebra may cause severe pain, decrease in height, or spinal deformity. So osteoporosis is a "Silent" disease. A study group of the World Health Organization (WHO) has proposed diagnostic guidelines for the interpretation of a bone mass measurement:

- **Severe osteoporosis :** Bone mineral density more than 2.5 standard deviations (SD) below the mean value of peak bone mass in young normal women and the presence of fractures.

- **Osteoporosis :** BMD more than 2.5 standard deviation below the mean value of peak bone mass in the young normal women.
- **Low bone mass (or osteopenia):** BMD within -1 SD and -2.5 SD of the mean value of peak bone mass in younger normal women.
- **Normal :** BMD not more than -1 SD below the mean value of peak bone mass in young normal women



SIGN & SYMPTOMS

There typically are no symptoms in the early stages of bone loss. But once your bones have been weakened by osteoporosis, you may have signs and symptoms that include:

- Back Pain, caused by a fractured or collapsed vertebra
- Loss of height over time
- A stooped posture
- A bone fracture that occurs much more easily than expected

CAUSES

The exact cause for osteoporosis is unknown. But a numbers of factors contribute to the disease including:

- **Aging:** Bones become less dense and weaker with age.
- **Race:** White and Asian women are most at risk. But, all races may get the disease.
- **Body weight:** people who weight less and have less muscle are more at risk for this condition.
- **Lifestyle factors:** Lack of physical activity, caffine use, excessive alcohol use, smoking, dietary calcium, and vitamin D deficiency may all increase your risk.
- **Certain medicines:** Some medicines may increase your risk.
- **Family history:** Having a family history of bone disease may increase your risk.

RISK FACTORS

- A number of factors can increase the likelihood that you will develop osteoporosis- including age, race, lifestyle choices, and medical conditions and treatments.
- **Gender:** Women are at higher risk for Osteoporosis than men. They have smaller bones and lose bone more rapidly than man do because of hormone changes that occur after menopause. Therefore, if you are a woman, you are at higher risk for osteoporosis.
- **Age:** Because bones become thinner with age, the older you are, the greater your risk of osteoporosis.
- **Family history:** Osteoporosis tends to run in families. If a family member has osteoporosis or breaks a bone, there is a greater chance that you will too.
- **History of Previous Fractures:** People who have had a fracture after the age of 50 are at high risk having another.

RESEARCH OBJECTIVES & HYPOTHESIS

- To comparative analysis of Osteoporosis problem in Muslims and Hindu women by Calcium & Vitamin D test
- H1 Muslims are more likely to have Osteoporosis comparatively to Hindu due to parda.

REVIEWS OF LITERATURE

- **Teotia&Teotia (2008)** surveyed 337.68 million population residing in 0.39 million villages in 22 states of India during the period 1963 to 2005. Of the 4,11,744 clients identified with the disorders of bone and mineral metabolism, 2,13,760 (52%) clients and nutritional bones disease. They identified dietary calcium deficiency (< 300mg/d), calcium deficiency induced Osteoporosis in the elderly were the commenest disorder responsible for bone disease and deformities.

- **Mattews, Laya& Dewitt (2006)** explored the rural women's knowledge about Osteoporosis through a survey of 437 women in rural Washington and Oregon. The response rate was 93% (N=406). The mean age of the respondents were 63 years and 74% (n=301) of women were postmenopausal. 27% of women above 40 years (n=111) reported to have fracture as an adult, less than half of this group (42%, n=47) considered themselves at risk for Osteoporosis. Of the 42% (n=171), only 18% (n=30) answered calcium and vitamin D questions correctly. Over half of the women in this group wanted more information about Osteoporosis, most wanted it before 50 years, and health care providers were a preferred source.
- **Osteoporosis Preventive Behaviors**
- **Narasinga Rao (2010)** reported that calcium is an essential mineral for bone formation, the deficiency of which leads to reduce bone formation, Osteoporosis and proneness to bone fracture. The calcium intake of people in developed countries was high (~1g/day). Also, the high intake of animal protein and sodium increased calcium loss in urine and raised the calcium requirement among people in developed countries. Calcium intake in developing countries between 300-600 mg/day and is derived mainly from cereals and vegetables. The article also featured the daily calcium intake for an adult Indian woman as 600 mg/day as recommended by the ICMR expert group, 2009.
- **Chang (2006)** executed a cross sectional survey of calcium intake in relation to knowledge of Osteoporosis and beliefs in young adult women (N=265). The investigator found out that the women had a very low intake of calcium (454 mg/day). The factors that most strongly affected the intake of calcium by women that accounted for 31.8% of the variation in calcium intake were, in order, knowledge, number of children, self-rated health score, body mass index, graduation from high school, experience of bone density examination and family history.
- **Bhatia (2008)** reported the necessity for a reappraisal of dietary calcium recommendations for Indians, both in reality and the recommendations were far lower than the western data.

METHODOLOGY

The study was to examine women's regarding Osteoporosis and their perception related to screening for the disease, in a community by utilizing the theoretical framework. A descriptive study was conducted to assess the knowledge about Osteoporosis in Indian women at Ortho hospital in Muzaffarnagar. Participants were 100 women (50 Hindu and 50 Muslim women's). The data collection considered of Blood test; These test are done to measure Calcium and Vitamin D levels. The second variables was information on the subject's Extraneous variables, lifestyle including age, religion, consumption of dairy food, dietary habits, take sun exposure or not, veg. Non veg., physical activity. The questionnaires were filled out at interview. Correlation was seen between selected variables, lifestyle factors, Blood test.

SUMMARY AND CONCLUSION

The cross sectional study on different community women's lifestyle factors aged 25-45 suffering from Osteoporosis residing in Muzaffarnagar. In this study study we saw which factors affecting Calcium & Vitamin D levels that cause of Osteoporosis. They are comparatively analysis between Hindu and Muslims women's lifestyle factors which affects the Calcium & Vitamin D levels these includes: We observed that 41-45 years old womens have more low calcium & vitamin D levels compared to younger women. Thats why age is also affects the levels of Calcium & Vitamin D levels. Reason is that as the age rises, Calcium and Vitamin D gradually decrease in our bone, due to which Osteoporosis is disease. After age 30, the the rate at which your bone tissue dissolves and is absorbed by the body slowly increases, while the rate of bone building decreases.

We observed mealtimming when eat in between 5 hours we were found that women who eat food in 5 hours, calcium & vitamin D levels are more normal than women who eat less time, there has no effects on calcium and vitamin D levels. This proves that whether the food is eaten late or early, it does not affect calcium & vitamin D levels , depends on how much calcium rich food we are eaten.

We find in this study that Osteoporosis has little difference in both Hindu & Muslims women. Because Muslims mostly lives in homes compared to hindu due to pardabut they take sun exposure in different way like windows, on the roof, balkony etc. Muslims are more at home, so they pay more attention to their food. Therefore it would be wrong to say that this disease is more in Muslims.

CONCLUSION

In this study, we found that parda is not main cause of Osteoporosis. Yes Muslims women's mostly lives in pardathrefore it would be wrong to say that this disease is more in Muslims due to parda. Even they lives in parda but they fulfill vitamin D in many ways like Muslims women's take sun exposure in different way. They eat vitamin D rich food like fish, egg etc. Other factors have reason of this disease like age, any disease, taking other medicine.

REFERENCE

1. Abrahamson, S.J., & Khan, F. (2006). Brief *Osteoporosis education in an in patient* rehabilitation setting improves knowledge of Osteoporosis in elderly patients with low-trauma fractures. International Journal of RehabilitationResearch, Mar.; 29(1): 61-4.
2. Abraham Samuel Babu, Faizal M. Ikbal, ManjulaSukumariNoone, AnupamaNaoni, & Joseph Prasanna Samuel. (2009). Osteoporosis and Osteopenia in India: A few more observations. Indian Journal of Medical Science, 2009; 63:76-7.
3. Alkel, D.L., Mortillaro, E., &Hussain, E.A. (1999). Lifestyle & Biologic contributors to proximal femur bone mineral density and hip axis length in two distant ethnic groups of premenopausal women. Osteoporosis International, 9:327-38.
4. Anderson, J.J., & Metz, J.A. (1993). Contributions of Dietary calcium and physical activity to primary prevention of Osteoporosis in females. Journal ofAmerican College of Nutrition, Aug; 12(4):378-83.
5. Aquigley Maria. (2006). Commentary: Shifting burden of disease- epidemiological transition in India. International Journal of Epidimiology, 35:1530-31.
6. AshwiniBhalearaoGandhi,& Ashok Kumar R. Shukla. (2005) Evaluation of BMD of women above 40 years of age. The Journal of Obstetrics and Gynecology ofIndia, May/June 2005; 55(3):265-67.
7. Ausenhus, M.K.(1998). Osteoporosis: prevention during the adolescent and young adult years. Nurse Practice, 13:42-8.
8. Bainbridge, K.E., Sowers, M.F., Crutchfield, M.,Lin, X., Jannausch, M., & Harlow, S.D.(2002). Natural history of bone loss over 6 years among premenopausal and early postmenopausal women. American Journal of Epidemiology, 156:410-17.
9. Bandura, A.(1997). Self-efficacy: Toward a unifying theory of behavioral change. Psychologic Review, 84: 191-215.
10. Bandura, A.(1986). Social Foundation of thought and action: A social cognitive theory. Englewood Cliff: Prentice - Hall.

Prabandhan Guru, ISSN : 2321-4295
Vol: XIV, Issue: 1, Jan-June 2023
RNI : UPENG / 2010 / 38376

REVIEW ARTICLE ON: THE CHEMICAL AND PHARMACOLOGICAL EVALUATION OF CROTON

Musayyab Khan
Assistant professor, shri ram collage of pharmacy, Muzaffarnagar
email-musayyabkhan1992@gmail.com

ABSTRACT

The plant species croton is a member of the Euphorbiaceae family. It is mostly found as a tree, Shurb, which may grow up to 1.5 meters tall, and as plants, which are found across the tropical and subtropical regions. Croton contains a variety of chemical elements with biological anticancer effects. It also has therapeutic efficacy as cytotoxic, anti-inflammatory, anti-tumor, anti-ulcer, and antioxidant agents. Along with these other uses, it also has antibacterial, antimalarial, insecticidal, larvicidal, molluscicidal, and anthelminthic properties. Secondary metabolites produced by plants as a sort of defense have been the subject of research because of their influence on the development and spread of other plants as well as the life cycle of natural pathogens. The current analysis offers a critical tip for further investigation into the chemical components and its antimicrobial activities like antifungal and other pharmacological activities from the Croton species as prospective pharmaceuticals.

INTRODUCTION

Around 80% population of the world of developing countries relies on medicinal plants, their extracts and active constituents used in traditional medicine for initial treatment according to WHO.

The plant species croton is a member of the Euphorbiaceae family. It is mostly found as a tree, Shurb, which may grow up to 1.5 meters tall, and as plants, which are found across the tropical and subtropical regions.It is most frequently discovered in India in the Sub-Himalayan region of West Bengal and in sandy alluvial soil in deserted locations, river basins, railway fields, etc.

Croton is one of around 8100 species that make up the family Euphorbiaceae, which also includes five subfamilies, 49 tribes, 317 genera, and about 8100 more species. Croton is rich in chemical components that have numerous biological anticancer properties. As cytotoxic, anti-inflammatory, anti-tumor, anti-ulcer, and antioxidant agents, it also exhibits therapeutic value. It is also employed in antimicrobial, antimalarial, insecticidal, larvicidal, molluscicidal, and anthelminthic activities. Due to their effects on the growth and spread of other plants as well as the natural pathogen life cycle, secondary metabolites produced by plants as a kind of defense have been the focus of investigation. mostly diterpenoids like phorbol esters, clerodane, labdane, kaurane, trachylobane, and pimarane, among others.3 Also abundant in active alkaloids is croton.4,5 A number of the genus' members are aromatic, indicating the presence of components that make up volatile oils.6,7 Croton species, like the majority of Euphorbiaceae, may contain latex, which is tinted red in some species.

The entire plant is traditionally used to treat a variety of skin conditions, including itching, ringworm infection, and other skin ailments, as well as to reduce body swelling. Because of its antibacterial qualities, leaves are frequently used to treat cholera as well as cuts, wounds, and venereal sores. Acute constipation, jaundice, internal abscesses, and abdominal dropsy can all be treated with seeds. Croton is regarded as a purgative and chologogue. According to reports, it has strong hepatoprotective and anti-helminthic qualities. The infusion of leaves is applied to treat severe fever brought on by gland infection, and leaves are also used to reduce excessive blood pressure. Plant latex has the ability to heal wounds, and fresh leaf juice is used to treat headaches. Interestingly, tribal people in Tamil Nadu use the latex of the plants to cure wasp stings as part of their traditional medicine. It has been claimed that croton has mosquito-repelling properties against A. aegypti. All of these findings motivate numerous croton research projects.

Researchers from all around the world have noted the isolation of croton-derived natural compounds that are biologically active. However, no such study with croton plants from this region of India has yet been documented.

Due to the fact that natural products are an effective tool for controlling a variety of weed, disease, and insect pests, the hunt for natural herbicides derived from these secondary metabolites is valuable and may yield new compounds that kill or restrict unwanted plant growth. Nematodes, which attack plants and can result in crop losses of up to US $70 billion yearly, also affect crops and are a severe challenge for crop production.For example, Meloidogyne spp. is a nematode that affects several crops including tomato, spinach, sweet potato and corn. In addition, several nematicide products currently in use cause environmental damage, health problems and enhance pathogen resistance.9 Although there are no phytochemical or bioactivity studies related to C. ehrenbergii, the essential oil from C. urucurana Baillon has been evaluated for its herbicidal activity on two seeds, Lactuca sativa and Allium cepa, showing effffects on the germination and seedling growth of these plants compared with a control.According to the findings, both plants' radicle growth was completely inhibited (100%) however seed germination was only partially inhibited (27%) for L. sativa and 83% for Allium cepa.10 The purpose of this research is to assess the phytotoxic and nematicide potential of C. ehrenbergii extracts as well as the main metabolite produced by this species.

Phytochemistry

The chemistry of crotons is very varied. Terpenoids, especially diterpenoids, which may be of the cembranoid, clerodane, neoclerodane, halimane, isopimarane, kaurane, secokaurane, labdane, phorbol, and trachylobane skeletal types, make up the majority of the genus' secondary metabolite constituents. For Croton species, triterpenoids, either pentacyclic or steroidal, have frequently been found. Volatile oils comprising mono- and sesquiterpenoids, as well as occasionally chemicals generated from shikimate, are not uncommon in the species.Numerous species have been identified as sources of various kinds of alkaloids, which significantly increases the genus' significance from a medical standpoint. Flavonoids, lignoids, and proanthocyanidins dominate among the phenolic compounds that are often reported. Secondary metabolites in plants include alkaloids, flavanoids, glycosides, and a number of other aromatic chemicals.

Phytochemical analysis from CROTON

General procedures

Purification was performed by open column chromatography (CC) using silica gel (0.063-200 and 230-400 mesh; Sigma-Aldrich, Toluca, México). They were monitored using thin layer chromatography (TLC) on aluminum foil sheets, observed under an ultraviolet lamp and revealed with a 1% (NH4)4Ce(SO4)4 in 1M H2SO4 solution. Solvents hexane, ethyl acetate (EtOAc) and methanol (MeOH) were distilled from industrial grade solvent. Compounds were characterized by nuclear magnetic resonance (NMR) at 400 and 100 MHz for 1H and 13C, respectively, in Varian Mercury 400 equipment. Deuterated methanol (CD3OD), dimethyl sulfoxide (DMSO-d6) with tetramethyl silane (TMS) as the internal reference, and water (D2O) were used for the dissolution of each compound (Sigma-Aldrich). Gas chromatography-mass spectrometry (GC-MS) experiments were performed in Agilent 6890 plus equipment coupled to a mass detector (Agilent 5379N 30-5550; electron impact ionization mode at 70 eV) and using a HP5-MS capillary column (30 m × 0.225 mm × 0.25 ?m). Samples (1 ?L) were injected in splitless mode (50 ?C, 0 min; 2 ?C/min; 285 ?C, 20 min), helium was the carrier gas at flflow rate 1 mL min?1. The database used for comparison of the results was NIST-MS version 1.7a.

Extraction and isolation

Because the fractions of stems and leaves produced identical findings in the phytotoxic and nematicide experiments, both of the dried aerial portions of Croton (1.88 kg) were crushed and macerated in 85% methanol (2 10 L). In a rotavapor, the solvent was evaporated to dryness at 40°C under reduced pressure. The hydroxy alcoholic extract (165 g) was resuspended in 500 mL of distilled water, partitioned with 3 500 mL each of n-hexane and ethyl acetate, and then dried once more at 40 °C under reduced pressure to yield 140 g of residual fraction. Because just 0.7 g of n-hexane fraction could be collected, a chromatography was not performed on it. The major component obtained in this phytochemical study, L-quebrachitol, was later identified in this powder by NMR analysis. A Buchner funnel was used to collect a yellow powder and dry it out. Finally, the NMR spectroscopic properties of this powder were examined, leading to the conclusion that tiliroside (0.016 g)18 was the flavonoid discovered during this approach.

Antimicrobial Activity.

The resultant clear zones around the discs were measured in mm. The antimicrobial activity of leaf extracts was indicated by clear zone of growth inhibition.

In-vitro screening of antibacterial activity of Croton bonplandianum leaves in both the aqueous and methanol extracts showed very promising results against all the tested bacterial strains.

The results also showed that both the aqueous and methanolic extracts were very sensitive against all the gram positive and gram negative antibiotic resistance bacteria.

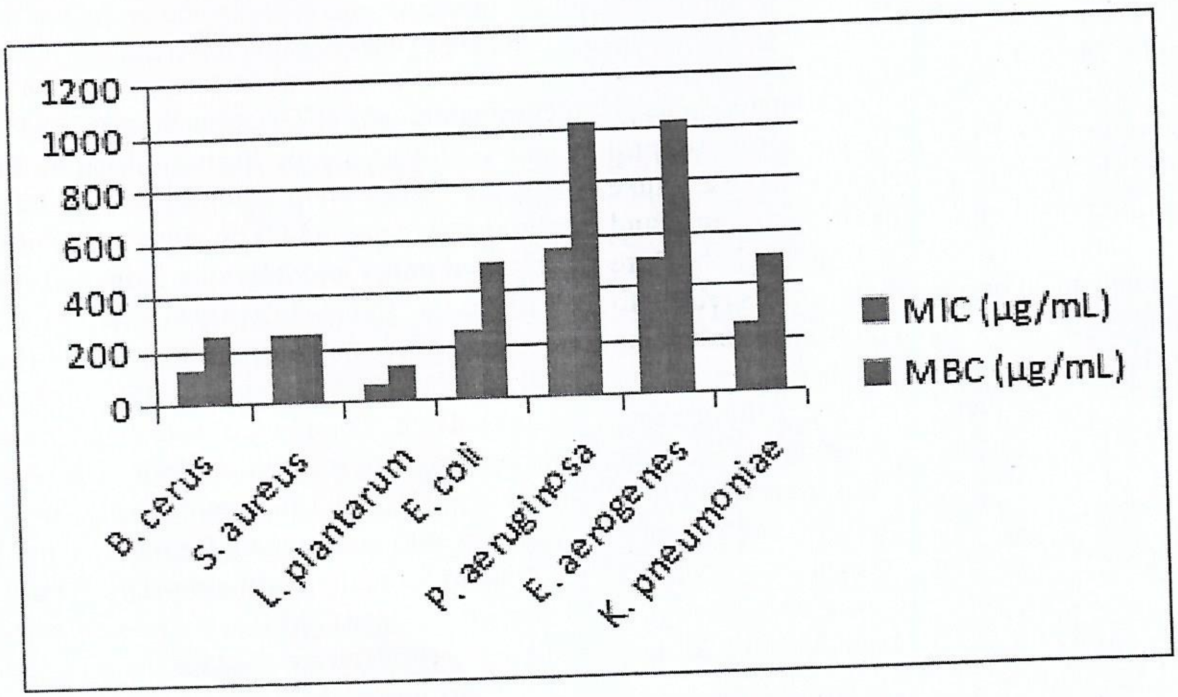


Fig. 1: Antimicrobial activity of the aqueous extract of leaves

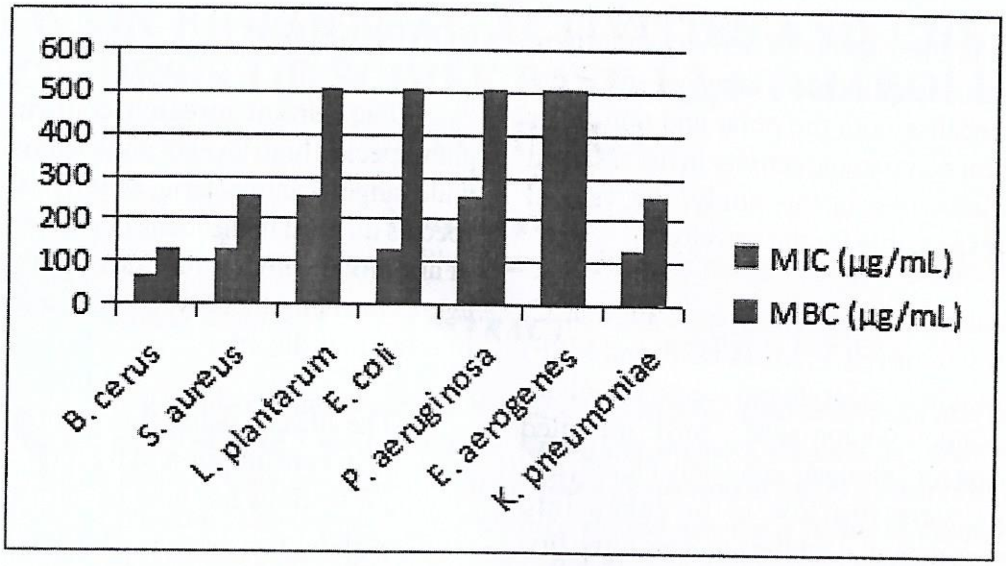


Fig. 2: Antimicrobial activity of the methanolic extract of leaves

Table 1: Preliminary phytochemical analysis of Croton bonplandianum with different solvents

Compound	Petroleu-mether	Chloro-form	Acet-one	Meth-anol
Alkaloid	+	-	+++	+++
Flavonoid	+	+	+	+++
Glycosides	+	+	++	+++
Steroids	+	++	++	++
Phenols	+	++	+	+++
Tannins	+	+	+	+
Saponins	+	-	++	+++
Resins	+	+	+	+

'+'and '-' indicate the presence and absence of the compounds respectively. '+ +'indicates moderate degree of presence and '+ + +' indicates the high degree of the presence.

The antimicrobial effects of different crude extracts The existence of various secondary metabolites or chemicals, such as glycosides, saponins, tannins, flavanoids, terpenoids, and alkaloids, in the study species Croton may also provide an explanation. These antimicrobial properties against bacteria and fungi provide proof antibiotic chemicals. Similar patterns of antimicrobial activity have been seen in Croton zambesicus, a species that showed a broad range of antibacterial and antifungal activities. Different species of Phyllanthus in the same family Euphorbiaceae have also been observed to have superior inhibitory effects against the bacteria even at low doses.

DISCUSSION

The examined species (L. sativa and Lolium perenne) respond differently, as seen by the results for the phytotoxic activity of C. ehrenbergii fractions, with L. sativa being more potently suppressed than Lolium perenne. This demonstrates that the physiological and biochemical traits of each species, as outlined by Kobayashi, determine whether a target species is susceptible to phytotoxic chemicals under laboratory circumstances.29 Furthermore, it is well acknowledged that chemical structure plays a significant part in biological function.

According to the previously given background, all of the identified chemicals, but particularly the flavonoids, 40-43 inositol, amino acids, and volatile molecules in the hexane fraction, are responsible for the phytotoxic activity of C.

displayed the highest levels of activity, but there were no appreciable differences between any of the treatments. Because both the polar and non-polar fractions exhibit comparable activity in the assessed assays, it follows that in this study, the vegetal species was responsible for the activity.

The findings of this study indicate that C. ehrenbergii fractions (HLF, MLF, HSF, and MSF) may be phytotoxic to dicotyledon seeds (L. sativa), but not to monocotyledon seeds. MSF inhibited Lolium perenne root elongation by only 68.8%, and other values were too low to be taken into consideration as potential inhibitors. This is the first study on the phytotoxic effects of L-quebrachitol, which appears to be a modest germination inhibitor at the tested dosages, notably for Lolium perenne.

Thus, the fractions and L-quebrachitol show higher inhibition in opposite species. This dichotomy could be attributed to synergism shown by substances known as allelochemicals, such as phenolic compounds, alcohol derivatives and flavonoids, which can directly or indirectly inflfluence the growth and development of neighboring organisms. In fact, previous studies have indicated that weed species might vary in their response/tolerance to phytotoxicity.44 Although none of the fractions evaluated prevented egg hatching, nematicide activity was considered adequate because all the fractions exhibited timeand concentration-dependent mortality and the maximum value (73.5%) against J2 after a 48 h exposure was found at a concentration fifive times smaller than the positive control (carbofuran). The same can be said for L-quebrachitol, which shows a higher mortality after a 48 h exposure at a lower concentration than carbofuran. From C. ehrenbergii, L-quebrachitol, phenylalanine, trans-4-hydroxy-N-methylproline and the flflavonoids were isolated and identifified by means of their spectroscopic characteristics. Phytotoxic and nematicide activities may be attributed to the synergism of all compounds identifified within Croton ehrenbergii.

CONCLUSION

The current research confirms the Croton plant species' high level of antibacterial activity. The wide range of antibacterial activity exhibited by this species may aid in the identification of novel classes of antibiotic compounds that could act as selective agents in chemotherapy, control, and the treatment of infectious disorders.

The idea of using this plant to create drugs for human consumption to treat typhoid fever and wound infections has now been made possible by this research.

REFERENCE

1. Abdulla SS, Arun Kumar M, Marimuthu R, Durga Lakshmi R, Bala Saraswathi K 2009. Screening of phytoconstituents and antibacterial activity of Gynandradropsis gynandra (L) Briq. Plant Archives, 9(2): 591-594.
2. Antonio Salatino, Maria L. Faria Salatino, Giuseppina Negri 2007 Traditional uses,Chemistry and Pharmacology of Croton species (Euphorbiaceae)Braz.Chem.Soc.,Vol. 18, No. 1, 11-33
3. M.V.Jeeshna, S. Paulsamy, T. Mallikadevi 2011. Phytochemical Constituents and Antimicrobial Studies of the Exotic Plant Species, Croton bonplandianum Baill. J Life Sci, 3(1) 23-27
4. Sampson, J. H. Phillipson, J. D. Bowery, N. G. O'Neill, M. J. Houston, J. G.Lewis, 200 J. A. Phytother. Res. 14, 24.
5. Maria Yolanda Rios,Ismael Leon-Rivera,Ramiro Rios-Gomez, Liliana C Cordova-Albores and Angelica Berenice Aguilar-Guadarrama 2019 Phytotoxic and nematicide evaluation of Croton ehrenbergii (Euphorbiaceae) Society of Chemical Industry
6. Wen-Hui Xu, Wei-Yi Liu and Qian Liang, 2018 Chemical Constituents from Croton Species and Their Biological Activities mdpi.com/journal/ molecules 2-38

Prabandhan Guru, ISSN : 2321-4295
Vol: XIV, Issue: 1, Jan-June 2023
RNI : UPENG / 2010 / 38376

A REVIEW ON BIOLOGICAL ACTIVITIES AND CHEMICAL SYNTHESIS OF SCHIFF BASE 1,2,4-TRIAZOLE DERIVATIVES

Sabiya praveen
Associate professor, Shri Ram College of Pharmacy, Parikrama marg, Muzaffarnagar, 251001

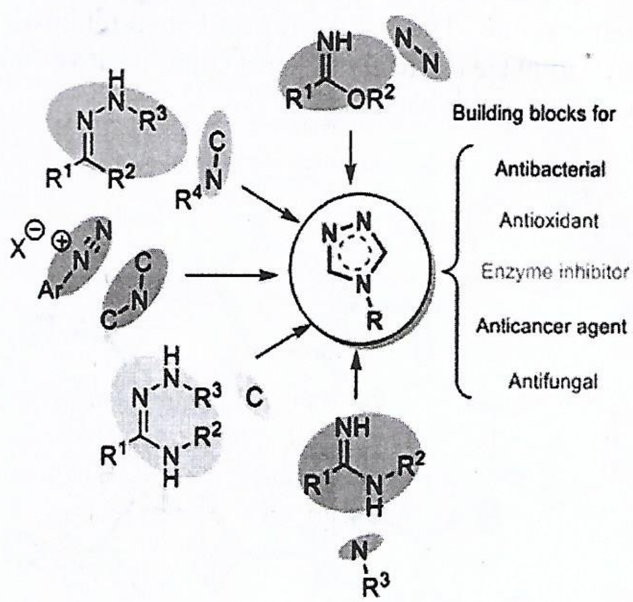
ABSTRACT

Following the synthesis of a number of substituted 1,2,4-triazole derivatives, their antifungal and antibacterial effects were assessed using the MES model and the Cup-plate method, as well as other methods. A copper-catalyzed oxidative coupling procedure in an air-filled environment offers a straightforward one-step synthesis of 1,2,4-triazole derivatives. The procedure should involve a series of copper-catalyzed oxidative coupling processes that generate N-C and N-N bonds. The biological screening of derivatives for antibacterial activity against bacterial species revealed that Staphylococcus aureus had antibacterial activity that was superior than streptomycin. Therefore, these could be a possible novel antibacterial chemical. Aryldiaziniums, amidines, imidates, and amidrazones are precursors. Properties antibacterial enzyme inhibitory, antioxidant, anticancer, and antifungal[3]

Keywords : *Antibacterial activity, antifungal activity, Microsporum gypseum, Schiff bases, Staphylococcus aureus.*

INTRODUCTION

Numerous 1,2,4-triazoles, a heterocyclic derivative, demonstrate significant medicinal properties. for instance, antifungal and antibacterial activities Additionally, a range of therapeutically intriguing pharmacological candidates, including antibiotics and antifungals, have included the 1,2,4-triazole ring system.[1] One of the important heterocycles with a variety of biological effects, including antibacterial, analgesic, anti-inflammatory, anticonvulsant, antineoplastic, antimalarial, antiviral, antiproliferative, and anticancer properties, is a compound containing a triazole.[2] In the therapy of many disorders, 1,2,4-triazoles and 1,2,4-triazol-3-one with a piperazine substituent are used. The drugs traconazole and posaconazole are crucial.antifungal medicines. Several substances that contain the piperazine nucleus are also well-known for being pharmaceuticals. In addition to Norfoxacin, Ciprofoxacin, and Ofoxacin, which are effective medicines against the respiratory, urinary, gastrointestinal, skin, and soft tissues, Prazosin, Lidofloxazine, and urapidil are employed as cardiovascular agents. either Gram-positive or Gram-negative bacteria-related tissue infections[3]



Strategies towards the construction of 1,2,4-triazoles

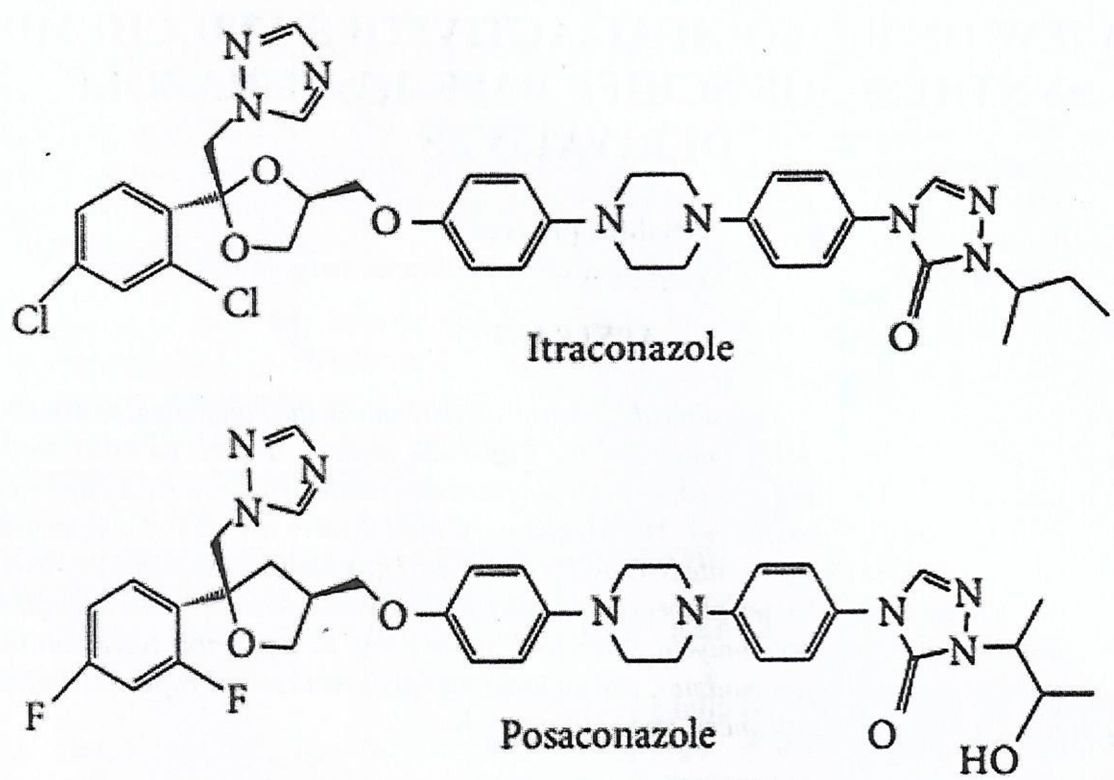
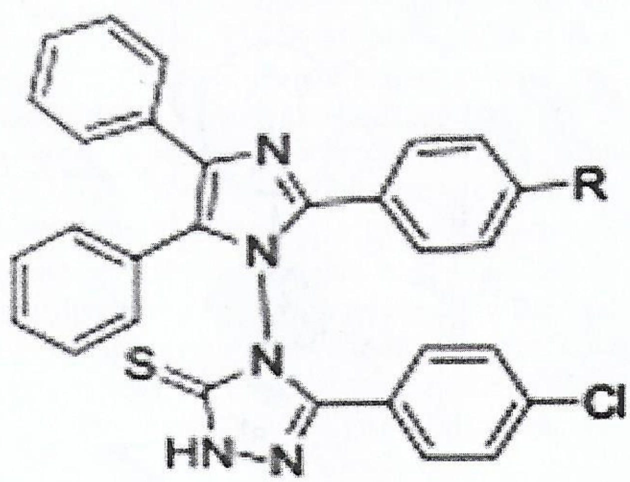


Figure : Drugs containing 1,2,4-triazole, 1,2,4-triazole-3-one, piperazine, and 2,4-dihalo phenyl moieties.

A number of bacteria, including S. aureus, S. typhi, B. subtilis, and E. coli, were successfully *inhibited by the 1,2,4-triazole-3-thione-imidazole* hybrids. Compounds 1b, 1d, and 1f were found to have antibacterial properties comparable to tetracycline. The 1,2,4-triazole benzoimidazole hybrids were ineffective against Gram-positive and Gram-negative bacteria..



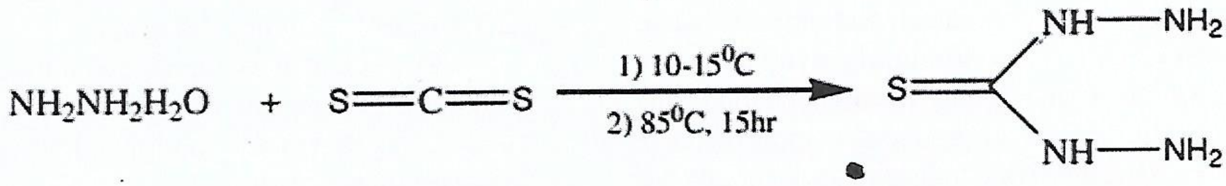
1b,R=F,1d R=Br,1f,R=CN

Experimental protocols.

Chemistry Without additional purification, all *the chemicals and solvents from* Merck (India), Spectrochem Sigma-Aldrich (India), CDH (India), and S.D. Fine were utilized. On silica gel G coated glass plates, thin layer chromatographic examination of several substances was carried out. Using a standard spreader, the adsorbent silica gel G was applied on TLC plates of 20x5 cm that had already been cleaned to a thickness of approximately 0.25 mm. The dishes spent 30 minutes in a hot air oven set to 150C. On the activated plate, a patch of compound solutions was put about 2 cm above the lower edge. The polarity of the compounds was used to determine the mobile phases. Open capillary melting point apparatus was used to determine melting points, which are reported uncorrected[1]. Compounds were inserted into the capillary's sealed end and put in the caves that were created for it. The cave contained a thermometer. A melting point range was defined as the temperature range between when a compound begins to melt and when it completely melts.

Synthesis of Thiocarbohydrazide.

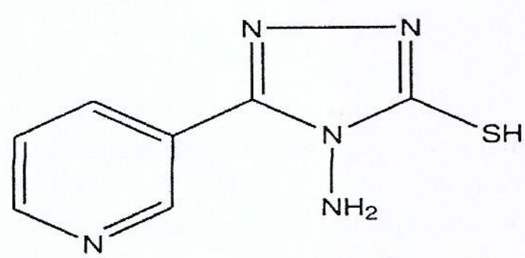
1. Hydrazine hydrate (1.0 mol) was put in a flask with a round bottom and a thermometer, an effective agitator, and a reflux condenser. While keeping the temperature below 15 degrees Celsius, the temperature was dropped to 10 degrees and 0.2 mol of carbon disulfide (15.2 g, 12.1 mL) was put dropwise into the flask. The temperature was then progressively increased to 85 degrees Celsius for 1.5 hours. Precipitate was filtered and rinsed with water after the reaction mixture was cooled to 10oC. [1]



Hydrazine hydrate Carbon Disulphide Thiocarbohydrazide

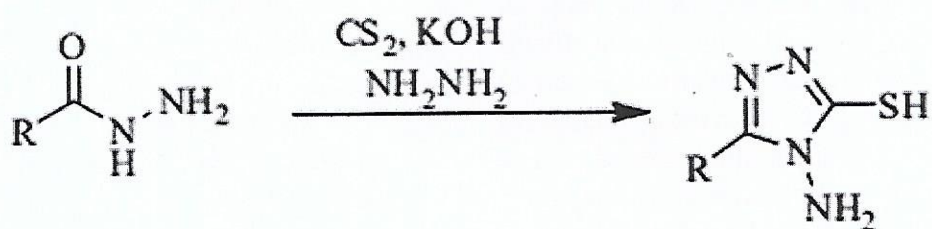
2. Synthesis of 4-Amino-5-(substituted-phenyl)-4H- [1,2,4]-triazole-3-thiol.

In around-bottomed flask with a mantle, substituted benzoic acid (0.01 mol) and thiocarbohydrazide (0.015 mol) were combined and heated until the mixture melted. When the product was finished cooling, sodium bicarbonate solution was applied to neutralize any carboxylic acid that may have remained unreacted. After that, it was filtered and cleaned with water. Recrystallizing the product with ethanol allowed for the production of the title compounds.

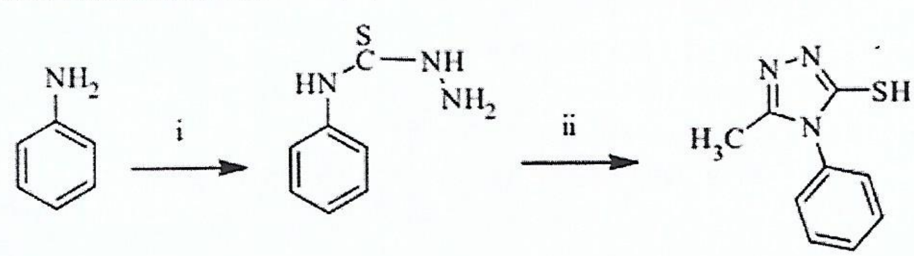


4-Amino-5-pyridin-3-yl-4*H*-[1,2,4]triazole-3-thiol

1. 1, 2, 4-triazsssole derivatives can also be prepared using Hydrazides, Carbon disulfide in presence of base[5]



2. prepared antibacterial substituted 1, 2, 4-triazole derivatives as depicted below[5]



Review of Complex Formation of 1,2,4-triazole Derivatives and Prospects for Their Application-

Researchers looked at five novel, complex compounds based on the heterocyclic system of palladium and the 1,2,4-triazole. The anti-cancer properties of enantiomeric pairings were discovered. All synthetic complexes already had antiproliferative qualities. This was particularly evident in the inactivation of MCF7 cells. The research found that the enantiomers of all produced complexes have nearly identical activity, indicating that chirality has no impact on their antiproliferative action. The chemicals have relatively low toxicity to non-cancerous cell lines, it is vital to emphasize.[6]

CONCLUSION

The triazole moiety displayed promising results in the majority of pharmacological activity, and we also have exciting results available under its belt, according to the review of the numerous outcomes produced by active compounds[7]. As in clubbed mode, included moieties, microwave synthesis, aided reactions, cycloaddition, and by many more mechanisms presented in this review, triazole demonstrated a favorable result. As it is currently being revealed and more are expected to become available soon due to the ongoing study, we anticipate that many additional pharmacological profiles will be added to it in the future.

REFERENCE

1. Deepu gupta et. al Synthesis, antifungal, antibacterial activity of novel 1,2,4- triazole derivative jouranal of pharmaceutical technology and research.
2. Jinlian daiet. al synthesis and methods of 1,2,3/ 1,2,3,4-triazoles Egypt publication.
3. Sabiya Praveen et al Synthesis and biological evaluation of some new Schiff base 1,2,4-triazole derivatives International Journal of Pharmaceutical Chemistry.
4. Feng Gao et al Antibacterial activity study of 1,2,4-triazole derivatives European Journal of Medicinal Chemistry.
5. Alimamad H Malani et. al a brief review article: Various synthesis and therapeutic importance of 1, 2, 4-triazole and its derivatives. Moroccan Journal of Chemistry.
6. Yurii G et. al 1,2,4-triazole derivatives in medicine and pharmacy and application prospects J. Fac. Pharm. Ankara / Ankara Ecz. Fak. Derg.
7. Gurkirpal singhet. al triazoles impinging the bioactivities international journal of current pharmaceutical research
8. Abderrahmen Abdelli et. al Recent advances in the chemistry of 1,2,4-triazoles: Synthesis, reactivity and biological activities hal open science.

Prabandhan Guru, ISSN : 2321-4295
Vol: XIV, Issue: 1, Jan-June 2023
RNI : UPENG / 2010 / 38376

A STUDY ON THE FUTURE OF OTT PLATFORMS

Ravi Gautam
(Hod JMC Dept Shri Ram College,Muzaffarnagar)
Kehkasha Mirza
Asst.Professor,JMC Dept. Shri Ram College, Muzaffarnagar

ABSTRACT

OTT or over the top platforms has seen a likely boom in recent years with hordes of new content and original shows. It has engulfed the entire world of digital content. The primary focus of this research paper is to know the future of OTT platform how much people's trend towards OTT increases in the coming time, along with how much time people spend on OTT and what content they like to watch fathom this tidal wave of new mode of entertainment and how it has impacted the viewers and how people are flocking towards this new generation of digital entertainment. The data on the research was acquired through a questionnaire which was floated among the people through goggle forms. And the data revealed the change in the behavior, cost, convenience, and demand of original and new contents for the new generation. Particularly the original and new content and convenience playing a major role. This research paper sheds light into the changing behavior of the consumers and how OTT has a major role in that change.

Keywords : *OTT, Content variety, Future of OTT, Digital content*

I. INTRODUCTION

When we think of OTT, I remember the older days when CD player and VCR used to be popular and people were crazy & love to see the programs or movies through DVD player. Slowly it transforms to the availability of cable connection then the technology brought the concept of pen drive and the YouTube which grow as major channel for viewers. TV, itself brought major evolution as LED, touch screen, inbuilt internet availability, etc. With these variations the recent trends in market is OTT video streaming. The availability of content, easy access to variety of shows, user friendly nature and continuity in shows compels the users to subscription of OTT video streaming.

In the recent year, the work culture of organizations due to Covid19 has also created an impact on OTT video streaming subscription. Covid19 has generated leisure time to families in India.

People started to spend more time on online streaming services and get engaged with content on television. Chats on different platforms, video calls, web-series and movies turn out to be most favorite choices of people to spend time. OTT platform boomed to get quality content. It has grown as a convenient and easy option for people. It casts quality content with variety of options and without any advertisement. The easy availability of smart phones has also enabled large part of the population to gain access to online platforms. This point made lot of people from urban area to subscribe the OTT platform. 500 million Smartphone users exist currently in India.

II. LITERATURE REVIEW :

The literature review is a crucial aspect of the research study which provides necessary input for the researcher to carry out a research study on the subject area. The basic purpose of this research is to better understand earlier studies to better identify gaps in past findings and to investigate problems chosen for the study.

'Understanding adoption factors of over-the-top video services among millennial consumers' a study by Dr. Sabyasachi Dasgupta and Dr. Priya Grover - takes note that Indian audiences have swayed towards OTT content and are willing to spend for easy and unlimited access to content without a place and time limitation. It again notes the inverse impact of pricing strategy of OTT on its popularity. Data consumption is another attribute that makes it a tough choice for Indian viewers and so are habits and preferences for TV as a medium.

'Digital Media: Rise of on-demand Content' a report by Deloitte - it is noted that the rise of internet- enabled digital devices capable of supporting digitized content has led to an increase in the use of digital content globally. In India, this trend is observed across diverse platforms such as audio, visual, news, music etc. It mentions that an Indian youth, on an average spends 14% of their time and nearly 17% of their monthly expenditures on entertainment. An internet content consumer in India consumes an average of 6.2 hours of content on an everyday basis out of *which 21% of the time* is spent on audio-visual entertainment. A shift in consumer attitude with regard to a favoritism for OTT content and easy access to vast libraries at any time and place over content ownership is notable.

A study by Sidneyeve Matrix on 'Netflix' - observes that viewers especially youth are becoming active curators of content than couch potatoes taking in 'whatever producers 14 feed them'. Supporting this paradigm shift in consumers is the need to share, stay connected and discuss the content on social media forums. In the process of these social media transactions, the viewers are setting new standards of expectations from producers thereby becoming an active catalyst in the production process too.

III. STATEMENT OF THE PROBLEM:

The purpose of this research is to evaluate the influence of OTT platforms and their increasing application and to achieve this, a hypothesis has been formed. A quantitative approach has been adopted for that very same method. The focus was on people, who used OTT platforms for entertainment. The importance of this research is to underline the context of the OTT platforms and the level of their human consumption. This research will help us better understand how OTT platforms have taken root in the world of interactive content. This is going to help us fully comprehend how OTT grew and eventually took over other popular media.

1V. RESERCH OBJECTIVE:

1. A study on " Future of OTT platform"
2. To find out the audience of different age group on OTT platform.
3. To find out the future and scope of the OTT platform.
4. To find out the audience experience for using OTT platform.
5. To discover the higher consumption of OTT platform.

V. HYPOTHESIS:

(A) *In* today's competitive environment, we discover that technological advances are ever-changing, which is why problems arise, especially in older age groups who have not grown up using some of these fresh streaming channels. Some genuinely think that there are several users There presently who will not explore different online content streaming options if it is too difficult to understand.

H0 There is a positive relationship between ease of use and the adoption of OTT platforms.

H1 There is a positive relationship between ease of use and the adoption of Cable TV/Cinema

(B) Availability of content plays a very important role in selecting a media service and is a key element. Sports programming, Original content, Web series which have a massive influence among consumers are major factors and it is understood

that many streaming options provide such offerings.

H0 Content options available positively relate to the use of OTT platforms.

H1 Content options available positively relate to the use of Cable TV/Cinema.

(C) As the world continues to develop, there is a significant increase in the use of Smartphone devices. Smartphone enhance the watching process of online services like Netflix. Social trends play a critical role in how consumers embrace OTT and what they watch. Social networking mixed with technological advances makes it easier for people to access see what everyone else wants to watch.

H0 Social trends have a positive relationship with the adoption of OTT platforms.

H1 Social trends have a positive relationship with the adoption of Cable TV/Multiplexes.

VI. Research Methodology

The study is intended to analyze the impact of various attributes such as ease of access and variety of content in the growth of OTT platform, international exposure, price sensitivity and its effect on high usage of OTT among consumers. The study has supported the primary research approach by survey. The survey was online and spread through social media such as WhatsApp, Email and LinkedIn. The sample size for the survey is 200.

6.2 Process of data collection:

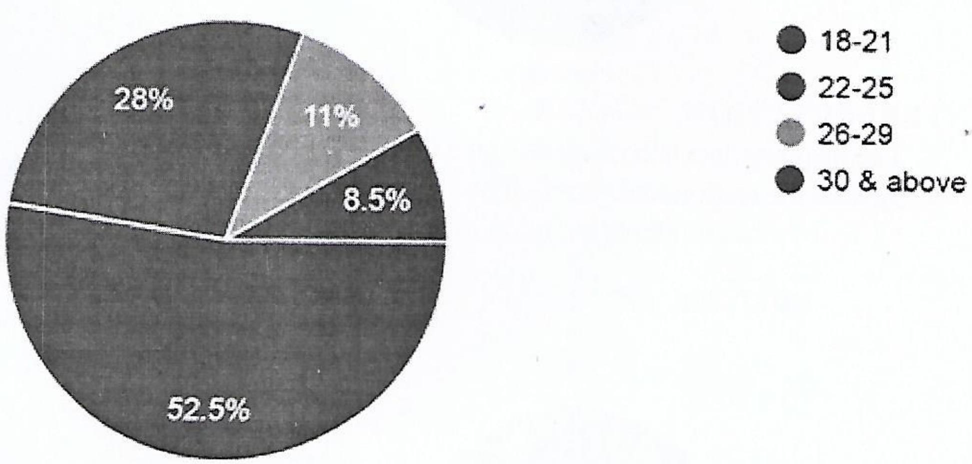
The collection of data will be done through Google forms. The response of the respondents will be recorded and a proper analysis will be done based on the responses. This will help us in understanding the changed behavior patterns of the respondents and the impact of OTT.

VII. DATA ANALYIS AND INTERPRITATION :

We used a questionnaire to collect data in this study; the collection of questions was created after a thorough investigation of the topic, and the set of questions intends to provide us with insights about the A study on " Future of OTT platform" In this analysis, we will focus on the primary data that is gathered. The aim is to analyze the data collected from 200 respondents.

1. Age

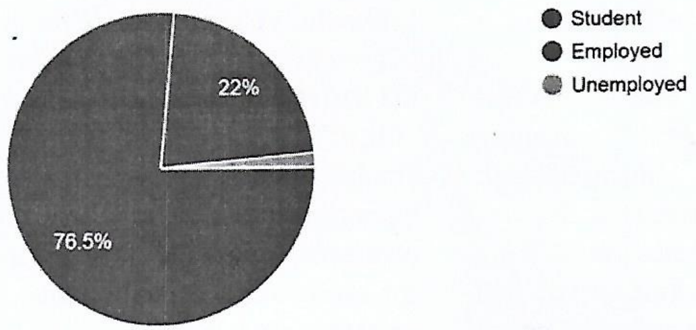
200 responses



INTERPRETATION

- 52.5% of the respondents are in age group of 18-21 years
- 28% of the respondents are in age group of 22-25 years
- 11% of the respondents are aged 26-29years & above
- 8.5% of the respondents are aged above 30 years

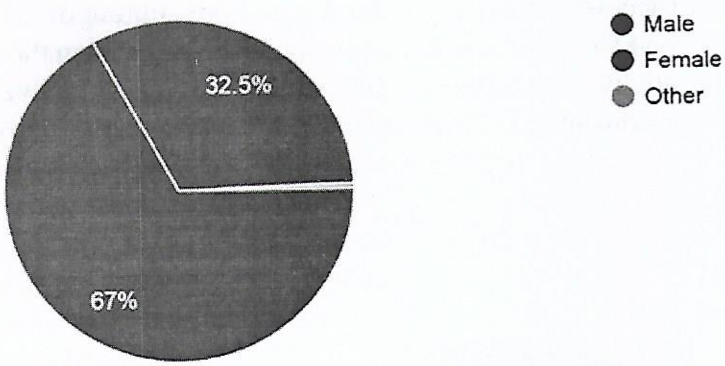
2. Occupational Status
200 responses



INTERPRETATION

- The majority of the respondents are students which consists of 76.5%
- 22% of the respondents are employed
- 0% of respondents are unemployed

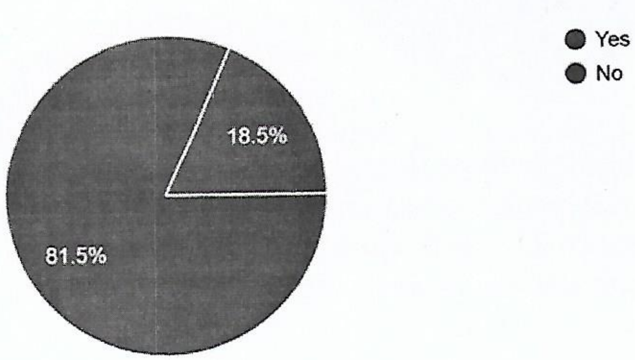
3.Gender
200 responses



INTERPRETATION

- The primary data is collected from a total of 200 respondents
- 32% of the respondents are female
- 67% of the respondents are male

4. Do you use OTT platform?
200 responses

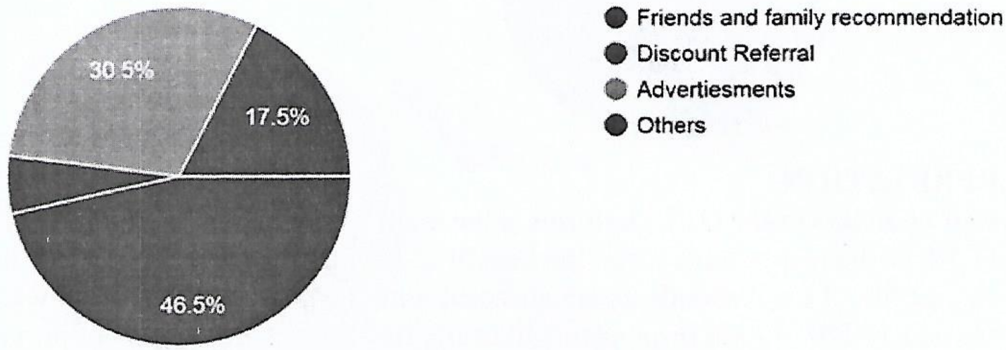


Prabandhan Guru, ISSN : 2321-4295
Vol: XIV, Issue: 1, Jan-June 2023
RNI : UPENG / 2010 / 38376

INTERPRETATION

The chart shows that 81.5% of respondents use OTT while 18.5 % of respondents don't. This was a screening question to filter out the required population who watch OTT and can proceed to answer the further questions. Through this, we could get the desired population who qualify for the research.

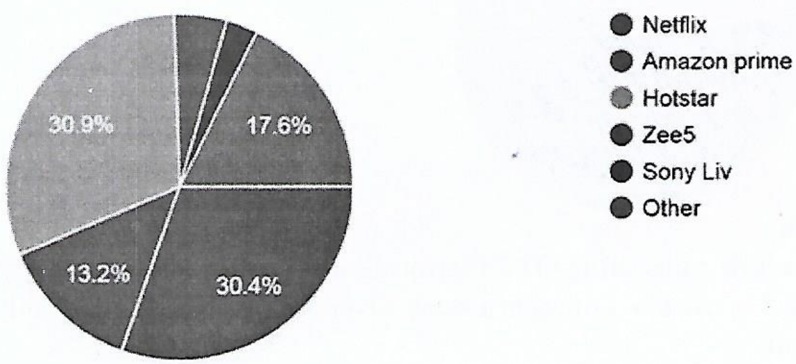
5. How did you come to know about OTT services?
200 responses



INTERPRETATION

The above chart shows the source of awareness for the OTT medium. The figure shows that 46.5% of respondents out of 200 came to know about OTT through their friends and family recommendations. Advertisements also played a major role in the awareness of OTT in respondents as 30.5% of them endorsed the advertisement. While 17.5% of respondents came to know through others.

6. Which OTT platforms do you like most?
200 responses



INTERPRETATION

Out of the 200 respondents, Hotstar is the most popular OTT platform is used by 30.9% of the respondents. Netflix is used by 30.4% of the respondents. Amazon prime video is used by 13.2% of respondents. The other OTT platforms used by 17.6% include Voot, Mx player Neestream, ErosNow, SunNXT etc.

7. Why do you like this platform?

200 responses

INTERPRETATION

The user friendliness of the OTT platforms is the main attraction & benefit majority of the respondents have. 37.5% of the respondents loved the benefit of having quality of the content in the usage of OTT platforms. 22.5% of the respondents are attracted with the availability of worldwide content via these platforms and 17.5% of total respondents likes the free of cost entertainment provided via these OTT platforms.

8. How frequently do you use the OTT platform?

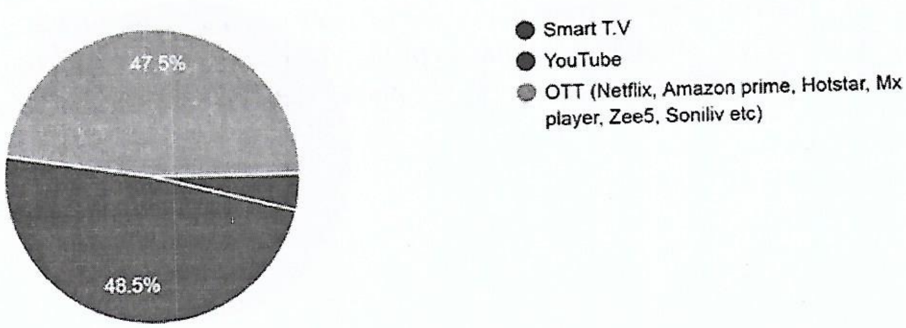
200 responses

INTERPRETATION

The above charts show how captivating OTT Platforms are to users. The above inquiry was posed, the discovery states that 38.5 % use it 3-4 times in a week. Over 30.5% of them use it daily. Just 21.5 % of the users use it once a month.

9. Out of these options which medium do you use most for relaxing on weekend?

200 responses



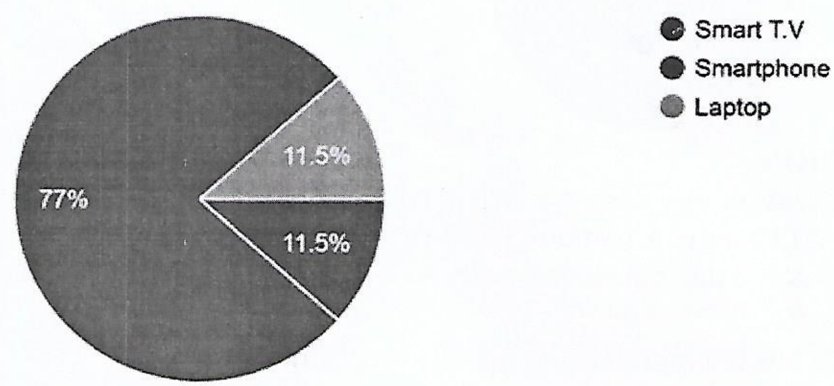
Prabandhan Guru, ISSN : 2321-4295
Vol: XIV, Issue: 1, Jan-June 2023
RNI : UPENG / 2010 / 38376

INTERPRETATION

The chart shows that 47.5 % of respondents use OTT on weekends for relaxing while the use of OTT and You tube was 48.5% Through this, we get a notion of how there has been a significant increase in the consumption of OTT platforms. As more and more people flock towards OTT we see a significant reduction in consumption of Cable T.V among the respondents.

10. How do you consume OTT most of the time?

200 responses

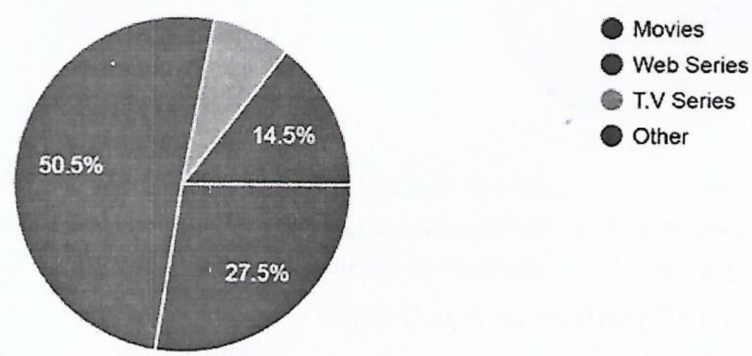


INTERPRETATION

From the above chart, it is evident that a maximum i.e. 77% of respondents consume OTT through their smart phones. 11.5% of respondents prefer laptops and the remaining 11.5% of Users consume through Smart T.V.

11. Which of these do you usually watch on OTT platform?

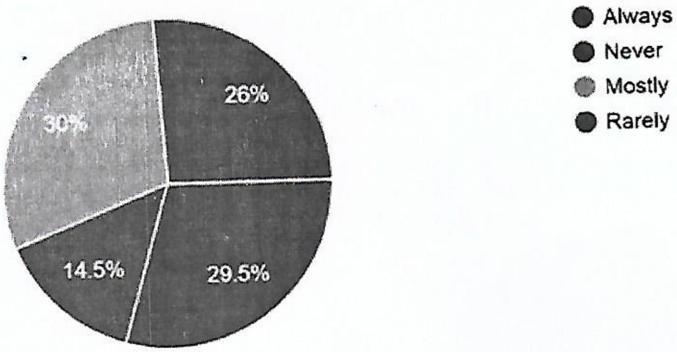
200 responses



INTERPRETATION

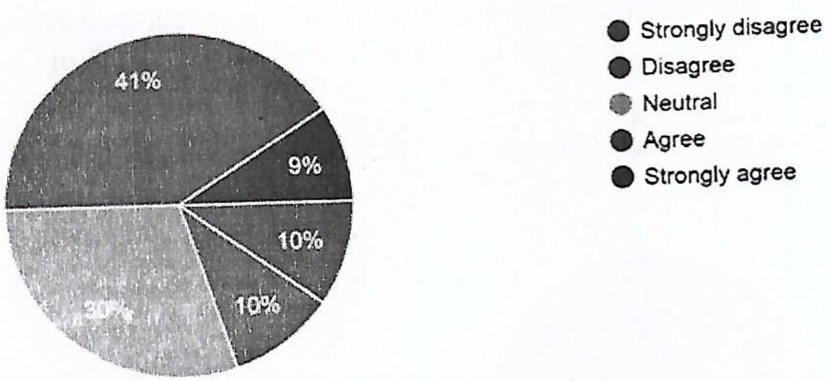
The above chart shows the result of their preferences on OTT platforms. Approx. 50.5%People prefer watching web series. While 27.45% like to watch movies on the OTT, 14.5.% of respondents like to watch other things on OTT platforms like Documentaries and reality shows.

12. Do you prefer to watch movies on OTT than in theaters?
200 responses



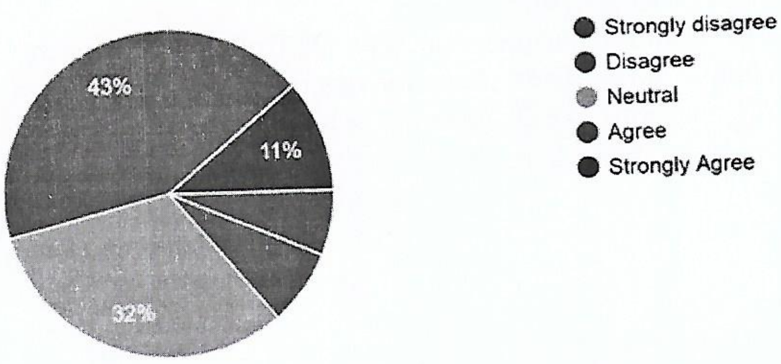
INTERPRETATION
30% of the respondents mostly wish to watch movies on OTT than in theatres. 26% of the respondents watch movies on OTT rarely. A portion of 29% of respondents always wish to watch movies on OTT than in theatres. 14.5% of the respondents never wish to watch movies on OTT than in comparison with theatres.

13. OTT platform flexible for releasing the all video content.
200 responses



INTERPRETATION
30% of the respondents have responded neutral to OTT platforms flexible for releasing the all video content. 41% of respondents agree with the flexible for releasing the all video content. 10% of the respondents are against the flexible for releasing the all video content in which 9% of respondents strongly agree.

14. Should video content of OTT platform be monitored?
200 responses

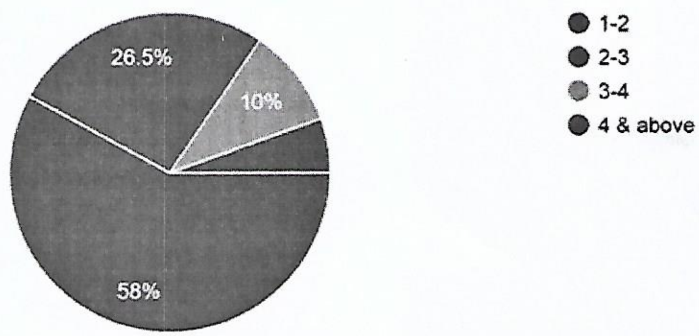


INTERPRETATION

43% of the respondents agree with the monitored of OTT platforms. 11% of the respondents are strongly agree. 32% of the respondents have responded neutral to monitored of OTT platforms.

15. How many OTT platform do you watch regularly ?

200 responses

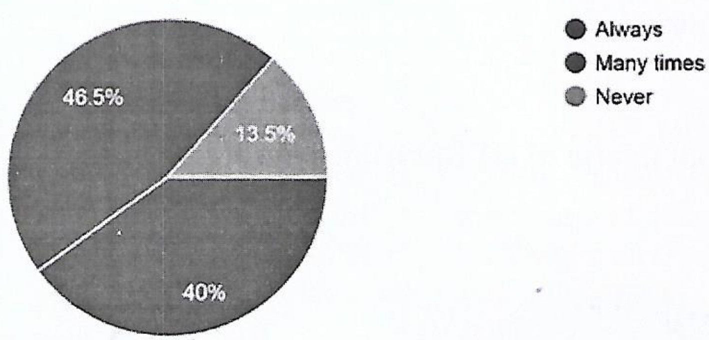


INTERPRETATION

58% of the respondents use 1-2 OTT platform regularly. 26% of the respondents use 2-3 OTT platforms regularly. 3-4 OTT platforms are regularly used by 10% of the respondents and none of the respondents are using more than 4 & above OTT platforms.

16. Do you think movies should be released together on OTT and Cinema?

200 responses

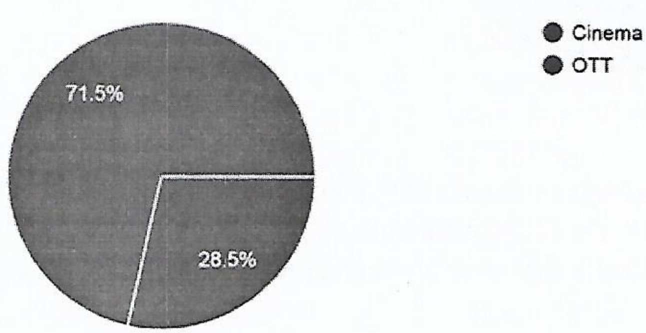


INTERPRETATION

46.5% of the respondents many times wish to watch movies on OTT than in theatres. 40% of the respondents watch movies on OTT always. 13% of the respondents never wish to watch movie on OTT than in comparison with theatres.

17. In the future, if a movie releases together on Cinema and OTT platform, what would you prefer?

200 responses

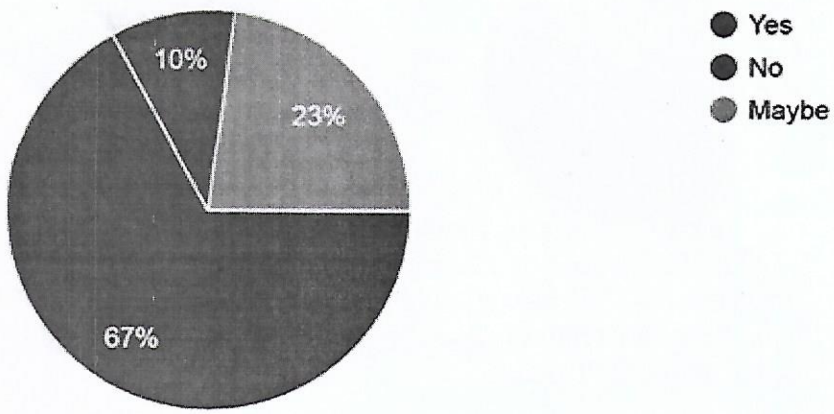


INTERPRETATION

The above chart states a futuristic question on the choices of the users. 71.5% of respondents says they will choose OTT to watch a movie instead of cinema while 28.5% of users still prefer Cinema over OTT platforms.

18.Are you satisfied with the content of online streaming?

200 responses

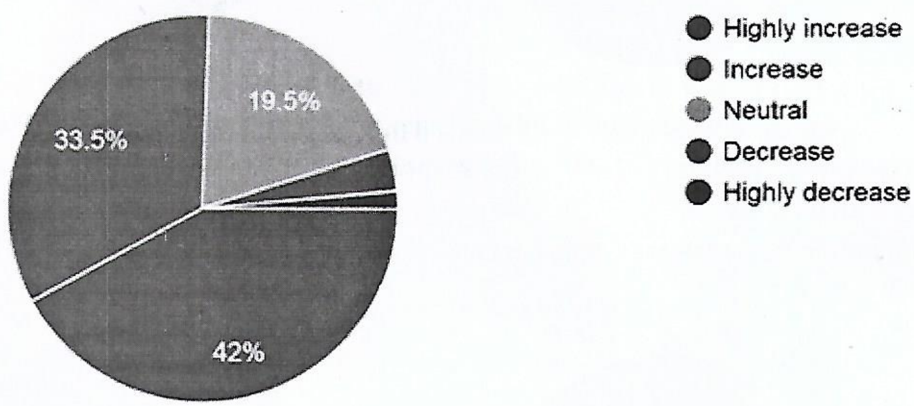


INTERPRETATION

As per the chart shown above, 8% people are satisfied with online streaming content. Whereas 30% people say. Maybe and 10% disagree.

19.What do you think about usage of OTT platform in future.

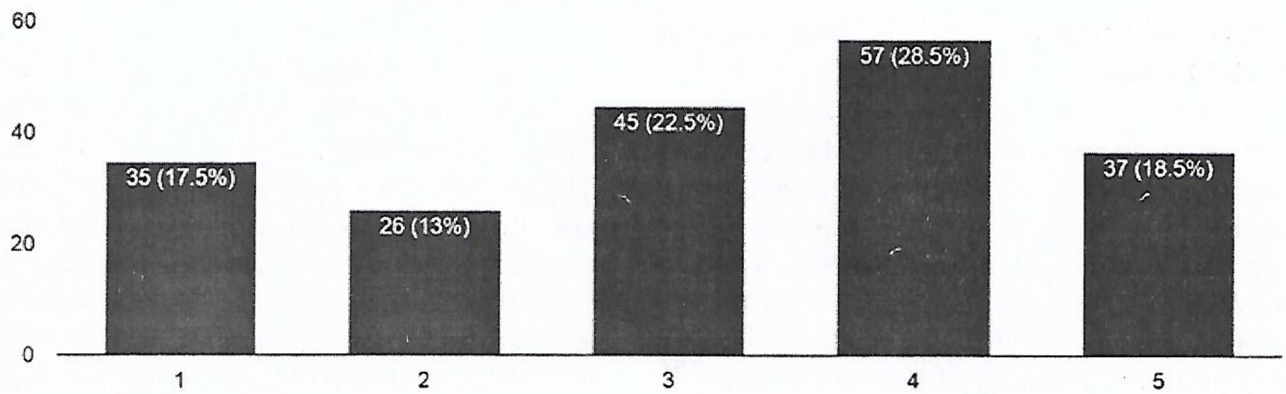
200 responses



INTERPRETATION

42%, majority of the respondents has highly increase their about usage of OTT platforms in future 33.5% of the respondents have increase. 19.5% of the respondents have been staying neutral on their OTT platforms usage. The most important fact is that none of the respondents have decrease and highly decrease their OTT usage.

20. Rate your experience of using OTT platform.
200 responses



INTERPRETATION

28.5% of the respondents have given a rating of 4 out of 5 as their OTT experience. 18.5% of the respondents were fully satisfied with their experience and they gave a 5 star rating. 22.5% of the respondents gave a 3 star rating and 26.13% of the respondents gave a 2 star rating and 17.5% respondents weren't happy with the experience & they gave 1 star ratings.

VIII. RESULTS & FINDINGS:

A survey was conducted to analyze the Impact of OTT platforms on the viewing experience. This chapter deals with the findings we have received through the data analysis. These findings are further discussed in details Over the last few years, the explosion of OTT streaming services in India has resulted in the emergence of distinct patterns of content consumption. The information gathered by the survey shows that over 94.5% of respondents are aware of the OTT medium implying that OTT is a popular medium in India.

1. The first hypothesis we'll look at in these findings is the ease of use.

Our survey clearly shows that 200 out of 163 respondents are comfortable using OTT platforms. Furthermore, it demonstrates that OTT is the preferred platform for entertainment for the majority of people in India, as the survey shows that 47.5% of respondents use OTT on weekends for relaxing, while only 6.1% and 9.1% use cinema and TV, respectively. This demonstrates how there has been a massive increase in the consumption of OTT platforms. As more people migrate to OTT, we see a significant decrease in consumption of cable television and cinema among respondents.

2. The availability of content on OTT platforms is the next hypothesis we'll look at.

OTT platforms are very popular among users, with 38.5% of them using them 3-4 times per week. Over 30.5% of them use it on a daily basis. Only 21.5% of users use it once per month. Speaking of content available on OTT platforms, we can clearly see from our findings that more people prefer OTT platforms rather than TV or cinema, as in the survey we asked a question related to the consumer's futuristic choice and we can clearly see that 71.5% of respondents say they will choose OTT to watch a movie instead of T.V and cinema due to content availability. Furthermore, OTT platforms offer a variety of content options to users, such as movies, exclusive/original content, web series, and television series. We attempted to analyze consumer preferences for various contents available on OTT platforms, and the survey results showed that approximately 50.5% of respondents prefer watching Web series on OTT, while 27.5% prefer watching Movies on OTT, and the remaining respondents prefer watching other things on OTT platforms like Documentaries and reality shows. user responses clearly showed that people prefer more content availability on OTT platforms rather than TV or cinema, as we can see that 46.5% said yes, and only 13.% said no.

3. The third hypothesis that we will look at is Social Trends.

Social trends have a significant impact on how consumers embrace OTT and what they watch. Social networking, combined with technological advancements, makes it easier for people to see what everyone else is watching. In the survey, we asked users about the source of their OTT platform awareness, and we discovered that 46.5% of respondents learned about OTT through recommendations from friends and family. The advertisement also played a significant role in respondents' OTT awareness, with 30.5% of them endorsing the advertisement. While 17.% of respondents learned about the OTT platforms through others. From this, we can clearly see that social trends play a significant role in the selection of OTT platforms, as social trends influence customers to either choose or reject OTT platforms. The use of Smartphone devices is increasing significantly as the world evolves. Smartphone enhance the viewing experience of online services like Netflix and Amazon Prime. When it comes to mode of consumption, people prefer Smartphone (77.%) to laptops (11%) and Smart televisions (11.%). lean more toward OTT platforms due to the additional features and facilities that OTT platforms provide.

IX. LIMITATIONS AND RECOMMENDATIONS OF THE STUDY:

1. The sample size for the survey was limited to 200 respondents. A larger population survey can be conducted for a more detailed study and understanding. And the respondents were mostly students and working professionals.
2. The survey results may be biased in favor of OTT platforms, as we can see that there has been a substantial increase in the viewership of OTT platforms during the lockdown period due to the closure of multiplexes and a lack of content available on televisions. And the also the majority of were not the general crowd but students and working professionals.

X. CONCLUSION:

The data collected from the questionnaire survey was successfully interpreted and analyzed. The research on the topic A study on " Future of OTT platform" has been completed successfully based on the analysis. When compared to OTT and Cinema , the hypothesis regarding ease of use, content availability, social trends, and customer service has proven to be correct. However, we are unable to prove the hypothesis of cost effectiveness in favor of OTT platforms due to the mixed responses we received in our survey; as a result, there was no conclusion. This shows that even though OTT platforms cannot replace cinema but certainly is creating its own segment. We can say that in the future, there might be few people who would prefer OTT over cinema.

According to all of the reports and articles that we have read and reviewed, OTT platforms will continue to spread in India and will have a significant impact in terms of viewership on our traditional mediums such as television and Cinema. Although some respondents who enjoy watching movies in a theatre will continue to do so, but this number is also bound to fall. The future footfalls of cinema and televisions will undoubtedly be influenced by OTT platform services. So, at last we like to conclude by saying that OTT platform services will be regarded as the technology of the future, having a significant impact on our collective viewing habits, the future of OTT is bright.

REFERENCE

1. https://en.wikipedia.org/wiki/Over-the-top_media_service

[1]. Dixit, D. (2020, March 6). The rise and 'densification' of Indian OTT. Retrieved from Television post: https://www.televisionpost.com /the-rise-and-desification-of-indian-ott/Purdy, s.c. (2018). KPMG's annual cable & OTT report.

[2]. Kaushal, S. (2020, May 26). OTT Platforms In India See Subscriber Bases Surge Up To 80% Amid Corona virus Lockdown. Retrieved from Forbes.

[3]. OTT Platforms in India See Subscriber Bases Surge Up To 80% amid Corona virus Lockdown:https://www.forbes.com/sites/swetakaushal/2020/05/26/good-news-amid-lockdown- ott-platforms-register-60-80-surgein-subscription-base/?sh=711b9141413a

[4]. Sharma, K. (2020, May 19). Will movies releasing directly on OTT platforms become a norm post-Covid? Experts think otherwise. Retrieved from a Business insider:

[5]. https://www.businessinsider.in/advertising/media/article/will-movies-releasing-directly-on-ott-platforms-become-a-norm-postcovid-experts-think-otherwise/articleshow/75808931.cms

[6]. Laghate, G. (2017, March 02). How OTT players are geared up to woo Indian viewers. Retrieved from Brand equity:

[7]. https://brandequity. economictimes. indiatimes.com /news/media/how-ott-players-are-geared- up-to-woo-indian-viewers/57275909

[8]. Article on Matrix, s. (2014). The Netflix Effect: Teens, Binge Watching, and On-Demand Digital Media Trends. Jeunesse: young people, texts, culture.

[9]. Gevers, A. (2019). Video Streaming in India: Hot! ComScore, Inc. Retrieved from February 3, 2020, Article.

[10]. Das, H. (2019). Online Streaming Platforms Trending in India. Retrieved from January 18, 2020, Article.

[11]. Deloitte (2019). 5G Ecosystem The digital haven of opportunities. Retrieved from January 18, 2020, Article.

[12]. IAMAI (2019).India Internet 2019. Retrieved from January 20, 2020, Article.

[13]. PwC India. (2019). Global Entertainment & Media Outlook 2019-2023. Retrieved from February 3, 2020, Article.

[14]. KPMG (2019). India's Digital Future article.

[15]. News18.com (2019). Four Out of Five Smartphone Owners in India Use At Least One OTT Entertainment App. Retrieved from February 3, 2020, Article.

[16]. Mitter, S. (2019). How OTT platform SonyLIV rode cricket, FIFA, and international content to record 100 million downloads. Retrieved from January 18, 2020, Article.

[17]. Begum, F. (2018). In India, localized content is as important as pricing when choosing a video service - IHS Technology. Retrieved from January 30, 2020, Article.

[18]. Bilbil, E. T. (2018). Methodology for the Regulation of Over-the-top (OTT) Services: the need of a multi-dimensional perspective published in International Journal of Economics and Financial Times.

[19]. Bezos, J. (2019). 2018 Letter to Shareholders. Retrieved December from 12, 2019, Article. [20]. BW Online Bureau (2019). A Holistic Entertainment Experience: Karan Bedi, CEO, MX Player. Retrieved from January 18, 2020, Article.

Vol: XIV, Issue: 1, Jan-June 2023
RNI : UPENG / 2010 / 38376

A REVIEW ON GREEN ENTREPRENEURSHIP PRACTICES IN INDIA

Shruti Mittal & Vivek Tyagi
Assistant Professor, Department of Business Administration, Shri Ram Group of Colleges, Muzaffarnagar
mittalshruti.mittal26@gmail.com

ABSTRACT

Today everyone is admiring environmentally and socially conscious goods over their traditional counterparts. This research study highlights that there are low entry-level standards to become an entrepreneur for a variety of environmentally sensitive companies, making it one of the factors for youth unemployment and sustainability issues. It has been argued that green businesses are developed at a small scale and fit the needs of rural regions. These sustainable startups offer companies with new prospects not limited to the urban areas. Green entrepreneurship research in India focuses on coordinated promotion for green entrepreneurs. Financial and technological support is required for developing startups. The State has been able to encourage entrepreneurship through key businesses in the region.

Keywords : *Green Entrepreneurship, Sustainability, Start ups, Green businesses, Green Marketing.*

I. INTRODUCTION

The notion of green entrepreneurship is not only to respond to evolving market demands but also to engage in the procedure of sustainable development in the long way (N Kumar, 2015). Largely green companies are organizations that examine the relationship between innovation and sustainability and thus make a competitive advantage of their firms/businesses by selling environmentally friendly products and services. Some environment-friendly goods may be either environmentally or environmentally recycled (Khurana, S., Haleem, A., Mannan, 2019). Both the sustainable marketing tactics and the ones based on sustainability in this competitive climate. The idea of green entrepreneurship is highly important for contemporary and any entrepreneurs (Sarkar, 2012). Green management is now becoming a big problem in every field of life. The conception of green entrepreneurship is largely unknown, little known, and commonly overlooked compared to entrepreneurship (M. Dadhich et al., 2018).

A lot will still need to be achieved in the coming years of researching the issues of green entrepreneurship i.e., environmental quality, social welfare, creativity, the sustainability of resources, technological growth, and wholesome economic development (Thanki, S.J., Thakkar, J., 2018).

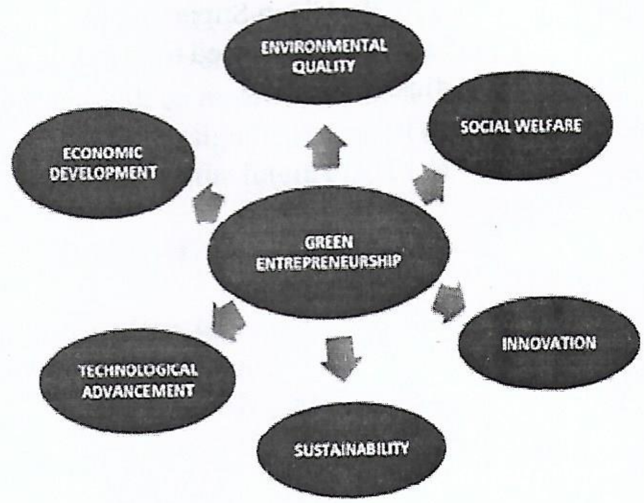


Figure 1: Components of Green Entrepreneurship

REVIEW OF LITERATURE

The papers explore the notion of green entrepreneurship using secondary tools including scholarly papers, articles, and interviews on the internet. (Gupta & Nagpal, 2020)has calculated an economy-sensitive productivity index adjusting the economy-sensitive productivity index for emissions downward. This is change beyond traditional 'orthodox' economic growth and into a 'sustainable' or 'green' economy. More in-depth research of the topic is required.

(Kaswan & Rathi, 2020; Nguyen et al., 2019) measured competitiveness and work in the green economy by incorporating and evaluating theory and practice. They are tackling the claim on decreasing productivity in a post-growth economy and describe the productivity trap that results from a systematic pursuit of labor productivity. (Thanki, S.J., Thakkar, J., 2018)suggest that the green revolution will prove to be a significant step to be able to feed the entire planet.

(Manish Dadhich et al., 2019; Rao, 2017) discusses how political economy and the green movement both go hand in hand. Green Revolution symbolizes the drive towards rising agricultural productivity in Third World countries. An increase in rice production can be achieved by replacing conventional rice varieties with high yielding varieties and using modern farming technology.

RESEARCH METHODOLOGY

This analysis is a theoretical one and focused on secondary sources of knowledge. The sources include journals, magazines, newspapers, annual surveys, reports, books, white papers, etc. This paper adopts the approach of literary analysis.

OBJECTIVES OF THE STUDY

The aim of this study is to understand and analyze the development of green entrepreneurship in India. Therefore, following objectives have been set:

- To define 'green entrepreneurship'.
- To study the enablers of green entrepreneurship in India.
- To offer suggestions to promote green entrepreneurship in India.

Conceptual Model: Green entrepreneurship as a source of Competitive Advantage for the firms and Sustainable development for the economy

The continuous and growing depletion of natural reserves, increase in global temperature, increase in Green House gas emissions, environment pollution and ecosystem and rapidly endangering of biodiversity has lead policy makers and institutions of both global and national stature to enact laws to penalize enterprises that are causing major harm to the environment and incentivize firms that are engaged in green innovation, use of green technology and production of green products. Growing awareness among consumers about environmental preservation has created green markets that demand products produced using green technologies, redesigning of supply chain in tandem with green agenda, creating new opportunities for green entrepreneurship. The enterprises that are focusing on green management practices therefore have an edge that these can swiftly build into competitive advantage thus paving way for other firms that would make other firms to follow the green practices ultimately leading to sustainable development.

Source: Author's Compilation

Green Entrepreneurs in India

Mini Couture (MINC)

MINC is clothing label started by Mini Shibu and Kochery C Shibu in 2007, that designs and produces both contemporary and classic clothes based on the concept of fair wages, low carbon footprints, natural fabrics, environment friendly dyes and packaging material made up of wood, coconut and sea shell. MINC uses Khadi sourced from

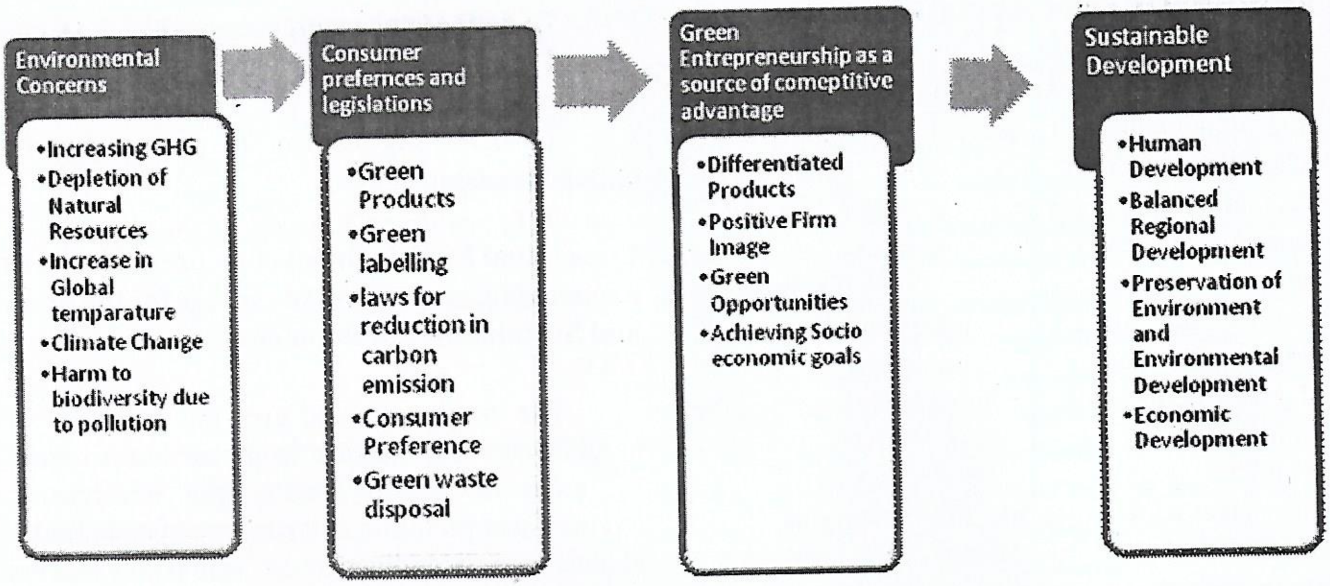


Figure: 2 Nexus between Environmental, Consumer and Institutional, Green Opportunities and Sustainable Development

SOFA (Sittilingi Organic Farmers Association) through an NGO by name Tribal Health initiative.

Fourth Partner Energy `

Started by Saif DHorajiwala, Vivek Subramanian and Vikas Gulati in 2010, Fourth Partner Energy is a Hyderabad based firm, committed to providing green electricity to every Indian Business. The firm helps firms in reducing their carbon footprints and meeting sustainability targets- while ensuring cost benefits of 30-60% on electricity consumed, by offering range of offsite and onsite energy options to choose from. Fourth Partner Energy has tripartite goals i.e. helping businesses in : reducing cost of energy, reducing carbon emissions and becoming power independent. The company has so far installed solar capacity of 251MWp. Using equity funding and debt, this firm has been able to undertake capacity addition and growth plans. Honeywell, NTPC, Airtel, Bharathi Cement, BridgeStone, Axis Banks, ICICI Bank, Glenmark, Ferrero are some clients of the rapidly expanding client base of FPEPL. In March 2021, the firm announced its partnership with Indika Energy, a Malaysian firm to provide solar, battery storage and EV solutions to the South East Asian nation.

Digital Green

Digital Green started off as a Microsoft Project for finding out if there is a role of technology in helping small scale farmers in 2006 in India. It is established to empower farmers, by helping them with the technological knowledge and information sharing to enhance their agricultural produce. The organization has so far reached 15200 villages and has helped 19 million people of which 90% are women.

EcoRight

Founded in 2017 in Ahmedabad, EcoRight has 18 product lines and 140 SKUs available in around 11 ecommerce websites. The startup says it makes products that are ethically, socially, legally, and environmentally audited as per the pillar standards of SEDEX 4. Its products, which include tote bags, work bags, backpacks, etc., are reusable, made with natural products, and are developed with innovative fabrics to make products better for the environment. Aimed at finding solutions to environmental problems such as plastic waste, the ecommerce startup claims that each bag it sells will, in turn, replace the use of 50-100 plastic bags. Each of the handbag designs features an eco-friendly message or a pun to spread awareness about the harmful effects of plastics.

The team has also begun manufacturing and supplying of masks amid the COVID-19 outbreak.

Chalk and Chuckles

Pallavi Agarwal and Prachi Agarwal founded Chalk and Chuckles which shapes children's learning, skills, and experiences based on the games they play. Calling themselves "play advocates," the Delhi-based entrepreneurs discourage the use of gadgets like a smartphone, laptop, PSP, and so on, to entertain children, citing the impact on the child's cognitive growth. The Chalk and Chuckles team helps families to unplug and connect with one and another while building character values and key learning skills. The startup's USP is to offer games, toys, crafts, and activity boxes, primarily focussing on the child's learning and growth, creativity and imagination, care and connection, discovery, and thinking.

The startup creates every product keeping the planet and the environment in mind. The toys are handcrafted MDF (Class I), and are printed using soy-based ink. Each of its products is tested for compliance on international safety standards and none of them run on batteries or chargers.

Love Organically

Love Organically is a Mumbai-based beauty manufacturing brand which claims to produce 100 percent natural and chemical-free products. It was founded by Deepshika Deshmukh who is a student of Ayurveda. She has conducted in-depth research and consultations with experts from the Ayurveda field, *as well as doctors, on her family's skin* nutrition secrets. Every product includes nutrients from flower extracts, essentials oils, and aromatic botanicals.

Krya Sustainable Goodies

Krya Sustainable Goodies was founded in 2010 by Srinivas Krishnaswamy and Preethi Sukumaran to create environmentally-friendly products. The entrepreneurs say they use natural ingredients. Krya Sustainable Goodies produces goods that address the issues of sustainable city living. Based on the principles of Ayurveda, the startup says its products are natural, vegan, and organic in nature. The laundry detergent is claimed to be 100 percent plant-based.

Conclusion and Suggestions

The study throws light on the concept of green entrepreneurship that uses green technologies in production and redesigns supply chains to make these more responsive to the necessities of greenness, create green jobs and enhance the demand for green products leading to sustainable development and greener economy. There is a need to create a culture that promotes the awareness among entrepreneurs regarding opportunities arising out of adoption of green business models, incentivizing green investments and removing the bottlenecks in the process of starting and sustaining green businesses. Specific institutional support is also needed to provide green entrepreneurs with financial and technical support. Green enterprises require more multidimensional and multilevel support in comparison to commercial enterprises therefore to induce willingness and readiness towards starting these, government should create favorable conditions including information sharing, financial incentivization, information exchange and knowledge enhancement measures.

REFERENCE

Sarkar, A. N. (2012). Green Supply Chain Management: A Potent Tool for Sustainable Green Marketing. Asia-Pacific Journal of Management Research and Innovation, 8(4), 491-507. https://doi.org/10.1177/2319510x13481911

• Sharma, N., & Dadhich, M. (2014). Predictive Business Analytics: The Way Ahead. Journal of Commerce and Management Thought, 5(4), 652. https://doi.org/10.5958/0976-478x.2014.00012.3

• Thanki, S.J., Thakkar, J. (2018). Interdependence analysis of lean-green implementation challenges: a case of Indian SMEs. Journal of Manufacturing Technology Management, Emerald Insight, 29(2), 295-328. https://doi.org/doi.org/10.1108/JMTM-04-2017-0067.

Birda, R. K. (2019). Study of ICT and E-Governance Facilities in Tribal District of Rajasthan.

• Kamal, 9(7), 39-49.

• Dadhich, M., Pahwa, M. S., & Rao, S. S. (2018). Factor Influencing to Users Acceptance of Digital Payment System. International Journal of Computer Sciences and Engineering, 06(09), 46-50. https://doi.org/10.26438/ijcse/v6si9.4650

• Dadhich, Manish. (2017). Impact of Demonetization on Indian Economy. International Journal of Research in Social Sciences, 7(8), 208-215.

• Dadhich, Manish, *Chouhan, V., & Adholiya,* A. (2019). Stochastic pattern of major indices of Bombay stock exchange. International Journal of Recent Technology and Engineering, 8(3), 6774-6779. https://doi.org/10.35940/ijrte.C6068.098319

• Gupta, G., & Nagpal, S. (2020). Green Dimensions, Environment Orientation and Size: Impact Assessment on Operational Performance of Manufacturing Firms. Global Business Review, 1(14), 1-14. https://doi.org/10.1177/0972150920919880

• Kaswan, M. S., & Rathi, R. (2020). Green Lean Six Sigma for sustainable development: Integration and framework. Environmental Impact Assessment Review, 83(November 2019), 106396. https://doi.org/10.1016/j.eiar.2020.106396

https://yourstory.com/2022/06/bigbasket-esg-scorecard-vipul-mittal-ganapathi-subramanyam/amp?utm_pageloadtype=scroll.

Prabandhan Guru, ISSN : 2321-4295
Vol: XIV, Issue: 1, Jan-June 2023
RNI : UPENG / 2010 / 38376

IDENTIFY DRIVERS OF CONSUMER'S SATISFACTION OF LUXURY LIFESTYLE

Nivedita Chaturvedi and Jatin Singhal
Assistant Professor, Department of Business Administration. Shri Ram College, Muzaffarnagar (UP)

ABSTRACT

The elderly are an essential component of any nation's population and deserve the same respect and care as the other demographic groups. However, because of modernity and changing family structures, it has become more difficult for the senior population to live a decent existence. The most dangerous situations that the elderly face are loneliness, carelessness, and a lack of relevance. They also face illnesses brought on by ageing and lack of treatment.

Due to the remarkable advancements that civilization has made in terms of improved life expectancy, the elderly population in India is growing dramatically. Holistic care is becoming more in demand as the older population grows.

In emerging countries, there will be 840 million elderly people by 2025. According to projections, the percentage of Indians over 60 increases from 7.5% in 2010 to 11.1% in 2025 for those age 65 and older. As the elderly in the nation age, it is crucial to comprehend the societal elements that affect them. Numerous issues for the elderly in India have emerged as a result of changing lifestyles, the availability, accessibility, and cost of health care, longer life expectancies, growing urbanization, and economic dependence.

I. INTRODUCTION

- **Consumer**

The study of consumer behaviour focuses on how individuals, groups, and organisations choose, acquire, use, and dispose of concepts, products, and services to fulfil their needs and desires. It refers to consumer behaviour in the marketplace and the underlying causes of that behaviour.

Marketers anticipate being able to identify which products are needed in the marketplace, which are outmoded, and how best to offer the commodities to consumers by understanding what drives people to purchase specific goods and services.

The assumption made in the study of consumer behaviour is that customers are players in the market. According to the role hypothesis, customers participate in a variety of roles in the marketplace. Consumers perform these roles in the decision-making process, starting from the information provider, moving from the user to the payer, and finally to the disposer.

According to Engel, Blackwell, and Mansard, 'consumer behaviour is the actions and decision processes of people who purchase goods and services for personal consumption'.

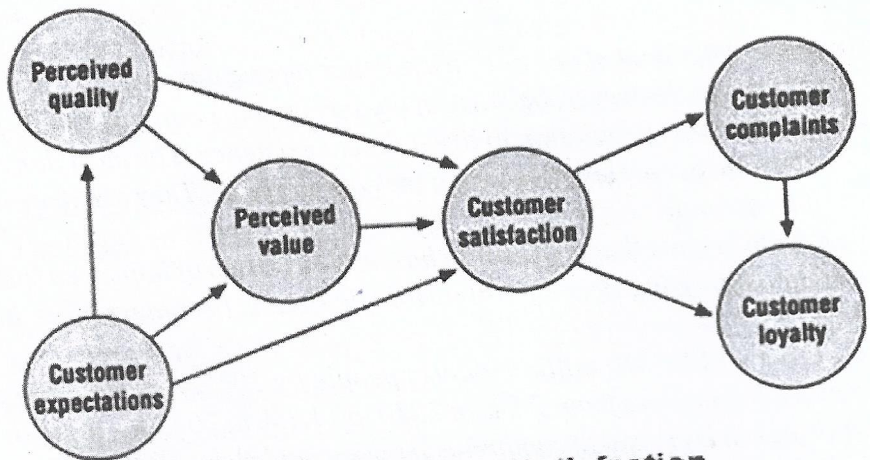
- **Luxury**

Luxury is a term that suggests spending a lot of money on luxuries that are unnecessary. But there isn't a universally accepted definition of luxury because it depends on the context and the individual. There is no clear distinction between luxuries, comforts, and requirements because it is a truism of history that the luxuries of one generation may become the necessities of a subsequent one. One of the greatest pleasures of the Roman Empire was the private bath, which was mostly used by the wealthy in the 19th century but is now considered one of the basic needs of the developed world. When considered from a crucial angle, luxury might be described as any expenditure over the usual and customary level of living of the group to which a person belongs. The problem of luxury comprises economic, societal, and ethical considerations.

- **Customer satisfaction**

Customer satisfaction is a metric used to gauge how content your customers are with your company. You can identify the black and white in your solutions, services, and products by measuring customer satisfaction.

Measuring customer satisfaction indicators enables you to gain useful insights into the operation of your entire firm. Based on the insights you can increase on the areas you are performing well and improve the regions having gaps.



Model of Customer Satisfaction

LITERATURE REVIEW

Luxury Brand

Although the term "luxury" is frequently used in our daily lives to describe goods, services, or a particular lifestyle, it is unclear what it exactly means. It differs in appearance for a wide range of individuals and is influenced by the consumer's attitude and background. Luxury is especially difficult to define, says Cornell. The perception of worth by others, a scarcity of supply, and a significant human component are essential. Luxury "defines beauty; it is art applied to useful objects," according to Kapferer (1997).

Luxury is enlightening, much like light. Items of luxury give greater pleasure and simultaneously appeal to all the senses. In contrast to necessities, which are goods with a practical purpose that alleviate discomfort, luxuries are described by Webster's (2002) as "extraneous goods or services that support opulent life; "extraneous goods or services that support opulent life; an extravagance or convenience over the necessary minimum. According to Berry (1994), they are pleasurable objects of desire.

Luxury goods allow customers to satiate psychological and practical demands since they are seen as products for which the straightforward use or display of a particular branded product offers respect for its owner. The psychological advantages are thought to be the key distinction between luxury and non-luxury goods. The idea of rarity or exclusivity is well-documented in literature. Although the functionality to price ratio may be low for some luxury goods, the ratio of intangible and situational utility to price is comparatively high. Luxury brands are those with the greatest price to quality ratios on the market. In order to compete, luxury businesses must be able to convey exclusivity, brand identity, brand awareness, and perceived quality from the viewpoint of the consumer. An integrative knowledge should come before a definition of luxury because it is a multifaceted, subjective construct. This essay adopts Vigneron and Johnson's (1999) definition of luxury brand as the pinnacle of prestigious brands that encompasses several physical and psychological attributes.

Dimensions of Luxury Value

Existing study on the motivations behind luxury consumption has shown that each person behaves differently depending on how easily they are influenced by others. Aside from interpersonal factors like snobbery and conspicuousness, personal factors like hedonism and perfectionism, as well as situational factors (like economic, societal, and political factors), must be taken into account to explain consumer behaviour in relation to luxury brands. While consuming prestige or status brands entails buying a more expensive product to stroke one's ego, consuming luxury goods entails purchasing a product that has value for the consumer as well as close family and friends. Therefore, a personally oriented type of consumption should be taken into account in managing luxury brand marketing in addition to the socially oriented luxury brand consumption and the human need "to impress others." Regarding individual and interpersonal views of luxury, it is anticipated that different consumer groups will view the luxury value of the same brands differently and that the final assessment will take these opinions into account.

Values can generally be thought of as beliefs that direct the choice or assessment of desired activities or end states. Different types have an impact on consumers' buying decisions when it comes to consumption values, which directly explain why consumers decide to buy or avoid various products. In addition to being influenced by a variety of social factors, such as the desire to impress others and the desire to display status, success, and distinction, a customer's perception of luxury and the reasons for using luxury brands also depend on the nature of the brand's financial, functional, and personal utilities. Indicating that the value of luxury is found in both social and personal as well as practical and financial aspects, in a multidimensional model, it is crucial to integrate all pertinent cognitive and emotional value dimensions.

Vigneron and Johnson (2004) examined the latent structure of the luxury concept and created a framework for a "brand luxury index" in part as a result of the work on the evaluation of luxury brands. They suggested that the decision-making process of luxury-seeking consumers can be explained by five main factors that make up a semantic network, including both more common non-personal perceptions (perceived conspicuousness, perceived uniqueness, and perceived quality) as well as personal perceptions (perceived extended self, perceived hedonism). The model given here expands Vigneron and Johnson's five-dimensional framework and builds on previously published luxury research material as well as Bourdieu's capital theory (1984). The knowledge of customer motivations and value judgments in the consumption of luxury goods. The existence of four latent dimensions- financial,functional, individual, and social-is used in this study to define the question of what, in the eyes of the consumer, truly adds luxury value.

The financial dimension of luxury value refers to the value of the goods as stated, for example, in dollars, euros, or yen, as well as to what is directly measurable in terms of money, such as price, resale cost, discount, and investment sacrificed or given up in order to gain it. Quality, originality, usability, reliability, and durability are examples of core product benefits and fundamental need that fall under the functional dimension of luxury value. The individual dimension of luxury value tackles personal issues including materialism, hedonism, and self-identity and focuses on a customer's personal orientation toward luxury spending. The perceived utility that people perceive they receive from goods or services that are acknowledged within their own social group(s), such as conspicuousness and prestige value, is referred to as the social dimension of luxury value. This dimension may have a significant impact on how people evaluate and are inclined to choose or use luxury brands. These value dimensions interact even if they work independently the ability to further distinguish and categorise various sorts of luxury customers by interacting with one another and having a variety of affects on each individual's views of luxury value and actions.

Conceptual Model: Determinants of Consumers' Luxury Value Perceptions

Figure 1 depicts the suggested conceptual approach for examining the highly associated but distinct luxury value aspects. It starts with an integral luxury value idea. The four main dimensions of luxury value perception, such as price, quality, and conspicuousness, may be associated to a number of influencing factors and value drivers, as illustrated in the framework here. In this study, the chosen variables are examined for any connections to those dimensions as well as for any effects on people's general perceptions. The antecedent constructions such as price value, quality value, and prestige are these chosen variables value judgments made by an individual must be understood as such. Individual customers' impressions of a particular luxury brand or product, which include their individual weighing of the various antecedent constructs that can be aggregated to the four core luxury value dimensions, are what they represent rather than an objective valuation. When it comes to the perceived prestige value of a particular luxury item, for instance, the objective and perceived price of a product might operate as a moderating factor in addition to making up the financial worth dimension.

As a result, the interconnections depicted in our model can only illustrate the fundamental connections between the antecedent constructs and the fundamental elements of luxury value.

Price Value

Numerous authors have shown that a product's cost can influence how people perceive its quality .

Consumers who care about their status also frequently mistake pricing for a sign of prominence. Therefore, prestige pricing, which involves charging a very high price to imply high quality or status, may increase consumer demand for some goods or services. But it's crucial to understand that a good or service is not luxurious simply because it costs a lot of money or because it is pricey. Luxury buyers want greater value in addition to their luxury. Some things, for example be viewed as luxury items not because of their price or label but rather because of their sentimental significance (for example, a wedding ring that represents a special moment in one's life or an ancestor's possession) or investment value (paintings, classic cars).

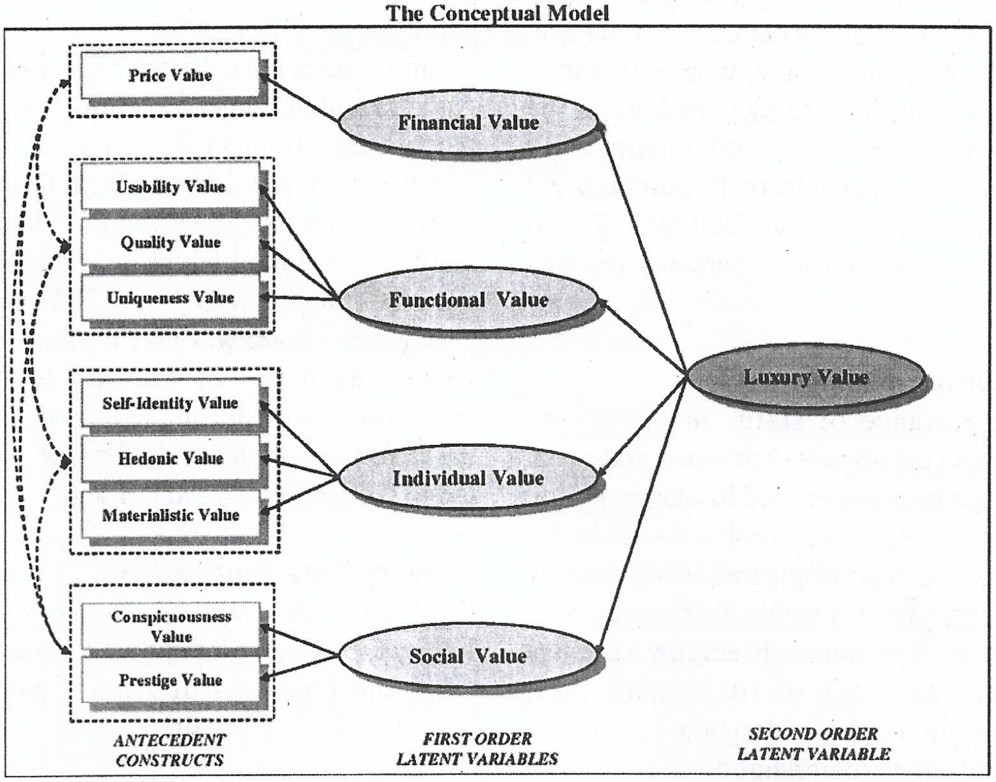
Usability Value

A product or service is typically made to fulfil a certain purpose; its main advantage can be observed in how well it can be used to meet customer wants. Usability is a term that has been researched and defined in terms of usability and can be either concrete or abstract depending on the product or service. Usability is determined by the needs of the customer as well as the features of the product. As a result, one must distinguish between an objective and a subjective assessment of usability, which depends on personal opinion and the intended purpose. Consumers anticipate their purchases to function properly, look beautiful, endure a long time, and fulfil their expectations and promises in terms of simple usage. Such Expectations for luxury goods rise even further.

Uniqueness Value

The concept of uniqueness is based on the premise that a consumer's demand or preference for a product is increased by the perception of its exclusivity and rarity. Additionally, this urge even grows when the brand is viewed as pricey. As a result, a brand becomes more valuable the more distinctive it is seen to be and the more expensive it is in comparison to other standards. Additionally, the practical value of uniqueness promotes people's desires for differentiation and exclusivity and their demand for uniqueness, which can only be satisfied by using and consuming a particular brand only to an exclusive clientele. By definition, a luxury good or service is not accessible to or possessed by everyone; otherwise, it wouldn't be regarded as a luxury good or service.

FIGURE 1
The Conceptual Model



Quality Value

According to Gentry et al. (2001), people purchase luxury brands in part due to the high calibre reflected in the brand name. This is in line with the perception of quality assumption that luxury brands provide better performance and product quality than non-luxury goods. Customers may perceive luxury goods as having higher brand quality and assurance, which would make them think they are worth more (Aaker, 1991). The necessity of quality is frequently emphasised in the literature on luxury consumption in order to maintain views of luxury and its worth. High quality is also perceived as a fundamental quality that is a sine qua non for a luxury good.

Materialistic Value

Since the late 1950s, there has been a lot of research on materialism in the field of consumer behaviour. However, because scholars approach materialism from several angles, theorists have not yet reached consensus on a single concept. But as many authors have noted, possession and acquisition are key components of the notion of materialism. More exactly, materialism might be defined as the extent to which people's goods take centre stage in their life. Consumers who are more materialistic are more likely to value material items highly and to have favourable acquisition-related attitudes. Individuals that are very materialistic may, inregard goods to be desirable in general and tend to spend more time and effort on product-related activities.

According to research, materialistic consumers rely extensively on outside cues and favour items that are worn or consumed in public settings. This is related to the idea held by materialists that material things act as a means of communicating and portraying one's identity as well as one's status or position.

Hedonic Value

In addition to their functional utility, some goods and services can have an emotional value. Luxury goods are likely to offer such individualised intangible advantages, according to studies in the field of luxury consumption. Additionally, studies on the idea of luxury have consistently found the emotional responses that are connected to its use, including sensory pleasure, visual attractiveness, and excitement. Thus, according to hedonism, the perceived subjective utility and intrinsically attractive qualities obtained from the purchase and consumption of a luxury brand elicit feelings and affective states associated with personal rewards and fulfilment.

Prestige Value in Social Networks

The importance of status in conveying information about the owners of products and social relationships has been underlined in a large portion of the current research. This is consistent with earlier studies that showed how people frequently adopted the opinions of the majority within their membership groups. Therefore, a person might employ a prestige brand during the week to fit in with their professional position and a modest brand during the weekend to comply to their neighborhood's social norms. Therefore, social referencing and the creation of one's self appear to be factors of luxury consumption because luxury brands and items frequently include renowned values. Luxury brand ownership will be seen as a show of group affiliation by consumers. Individuals are influenced by the "bandwagon effect" to adopt rich lifestyles or to set themselves apart from others who don't.

In summary, the contribution of reference theory to the study of luxury consumer behaviour seems significant for understanding the driving forces behind luxury consumption.

Research Methodology

This study used previously developed and validated measures to assess the underlying characteristics of consumers' perceptions of luxury value against the backdrop of the multidimensional model as well as created additional elements as a consequence of exploratory interviews. The qualitative portion of the study, in particular, covered a written explanation of what luxury is and what its elements are worth as a set of adjectives that demonstrated the value concept.

A 5-point Likert scale was used to assess the survey items (1 for strongly disagreeing and 5 for strongly agreeing). In the senior living facility Antara Purukul Limited, I completed my internship. An old age home for seniors is Antara. The questionnaire was adopted from Chang 2009.The questionnaire so framed was circulated among the residents of antara which was spread over for a period 2 months from 9 may 2022 to 6 july 2022. The questionnaire was not circulated in the online format as many of the residents were not comfortable with the online format. Hard copies of the same were printed and fill by the residents which led to collection of a total of 150.

Primary Data Sources

To create a report on the aspects that affect a luxury lifestyle, we individually gather information from the residents of Antara and have them complete a questionnaire.

Methodology Index:

Universe	Residents
Population	Antara Purukul Senior Living Limited
Sampling unit	Individual residents of Antara Purukul Senior Living Limited.
Sampling size	150
Sampling area	Dehradun
Sources of data collection	Primary : Questionnaires
Response rate	Sample of 150 was taken, 150 responses were collected. Response rate- 100%

Objectives of the Study

- To identify the factors which impact the luxury lifestyle of consumer.
- To provide suggestions measures for luxury lifestyle providers.

Data Analysis and Interpretation

Factor Analysis

Prabandhan Guru, ISSN : 2321-4295
Vol: XIV, Issue: 1, Jan-June 2023
RNI : UPENG / 2010 / 38376

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.829
Bartlett's Test of Sphericity	Approx. Chi-Square	3946.279
	df	78
	Sig.	.000

Interpretation

- The optimal number for the kmo table must be higher than.60, however our result is.829.
- The test's significance is indicated by a significance value that is less than.05.

Total Variance Explained

Comp-onent	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.988	46.064	46.064	5.988	46.064	46.064	4.419	33.992	33.992
2	2.472	19.019	65.083	2.472	19.019	65.083	3.409	26.226	60.218
3	1.953	15.024	80.107	1.953	15.024	80.107	1.952	15.013	75.231
4	1.019	7.842	87.949	1.019	7.842	87.949	1.653	12.718	87.949
5	.356	2.735	90.685						
6	.313	2.405	93.089						
7	.299	2.301	95.390						
8	.220	1.696	97.086						
9	.143	1.099	98.185						
10	.097	.743	98.929						
11	.080	.614	99.543						
12	.050	.384	99.926						
13	.010	.074	100.000						

Extraction Method: Principal Component Analysis.

Interpretation

- Those factors are made whose eign values more than 1 as a result of which 4 factors such as financial, individual, functional, social which contributes to luxury lifestyle.
- A total of 87.949 variance was explained for these factors. Each factor contributed approx. the same variance excluding any chance of business.

Rotated Component Matrixa

	Component			
	1	2	3	4
FIN 1		.917		
FIN 2		.839		
FIN 3		.942		
IN 1				.898
IN 2				.821
IN 3				.861
IN 4				.888
FUNC 1	.894			
FUNC 2	.944			
FUNC 3	.844			
FUNC 4	.946			
FUNC 5	.900			
SO 1			.986	
SO 2			.832	
SO 3			.876	
SO 4			.987	

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 4 iterations.

Interpretation

- Principal component analysis was applied for extraction of factors.
- Factor loading is above .70 for each of the items in each factor

1. Financial
2. Functional
3. Individual
4. Social

Findings

1. A market niche where clients are drawn in by product differentiation: the niche marketing refers to the activity of advertising and offering a good or service to a target market or market group. Antara differentiates its product towards older consumers.

2. Convenience of access to healthcare services and other amenities like leisure and social meeting places: Every week, Antara hosts events for the residents at which everyone gets to know one another.

3. A welcoming neighbourhood with a group of like-minded neighbours: Antara offers residentship to people with similar income levels and family background. This creates a comfortable atmosphere for the ones living there.

4. Expensive construction of infrastructure specifically designed for elders: An expensive project, Antara costs 1400 crores. Antara offers various kinds of services to the residents and guests.

5. Provide elders with opportunities for filling their free time with activities that promote their spiritual, intellectual, physical, social, and emotional wellness: Older adults in Antara have the advantage of receiving all kinds of wellness care as well as social, emotional, and intellectual assistance. The availability of professionals adds to the services more.

6. The availability of social amenities including temples, clubs, shopping centres, entertainment venues, and other recreational facilities in the immediate area: In addition to having a place of worship, Antara offers elderly residents and visitors entertainment services.

Conclusion

A finer time had never existed to embrace the world of Indian senior living. Every organisation wants a minimal level of competition and a never-ending target consumer base. The key to success for this developing REAL ESTATE + SERVICE INDUSTRY will be the correct infrastructure and the appropriate linkages with supporting industries (human resources, health care, and hospitality). Richness, history, and cultures are all ties that bind luxury. Luxury includes brilliance, magnificence, and invention in addition to worldly stuff. Real luxury is very individualised, simplifies rather than complicates life.

Luxury is viewed as a symbol of riches, social domination, and good standing in India and other Asian nations. As a sign of their wealth, the majority of Indians would like to purchase a luxury home or serviced apartment in a development like Antara. According to the study's findings, some consumers place a premium on social value dimensions such brand conspicuousness, popularity, or exclusivity since they serve as markers of status, power, and wealth and help people belong to social groups. Others may view living a luxurious lifestyle as a financial investment or as having to live up to their particular standards of excellent quality. Another group of people that indulge in luxury lifestyles do so for hedonistic or financial reasons to exhibit their unique selves.

Recommendation and suggestions

Antara is a nice site to receive all services for senior citizens, although I advise a few improvements:

- Because Antara is pricey and its services are only accessible to the wealthy, Antara lowers the cost of its services so that upper middle-class families can use them.
- The profit margin of Antara improves and the number of customers rises when upper middle class families can afford the services.
- The cost of the service decreases when Antara offers professional volunteers employment opportunities.

REFERENCES

1 Wiedmann, K. P., Hennigs, N., & Siebels, A. (2009). Value?based segmentation of luxury consumption behavior. Psychology & Marketing, 26(7), 625-651.

2 Husic, M., &Cicic, M. (2009). Luxury consumption factors. Journal of Fashion Marketing and Management: an international journal.

3 Kim, J. H., Hsu, M. M., & Yuen, C. L. A. (2020). Individual and social factors impacting Chinese millennials' luxury consumption. International Journal of Costume and Fashion, 20(1), 27-43.

4 Yeoman, I., & McMahon-Beattie, U. (2018). The future of luxury: mega drivers, new faces and scenarios. Journal of Revenue and Pricing Management, 17(4), 204-217.

5 Osburg, V. S., Davies, I., Yoganathan, V., & McLeay, F. (2021). Perspectives, opportunities and tensions in ethical and sustainable luxury: introduction to the thematic symposium. Journal of business ethics, 169(2), 201-210.

6 Hennigs, N., Wiedmann, K. P., Klarmann, C., Strehlau, S., Godey, B., Pederzoli, D., ... & Oh, H. (2012). What is the value of luxury? A cross?cultural consumer perspective. Psychology & Marketing, 29(12), 1018-1034.

Questionnaire

Functional Value Dimension

Factor 1: Usability Value
In my opinion, luxury is really useless.
In my opinion, luxury is just swanky
In my opinion, luxury is pleasant
In my opinion, luxury is old-fashioned
In my opinion, luxury is good
Luxury products make life more beautiful
I am not interested in luxury.

Factor 2: Uniqueness Value
Few people own a true luxury product
People who buy luxury products try to differentiate themselves from the others.

Factor 3: Quality Value
I'm inclined to evaluate the substantive attributes and performance of a luxury brand myself rather than listen to others' opinions
The luxury brand preferred by many people but that

does not meet my quality standards will never enter into my purchase consideration.
I buy a luxury brand for satisfying my personal needs without any attempt to make an impression on other people.

Individual Value Dimension

The luxury brands I buy must match what and who I really am
My choice of luxury brands depends on whether they reflect how I see myself but not how others see me.

Factor 4: Materialistic Value
My life would be better if I owned certain things I don't have.
I'd be happier if I could afford to buy more things
It sometimes bothers me quite a bit that I can't afford to buy all the things I'd like.
I have all the things I really need to enjoy life

Factor 5: Hedonic Value a-Self-Gift Giving
Reward for hard work or that I feel I have earned or am entitled to is an important motivator for my luxury consumption.
To me, luxury consumption is a way to reduce stress.

Factor 6: Hedonic Value b-Extravagance
I enjoy spending money on things that aren't practical.
I usually buy only the things I need.
Buying things gives me a lot of pleasure

Factor 7: Hedonic Value c-Self-Directed Pleasure
Luxury brands are one of the sources for my own pleasure without regard to the feelings of others.
I can enjoy luxury brands entirely on my own terms no matter what others may feel about them.

Factor 8: Hedonic Value d-Life Enrichment
For me as a luxury consumer, cultural development is an important motivator.
Self-actualization is an important motivator for my luxury consumption.
Luxury consumption enhances the quality of my life.

Social Value Dimension

Factor 9: Prestige Value in Social Networks
I usually keep up with style changes by watching what others buy.
Before purchasing a product it is important to know what my friends think of different brands or products.
If I were to buy something expensive, I would worry about what others would think of me.
Social standing is an important motivator for my luxury consumption
For me as a luxury consumer, sharing with friends is an important motivator.

Prabandhan Guru, ISSN : 2321-4295
Vol: XIV, Issue: 1, Jan-June 2023
RNI : UPENG / 2010 / 38376

AIM OF DIGITAL INDIA IS TO PROMOTE DIGITAL MARKETING

Dr. Pushpender Kumar
Assistant Professor (Department of commerce)
Gochar Mahavidalay Rampur Maniharan, Affiliated to Maa Shakumbhari university Saharanpur

ABSTRACT

The purpose of this review paper is to aim of digital India is to promote digital marketing and how important it is for both consumers and marketers. This paper begins with an introduction of digital marketing and then it highlights the mediums of digital marketing, the difference between traditional and digital marketing, and the pros, cons, and importance of digital marketing in today's era. The world is shifting from analog to digital and marketing is no exception. As technology development is increasing, the use of digital marketing, social media marketing, search engine marketing is also increasing. Internet users are increasing rapidly and digital marketing has profited the most because it mainly depends on the internet. Consumer's buying behavior is changing and they are more inclined towards digital marketing rather than traditional marketing.

Keywords : *digital marketing, internet, online advertising, internet marketing*

INTRODUCTION

Digital marketing is the component of marketing that utilizes internet and online based digital technologies such as desktop computers, mobile phones and other digital media and platforms to promote products and services. Its development during the 1990s and 2000s, changed the way brands and businesses use technology for marketing. As digital platforms became increasingly incorporated into marketing plans and everyday life and as people increasingly use digital devices instead of visiting physical shops, digital marketing campaigns have become prevalent, employing combinations of search engine optimization (SEO), search engine marketing (SEM), content marketing, influencer marketing, content automation, campaign marketing, data-driven marketing, e-commerce marketing, social media marketing, social media optimization, e-mail direct marketing, display advertising, e-books, and optical disks and games have become commonplace. Digital marketing extends to non-Internet channels that provide digital media, such as television, mobile phones (SMS and MMS), callback, and on-hold mobile ring tones. The extension to non-Internet channels differentiates digital marketing from online marketing.

Review of literature : Yasmin. S. Tasneem and K. Fatema (1) have studied about the various features and the challenges associated with digital marketing "Effectiveness of digital marketing in the challenging age: an empirical study," Bhagowati and D. M. Dutta,(2) have made a research work about the "A study on literature review for identifying the factors impacting digital marketing," they have suggested that the government must provide awareness about the concept of digital marketing to the public. Ms. A. Lavanya, Mrs. M. Radhikamani (3) have made a research work the A Stduy on Digital marketing and its impact. They have found out that the digital marketing change the market position.

Objectives of the study: This study is based on the following objective-

1. To study about the concept of digital marketing.
2. To study about the merit and demerit of the digital marketing.
3. To study components of digital marketing.
4. To study how to differ digital marketing with traditional marketing.

Methodology : this study is descriptive in nature and it used the exploratory technique. The data for the study were gathered from the secondary sources such as journals, articles published online and offline on various newspapers and websites.

COMPOENTS OF DIGITAL MARKETING

Search Engine Marketing: A search engine is a web based tool that helps the user to find the information they are looking for. Examples of a search engine are Google, Yahoo, Bing, Baidu, etc. Search engine marketing refers to any activity that increases a user's websites rank in any search engine .There is two types of Search engine marketing search engine optimization (SEO) and paid search.

Email: There are several reasons why it's so hard to dislodge email as a channel that delivers medium to high ROI for your business, but the one thing you can't take away from email is its versatility. Although email may not be the newest technology available, it allows you to apply the latest trends in content marketing, such as personalization and automation, without hurting your marketing budget mail also has the ability to support other marketing objectives, so it's no surprise that 73% and 63% of B2B marketers say that email is their top tool for generating leads and driving revenue, respectively. Email has become so widespread that it reached 3.9 billion users in 2020, and the figure is expected to grow to 4.3 billion users in 2023-more than half of the world's population.

Social Media: Social media marketing is on this list for some very worthwhile reasons, but this isn't just about social media users reaching the 3.81 billion mark. From being a channel that people use to establish personal connections, social media has evolved into something grander, bigger, and better than what it was originally envisioned to be.

Facebook: It is the number one social media platform. A company can promote their product and services on Facebook.

LinkedIn: Professional write their profiles on LinkedIn and can share with others. The company also build their profile and LinkedIn connect these two dots companies and professionals.

Google: It is Google's social network, user can easily connect based on their common interest and friendship.

Twitter: Its strategy is to increase brand awareness and sales, attract new followers, and lead and boost conversions.

Affiliate Marketing: In affiliate marketing, the company rewards subsidiaries for every customer or visitor they bring to the company's website by their marketing efforts or strategy on behalf of the company. According to Pat Flynn's Smart Passive Income, "Affiliate marketing is the process of earning a commission by promoting other people's (or company's) products. You find a product you like, promote it to others, and earn a piece of the profit for each sale that you make".

Online Display Advertising: In traditional marketing, there is a poster or billboard of any company on both sides of the road or an ad in a magazine/newspaper to promote their product or service. Online display advertising is a digital version of that. Today, a marketer can use online display advertising to achieve the same thing. There are different types of display advertising such as video ads, banner ads, interactive ads, and rich media, etc. Display advertising is great for catching the eye due to graphic ads.

COMPARISON BETWEEN TRADITIONAL AND DIGITAL MARKETING

Traditional marketing is the most recognizable form of marketing. Most people are used to traditional marketing due to its longevity. Some examples of traditional marketing include tangible items like ads in a newspaper or magazine. It also includes a billboard, brochure, commercial on TV or radio, poster, etc. It is a non-digital way of marketing. Whereas digital marketing uses various digital channels to reach customers. Some comparisons are given below:

	Traditional marketing	Digital marketing
1.	Traditional Marketing refers to the marketing that uses traditional channels or media, for the purpose of marketing communication.	Digital Marketing implies the marketing of products and services via digital channels, such as the internet, smartphone, display ads, and other digital medium.
2.	Static	Dynamic
3.	Slow Comparatively	fast Comparatively
4.	Cannot be measured easily	Can be measured easily
5.	Less effective more expensive	Less expensive more effective
6.	Standardized	Customized
7.	Not possible once the ad is placed.	Can be performed anytime, even after the ad is placed.
8.	Local	Global
9.	Delayed results	Quick and real-time results
10.	Consumers cannot skip the ads, as they are bound to see them.	Allows the consumers to avoid or skip the ads which do not interest them.
11.	One-way Communication	Two-way Communication

Advantages of digital marketing: The main advantage of digital marketing is that a targeted audience can be reached in a cost effective and measurable way. Other digital marketing advantages include increasing brand loyalty and driving online sales.

Global reach- A website allows you to find new markets and trade globally for only a small investment. Lower cost - a properly planned and well targeted digital marketing campaign can reach the right customers at a much lower cost than traditional marketing methods

Trackable, measurable results- Measuring your online marketing with web analytics and other online metric tools makes it easier to establish how effective your campaign has been. You can obtain detailed information about how customers use your website or respond to your advertising.

Personalisation- If your customer database is linked to your website, then whenever someone visits the site, you can greet them with targeted offers. The more they buy from you, the more you can refine your customer profile and market effectively to them.

Openness- By getting involved with social media and managing it carefully, you can build customer loyalty and create a reputation for being easy to engage with.

Social currency- Digital marketing lets you create engaging campaigns using content marketing tactics. This content (images, videos, articles) can gain social currency - being passed from user to user and becoming viral.

Improved conversion rates- If you have a website, then your customers are only ever a few clicks away from making a purchase. Unlike other media which require people to get up and make a phone call, or go to a shop, digital marketing can be seamless and immediate.

Disadvantages of digital marketing

Skills and training- You will need to ensure that your staff have the right knowledge and expertise to carry out digital marketing with success. Tools, platforms and trends change rapidly and it's vital that you keep up-to-date.

Time consuming- Tasks such as optimising online advertising campaigns and creating marketing content can take up a lot of time. It's important to measure your results to ensure a return-on investment.

High competition- While you can reach a global audience with digital marketing, you are also up against global competition. It can be a challenge to stand out against competitors and to grab attention among the many messages aimed at consumers online.

Complaints and feedback- Any negative feedback or criticism of your brand is can be visible to your audience through social media and review websites. Carrying out effective customer service online can be challenging. Negative comments or failure to respond effectively can damage your brand reputation.

Security and privacy issues- There are a number of legal considerations around collecting and using ustomer data for digital marketing purposes.

Importance & Benefits of Digital Marketing

Better Reach: Nowadays, many people across the world are spending their time online. They are browsing the internet and looking for your products. In order to benefit from this massive audience base, maximising your online presence is key. This is where digital marketing comes into the picture. Digital marketing is all about reaching the right people at the right time. Hence, to begin with, one must have an engaging online store with easy navigation to improve audience reach. In this process, various mediums within digital marketing can eventually help in brand building-Pay Per Click Marketing, Social Media Marketing, Search Engine Optimization, Content Marketing, and many more.

Can compete with large corporations: Analysing the competitor is a key activity in digital marketing. The activity is essential to keep up with the competition especially amongst fast-growing brands such as Myntra, Amazon, Big basket, Walmart. Businesses also try to push the envelope with multichannel marketing which comprises of PPC, SEO, social media, and many more mediums. The approach helps both small and large businesses to achieve their respective goals, leveling the field.

Increase in Brand Awareness for small businesses: Digital marketing is a boon to businesses. Large companies use digital marketing so that they could stand steady in a competitive environment. In contrast, small businesses use online marketing to make headway into a booming market and create brand awareness amongst large companies.

Increase in Sales: One of the key aspects, when it comes to the importance of digital marketing, is that one can measure their CRO (Conversion rate Optimisation) in real-time. The data can help understand the overall percentage of searches that get converted into leads by buying products. PPC, Social media marketing, SEO services, affiliate marketing are some of the active channels to communicate and get high conversions.

Return on investment: If you want to know the value of digital media, look at the measurement metrics of profit and loss it drives for business. The ROI in digital marketing defines the worth of your marketing campaigns. For example, when compared with other mediums like e-mail marketing, content marketing, PPC, social media campaigns; SEO has been known to generate higher ROI. From basic metrics such as sessions and bounce rate, the organic traffic generated by the SEO shows 40% more revenue growth than any other marketing strategies.

Maintaining The Brand Reputation: Developing a strong brand reputation in the online world has become very important as the brand's reputation cements its ability to sustain in the market. There by, further reiterating the importance of digital marketing in this aspect too.

Can target ideal audiences: Imagine, reaching out to the right audience for your business's niche is such a great opportunity. That is exactly what digital marketing helps to achieve. You can analyze your audience's behavior online and take measures to deliver optimal fulfillment. When you reach the right audience group, you drive more traffic, and that results in better campaigns.

Get Ahead of Your Competitor: The digital market is incredibly competitive when it comes to online business, in particular. Hence, you would want potential customers to find you with your best reviews and other measures initiated by various digital marketing services. These measures can you and your customer to work towards the right business goals in the end. Also, for any successful business, one needs to make a track of their competitor's activities. How do they communicate with customers? What makes them unique? Competitor analysis can help you understand all the aforementioned queries and develop strategies that work best in your favour.

Different Channels To Boost Your Traffic: One can use multiple different avenues to make their business successful in the marketing world. Business owners have the freedom to avail SEO services, PPC Services, content marketing services, and even social media campaigns to boost traffic on their website.

Engagement with Mobile Customers: We are engaging ourselves in a portable world, as these days people carry their devices like smartphones and laptops, on the go. After Google's mobile-first update, almost all the websites are developed in a manner that they are easily accessible on the mobile as well. Perhaps, mobile users are more common now than ever before, and the chances are that mobile users are likely to purchase.

CONCLUSION

Individuals are investing more in online content and companies that find it hard to digest this fact in their advertising strategy need to adjust quickly. The more time individuals spend on the internet every year, the more digital platform they use play an ever-developing function in their lives. The main aim of digital India is to promote digital medium. Because people can use digital platform any time anywhere from the world companies needs to change their marketing strategy from traditional to digital.

REFERENCES

1. Yasmin. S. Tasneem and K. Fatema, "Effectiveness of digital marketing in the challenging age: an empirical study," Journal of International Business Research and Marketing, vol. 1, no. 5, Apr., pp. 69-80, 2015.
2. Bhagowati and D. M. Dutta, "A study on literature review for identifying the factors impacting digital marketing," International Journal of Sales & Marketing Management Research and Development, Aug., vol. 8, no. 3, pp. 1-8, 2018.
3. Ms.A.Lavanya,Mrs.M.Radhikamani "A Stduy on Digital marketing and its impact" international journal of creative research thoughts (IJCRT) volume 9 issue 5 may 2021 page 677-684
4. https://act-on.com/blog/digital-marketing-7-essential-channels/
5. https://neilpatel.com/what-is-affiliate-marketing/
6. https://neilpatel.com/what-is-seo/

IMPACT OF ONLINE TEACHING/ LEARNING ON STUDENTS OF HIGHER EDUCATIONAL SYSTEM

Hansika Jain, Assistant Professor, Department of Business Administration
Pooja Chaudhary, Assistant Professor, Department of Commerce
Shri Ram College, Muzaffarnagar (UP)

ABSTRACT

The online education platform makes a reasonable introduction.Online teaching has globally become a part of the learning process and has been more well-established in developed countries. In developing countries, online teaching or e-Learning is not practiced or recognized officially by educational organizations and policymakers. The most important contributions of the paper reside in an in-depth analysis of student perceptions of online education processes and their perceived advantages and disadvantages related to online learning experienced during the COVID-19 pandemic. Based on the findings of the study, the proposed conceptual model outperformed the existing ones in terms of improving the process of online learning. On the other hand, it is well-known that computers and technology are the future; in such a case, the advancement of distance-learning or online learning is immensely remarkable. It has reduced teachers' and students' introversion concerning e-learning and technology and has provided a platform for learning new technologies and developing new skills. The primary tool employed to collect relevant data was in-depth interviews with six people who voluntarily participated in the study in the eastern province of Muzaffarnagar.

INTRODUCTION

The issue of quality of Higher Education in India cannot be understood without digging into the past. Online learning is a term that encompasses web-based teaching, e-learning, distributed learning, net-based learning, web-based training, cyber learning, virtual learning and internet-based learning. At present, there are not only many institutions with innovative online education, but student engagement is also relatively high. Today's version of distance learning is online education, which is "no longer a trend, but mainstream". Numerous nations are contributing in instructive change, educational reform, and and educational Information Communication Technology (ICT) hence the need for economic and social progress. A comprehensive online free course has been established, and a national system of innovative online education has been established to apply more educational resources to the application of education teaching, combined with big data and artificial intelligence technology. A key purpose of global computing technologies is to expand the engagement of students. In developing countries, little information is known regarding the practice of e-learning, its procedures, and its success rates. Research studies on this trend and its applications in the developing countries' education systems are minimal, and the studies are at the university level. It also aims at collecting data from a wide range of sources and incorporating them into different activity solutions, which is vital to the provision of ratings that are based on the daily activities of students based on an educational perspective. Online education improves interactive activities between teachers and students that have an impact on learning outcomes of students while implementing learning activities such as learning support and social intimacy, communication, instructor presence, support and establishing curriculum.The interest in this study is motivated by these developments, stimulating the eagerness to examine extant work, develop novel models, and unearth novel IoT applications. The advancement in online education has been supported by the continuous technological advancement in the area of wireless communication networks, which have attracted the interest of professionals and academics, and they're already being used in nautical applications globally. Research on the impact of COVID-19 on students' learning outcomes is gradually emerging as researchers worldwide study the effects of COVID-19 on daily life. Some studies have focused on the teaching and learning process during the transfer from school-site to distance/ online learning .UNESCO recommends distance learning programs and open educational applications during school closure caused by COVID-19 so that schools and teachers use to teach their pupils and bound the interruption of education. Therefore, many institutes go for the online classes Distance education is described as teaching and learning that takes place over a long distance between the teacher and the pupils. They communicate with one other through technology instruments such as letters, audio, video, computers, and the internet. Recently, online education has become more common among the western educational system, despite concerns about introducing online or e-learning for several reasons such as privacy, experience, regulations, and infrastructure, mainly the internet services and required devices. This study seeks to examine the teachers' perceptions about e-learning/online teaching because they are the main driver in the educational process and understand the various possibilities of implementing e-learning . To achieve this study's aim, the researcher collected and analyzed data from a survey through an online questionnaire.

Literature review

Name of author & year	Name of article	Name of journal & book	Research method	*Brief summary of the findings
Allen, I. E., & Seaman, J. (2013).	Changing course: Ten years of track-ing online edu-cation in the United States	Babson Survey Research Group and Quahog Re-search Group LLC	Quantitative	The study addresses: Massive Open Online Courses (MOOC), is online learning strategic, how many students are learning online, does it take more faculty time and effort to teach online, are learning outcomes in online comparable to face-to-face, has faculty acceptance online increased, and barriers to widespread adoption of online learning
Bailey, C. J., & Card, K. A. (2009).	Effective ped-agogical prac-tices for online teaching: Per-ception of ex-perienced	Internet and Higher Educa -tion	Qualitative	From the interviews, the au-thors found eight pedagogical practices for effective online teaching: fostering relation-ships, engagement, timeli-ness, communication, organ-

				ization, technology, flexibility, and high expectations.
Bell, B. S., & Fedeman, J. E. (2013).	E-learning in postsecondary education	The Future of Children	Qualitative	The study found during the fall 2010 term 31 percent of U.S. college students took at least one online course. The primary reasons for the growth of e-learning in the nation's colleges and universities include the desire of those institutions to generate new revenue streams, improve access, and offer students greater scheduling flex-ibility. Yet the growth of e-learning has been accompa-nied by a continuing debate about its effectiveness and by the recognition that a number of barriers impede its widespread adoption in higher education.
Brindley, J. E., & Walti, C., & Blaschke, L. M. (2009).	Creating effective collaborative learning groups in an online environment	The International Review of Research in Open and Distributed Learning	Qualitative	This paper addresses whether assessment makes a differ-ence to the level of learner participation and then con-sidering other factors in-volved in creating effective collaborative learning groups. It focuses on specific instructional strategies that facilitate learner participation in small group projects, which result in an enhanced sense of community, in-creased skill acquisition, and better learning outcomes.
Bryant, J., & Bates, A. J. (2015).	Creating a Constructivist Online Instructional Envi-	Tech Trends	Qualitative	This paper describes the ways in which social constructivist learning was fostered in an online teacher

	ronment			education program, and explores the potential of certain online tools and methods to facilitate a social constructiv-ist approach to preparing teachers in a virtual program model.
Callaway, S. K. (2012).	Implications of online learn-ing: Measuring student satis-faction and learning for online and traditional students.	Insights to a Changing World Journal	Qualitative	The purpose of the study was to develop comprehensive multidimensional measures of satisfaction and motivation factors, and to empirically test a model of how motiva-tion predicted student satis-faction and learning. Results showed that while traditional students were satisfied both with convenience and quality, as expected, online students were unexpectedly not satisfied with convenience, but were satisfied with quality. Results also indicated that quality satisfaction is not any more strongly associated with GPA than is convenience satisfaction
Cole, M. T., Shelley, D. J., & Swartz, L. B. (2014).	Online instruction, E-learning, and student satis-faction: A three year study	The International Review of Research in Open and Dis-tance Learning	Mixed- Method	This article presents the results of a three-year study of graduate and undergraduate students' level of satisfaction with online instruction at one university. Overall, students rated their online instruction as moderately satisfactory, with hybrid or partially online courses rated as somewhat more satisfactory than fully online courses. "Convenience" was the most cited reason for satisfaction. "Lack of interaction" was the most

				cited reason for dissat-isfaction. Preferences for hy-brid courses surfaced in the responses to an open-ended question asking what made the experience with online or partially online courses satis-factory or unsatisfactory.
Coppola, N. W., Hiltz, S. R., & Rotter, N. G. (2002).	Becoming a virtual profes-sor: Pedagogi-cal roles and asynchronous learning net-works	Journal of Management Information Systems	Qualitative	This paper presents a qualita-tive study of role changes that occur when faculty be-come online or "virtual" pro-fessors. In 20 semi-structured interviews of faculty, coded with pattern analysis soft-ware, the authors captured role changes enacted by in-structors in ALN settings - cognitive roles, affective roles, and managerial roles. Overall, faculty reported a change in their teaching per-sona, toward more precision in their presentation of mate-rials and instructions, com-bined with a shift to a more Socratic pedagogy, empha-sizing multilogues with stu-dents.
Cormier, D., McAuley, A., Stewart, B., & Siemens, G. (2010).	The mooc model for digi-tal practice	Coursera	Qualitative	The study argues that build-ing and sustaining prosperity through Canada's current digital strengths depends on a digital ecosystem that em-braces both infrastructure and the collaborative social net-works enabled by that infra-structure. By exploring the relationship of MOOCs to the digital economy in gen-eral and their potential roles

				to prepare citizens for participation in that digital economy in particular, it illustrates one particularly Canadian model of how these needs may be addressed.
Cox, B., & Cox, B. (2008).	Developing interpersonal and group dy-namics through asynch-ronous threaded dis-cussions: The use of disc-ussion board in collaborative learning	Education	Qualitative	This study examines discussion board transcripts from three graduate education courses. The researchers analyze interactions between and among students. Qualitative and quantitative transcript content analyses are conducted to determine that asynchronous threaded dis-cussions can be used to cre-ate a collaborative learning environment as well as inter-personal and group dynam-ics.
Crawford-Ferre, H. G., & Wiest, L. R. (2012).	Effective online instruc-tion in higher education	The Quarterly Review of Distance Education	Qualitative	This article is a summary of effective practices in online instructional methods, including course design, interaction among course participants, and instructor prepara-tion and support.
Finch, D., & Jacobs, K. (2012).	Online education: Best practices to promote learning	Proceedings of the Human Factors and Ergonomics 56th annual meeting	Qualitative	"The purpose of this paper is to discuss best practices and the evidence literature related to online education. High quality educational experi-ences in human factors and ergonomics (HFE) are of in-terest to the global ergonom-ics community in order to promote the development of the profession, enhance the skill set of HFE practitioners, and facilitate the translation of knowledge

				into practice (Dul et al., 2012).
Gallagher, S., LaBrie, J. (2012).	Online learning 2.0: Strategies for a mature market	Continuing Higher Education Review	Qualitative	This article has elucidated aspects of one institution's approach to online education Northeastern University
Garrison, D. R., Anderson, T., & Archer, W. (2009).	Critical thinking, cognitive presence, and computer conferencing in distance educa-tion	American Journal of Distance Education	Qualitative	The authors present encouraging empirical findings re-lated to an attempt to create an efficient and reliable in-strument to assess the nature and quality of critical dis-course and thinking in a text?based educational context. The authors suggest that cognitive presence (i.e., critical, practical inquiry) can be created and supported in a computer?conference environment with appropriate teaching and social presence
Garrison, D. R., & Ar-baugh, J. B. (2007).	Researching the community of inquiry frame work: Review, issues, and future directions	The Internet and higher education	Qualitative	This literature review examines recent research pertaining to the overall framework as well as to specific studies on social, teaching, and cog-nitive presence.
Garrison, D. R., Anderson, T., & Archer, W. (2000).	Critical inquiry in a text-based environment: Computer conferencing in higher education	The Internet and Higher Education	Qualitative	The purpose of this study is to provide conceptual order and a tool for the use of computer-mediated communication (CMC) and computer conferencing in supporting an educational experience. Central to the study introduced here is a model of community inquiry that con-stitutes three elements essen-tial to an educational transac-tion-cognitive presence, social presence,

				and teaching presence. This research sug-gests that computer confer-encing has considerable po-tential to create a community of inquiry for educational purposes.
Harasim, L. (2000).	Shift happens: Online educa-tion as a new paradigm in learning	Internet and Higher Education	Qualitative	Beginning with the innova-tions of early pioneers as contributing to the paradig-matic shift, the study provi-des a framework for under-standing this new field. The article then focuses on the Virtual-U, a Web-based envi-ronment especially custom-ized to support advanced ed-ucational practices .
Keengwe, J., & Kidd, T. T. (2010).	Towards best practices in online learning and teaching in higher education	MERLOT Jour-nal of Online Learning and Teaching	Qualitative	This article examines a re-view of literature related to online learning and teaching. The authors provide a brief historical perspective of online education as well as describe the unique aspects of online teaching and learn-ing. The barriers to online teaching, the new faculty roles in online learning envi-ronments, and some implica-tions for online learning and teaching are also provided
Ke, F. (2010).	Examining online teach-ing, cognitive, and social presence for adult students	Computers & Education	Mixed Method	This study examined the nature and interactions of teaching, cognitive, and social presence created by online instructors and adult students in diverse course contexts. The study results indicated online instructional design and

				teaching elements that are crucial prerequisites for a successful online higher educational experience for adult students.
Kehrwald, B. (2008).	Understanding social presence in textbased online learning environments	Distance Education	Qualitative	This article reports on key aspects of a theory generative study into social presence in text based online learning environments. The focus of the article is the nature of social presence as experi-enced by online learners in those environments.

Research objective

1. To give a few ideas and suggestions for the accomplishment of online method of getting the hang of during an emergency like circumstance.
2. To explore the growth of the online learning and benefit and drawbacks.
3. Students are comfortable to online learning or not.
4. During the COVID-19, online learning is option that help of students in skill or practical knowledge.

Methodology

Research Design	Exploratory cum descriptive
Universe	Student
Population	Government and Private College
Sampling unit	Individual student of Government and Private college.
Sampling size	50
Sampling area	Muzaffarnagar
Sources of data collection	Primary : Questionnaires Secondary: Journals, research papers and internet.
Response rate	Sample of 50 was taken, 50 responses were collected. All responses are appropriate in understanding and Awareness of students and teachers. Response rate- 100%
Data analysis tools	One sampled t-test.

Analysis

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Q1	50	3.36	1.27391	.18016

One-Sample Test

	Test Value = 3					
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Q1	1.998	49	.051	.36000	-.0020	.7220

The mean value of the above question came to be 3.36. When measured against the test value of 3, which signifies a neutral perception of the customer, the significance value came to be above 0.05. This indicates that the difference of mean value and the test value is insignificant.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Q2	50	3.4600	1.26507	.17891

One-Sample Test

	Test Value = 3					
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Q2	2.571	49	.013	.46000	.1005	.8195

The mean value of the above question came to be 3.46. When measured against the test value of 3, which signifies a neutral perception of the customer, the significance value came to be above 0.05. This indicates that the difference of mean value and the test value is insignificant.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Q3	50	3.5600	1.26427	.17879

One-Sample Test

	Test Value = 3					
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Q3	3.132	49	.003	.56000	.2007	.919.

The mean value of the above question came to be 3.56. When measured against the test value of 3, which signifies a neutral perception of the customer, the significance value came to be below 0.05. This indicates that the difference of mean value and the test value is significant.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Q4	50	4.3400	.068839	.09735

One-Sample Test

	Test Value = 3					
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Q4	13.765	49	.000	1.34000	1.1444	1.5356

The mean value of the above question came to be 4.34. When measured against the test value of 3, which signifies aagreed perception of the customer, the significance value came to be below 0.05. This indicates that the difference of mean value and the test value is significant.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Q5	50	3.2200	1.28238	.18136

One-Sample Test

	Test Value = 3					
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Q5	1.213	49	.231	.22000	-.1444	.5844

The mean value of the above question came to be 3.22. When measured against the test value of 3, which signifies a neutral perception of the customer, the significance value came to be above 0.05. This indicates that the difference of mean value and the test value is insignificant.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Q6	50	3.0000	1.22890	.17379

One-Sample Test

	Test Value = 3					
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Q6	.000	49	1.000	.00000	-.3493	.3493

The mean value of the above question came to be 3.00. When measured against the test value of 3, which signifies a neutral perception of the customer, the significance value came to be above 0.05. This indicates that the difference of mean value and the test value is insignificant.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Q7	50	4.58	.49857	.07051

One-Sample Test

	Test Value = 3					
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Q7	22.409	49	.000	1.58	1.4383	1.7217

The mean value of the above question came to be 4.58. When measured against the test value of 3, which signifies a strongly agreed perception of the customer, the significance value came to be below 0.05. This indicates that the difference of mean value and the test value is significant.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Q8	50	4.8	.40406	.05714

One-Sample Test

	Test Value = 3					
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Q8	31.5	49	.000	1.8000	1.6852	1.9148

The mean value of the above question came to be 4.8. When measured against the test value of 3, which signifies a strongly agreed perception of the customer, the significance value came to be below 0.05. This indicates that the difference of mean value and the test value is significant.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Q9	50	4.2200	.91003	.12870

One-Sample Test

	Test Value = 3					
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Q9	9.480	49	.000	1.22000	.9614	1.478

The mean value of the above question came to be 4.22. When measured against the test value of 3, which signifies agreed perception of the customer, the significance value came to be below 0.05. This indicates that the difference of mean value and the test value is significant.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Q10	50	4.8000	.40406	.05714

One-Sample Test

	Test Value = 3					
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Q10	31.50	49	.000	1.80000	1.6852	1.9418

The mean value of the above question came to be 4.8. When measured against the test value of 3, which signifies a strongly agreed perception of the customer, the significance value came to be below 0.05. This indicates that the difference of mean value and the test value is significant.

Findings

- The mean value of the above question came to be 3.36. When measured against the test value of 3, which signifies a neutral perception of the customer, the significance value came to be above 0.05. This indicates that the difference of mean value and the test value is insignificant.
- The mean value of the above question came to be 3.46. When measured against the test value of 3, which signifies a neutral perception of the customer, the significance value came to be above 0.05. This indicates that the difference of mean value and the test value is insignificant.
- The mean value of the above question came to be 3.56. When measured against the test value of 3, which signifies a neutral perception of the customer, the significance value came to be below 0.05. This indicates that the difference of mean value and the test value is significant.
- The mean value of the above question came to be 4.34. When measured against the test value of 3, which signifies aagreed perception of the customer, the significance value came to be below 0.05. This indicates that the difference of mean value and the test value is significant.
- The mean value of the above question came to be 3.22. When measured against the test value of 3, which signifies a neutral perception of the customer, the significance value came to be above 0.05. This indicates that the difference of mean value and the test value is insignificant.
- The mean value of the above question came to be 3.00. When measured against the test value of 3, which signifies a neutral perception of the customer, the significance value came to be above 0.05. This indicates that the difference of mean value and the test value is insignificant
- The mean value of the above question came to be 4.58. When measured against the test value of 3, which signifies a strongly agreed perception of the customer, the significance value came to be below 0.05. This indicates that the difference of mean value and the test value is significant.
- The mean value of the above question came to be 4.8. When measured against the test value of 3, which signifies a strongly agreed perception of the customer, the significance value came to be below 0.05. This indicates that the difference of mean value and the test value is significant.
- The mean value of the above question came to be 4.22. When measured against the test value of 3, which signifies agreed perception of the customer, the significance value came to be below 0.05. This indicates that the difference of mean value and the test value is significant.
- The mean value of the above question came to be 4.8. When measured against the test value of 3, which signifies a strongly agreed

perception of the customer, the significance value came to be below 0.05. This indicates that the difference of mean value and the test value is significant.

REFERENCES

1. Cui, Y., Ma, Z., Wang, L., Yang, A., Liu, Q., Kong, S., & Wang, H. (2023). A survey on big data-enabled innovative online education systems during the COVID-19 pandemic. Journal of Innovation & Knowledge, 8(1), 100295.
2. Kadhim, J. Q., Aljazaery, I. A., & ALRikabi, H. T. S. (2023). Enhancement of online education in engineering college based on mobile wireless communication networks and IoT. International Journal of Emerging Technologies in Learning (Online), 18(1), 176.
3. Sofi-Karim, M., Bali, A. O., & Rached, K. (2023). Online education via media platforms and applications as an innovative teaching method. Education and Information Technologies, 28(1), 507-523.
4. Alharthi, M. (2023). Parental Involvement in Children's Online Education During COVID-19; A Phenomenological Study in Saudi Arabia. Early Childhood Education Journal, 51(2), 345-359.
5. Abdullah, F., & Kauser, S. (2023). Students' perspective on online learning during pandemic in higher education. Quality & Quantity, 57(3), 2493-2505.
6. Bag, S., Aich, P., & Islam, M. A. (2022). Behavioral intention of "digital natives" toward adapting the online education system in higher education. *Journal of Applied Research in* Higher Education, 14(1), 16-40.
7. Pandit, D., & Agrawal, S. (2022). Exploring challenges of online education in COVID times. FIIB Business Review, 11(3), 263-270.

Questionnaire

1. Overall framework and operation levels of the system are clear and smooth.
2. Overall configuration color and background is normal harmonious for the system.
3. Overall screen layout and window design of the system is appropriate.
4. Overall interface operation method is easy and appropriate.
5. Log-in interface is clear and easy to operate.
6. Register interface is clear and easy to operate.
7. Exam interface is clear and easy to operate.
8. Exam interface design is appropriate.
9. Exam interface design is appropriate.
10. Are you comfortable in taking course(s) online.

Prabandhan Guru, ISSN : 2321-4295
Vol: XIV, Issue: 1, Jan-June 2023
RNI : UPENG / 2010 / 38376

MARRIAGE OF MINORS: RISING CRIME RATE AND LEGISLATION

Dr. Hina Gupta
Assistant Professor
Shri Ram College of Law, Shri Ram Group of Colleges, Muzaffarnagar

ABSTRACT

In the present scenario, we frequently discuss on women empowerment, technological developments, Artificial Intelligence and of becoming one of the strongest countries in the world, but somewhere we are ignoring our in-house practical problems. Rise in crime rate is one of them and in this all, rising crime-rate in minors is more serious issue. In this research paper, the author is approaching the edges of the conditions for a Hindu marriage, marriage by minors without the consent of guardians and offences relating to the same. There is a gap in our existing legislation in this regard, to which we need to fill with new amendments, if we really want to lower-down the crime rate in Indian civilized society and do not want to spoil the shining future of the juveniles. In this modern age, as soon as children enter in their teenage they want to know everything around the world. It might be because of updated syllabus in education system and frequent use of internet by young ones. In this paper, author is also trying to find out solution of this existing problem in our society after analyzing the legislative provisions.

Keywords: *Hindu marriage, marriage, juvenile, juvenile justice, offence.*

INTRODUCTION

Hindu Dharmashastras are the base of the Hindu personal Law. In Hindu Dharmashastras the whole life of a Hindu has been divided into four Aashrams. Such as

1. Brahmacharya Aashram
2. Grahasth Aashram
3. Sanyas Aashram
4. Vaanprasth Aashram

The focus is only on two Aashrams only, Brahmacharya Aashram and Grahasth Aashram. In our Hindu Dharma, the age for Brahmacharya Aashram is only till 25 years and after that Grahasth Aashram covers till 50 years only. In this manner, it can be drawn that in ancient Hindu marriage system the appropriate age for marriage was after 25 years. In Hindu Dharma, Hindu Marriage is considered as a pious step of life because it is one of the sixteen sanskars of Hindu Dharma. It is understood that during that period, Hindu marriage was not allowed till
25 years. But in present time, the Hindu marriage Act, 1955 mentions the conditions for a Hindu marriage in which the age for bride and groom is mentioned only. But under the whole Act such marriages have not been made either void or voidable, but have been made punishable only. Due to its impact, the present Juvenile Justice system is being affected deeply.

PROVISIONS UNDER THE HINDU MARRIAGE ACT, 1955

According to the Section 5 (iii)i of The Hindu Marriage Act, 1955, a Hindu marriage may be solemnized between two Hindus if the bride is of eighteen years of age and groom is of twenty-one years, at the time of their marriage.

Punishment for contravention of certain other conditions for a Hindu marriageii Every person who procures a marriage of himself or herself to be solemnized under this Act in contravention of the conditions specified in clauses (iii), (iv), and (v) of section 5 shall be punishable

(a) in the case of contravention of the condition specified in clause (iii) of section 5, with rigorous imprisonment which may extend to two years or with fine which may extend to one lakh rupees, or with both.......

PROVISIONS UNDER OTHER STATUTES

1) Provisions under Indian Penal code, 1860

As per the Section 361 Indian Penal Code, 1860, if a person entices or takes away any minor girl under 16 years of the age from the lawful guardianship without the consent of her lawful guardian, such act amount to kidnapping from lawful guardianship and is punishable under S. 363iii for imprisonment which may extend to 7 years and shall also be fined.

In the same way, if such kidnapping is done for the purpose of marring any person against her will, or she may be forced or seduced to illicit intercourse, or knowing it to be likely that she will be forced or seduced to illicit intercourse, such act shall be punished with imprisonment of a period which may extend to ten years, and shall also be finediv.

Section 375 and 376

One of the clauses of S. 375 IPC provides that where a man has sexual intercourse with a woman with or without her consent, when she is under sixteen years of age, such act shall amount to rape.

2) Provisions under Protection of Children against Sexual Offences Act (POCSO)

It is also to be learnt that Criminal Law (Amendment) Act-2013 as well as POCSO Act (Protection of Children against Sexual Offences Act) also made punishable sexual intercourse between a minor girl and a minor boy, or between two persons wherein one is a minor girl i.e. below 18 years of age. Such an act shall amount to rape and shall come under the definition of rape under Indian Penal Code. It is needless to mention that consent of a minor girl is of no value.

REASONS FOR THIS PROBLEM

In our present education system, many contents and chapters about the human biology have been added for the purpose to educate the students about the general awareness about our body, either man or woman. But somewhere, our children divert their minds to know more about the available Chapters in their syllabus. Under this curiosity, they try to find content from any where they can. Sometimes, in this curiosity, they even want to experience this all in their lives. Thus, in very early age, they do something that they should not.

SITUATIONS IN WHICH SUCH INCIDENCES HAPPEN

There are a number of occasions when we heard on print media, social media or on television that the minors eloped from their parental house, went to some other places and got married in some institutions like "Arya Samaj" or in a temple. Thereafter, they started living like husband and wife. They also consummated their marriage by making physical relations. Generally, this kind of behavior is seen in the age between 15 to 18 years of boys and girls. Such behavior is due to some obvious reasons which are being discussed.

First of all, these minors have just come over of their age. They are surprised and curious about biological changes in their body. Generally, these biological changes in the body tend to attraction towards opposite sex. It gives rise to curiosity to know. Now- a-days, there is an "Internet Revolution". Internet has given access to the knowledge of all types all over the world. Parents are willingly providing mobile phones to their children but they do not have control on the accessibility of contents by their children. The biological changes, attraction towards opposite sex and immature emotions tends them to do experiments and take decisions of elopement and committing marriages. However, they totally do not have ability to understand the nature of the act and its consequences.

In some of the cases, it has also been observed that when it comes to the knowledge of parents about the affairs of the minors, they beat and scold them and due to such fear, scolding and beating, they left the house and execute the marriage. Therefore, family circumstances also plays pivotal role in such acts. However, the elopement, subsequent marriage and its consummation, howsoever it may be innocent, have its own legal implications and may rise to issue relating to guardianship and criminal offences.

Now there are thousands of cases where two minors or two persons in which woman partner is under age of 16 years eloped from their parents' house and got married or have consensual intercourse, the parent of under age girl lodges First Information Report before a Police Station, the Police taking into account of the language of the First Information Report, booked the man partner under Section 363, 366 and 376 IPC (as the case may be).

Here, although it is one of the settled principal that everyone must know the law, it is generally observed that these minors don't have the knowledge of the law and they are completely unaware of the consequences of their act. Generally these cases are of nature of love affairs.

It should also be seen that at somewhere it gives feeling that law appears to be stricter for a male partner and criminal liability of a girl is a vanishing point. Whereas, for an act which was consensual between two minors, one of them is facing criminal charges and other one is considered to be a victim only. The only determining factor in such case was prejudicially consider as the girl was taken or enticed away from the lawful guardianship and she was under age.

Section 361 which defines kidnapping has made it very much clear that in case of a minor girl, consent of the girl is immaterial. Where boy and girl run away to get married and the girl is minor, the boy, as per the Indian Law, would be held liable for the crime in accordance with the provisions of sections 362, 366 and 375 of the Indian Penal Code.

There is another aspect of marriages by minors after elopement from their parents' house. When two minors married, The Prohibition of Child Marriage Act, 2006 came into effect which regulates the effects of their marriage. As per the act, age of a valid marriage for a girl is 18 years and for a boy is 21 years. This law prohibits child marriage and a child marriage is not a legal marriage in the eyes of law.

It is also seen very common that when parents of a minor girl find her daughter in a compromising situation with any other person, in order to save their respect in society, without considering the sensitivity of the act as well as sensitivity of the age of the child, immediately press charges of rape and other charges under various Laws. Needless to mention, that charges of kidnapping and abduction are also pressed as an attachment. However, the parents never tried to go into the root of the cause. Further, now the definition of rape has been made so wide and vague that any act may come under the definition of the rape. Moreover, it is also seen that the all family members of the boy have been made accused as conspirator or accomplice. In some cases, it is also seen that the lodging of First Information Reports become tool to extort money and thereafter at the trial stage, a hostile statements are being made for acquittal of the minor accused as well as their family members.

RECENT JUDGMENTS

Recently, in case of XYZ v. State of Maharashtrav, , before Bombay High, where the facts of the case was, a girl of 17 years of age went missing when her parents and relatives were out of city. Her brother lodged an FIR against a boy alleging he had affair with her sister. Police recovered the girl. During her medical examination, it was found that she was in habit of intercourse and was carrying pregnancy of 14.6 weeks. Medical reports do not showed any forced intercourse on her. Boy was charged for kidnapping and rape as well as under POCSO Act. Two other relatives of the boy were also charge sheeted along with him as abettor of the offence. After trial, charges were found proved by the trial court and the boy was convicted and sentenced for 10 years of imprisonment.

It was observed by the Bombay High Court that statements of the victim girl shows the consensual sexual intercourse with the accused boy and stringent law of POCSO Act provides for any act of sexual intercourse with a minor girl would amount to rape. And this is the reason of conviction of the accused boy.

Similar problems were also faced by other Courts in other cases like Madras High Court in Sabari v. Inspector of Policevi, Calcutta High Court in Ranjit Rajbanshi v. State of W.B.vii, Recently, it has been urged to various State Government and Central Government to lower down the age of consent of sexual intercourse between a boy and a girl from present 18 years to 16 years.

This may help in protection of adolescence of the minors and prevent them from becoming an offender and a convict. Furthermore, along with this respective marriage laws should also be amended giving validity of marriage between two minors above 16 years of age. These children are not terrorists or hardcore criminals. But the circumstances and unawareness to law and their immaturity, like a disease turning them into a criminal.

CONCLUSION AND SUGGESIONS

If we observe, we finds that elopement and marriage between minors are generally confined above the age of 15 years. At this age, generally, a school going boy or girl is in its High School. Co-education has been a normal phenomenon now-a-days. It would be better that if we are not ready to give sex education to our children in their schooling phase, it would be much better to at least give them knowledge of our criminal laws relating to rape, kidnapping and abduction as well as its social implications. This may help these children to think over before taking any immature steps in their early ages. Few suggestions are as follows:

a) To amend marriage age in The Hindu marriage Act or add a provision relating to the marriage of minors, either executed by themselves or by any other person, which may specify the status of such marriage; and
b) To educate minors about offences, such as if they execute marriage in such age and what all can be consequences of the same; and
c) While adding any Chapter, like human parts, biological changes or procreation of child etc. a short introduction of relating offences should be there, in the books; and
d) Legislation and punishment should be equal for minor boy and girl, as they age being equally educated and have an even intellect too, if they commit any of the acts as discussed in this article.

We are living in a country where marriage or matters relating to it specially, sexual relations, is always been a Taboo and still people are hesitating to talk on the topic. India is a Country having its own social and cultural threads which prohibits such talks and keeps the things behind the curtains. We still failed to implement sex education in the schools even in Government Schools. However, these suggestions may have their own critics. How so far it is socially acceptable, is a big question.

FOOTNOTES

i Conditions for a Hindu marriage
ii Section 18 of The Hindu marriage Act, 1955.
iii The Indian Penal Code, 1860
iv Section 366 of The Indian Penal Code, 1860.
v 2023 SCC OnLine Bom 1390
vi 2019 SCC OnLine Mad 18850
vii 2021 SCC OnLine Cal 2470.

Prabandhan Guru, ISSN : 2321-4295
Vol: XIV, Issue: 1, Jan-June 2023
RNI : UPENG / 2010 / 38376

A COMPARATIVE STUDY ON THE ANALYSIS OF HEALTH STATUS BETWEEN TAKING AND NON- TAKING BREAKFAST

Dr. Shweta Rathi
HOD, Department of Home Science, Shri Ram College, Muzaffarnagar
Rubi Poswal
Assistant Professor, Department of Home Science, Shri Ram College, Muzaffarnagar

ABSTRACT

TO STUDY THE IMPORTANCE OF BREAKFAST FOR HEALTHY LIFE FOR COLLEGE GOING GIRLS IN MUZAFFARNAGAR.

A comparative study on the analysis of health status between taking & non taking breakfast. Breakfast is often called 'the most important meal of the day', and for good reason. As the name suggests, breakfast breaks the overnight fasting period. It replenishes your supply of glucose to boost your energy levels and alertness, while also providing other essential nutrients required for good health.Rise and shine! Our bodies use the simple sugar called glucose for fuel. Glucose is stored in the liver and released as needed. Healthful nutrition has a positive connection with both physical and mental health. The aim of this study was to comparatively analysis health status taking and non taking breakfast & the role of breakfast for healthy life.The data was collected through questionnaire that is formed in English language. It is a questionnaire consisting of multiple choice type questions. Interview method was used in survey. The data was collected by both face to face interview and by questionnaire supply.A discriptived survey was conducted to access the difference of breakfast habits and health issuse 100 respondent were taken data was analysis through tables and graphs.In this study, we saw that many types of health issues were seen in the girls who did not taking breakfast regularly if we compared to that girls who have taking breakfast daily, Physical and mentally changes were seen in the girls who skipped breakfast regularly. Such as headache, not feeling hungry on time. BP low, lack of concentration, low immunity, Dizziness, Mood swing, also was seems. Craving to eat sweets.And it is also known is this study that many types of benefits have been seen in the girls who were taking breakfast regularly such as , weight is maintained not feel hungry frequently , eating healthy & nutritious breakfast improves their concentration and increase energy level. And improves metabolism, or energy is boosted.And also know that most of the girls feel active after having breakfast. But some feel laziness may be due to bad digestive systems.

INTRODUCTION

Breakfast is often called 'the most important meal of the day', and for good reason. As the name suggests, breakfast breaks the overnight fasting period. It replenishes your supply of glucose to boost your energy levels and alertness, while also providing other essential nutrients required for good health.

Many studies have shown the health benefits of eating breakfast. It improves your energy levels and ability to concentrate in the short term, and can help with better weight management, reduced risk of type 2 diabetes and heart disease in the long term.

Despite the benefits of breakfast for your health and wellbeing, many people often skip it, for a variety of reasons. The good news is there are plenty of ways to make it easier to fit breakfast into your day.

The importance of breakfast: Start your day off strong- Rise and shine! Our bodies use the simple sugar called glucose for fuel. Glucose is stored in the liver and released as needed. When glucose

stores are depleted, usually by mid-morning after a night of sleeping, this source of quick energy is not available.
The result is the sensation of hunger, decreased concentration and fatigue, all of which can make learning more difficult. This is why it is important to be sure your children "break the fast" and refuel their bodies to start the school day - and every day - right.

When you wake up from your overnight sleep, you may not have eaten for up to 10 hours. Breakfast replenishes the stores of energy and nutrients in your body.

Energy- In the morning, after you have gone without food for as long as 12 hours, your glycogen stores are low. Once all of the energy from your glycogen stores is used up, your body starts to break down fatty acids to produce the energy it needs. But without carbohydrate, fatty acids are only partially oxidised, which can reduce your energy levels.

During times of fasting (not eating), such as overnight, the liver breaks down glycogen and releases it into your bloodstream as glucose to keep your blood sugar levels stable. This is especially important for your brain, which relies almost entirely on glucose for energy.

Eating breakfast boosts your energy levels and restores your glycogen levels ready to keep your metabolism up for the day.

Breakfast helps you control your weight- People who regularly eat breakfast are less likely to be overweight or obese. Research is ongoing as to why this is the case. It is thought that eating breakfast may help you control your weight because:

Breakfast boosts brainpower - Studies suggest that not having breakfast affects your mental performance, including your attention, ability to concentrate and memory. This can make some tasks feel harder than they normally would.

Children and adolescents who regularly eat breakfast also tend to perform better academically compared with those who skip breakfast.

Improved Concentration
Students who eat a healthy breakfast tend to have better concentration than students who skip breakfast altogether.

It's not just about test scores and concentration, though. Eating breakfast can help students meet their daily nutrient needs more easily Breakfast eaters also tend to take in more daily fiber and lower total fat and dietary cholesterol.

Regularly eating breakfast is also associated with a healthier body mass index, or BMI, and a decreased likelihood of obesity. Research shows that students who regularly eat breakfast have an easier time maintaining a healthy body weight than students who are regular breakfast skippers.https://www.weekand.com/healthy-living/article/benefits-eating-breakfast-students-18003450.php

PROBLEMS ARISING WITH SKIPPING BREAKFAST

Skipping breakfast was shown to be common in the most recent national nutrition survey of Australian children and adolescents, although the majority did not skip breakfast consistently.

Those most likely to skip breakfast were older females, and people who:

- are under or overweight
- have a poor diet
- have lower physical activity levels
- do not get enough sleep
- are from single-parent or lower income households.

Some common reasons for skipping breakfast include:

- not having enough time or wanting to spend the extra time being in bed
- trying to lose weight
- too tired to bother
- bored of the same breakfast foods
- don't feel hungry in the morning

- no breakfast foods readily available in the house
- the cost of buying breakfast foods
- cultural reasons.

While skipping breakfast is not recommended, good nutrition is not just about the number of meals you have each day. If you don't have breakfast, aim to make up for the nutritional content you missed at breakfast with your lunch and dier. https://www.betterhealth.vic.gov.au/health/healthyliving/breakfast

PROBLEMS IN METABOLISM- Metabolism is a chemical process which occurs in the cells and it is necessary for body maintenance. Having breakfast in morning help in boosting your metabolic rate does burning more calories if we do not take breakfast regularly our metabolism process will hamper the rest of the day.

RISK OF HEALTH PROBLEMS- The risk related to heart diseases increases if we skip our breakfast. Apart from heart diseases the chances of having diabetes, high blood pressure, high cholesterol etc. would be increased.

MAKES EXERCISE DIFFICULT- Skipping breakfast lowers the energy level in the body and thus makes us physically inactive. This makes exercising through the day hard.

WEIGHT GAIN- Many people skip their breakfast to reduce their weight but it is believed that skipping breakfast can lead to gaining of calories instead.

INCREASE THE RISK OF TYPE 2 DIABETES- No breakfast consumption increase the risk of type 2 diabetes. This is common in case of women.

POOR MEMORY- Avoiding breakfast has an influence on brain which result in poor memory. The short term memory is reduced and it results in a person being forgetful.

Objective of the styudy

- To study comparatively analysis health status taking and non taking breakfast.

REVIEW OF LITERATURE

The central role of breakfast as part of a healthy lifestyle is well recognized and documented. Breakfast provides support for the energy and nutritional needs that are essential to face the day both physically and mentally. The promotion of a healthy breakfast is not only part of the nutrition education program, but also part of a more complex primary and secondary policy of overweight prevention in childhood. There is increasing evidence linking breakfast consumption and obesity, even in pediatric populations of different ethnicities. In fact, the first observations on the beneficial impact of breakfast in pediatric practice were published in the 1950s,8 but it was later, with the spread of adult and pediatric obesity, that its importance was defined in promoting a healthy lifestyle.

Regular breakfast eating has traditionally been considered an important factor in a healthy lifestyle. Nevertheless breakfast skipping has become increasingly widespread among children adolescent and adult in western countries during past 30 years (Haines et al., 19 96; Niklas et al., 1998;Siega-Riz et al., 1998). Breakfast skipping increases with age; children in primary school do so less than teenagers (Brugman et al., 1998., Niklas et al., 1998;. The prevelance of breakfast skipping among adolescent has range from 3% to 67% in studies conducted in different countries (al sudairy and Howard, 1992; Brugman et al.,1998; Ho glund et al; 1998: Isralo witz and Troastler, 1996; Michaud et al., 1990; Sam-uelsen et al; 1996., shaw, 1998; Siega Riz et al; 1998., Terre et al 1990); The great variability of these estimated is caused by methodological and cultural differences. The studies with largest number of adolescent participants have been conducted in Sweden, Finland and the US in these studies 13-25 % of adolescent boys and 18-35 % of girls aged 12-18 skipped breakfast. Each study used a different method and a slightly different group. https://www.academia.edu/21840545/

A USA based study investigated potential relationships between participation in a Universal Free School Breakfast Programme and measures of psychosocial and academic functioning in school children (Murphy et al., 1998). Data on educational outcomes, including academic achievement (test grades in mathematics, science, social studies and reading), and school attendance and punctuality, were obtained via school records, for children (N = 133; mean age 10.3 years), from three inner city public schools. Data collection took place prior to the implementation of a universal free school breakfast programme (baseline) and four months afterwards (follow-up). The exact nutritional composition of breakfast was not determined, and the authors noted that consumption of school breakfast was observed by researchers, who deemed that most of the children ate most of their breakfast meals.

Breakfast is known to be the most important meal of the day. In 2001, The Statistic Portal showed that in the United States, 28 percent of the male respondents skip breakfast while 18 percent of the female respondents who skip breakfast are between 18 to 34 years old. On the other hand, in Scotland, research showed that almost 30 percent of the 15-year-old girls are more often to skip their breakfast while boys aged 15 displays a continuing decline on their breakfast with age (Kirby,n.d.) Breakfast is essential because it is correlated to positive mood. If we kept our stomach empty for a long time, our body will suffer insufficiency of proteins and glucose. Then blood sugar will sink then followed by mood swings. Protein steadies blood sugar levels while carbohydrate significant to offer energy which means that combining these two type of nutrition in the morning would lead to more ideal performance. (SHAPE, 2006).

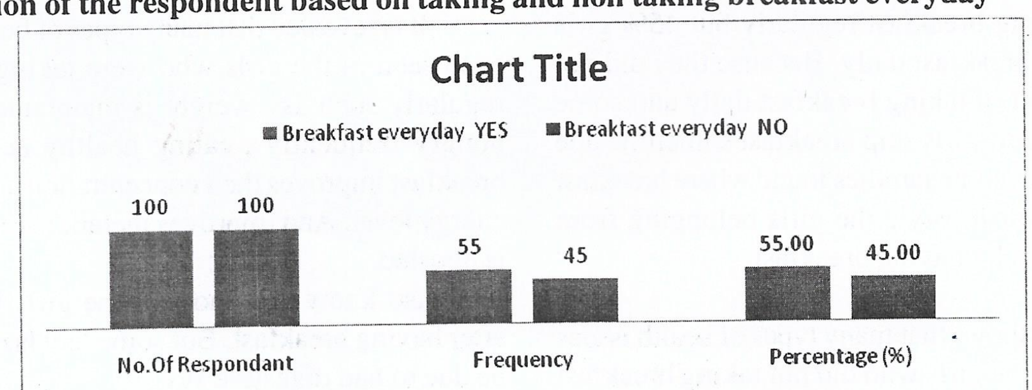
REASERCH METHADOLOGY

The research approach of this study is descriptive survey based on the adolescence college going girls. Who were belongings to Muzaffarnagar Uttarpradesh. A questionnaire was used to obtain information for this study. A review of breakfast studies was made to obtain ideas for designing the questionnaire. The total no. of respondents selected for this study was 100 adolescence college going girls who was residing in Muzaffarnagar.The data was collected by both face to face interview and by questionnaire supply. A discriptive survey was conducted to access the difference of breakfast habits and health issues of Adolescence college going girls who is residing in Muzaffarnagar 100 respondent were taken data was analysis through tables and graphs.

RESULT ANALYSIS

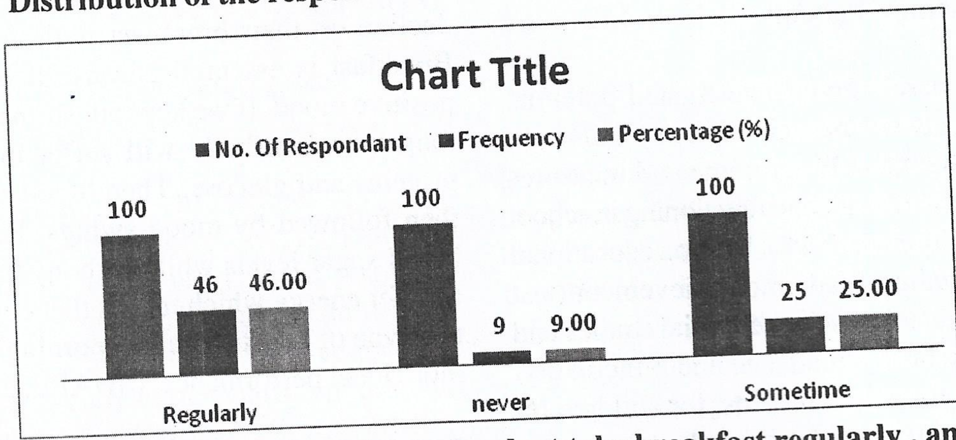
SECTION A COMPARATIVE STUDY ON THE HEALTH STATUS BETWEEN TAKING AND NON- TAKING BTEAKFAST

Distribution of the respondent based on taking and non taking breakfast everyday



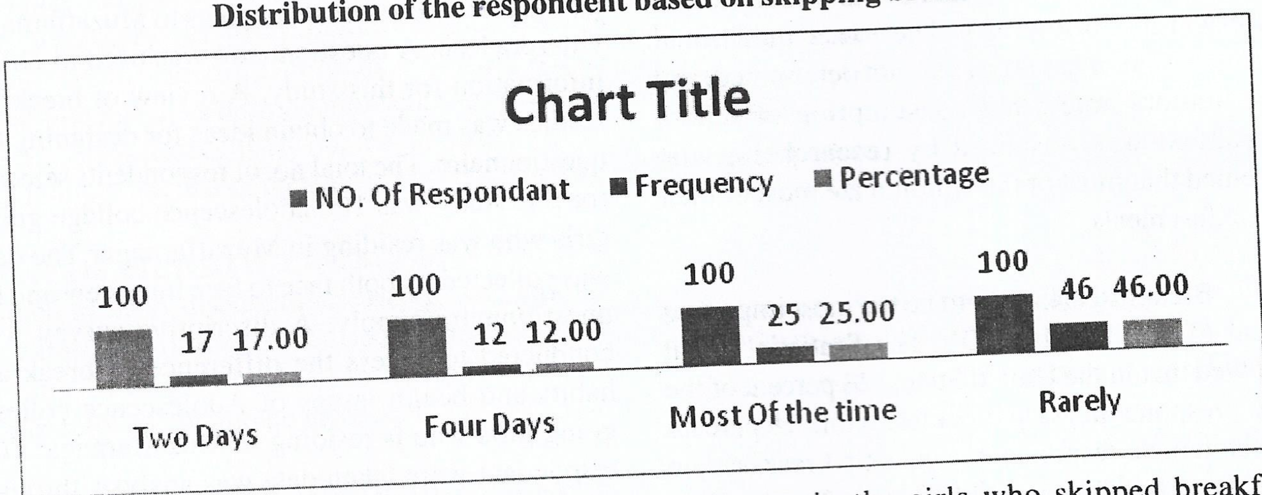
According tograph no. 1 data shows that out of 100 respondent 55% taking breakfast regularly and 45 % does not take breakfast regular.

Distribution of the respondent based on taking breakfast regularly



Graph No. 2 shows that 46% of total respondent take breakfast regularly , and 9 % of respondent never take breakfast , also shows that 25% of respondent sometime takes breakfast.

Distribution of the respondent based on skipping breakfast



The above graph shows that 17 % of total respondent skip breakfast for two days, 12% for four days , 25% for most of the time and 46% of respondent rarely skip breakfast.

In this study, It has been found that 55% of the girls taking breakfast regularly but 45% girls did not take breakfast daily. Because they did not have the habit of taking breakfast daily and some girls did not few girls skip breakfast sometime due to lake of time, some families found where breakfast pattern in their lifestyle the girls belonging from families also a lot having breakfast.

Study shows that many types of health issues were seen in the girls who did not taking breakfast regularly if we compared to that girls who have taking breakfast daily, Physical and mentally chnges were seen in the girls who skipped breakfast regularly. Such as Headache, Not feeling hungry on time. BP low, lack of concentration, low immunity, Dizziness, Mood swing, also were seens. Craving to eat sweets.

It is revealed that many types of benefits have been seen in the girls who were taking breakfast regularly such as , weight is maintained not feel hungry frequently , eating healthy & nutritious breakfast improves their concentration and increase energy level. And improves metabolism, or energy is boosted.

And also know that most of the girls feel active after having breakfast. But some feel lazyness may be due to bad digestive system.

CONCLUSION

In this study it has been seen that the health status of the adolescent girls who used to have breakfast was seen to be good & minor health issues were seen but whose girls not taking daily breakfast who had faced many health related problems like- Lake of energy, Dizziness, Low B.P, Headache, Vomiting. So that breakfast is important meal for us.

BIBLIOGRAPHY

- Ogata H, Kayaba M, Tanaka Y, Yajima K, Iwayama K, Ando A et al, 2019, 'Effect of skipping breakfast for 6 days on energy metabolism and diurnal rhythm of blood glucose in young healthy Japanese males', The American Journal of Clinical Nutrition.
- Betts JA, Richardson JD, Chowdhury EA, Holman GD, Tsintzas K, Thompson D, 2014, The causal role of breakfast in energy balance and health: a randomized controlled trial in lean adults, The American Journal of Clinical Nutrition, vol. 100, no. 2, pp. 539-547.
- Garrido AAG, Brofman-Epelbaum JJ, Gómez-Velázquez FR, Balart-Sánchez SA, Ramos-Loyo J, 2019, Skipping breakfast affects the early steps of cognitive processing: an event-related brain potentials study, Journal of Psychophysiology, vol. 33, no. 2, pp. 109-118
- Sampasa-Kanyinga H, Hamilton HA, 2017, Eating breakfast regularly is related to higher school connectedness and academic performance in Canadian middle- and high-school students, Public Health, vol. 145, pp. 120-123
- Adolphus K, Lawton CL, Champ CL, Dye L, 2016, The effects of breakfast and breakfast composition on cognition in children and adolescents: a systematic review, Advances in Nutrition, vol. 7, no. 3, pp. 590S-612S
- Zipp A, Eissing G, 2019, Studies on the influence of breakfast on the mental performance of school children and adolescents, Journal of Public Health, vol. 27, no. 1, pp. 103-110.
- Brikou D, Zannidi D, Karfopoulou E, Anastasiou CA, Yannakoulia M, 2016, Breakfast consumption and weight-loss maintenance: results from the MedWeight study, The British Journal of Nutrition, vol. 115, no. 12, pp. 2246-2251.

INDIAN SUGAR SECTOR: A WAY FORWARD

Anshuman Kaler, Assistant Professor
Department of Applied Sciences, Shri Ram Group of College, Muzaffarnagar

ABSTRACT

The Indian sugar sector is crucial for the Indian Economy as an output producer and employment generator and also for promoting environmental sustainability. The Indian Sugar industry is the second largest agro-based industry in the country. This article focused on the performance review of the Indian sugar sector during the sugar season 2021-22 and performance projections for the sugar season 2022-23. Given the rise in petroleum prices, the National Ethanol Blending Policy (2018) mandates 20 percent blending of ethanol with petrol. The government of India has hiked ethanol prices sold to oil companies to promote Ethanol production. This will result in more sugar diversion towards ethanol. The secondary demand for sugarcane for ethanol production would enhance the revenue of sugarcane farmers and sugar millers for the sustainable development of the Indian Sugar Sector.

INTRODUCTION

According to Indian Sugar Mills Association (ISMA), Sugar production is estimated to be 340 lakh tonnes in Sugar Season 2022-23, as compared to the peak of 358 lakh tonnes produced in the previous Sugar Season 2021-22; with the highest ever diversion towards ethanol estimated at 45 lakh tonnes with an annual growth rate of 41%. This increasing diversion towards high-realization ethanol is likely to support 8-12% revenue growth for sugar mills this fiscal. By the year 2025, the government is targeting to divert 60 lakh tonnes of excess sugar towards ethanol annually. For export sales, the sugar export quota is set at 60 lakh tonnes by the government in the current Sugar Season, which is still lower than exports made of 72 lakh tonnes and 112 lakh tonnes in the Sugar Season 2020-21 and Sugar Season 2021-22, respectively. The additional sugar export quota will be decided after evaluating the current demand-supply scenario. Furthermore, a GST reduction from 18% to 5% coupled with any additional export quota announcement by the government could support the sugar mills' performance in the near term. The price of ethanol derived from the C heavy molasses route is to be increased by about 6% to Rs. 49.41 per liter. The price of ethanol derived from B heavy molasses route and direct route (sugarcane juice/ sugar/sugar syrup) is to be increased by 3% to Rs. 60.73 per liter and Rs. 65.61 per liter respectively, which in turn will incentivize sugar mills for high margin ethanol production and support its profitability. The revenue for sugar mills is estimated to increase by 8-12% in FY23. The growth is expected to be supported by an addition in installed capacity for sugar production and distilleries along with an increase in ethanol blending target and price. With the government's continuous support towards the sugar sector and increasing focus on diversion towards ethanol production to promote the Ethanol Blending Program in India, the sugar sector is likely to gain traction going forward.

Performance of the Indian Sugar Sector in 2021-22

The sugar season 2021-22 registered a successful year with record-level sugarcane production, sugar exports, cane procured, ethanol production, and cane dues clearance. The growth has been recorded for production and consumption at a CAGR of 2.6% and 1.4% respectively in the past five years. Moreover, the highlight of this season was sugar exports. With a consistent increase in surplus sugar production, the country's sugar exports grew by 105% CAGR to 112 lakh tonnes this season.

Performance Projection for Sugar Season 2022-23

For the Sugar Season 2022-23, the total sugar production (after diversion towards ethanol) is estimated to fall by 5% to 340 lakh tonnes as compared to the record high production of about 358 lakh tonnes in the last Sugar Season 2021-22.

The total sugar production in Maharashtra is estimated to decline to 121 lakh tonnes in Sugar Season 2022-23 from 137 lakh tonnes in the previous season. Karnataka is likely to witness a decline to 56 lakh tonnes, whereas Uttar Pradesh may observe a minor decline to 101 lakh tonnes from 102 lakh tonnes in the previous season.

The actual production, after sugar diversion towards ethanol, stood at 254.2 lakh tonnes (higher by 5.5%) as of February 15, 2023, as compared to 240.9 lakh tonnes in the same period last year. Maharashtra and Uttar Pradesh continue to be the major contributors with 94.1 lakh tonnes and 69.8 lakh tonnes, respectively. The number of operating factories has also increased to 505 from 504 as of last year's corresponding date.

To prevent uncontrolled export of sugar and to ensure sufficient availability of sugar for domestic consumption and at a reasonable price, the government has decided to allow export up to a certain limit w.e.f. November 01, 2022, till October 31, 2023.

Boost to Ethanol Production for Sustainable Development of Sector

By the Ethanol Blending Programme (EBP) duly launched by the government, Oil Marketing Companies (OMC) sell petrol blended with ethanol up to 10% at present and the government is targeting to double this quantity by 2024-25.

The sugar diversion towards ethanol production is estimated to be at a consecutive record high of 45 lakh tonnes in Sugar Season 2022-23 against 32 lakh tonnes in Sugar Season 2021-22 (y-o-y increase of 41%). By the Sugar Season 2024-25, the government is targeting to divert 60 lakh tonnes of excess sugar towards ethanol, 88% higher than the diversion made in Sugar Season 2021-22.

As of February 15, 2023, the actual diversion towards ethanol increased by 38% to 25.8 lakh tonnes from 18.7 lakh tonnes of the last corresponding period. The growing focus of the government along with sugar mills to divert excess sugarcane to ethanol will eventually help to utilize the surplus production which led to high inventories of sugar. This bodes well for sugar mills to improve liquidity and to help in making timely payments to the cane farmers. Moreover, higher ethanol prices for producers have been encouraging distilleries to divert more sugar towards ethanol. The distilleries are poised to see healthy business growth; due to higher ethanol prices derived from different sugarcane-based raw materials under the EBP programme for the Sugar Season 2022-23.

The price of ethanol derived from the C heavy molasses route is to be increased by around 6% to Rs. 49.41 per liter. The price of ethanol derived from B heavy molasses route and direct route (sugarcane juice/ sugar/sugar syrup) is to be increased by around 3% to Rs. 60.73 per liter and Rs. 65.61 per liter, respectively. This price hike was done to incentivize ethanol production as well as help the government keep a check on sugar production.

Furthermore, looking at the overall profitability of the sugar mills, the distillery segment contributes a comparatively higher profit margin than the sugar segment. Such remunerative prices to ethanol suppliers will help in early payment to cane farmers, and improve the liquidity of Sugar mills.

CONCLUSION

The diverse challenges and constraints faced by the sugarcane production and Indian sugar sector to fulfill the ever-increasing food, fuel, and energy demand require a paradigm shift in formulating and implementing suitable policies for the sustainable development of India's second largest agro-based industry. Presently the primary demand of sugarcane is for the production of sugar. Recently the National Bio fuel policy (2018) allowed production of ethanol directly from sugarcane and B Heavy Molasses. The diversion of sugarcane for ethanol production to cater the mandate of Ethanol blending policy will generate secondary demand of sugarcane in ethanol production. This will foster the interests of sugarcane farmers and sugar millers for sustainable development of the sector.

REFERENCES

1) Kansal, S. (1997): "Factors determining Indian Sugar Production and its comparative Advantage", www. agris.fao.org
2) Rao, M.V. (2014): "Problems of Indian Sugar Industry"; Indian Journal of Research, Volume 3
3) Ray, Amrita,G., Smita, M. (2012): "The Ethanol blending policy in India", Economic and Political Weekly", Volume 67
4) Jyothi, K.C. (2014): "Impact of Policy of Government on import and export of sugar from India", IOSR
5) A. Musheer and F.Rahman (2014): "Changing Paradigms in Regulating and Deregulating the sugar price mechanism in India", SAARANSH RKG Journal of Management, Volume 5
6) Baru, S. (2010): "The Political Economy of Indian Sugar : State Intervention and Structural Change"

Prabandhan Guru, ISSN : 2321-4295
Vol: XIV, Issue: 1, Jan-June 2023
RNI : UPENG / 2010 / 38376

USE OF KURT LEWIN'S PARTICIPATIVE LEADERSHIP STYLE WITH GANDHIAN STANDPOINT OF LEADERSHIP FOR THE BETTER MANAGEMENT OF RURAL INSTITUTIONS

Bhavin Gohil, Research Scholar- Ph.D.
E-mail: bhavingohil63@gmail.com
Dr. Lokesh Jain, Professor
E-mail: lokeshcsrm@yahoo.co.in

ABSTRACT

In the management of rural institutions, whenever the situation and necessity arise, the leader take the initiative as a part of directing by combining two or more leadership styles and directs all the people in the institution towards the goal of the institution by implementing it. Selection of the right leadership style at the right time in accordance with the managerial situation arising in rural organizations is the key to successful leadership. Thus, the choice of leadership style and its implementation is an integral part of leadership. Leadership is the process by which one person in a community directs others and influences their performance. According to Kurt Lewin's participative leadership style, before taking crucial decisions of the organization, managers consult with subordinates and take their suggestions. Making employees feel that they have contributed to the decision increases their productivity and progress. This leadership style overcomes the limitations of centralization of power and allows all people in the organization to participate in the decision-making and working process. Gandhiji's ideas on leadership are evident throughout his life and establish him as a unique leader. Different aspects of his leadership include management skills, organizational and restructuring skills, strategic skills, broad vision, understanding of capital-labor relations, communication skills etc.These Gandhian qualities of leadership can be used as a part of leadership for effective management of rural institutions in modern times. In this research paper a conceptual study has been done on how Kurt Lewin's participative leadership style can be integrated with Gandhian standpoint of leadership and how it can be used for the effective management of rural institutions.

Keywords : *Leadership, Participatory Leadership Style, Management of Rural Institutions.*

INTRODUCTION

India is a country with vast rural areas. There are various types of institutions working in rural areas which are doing great work in their respective fields, such as agriculture, arts and culture, education, animal husbandry, children and women opportunities and empowerment, sanitation, child development, health and family welfare, information and communication technology, micro, medium and small industries, craft industries, handicrafts, renewable energy sources, panchayati raj, rural development and poverty alleviation, skill development, education and technology, sports, tourism, etc. Leadership is an important function as part of management in every such organization. The success of the functioning of any organization depends on the leadership skills of the motivating leader. What style of leadership to follow in a rural organization is a thought-provoking question.

Different leadership styles are preferred according to time and situation in different organizations.

Different communities are present in the rural areas, such as the community of farmers, the community of Dalits, the community of a particular caste or religion, the community of herdsmen, the community of women, the community of people doing home industries, the community of the laboring class, etc. If rural organizations involve the people of thesecommunities in their decision-making process and operations according to their needs, then both the organization and the communities can reach the pinnacle of progress. Therefore, the present research paper has tried to cover the theoretical aspects of Kurt Lewin's Participatory Leadership Style with Gandhiji's leadership standpoint and what benefits can be gained by using it in rural organizations. The present research paper presents an approach on how a leader in a rural institution can do organizational work with people's participation.

In this research paper, what qualities are expected in a good leader working in a rural organization and what are the various factors of Gandhiji's leadership style are included. Gandhiji was an outstanding leader whose guidance, untiring efforts and noble leadership style made India achieve many outstanding achievements. These achievements include organizing people, independence of India through non-violent struggle, equal status of men and women, promotion and revival of rural industries, eradication of untouchability, etc. Gandhiji's influential personality has given such a precious gift to India and how can it be implemented in the management of rural institutions by truly understanding and analyzing the leadership style of the leader. A manager of any organization should implement Gandhiji's qualities of leadership, through which the leader can exert his right influence on his participants and create a friendly and sympathetic environment and lead towards the goals of increasing the productivity of the rural institution.

Objectives of the study:

1. To study Kurt Lewin's participatory leadership style.
2. To analyze Gandhian standpoints of leadership.
3. To integrate participatory leadership style with Gandhian leadership thoughts and to provide ideas about the use of it in the better management of rural institutions.

Methodology of the study:

This conceptual paper is based on secondary data collected from books, journals, internet, etc.

Scope of the study:

To provide an exemplary leadership style model as a part of directing for managers associated with rural organizations. This research paper focuses on integrating Kurt Lewin's participatory leadership style with Gandhiji's leadership ideas to make it useful for managers of rural organizations.

Main Body:

For any rural organization to function successfully, the manager has to enhance the capacity of an individual, group or community, so managers of a rural organization need to have an understanding of leadershipand he should be able to exercise leadership also. Selection of the right leadership style at the right time in accordance with the managerial situation arising in rural organizations, is the key to successful leadership.

The power of action and specialized knowledge in a leader becomes a role model for others in his community.So, when having to discuss with other communities or groups that person discusses as a representative of the community and also becomes a mediator in times of conflict. Thus, it serves to give direction to the community.One of the most important attributes for the success of any ruralinstitution is effective and dynamic leadership. It is defined as the activity of influencing people to voluntarily strive for collective objectives. How to use successful leadership in effective management of an organization is a tricky matter.

The quality and effectiveness of the work done by the leader depends on the type of working style of the leader. The management efficiency of rural institutions depends on the employees who plan and implement the decisions, so the manager needs to have leadership qualities. A manager should have leadership power to develop group spirit among the people of the community. Based on his speech, behavior and actions, an atmosphere of mutual trust can be created and ethical values and good relations can be established. Leadership functions include leading the people of the community towards the goals and objectives of the rural institution by establishing friendly relations, creating an atmosphere of trust, developing group spirit, etc.

According to George R. Terry, "Leadership is the activity of influencing people to strive willingly for mutual objectives."

Koontz and O'Donnell have defined leadership as, "The ability of a manager to induce subordinates to work with the confidence and zeal."

According to Chester Bernard, "Leadership is the quality of behaviour of the individuals whereby they guide people in their activities in an organized effort."

According to Livingston, "Leadership is the ability to awaken in others the desire to follow a common objective."

Important considerations for providing effective leadership:

1. Constant awareness among the people of the community about the objectives of the organization: The most important objective of leadership is to keep the people of the group constantly aware of the objectives of the organization. Organizational objectives should be ranked in order of priority. To achieve these goals, the leader must clarify and direct the use of available resources to the people of the group.

2. Importance of Group Strength : Organizational objectives can be achieved more quickly through group strength. Therefore the development of group spirit is important for leadership development. Achieving the objectives of an organization is more of a collective than an individual affair. Each person in the group needs to be convinced that their contribution is important to the achievement of the organization's goals.

3. Importance of every individual : Effective leadership is essential to sustain enthusiasm and productivity among the workers of arural institution. In order to increase the job satisfaction of each individual, they should be made participants in the decision-making process, their human needs should be recognized and their importance in the management system should be acknowledged.

4. Enthusiastic and Progressive Environment : In any organization there is interaction between employee-employee, employee-group or group-group. Leadership is very important to create a motivating and progressive environment by bringing about the right effects of this interplay.In the context of management of rural institutions, leadership is the art of getting the workers of the organization to do the work assigned to them satisfactorily. In order to lead successfully, a leader must have the ability to influence and motivate group members.Congruence in the values, attitudes and behaviors of the leader and his followers is necessary to achieve the set objectives of the group or organization.A combination of two things is essential for the success of leadership: 1. The leader develops and inspires group spirit among the people belonging to the group or organization, 2. The followers accept the leader as a leader and follow his orders and guidance.

Leadership Style:

The study of leadership styles has been popular since the 1930s. According to the studies of the time there were two types of leadership leaders: 1. task oriented and 2. employee oriented. These two types have since been expanded by scholars to become known as different leadership styles. 'The pattern of behavior that a leader

- Thinking strategically about the future based on the past and present of the organization
- Division of tasks and encouragement to perform tasks
- Disseminating various types of information to followers
- Coordinating at all levels of the group
- Analyzing organizational problems and finding solutions & implementing them
- Monitoring and evaluating program implementation
- Setting goals and formulating policies to achieve them
- Mediating differences between group members and bringing about an amicable resolution

Figure- 1: Various Functions of a Leader in a Rural Institution

- Motivation and guidance for total achievement
- Realistic approach
- Power to organize scattered ideas
- Loyalty to organization
- Ability to make logical sound decisions
- Intimacy towards people of all levels
- Strong self-confidence
- Physical and mental activity

Figure - 2: Qualities required for successful leadership in a rural institution

influences the people of the organization to achieve the goals of the organization is called leadership style.' Leadership style varies according to group and situation. The nature of the organizational environment, the personality of the leaders, the personality of the employees, the nature of the work, etc. factors affect the leadership style. Considering such factors, after studying them in depth, the leader can coordinate one or more leadership styles according to his organization and use them to achieve the goals of the organization.

In the management process of any rural institution, the cooperation of human beings is very essential for managers to achieve the pre-determined goals. Managers have to motivate people to succeed in their work. For that they have to be guided, that is concept of leadership. Thus, leadership is an important part of directing function of management. The attitude that managers adopt towards subordinates in a management system is known as leadership style.Leadership aligns an organization of people. Leadership inspires, motivates and energizes people. Leadership studies conducted by Kurt Lewin and his associates in Iowa University identified three styles of leadership viz. autocratic, democratic and laissez-faire style of leadership. The Other styles of leadership can be clubbed into these three styles in one way or the other.

'In the University of Iowa Lewin, Lippitt and white studied the impact of three leadership styles-autocratic, democratic and laissez-faire. This relates to the behaviour of the leaders in relation to their group. The results indicated that

1. group members preferred democratic over autocratic leaders
2. incidents of intra group hostility was higher in autocratic and laissez-faire groups
3. incidentally productivity was also higher in democratic group'

Participative Leadership Style:

In the participative leadership style, before taking various decisions of the organization by holding formal meetings or informal meetings, the managers discuss with the subordinates and take their suggestions. In this leadership style, the evils born out of absolute centralization of power can be remedied. This style increases employee satisfaction and their productivity. By feeling that employees have contributed to the decision, they believe in progress.

In this style of leadership, the opinion of employees and group members are consulted before making decisions in the decision-making process of the organization. The leader himself, subordinates, employees and all members of the group are made participants in the decision-making process. So this leadership style is also known as participative style of leadership. A proper decision is taken after the consent of all the members. This leadership style is suitable for employees who perform non-repetitive tasks. This style works to improve employee morale. In rural institution's operations, participative leadership style is more suitable when teamwork skills are more important, organization objectives are classified among members, responsibility for carrying out work is shared and work involves occasional potential risks.This leadership style is useful when group members want to have some control over the working methods used in the organization and the leader has limited power and authority and restrictions on its use.

Benefits of participative leadership style:

1. Employees get an opportunity to develop leadership skills.
2. In this style the corruption of centralization of power can be avoided.
3. Employee productivity and satisfaction increases due to participation in the decision-making process.
4. Implementation of this leadership style increases discipline, passion, trust, cooperation and loyalty among employees.
5. Increases individual progress of employees and collective progress of the organization.
6. Through the implementation of this leadership style, the potential of the people in the community can be harnessed and their creativity enhanced.

There are many types of leadership styles that are found in business, politics and other fields. Leadership style involves the leader directing people, implementing plans and motivating people to achieve the set goals of the organization.

Gandhian standpoint of leadership:

Gandhiji's ideology has been called rustic by some people. He is considered by many to be an extreme idealist, but in reality, his ideology is multi-dimensional, visionary, divine, lofty and even today practical.

1. Love and truth instead of hatred and fear:

Love and truth were the main ingredients of Gandhiji's leadership. The path of non-violence is ensured through love and the path of justice through truth. Only the law of love can rule the human race. So, while leading a rural institution, love is an essential quality to get people to act in accordance with the goals of the organization, through which hatred can be overcome. The work done by fearing the people through power gives short-term results, instead it will be better if they are made to participate in the work of the rural institution through love. Thus, here Gandhiji's ideas are integrated with Kurt Lewin's participatory leadership style rather than authoritative leadership style. Gandhiji said, "The world stands on the foundation of truth, so it can never be destroyed. In short, this is the principle of Satyagraha."Now, we can understand that if the world can survive on truth, then why cannot an organization of truthful leaders and participants? Where there is truth there is justice and only through it, peace is achieved. According to Gandhi, "The aim of all non-violent movements is always mutual understanding, never to belittle or defeat the other and never to humiliate the opponent." This advanced idea of Gandhiji is the best and non-violent way of solving any conflict or difficulty in the communities of a rural institution and when there is no mutual hatred or conflict all the members will be able to work towards the basic objectives of the organization.

2. Training for civil disobedience:

An important aspect of leadership is training how to civil disobedience when members of the organization do not agree with a decision taken by the management of the organization. By doing this, instead of creating friction within the organization, it provides a proper way to move forward towards the goals of the organization.

Gandhiji established an ashram in the village of Kochrab in Gujarat to establish a strong base for working closely with the farmers of rural India. After some time, this ashram was shifted to Sabarmati village near Ahmedabad. Both these ashrams became training centers for communal living and non-violence, like his South African 'Phoenix Ashram' and 'Tolstoy Farm'. According to him, "Training is as essential to civil disobedience as to military mutiny."

Thus, teaching the members of the organization to practice civil disobedience rather than soldiering and rebellion rather than non-violence is an important quality of Gandhi's leadership, which does not allow the organization and its participants to deviate from the goal.

3. Engaging people with a charismatic personality:

Leadership is the advanced art of a leader influencing followers through his thoughts, speech and behavior to make them participate in his work, as exemplified by Gandhiji. Gandhiji engaged leaders from different fields like Mahadevbhai Desai, Vinoba Bhave, J. B. Kripalani, Jawaharlal Nehru, Motilal Nehru, Jayaprakash Narayan, Vallabhbhai Patel etc. Each of these were individuals who were able to make a successful career in their own professional field.It was a great achievement of Gandhiji to associate with him such influential persons living in India and abroad and it was a testament to his charismatic personality. Thus, managers can learn from Gandhiji the unique art of engaging people in their work through leadership style. This can be equated with Kurt Lewin's participatory leadership style.

Gandhiji's characters had a surprising impact on these followers. Following Gandhiji's practice, they changed their entire luxurious lifestyle from water-based, exotic to indigenous and modern to traditional. Instead of a luxurious life, he adopted a simple life. For the successful management of a rural institution a leader should have a unique and charismatic personality, which can leave a great impression on his participants and group members. By doing so, the goals of the organization and its members are aligned and productivity increased.

4. Decentralization of leadership:

From 1915 to 1925 the Congress was transformed from an urban disputation organization to a disciplined and mass-organized organization. Champaran, Kheda and Bardoli satyagrahas are the main reasons for this change. Congress came to be led by leaders from every part of the country, including small towns. The goal of all leaders was the same, the goals of the leader and the followers were not different - to achieve self-rule, not domination. Gandhiji became the undisputed king of the Congress, gaining the full support of the masses and immense popularity. Here we can understand that Gandhiji made the Satyagraha successful by decentralizing the leadership and giving every common man a chance to lead. This fits with Kurt Lewin's participatory leadership style, and avoids the evils of centralization of power. Rural Institutions should take the opinion of all the members and involve them in the decision-making process in order to act according to their plans and achieve the goals.

5. Equitable treatment of all members of the community:

The true test of leadership in a community is that all members of the community have an equal opportunity to voice opinions, act and enjoy the benefits of the work. Along with the progress of the rural institution, the mass of the organization should also progress, it should not be deprived of such benefits. Thus, the leader of the community should treat all members equally and should take decisions and perform his/her work in keeping with the common interest of all.

Gandhiji asserted, "I will work for an India in which even the poorest man feels that this is his own country, in the making of which his own opinion has had a full influence." Thus, the fact that Gandhiji asked for the opinion of the people in the building of the country shows how he wanted the participation of all people in the decision-making process. Gandhiji's attitude towards leadership is what supports the participatory leadership style. He always looked out for the downtrodden and the weak, sympathized with them, dressed like them and sympathized with them. The manager of a rural institution should implement such virtues of Gandhiji's successful leadership in his life so as to create a sympathetic and friendly atmosphere in the organization and ultimately increase the productivity of the organization.

6. Value of dedication to the organization:

As part of the management of any rural institution, the leader must have a sense of dedication to the organization for the unity and integrity of the organization. Because, his talent has a direct impact on other members of the organization. Only if a leader is committed to the organization's goals can he influence community members to do the same. Gandhiji's insistence towards the unity and integrity of India is the proof of Gandhiji's spirit of dedication. He was also offered the post of Prime Minister, which he rejected. Thus, he proved that no position is important for leadership but dedication to the task at hand is essential. Only if the leader himself has the spirit of self-sacrifice can he lead his fellow members in the same way, this is what distinguishes Gandhiji from other leadership thinkers. James K. Mathews praises Gandhiji's determination, saying, "Much of the real credit for his successful leadership lay in his persistence of purpose, repeating it often, so that it was always clear to himself and his associates." Thus, keeping one's associates alert to the goals of the organization was also an important part of Gandhiji's leadership style, which provides a unique guide for managers today.

7. Effective and Proficient Communication Skills:

A leader in any organization must have effective and proficient communication skills. A leader must have the skills to properly and periodically inform his associates about his plans and strategies for achieving the goals of the organization. Gandhiji's system of communication served to bring India's freedom struggle from the urban community to the masses in which millions of Indians participated celebratorily. Thus, when a leader communicates effectively with his participants, their motivation increases and progress towards the organization's goals becomes easier and faster.

Gandhi used different methods or tools for communication including letters, newspapers, books, satyagraha, padayatra, fasting and prayer meetings. Communicating with members of your organization becomes a direct means of involving people in the organization. The manager of the organization also needs to develop his communication skills to direct the people in his group so as to motivate and inspire the people to work and increase the productivity and progress of the organization.

8. Incorporation of Key Elements of Management:

Gandhiji's work throughout his life includes the key elements of management such as transparency, orderly and humane proposition and adoption of ethical ways to achieve desired goals. This is reflected in Gandhiji's satyagrahas, meetings, hunger strikes and agreements made with political opponents and the British government. According to Gandhiji, "people cannot be organized in any other way except transparency and truth." A leader should be transparent in his performance and should also be truthful so that he can win the trust of his participants and get their participation for a long time. Thus, transparency and truthfulness in operations are two qualities a manager should have which increases his power to organize people.

Gandhiji had very broad ideas in his mind when he was trying to solve the local issues, like India's freedom should come not only from the British Empire but also from all the sufferings of filth, unhappiness, unemployment, poverty, malnutrition, etc. These issues of Gandhi are directly related to the economic condition of the country. Until a satisfactory solution to these issues is found, true independence cannot be said to have arrived. An important characteristic that a high-quality manager should have his broad and realistic vision. Gandhiji managed to inspire and motivate people by being very close to the masses, this became a hallmark of his leadership. He succeeded in making people believe that India's 35 crore people could not be ruled by only 1 lakh Britishers and thereby all Indians - men, women, rich, poor, educated, uneducated, urban, rural, high and low caste and even Harijans. became an important contributor to India's independence. Gandhiji made everyone participate in his work, this is a characteristic of participatory leadership style. Under Gandhiji's leadership, people became united in achieving a single goal. Gandhiji brought people of different castes, religions, cultural and social views together to achieve a set objective, which can be considered as his greatest achievement as India is a very diverse country with many different types of people in terms of language, religion, habitation and ideology.Gandhiji's management acumen was effective in training masses, planning, fundraising, financial management, leadership, etc., which are important qualities a successful manager should possess.

Morality is a very essential quality in any rural institution that should be possessed by the leader and its participants. All the efforts made by Gandhiji for the freedom of India were non-violent in thought, speech and behavior and were done on the basis of truth and justice. Credible and excellent leadership requires ethical decision-making in line with appropriate work. To choose the right option from the available options, leaders must have a deep understanding of the lives of the world's great moral philosophers. And it is very important to have a usage model for it.

Conclusions and suggestions:

Using Kurt Lewin's participatory leadership style along with Gandhiji's standpoint on leadership can make an important contribution to effective management by removing the shortcomings or difficulties in rural institution leadership. Participatory leadership style is more suitable and efficient in leadership of rural organizations than other leadership styles. Gandhiji saw and lived the rural life very closely, so his ideas on leadership are definitely adapted to the rural folk life. Gandhiji's views on leadership continue to be a source of inspiration for successful leadership for the rural people. This research paper will add one more leadership style combination to the available leadership style combination, which will be useful in the management of rural organizations. Its use will be a support in the economic, social, educational and cultural development of the rural institution and the people associated with it. When competent institutions with successful leadership are functioning in the villages, the pace of sustainable development of the village will also increase.

REFERENCES

1. Adhvaryu, T., Kureshi, B. (2020). Samajik Juthkary. Dr. Babasaheb Ambedkar Open University, Ahmedabad.
2. Ariyarante, A. T. (1984). Religious Path to Peace and Building a Just World. Sarvodaya Prakashan, Colombo.
3. Axelrod, A. (2010). Gandhi CEO: 14 Principles to Guide & Inspire Modern Leaders. Sterling Publishers, London.
4. Baldoni, J. (2008). Lead by Example: 50 Ways Great Leaders Inspire Results. Amacom, New York.
5. Brahmbhatt, S., Saini, N., Patel, M. (2020). Samudayik Sangathan Kary. Dr. Babasaheb Ambedkar Open University, Ahmedabad.
6. Chopra, D. (2005). Peace is the Way: Bringing War and Violence to an End. Random House, Gurgaon.
7. Gandhi, M. K. (1909). Hind Swaraj or Indian Home Rule. Navjivan Publishing House, Ahmedabad.
8. Gandhi, M. K. (1947). India of My Dreams. Navjivan Mudranalaya, Ahmedabad.
9. Gandhi, M. K. (1962). Village Swaraj, Navjivan Publishing House, Ahmedabad.
10. Gandhi, M. K. (1968). An Autobiography or The Story of My Experiments with Truth. Navjivan Publishing House, Ahmedabad.
11. Joshi, D. (2002). Gandhiji on Villages. Mani Bhavan Gandhi Sangrahalaya, Mumbai.
12. Kumarappa, J. C. (1997). Economy of Permanece. Sarva Seva Sangh Prakashan, Varanasi.
13. Merchant, V. (1969). Gandhiji on Trusteeship Management. An Autobiography of Gandhiji's Thoughts on Trusteeship Management with an Experiment on the Concept. Indian Centre for Encouraging Excellence, Court Chambers, Bombay.
14. Mistry, D., Chudasama, M. (2020). Sanchalan na Sidhhanto, Dr. Babasaheb Ambedkar Open University, Ahmedabad.
15. Nazareth, P. A. (2010). Gandhi's Outstanding Leadership. Sarvodaya International Trust, Bangalore.
16. Prasanna Kumar, W. G., Rekha, K. N. & Anasuya, V. (2019). Rural Management Principles and Practices. Mahatma Gandhi National Council of Rural Education (MGNCRE), Hyderabad.
17. Prasanna Kumar, W. G., Rekha, K. N. (2020). Rural Management, Rural Society and Polity, Mahatma Gandhi National Council of Rural Education (MGNCRE), Hyderabad.
18. Pratap, R. (2009). Gandhian Management, The Paragon of Higher Order Management, Jaico Publishing House, Mumbai.
19. Ruskin, J. (1905). Unto This Last. George Allen, London.
20. Thomas, W. (1997). Conflict Resolution & Gandhian Ethics. Gandhi Peace Foundation, New Delhi.

https://www.leadershipsuccess.co
https://leadershipandperformance.com
https://www.forbes.com
https://ukessays.com
https://youthforhumanrights.org
https://www.scribd.com
https://www.fao.org
https://mgncre.org
http://egyankosh.ac.in
http://www.mkgandhi.org
http://wikipedia.org
http://nirdp.org.in
http://shodhganga.inflibnet.ac.in
http://gandhigram.org
http://www.gandhiashramsabarmati.org

Prabandhan Guru, ISSN : 2321-4295
Vol: XIV, Issue: 1, Jan-June 2023
RNI : UPENG / 2010 / 38376

अहिंसक सम्पोषीय जीवन शैली के शिक्षण – प्रशिक्षण की उर्वरा प्रयोग भूमि गुजराज विद्यापीठ : एक वैयक्तिक अध्ययन

डॉ० लोकेश जैन
प्रोफेसर–ग्रामीण प्रबंध अध्ययन केन्द्र, गुजरात विद्यापीठ, अहमदाबाद, गुजरात
डॉ० देवेन्द्र नाथ दास
सहायक निर्देशक (रिसर्च एण्ड नेटवर्किंग) महात्मा गांधी राष्ट्रीय ग्रामीण शिक्षा परिषद (MGNCRE)] MOE, GOI, हैदराबाद।

सारांश

गूजरात विद्यापीठ राष्ट्र निर्माण की उस संस्था के रूप में जानी जाती है जिसकी स्थापना पूज्य महात्मा गांधीजी द्वारा 1920 में सच्चे स्वराज को लाने के लिए शिक्षण–प्रशिक्षण की व्यवस्था हेतु की गई थी। संस्थान के 1963 से मानद विश्वविद्यालय का दर्जा मिलने के पश्चात उच्चशिक्षण के औपचारिक क्षेत्र में भी लीक से हटकर संपोषित जीवनशैली को प्रोत्साहन देने हेतु विविधलक्षी प्रयोग किए गए जो स्वाबलंबन व सह–अस्तित्व की अटूट कड़ी हैं।
आज जब शिक्षा का मकसद मात्र ऊंचे पेकेज वाली नौकरी प्राप्त करना तथा श्रम रहित व्हाइट कलर जॉब प्राप्त करना बन रहा हो ऐसे उच्चशिक्षण जगत के वातावरण घारा प्रवाह के लगभग विपरीत रहते हुए गांधीजी समाजोत्थानमुखी विचारों के केन्द्र में रखकर गूजरात विद्यापीठ के विभिन्न पाठ्यक्रमों से जुड़े विद्यार्थी अपने सैद्धांतिक ज्ञान को सम्पोषित जीवनशैली के व्यावहारिक पटल से जोड़कर सीखने का अभिनव प्रयास कर रहे हैं। यहाँ बुनियादी तालीम आधारित शिक्षण व्यवस्था में जो प्रयोग वे कर रहे हैं उसका उनके स्वयं के विकास तथा समाज व प्रकृति के साथ अनुबंध पर क्या प्रभाव पड़ रहा है इसे समझने तथा समाज के समक्ष रखने का प्रयास इस वैयक्तिक अध्ययन के माध यम से किया जा रहा है जो शिक्षण जगत व समाज को अभिप्रेरित करते हुए एक नई दिशा प्रदान कर सकेगा जिसमें सह–अस्तित्व व सम्पोषित विकसलक्षी जीवनशैली को पोषण मिलता हो।

कुंजी शब्द - अहिंसक जीवनशैली, सम्पोषित विकास, गांधीविचार एवं बनियादी तालीम, रचनात्मक कार्य व संयममय उत्पादकीय व उपभोग व्यवहार

परिचय

1. गूजरात विद्यापीठ एवं अहिंसक सम्पोषीय जीवनशैली के शिक्षण – प्रशिक्षणःसामान्य परिचय

गूजरात विद्यापीठ की स्थापना राष्ट्रपिता महात्मा गांधीजी द्वारा 2 अक्टूबर, 1920 को अहमदाबाद में की गई। इसकी स्थापना के समय गांधीजी ने कहा था मैंने अपने जीवन में अनेकों कार्य किए हैं जिसमें से कई कार्यों के लिए पश्चाप हुआ है किन्तु कि यह वणिक पुत्र के द्वारा किया गया वह सर्वोत्तम कार्य है जिसके लिए उन्हें गर्व है। विद्यापीठ की स्थापना का उद्देश्य वास्तविक आजादी (सच्चे स्वराज) के लिए ऐसे कार्यकर्ताओं को शिक्षिति–प्रशिक्षित कर राष्ट्रनिर्माण हेतु गांवों को समर्पित करना था जो गांवों में जाकर वहाँ लोगों के साथ रहकर बुनियादी तालीम के अभिगम को आकार दे सकें, उनमें जागृति, श्रम निष्ठा, अभय, स्वदेशी व स्वाबलंबन की भावना को साकार कर सकें ताकि दासता की स्थापित व्यवस्था से बाहर निकलकर अन्याय का अहिंसक किन्तु सुदृढ़ प्रतिकार करने में स्वयं को समर्थ व सक्षम सिद्ध कर सकें तथा लोग दृढ़ मनोबल के साथ सत्य – अहिंसामय जीवनयापन का आत्मविश्वास स्वयं में पैदा कर सकें।

उच्च शिक्षण की इस प्रयोगभूमि पर जीवनोपयोगी शिक्षण की सच्ची सोच रखने वाले कई विद्वान– काका कालेलकर, जे.बी.कृपालानी, आचार्य गिदवानी आदि गांध ीजी के कुशल नेतृत्व में पूरी ऊष्मा के साथ इस राष्ट्रीय यज्ञ को आगे बढ़ाने में लगे। मेकाले की शिक्षण पद्धति

के विरूद्ध यह बुनियादी तालीम सभ्य समाज का ढांचा बड़ी ही सिद्दत के साथ तैयार कर रही थी । गांव स्वच्छ, स्वस्थ, स्वाबलंबी बने, सामाजिक सौहार्द बढ़े, पारस्परिक प्रेम व शांति, अमन–चौन कायम हो, धार्मिक सहष्णुता बने, समाज व्यसन मुक्त होकर दूषण रहित होकर एकजुट हो तो उन्हें कोई शक्ति गुलाम बनाकर नहीं रख सकती। गांधीजी ने अहिंसक जीवनशैली के मार्ग को अपनाने की दिशा में समाज को शिक्षित–प्रशिक्षित करने की पुरजोर वकालत की जिसमें सम्पोषित शब्द का उपयोग किए बिना व्यक्ति, समाज व समष्टि के समन्वित हितों की हिमायत निहित थी। संपोषित जीवन शैली का शिक्षण स्वस्थ व रचनात्मक समाज के निर्माण के लिए न सिर्फ अनिवार्य है अपितु सह–अस्तित्व का एक मात्र विकल्प है जिसकी ओर सभी ओर से निराश हो चुका यह भौतिकतावादी विश्व बड़ी आशा के साथ निहार रहा है क्योंकि इसमें सर्वोदय की सुवास है, सभी के अस्तित्व के संरक्षण (सह – अस्तित्व) की गारंटी और वास्तविक जीवन का आधार निहित है।

आजादी के पूर्व का यह परिवेश देशप्रेम की एक अलग भावना के साथ गूजरात विद्यापीठ की धरा पर पुष्पित पल्लवित हुआ किन्तु आजादी के पश्चात पूर्व राष्ट्रपति डॉ. राजेन्द्र प्रसाद, स्वतंत्र अखंड भारत के शिल्पी सरदार वल्लभभाई पटेल तथा पूर्व प्रधानमंत्री मोरारजी भाई देसाई जैसे व्यक्तित्वों का विद्यापीठ को नेतृत्व एवं मार्गदर्शन मिला। कुलनायक व कुलपति के रूप में मोरारजीभाई का सानिध्य सबसे अधिक (1948 से 1995 मृत्यु पर्यंत) मिला। 1963 में जब गूजरात विद्यापीठ को मानद विश्वविद्यालय का स्वतंत्र व विशिष्ट दर्जा मिला तब से औपचारिक आधुनिक उच्च शिक्षण प्रवाह के साथ ही नूतन स्वरूप में भी मूल्यआधारित समाजोपयोगी तालीम विद्यार्थियों को गांधीजी की इस तपोभूमि पर मिलने लगी। यहाँ छात्रावास अर्थात् निवासी शिक्षण व्यवस्था जीवन निर्माण की जीवंत प्रयोगशाला बनी जहाँ विद्यार्थी समूह में रहने की सहिष्णुता, प्रेम दया के साथ साथ श्रम साधना व जीवनोपयोगी विविध कौशल्यों का साक्षात्कार करने लगा। इस आधुनिक विद्यापीठ को सुशीला नैयर, रविन्द्र वर्मा आदि का ऊर्जामय नेतृत्व मिला। 21वी सदी 2000 के दशक में गांधीजी के सचिव महादेवभाई देसाई के पुत्र नारायणभाई देसाई (गांधी कथाकार) के नेतृत्व में विद्यार्थी ही नहीं अपितु अध्यापक (सेवक) भी इस विभावना से उनके मार्गदर्शन में ओतप्रोत हुए। सेवा संस्था की संस्थापक एवं गूजरात विद्यापीठ की कुलपति ने भी अपने कार्यों व चिंतन के द्वारा स्वाबलंबन के प्रयोगों के आदर्श विद्यार्थी व समुदाय के समक्ष रखकर प्रेरणास्पद वातावरण का निर्माण किया। उनके मार्गदर्शन में सर्वोदय व ग्रामोत्थान के कार्य को आज के युवाओं के माध्यम से आगे ले जाने के लिए विद्यापीठ नेतृत्व ने कई महत्वपूर्ण परियोजनाओं को आकार दिया ताकि युवा गांधी विचार को समझ कर समाज के साथ आगे बढ़ सकें। इन्हीं की उपादेयता का विश्लेषण गूजरात विद्यापीठ की शिक्षण–प्रशिक्षण व्यवस्था के संदर्भ में प्रासंगिक हो जाता है।

2. अहिंसक जीवन शिक्षण की दिशा में उच्चशिक्षण के क्षेत्र में बुनियादी तालीम की सैद्धांतिक पृष्ठभूमिः अभिगम आधारित समझ

ान्य रूप से गांधीजी की नई तालीम या बुनियादी शिक्षण एवं वर्धा शिक्षण प्रयोगों का संबंध प्राथमिक व स्कूली शिक्षण से जोड़कर देखा जाता है जहाँ शिक्षार्थी की जड़ों का सिंचन इस प्रकार किया जाता है कि वह स्वयं के साथ साथ समाज व प्रकृति के लिए उपयोगी बन सके। इस दृष्टि से गांधीजी का शिक्षण दर्शन 3 एच को साथ लेकर चलता है जिसमें पहला एच अर्थात् हेड जो बौद्धिक व तार्किक क्षमता का विकास, नीर–क्षीर का विवेक, जागृति व चेतना से संबंध रखता है, दूसरा एच अर्थात् हेड जो शिक्षा फलित ज्ञान को शारीरिक श्रम व जीवनोपयोगी कुशलताओं को समन्वित करता है और उसे शिक्षण व्यवस्था के अभिन्न अंग के रूप में समन्वित करते हुए चलता है तथा तीसरा एच– हर्ट जिसे इस अभिगम का केन्द्र बिन्दु माना जा सकता है वह है– मानवीय संवेदना, नैतिक मूल्यों के साथ शिक्षा द्वारा प्राप्त ज्ञान का प्रयोग व उपयोग है। इस प्रकार की शिक्षा जीवन निर्वाह अथवा आजीविका के लिए तैयार तो करती है किन्तु उसमें आर्थिक मूल्यों की अपेक्षा नैतिक मूल्यों की प्रधानता देती है। यह शिक्षा लोगों को सम्पोषीय आजीविका एवं उपभोग व्यवहार के लिए तैयार करती है। गांधीजी अपनी कृति हिन्द स्वराज में इस तरह के शिक्षण से प्रेरित समाज व्यवस्था को सभ्यता के प्रतिमान के रूप में परिलक्षित करते हैं। बुनियादी तालीम गांधीजी के ग्राम स्वराज, सच्चा स्वराज व राष्ट्र निर्माण की धुरी है जिसमें बिना किसी विरोधाभास के सभी का हित संरक्षण का चक्र अनवरत चलता रहता है।

गांधीजी ने शिक्षण के संदर्भ में जो विचार व्यक्त किए हैं उसकी बुनियाद सीखने पर टिकी है याद करने

पर नहीं। कार्य करते हुए सीखना इसकी मुख्य पद्धति है ताकि ज्ञान किताबी जानकारी के रूप में यह महज भार बन कर न रह जाय अपितु वह ज्ञान जीवन की सच्चाइयों व जरूरतों से साक्षात्कार करने की सक्षमता प्राप्त करे। गूजरात विद्यापीठ उच्चशिक्षण के क्षेत्र में कतिपय देश का पहला संस्थान कहा जा सकता है जिसकी स्थापना पूज्य बापू के द्वारा हुई हो और उसके उच्चशिक्षण से जुड़े विद्यार्थी भी बुनियादी तालीम के सिद्धांतों को प्रयोगधर्मिता के साथ आत्मसात करने के लिए कटिबद्धता प्रदर्शित करते हों। सैद्धांतिक पृष्ठभूमि में बुनियादी तालीम निम्न लिखित घटकों को साथ लेकर चलती है जिनकी संक्षिप्त समझ इस प्रकार है–

– स्वाबलंबन, रचनात्मकता एवं लोक आवश्यकताओं की संतुष्टि

बुनियादी तालीम का संभवत : पहला घटक माना जा सकता है कि व्यक्ति शिक्षित होकर स्थानीय स्वाबलंबन व्यवस्थी की एक मजबूत कड़ी बने। गांधीजी कहते हैं कि व्यक्ति को अपनी समस्त हाजतो को पूरा करने के कौशल्य व सामर्थ्य को शिक्षण–प्रशिक्षण के द्वारा विकसित करना चाहिए और उन जरूरतों को पूरा करने का अभिलाषी नहीं बनना चाहिए जिसका उत्पादन या निर्माण वे न कर सकते हों। इन समस्त उत्पादकीय कार्यों में रचनात्मकता का पुट आवश्यक है अर्थात् ये समस्त कार्य पुरुषार्थ व उद्यमिता सृजन का आधार बने, किसी के (व्यक्ति, समाज व समष्टि) के विनाश का कारण नहीं। इस दृष्टि से इनमें लोक आवश्यकताओं का घटक अनिवार्य है। आजीविका निर्वाह लोगों की जरूरतों की संतुष्टि के माध्यम से हो, लोगों के मध्य बिन जरूरी जरूरतें खड़ी करके नहीं। इनसे भले ही अधिक आर्थिक लाभ हो सकता हो किन्तु जब इससे पर्यावरण एवं व्यावसायिक नौतिकता का ह्रास होता हो तो इस तरह का शिक्षण–प्रशिक्षण लोक–कल्याणकारी स्वाबलंबन का प्रतिनिधित्व नहीं कर सकता। इन जरूरतों की संतुष्टि में परस्परालंबन, प्रेम व स्वदेशी धर्म की भावना का अस्तित्व अनिवार्य है किन्तु स्वाबलंन के पटल पर किसी भी रूप में बाहरी पक्षों के प्रति द्वेष अथवा द्वेषवश वस्तु व सेवाओं के सृजन की हठी मानसिकता योग्य नहीं है। गांधीजी स्पष्ट करते हैं कि जिन वस्तुओं का उपयोग हमारे लिए अपरिहार्य है किन्तु जब हम उसे बना नहीं सकते हों तो स्वाबलंबन के नाम पर द्वेषवश उसे बनाने की विकृत कोशिश नहीं करनी चाहिए।

– समरसतापूर्ण समाज रचना

बुनियादी शिक्षण– प्रशिक्षण का ध्येय आजीविका के साथ समाज के साथ घुलमिलकर सौहार्दपूर्ण तरीके से रहना सिखाना है। वे कहते हैं कि हमें दूसरों के साथ वह व्यवहार कदापि नहीं करना चाहिए जिसे हम अपने लिए पसंद नहीं करते हों। इस शिक्षण का दूसरा पक्ष अश्पृश्यता निवारण एवं सामाजिक सहिष्णुता व सहृदयता का विकास करना है ताकि शिक्षित वर्ग समरस समाज निर्माण के लिए पहल करे। शिक्षा यही सिखाती है कि हम एक दूसरे की भावना को समझे तथा उनकी आस्था, श्रद्धा व धार्मिक विश्वासों का सम्मान करें, हिलमिलकर रहें जिससे समाज में अमन–चौन कायम हो क्योंकि शांति में ही समृद्धि व सच्ची खुशी निहित है। सच ही कहा है कि प्रेम व अपनापन हर एक असाध्य रोग की अकसीर दवा है इससे सामाजिक विकृतियों के केंसर पर भी विजय पायी जा सकती है।

– संयममय जीवन का शिक्षण

बुनियादी तालीम का यह एक अभिनव पहलू है। यह तालीम हमें इस तरह जीना सिखाती है कि हम उपलब्ध साधन संसाधनों का उपयोग इस प्रकार करना सीखें कि वे सभी को समान रूप से सुलभ हो सके और इनके उपयोग से प्रकृति एवं भावी पीढ़ी के हितों को नुकसान न पहुँचे। गांधीजी कहते हैं कि जीवन का आदर्श, सुख और खुशी भोगवादी, भौतिकवादी संस्कृति प्रेरित जीवन यापन में नहीं अपितु भारतीय लोक कल्याणकारी संस्कृति प्रेरित संयममय जीवन यापन के शिक्षण में है। गांधीजी का बहुत ही चर्चित कथन सभ्य समाज की स्थापना के चाहकों के लिए प्रेरणास्पद है कि हम प्रकृति से उतना ही ले जितनी हमारी मूलभूत आवश्यकता है ताकि प्रकृति के अवयवों का अतिरेक शोषण किए वगर दूसरों को भी अपनी जरूरतों की संतुष्टि हेतु उतना अवश्य मिल सके। वे कहते हैं कि "कुदरत के पास सभी की जरूरतों को संतुष्ट करन के लिए पर्याप्त है किन्तु किसी एक के लालच के लिए नहीं।" संयममय जीवनशैली व्यक्ति के शारीरिक – मानसिक स्वास्थ की दृष्टि से सभी के लिए लाभदायक है और नैतिक मूल्यों की कसौटी पर भी खरी उतरती है। संयममय जीवनशैली व्यक्ति के मनो–सामाजिक संतुलन भी मजबूत बनती है, सकारात्मकता व संवेदना को जीवंत बनाती है जिसमें शांतिपूर्ण अहिंसक समाज रचना का निर्माण सुनिश्चित होता है।

डॉ0 लोकेश जैन
डॉ0 देवेन्द्र नाथ दास

– जीवन यापन के विविध क्षेत्रों में लोकतांत्रिक मूल्यों का बुनियादी शिक्षण–प्रशिक्षण

बुनियादी तालीम लोकतांत्रिक मूल्यों के साथ जीना सिखाती है चाहे वह राजनैतिक क्षेत्र हो या आर्थिक क्षेत्र अथवा सामाजिक–सांस्कृतिक भागीदारी का क्षेत्र। इसके चलते सभी को स्व एवं सामूहिक विकास की प्रक्रिया में भागीदारी तथा आगेवानी (नेतृत्व) करने का समान अवसर प्राप्त होता है, जीवन यापन के विविध क्षेत्रों में नेतृत्व एवं संचालकीय क्षमता का विकास होता है तथा सामुदायिक विकास की दिशा में सभी की समन्वित कुशलताओं के उपयोग की संभावनाओं में वृद्धि होती है।

– विकेन्द्रित व्यवस्था का प्रशिक्षण

सम्पोषित जीवनशैलीलक्षी बुनियादी तालीम व्यवस्था ''स्मॉल इज ब्यूटी'' के सिद्धांत का अनुसरण करते हुए विकन्द्रीकरण की अवधारणा का पोषण करती है फिर चाहे वह राजनैतिक सत्ता का विकेन्द्रीकरण हो या आर्थिक व्यवहारों का। सुशासन हेतु गांधीजी स्व–शासन की व्यवस्था का समर्थन करते हैं और इस दिशा में ग्राम पंचायत या पंचायतीराज व्यवस्था के अस्तित्व को अपरिहार्य मानते हैं। इसी प्रकार आर्थिक क्षेत्र में कमजोर वर्गों के शोषण से रक्षण की शक्ति विकसित करने के लिए वे ''सहकारिता'' के तंत्र की वकालत करते हैं जिसका निर्माण व संचालन विकेन्द्रीकरण की आत्मा को साथ रखकर किया जाता है, जिसमें कमजोर वर्ग एकत्र होकर संगठित होकर सामूहिक व वैयक्तिक ध्येय सिद्धि के संगठन की समन्वित शक्ति को विकसित कर चुनौतियों को सफलता व सहजता से पार करते हुए संपोषित जीवन यापन की ओर अग्रसर होते हैं।

इस दिशा में गांधीजी का स्वाबलंबन व स्वराज का चिंतन आगे बढ़ते हुए ग्रामोद्योगों, लधु एवं कुटीर उद्योगों को प्रोत्साहित करता है। इसमें मूल्य–वृद्धि हेतु उन मुख्य आदानों पर ध्यान केन्द्रित किया जाता है जो स्थानीय स्तर पर उपलब्ध होते हैं। विकेन्द्रित अर्थव्यवस्था के तहत महत्तम स्थानीय लोगों को आजीविका का आध ार मिलता है, पूँजी तथा उत्पादन के जरूरी साध न–संसाधनों का स्वामित्व या उपयोग का अधिकार कुछ शक्ति व सत्ता सम्पन्न हाथों में सिमट कर नहीं रह जाता। केन्द्रीयकरण की वृत्ति हमारे समाज को केंसर की तरह अंतर से खोखला कर डालती है और बहुदा इसकी भनक तब लगती है जब हम महा विनाश के कगार पर लगभग पहुँच चुके होते हैं। आज जलवायु परिवर्तन इसी की एक परिणति है, जहाँ जीवन पर ही बन आई है और काफी कुछ हमारे नियंत्रण से बाहर हो चुका है।

गांधीजी के अनुयायी संत विनोबा भावे ''लफंगा पैसे के अनर्थकारण'' में लिखते हैं कि पैसे का अतिरेक समाज में कई तरह के दूषण व व्यसनों की भरमार लेकर आता है। सामाजिक विघटन, अराजक तत्त्वों का बोलबाला, नैतिक मूल्यों का ह्रास, अर्थ की प्रधानता, अनियंत्रित सामाजिक–आर्थिक–शारीरिक मानसिक शोषणआदि अनेक बुराइयां सत्ता शक्ति और अर्थ के केन्द्रीकरण का प्रत्यक्ष–परोक्ष परिणाम है। औद्योगिक समाज के केन्द्रीयकरणजनित अलोकतांत्रिक संचालकीय व्यवस्थाओं के दूषणों से भी हम अनजान नहीं है जहाँ साम–दाम–दण्ड–भेद की नीतियों का उपयोग करते हुए समाज में सन्धि–विग्रह के षडयंत्रों को निरंतर आकार दिया जाता है तथा येनकेन प्रकारेण निर्मम तरीकों से स्वार्थसिद्धि की जाती हैं।

बुनियादी तालीम समाज को इन दूषणों से दूर कर विकेन्द्रीकरण के सार से अभिभूत कर ऐसी व्यवस्था को प्रोत्साहित करती है जिसमें समाज समन्वित रूप से सुख, शांति, समृद्धि के अमन–चौन के रास्ते पर चल सकता है।

– लोक स्वी त समर्पित नेतृत्व का सृजन

बुनियादी तालीम का ध्येय लोक स्वीकृत समर्पित नेतृत्व हेतु आत्मविश्वास व परस्पर सहयोग व प्रेम का खाद–पानी देकर समाज के सर्वांगीण विकास की उर्वरा भूमि को तैयार करना है जिस पर मानवीय मूल्यों के पुष्प जनकल्याण हेतु पल्वित हो सकें। बुनियादी शिक्षण के द्वारा लोगों को सार्वजनिक भूमिका निर्वाह का ज्ञान प्रदान कर उनकी स्वयं स्फुरणा को प्रकटाने का कार्य किया जाता है ताकि वे अपने कर्तव्य पथ पर सुनियोजित पहल कर सकें तथा बेहतर तरीके से अपनी भूमिका का निर्वाह कर सकें।

– समता, समानता और न्याय, करुणा, मानवीय संवेदना युक्त जीवनशैली के प्रतिमानों का विकास

हम कितना जीवन जी पाते हैं, यह महत्वपूर्ण नहीं अपितु हम कैसा जीवन जीते हैं, यह तय करना जीवन की सार्थकता हेतु अनिवार्य है। बुनियादी शिक्षण का तीसरा एच– हर्ट इसी तरह की संवेदनाओं का विकास करता है तथा स्व–पर तनाव व संघर्ष रहित जीवनशैली

के निर्माण में अपना योगदान सुनिश्चित करता है जिससे समाज में समता, समानता और न्याय, करुणा जैसे मानवीय मूल्यों की स्थापना को आकार मिलता है। इससे व्यक्तिगत व सामूहिक दोनों ही जीवन में व्यक्ति बिना किसी टकराव के परस्पर मददरूप सिद्ध होता है।

3 शोध कार्य का स्वरूप–

यह संशोधन संशोधक के कार्यक्षेत्र से सीधा संबंध रखता है। यहाँ गांधी विचार प्रेरित अहिंसक सम्पोषित जीवनशैली को लेकर जो प्रयोग किए जो रहे हैं, उनके परिणामों का विश्लेषणात्मक निष्पक्ष अवलोकन किया गया है। अध्ययन की प्रकृति सैद्धान्तिक तो है ही किन्तु इसके प्रयोगों के परीक्षण के दृष्टि से क्षेत्र विषयक अभ्यास बन जाती है। गुणात्मक संशोधन की प्रकृति वाला यह लघु शोध विवरणात्मक है। इसमें वैयक्तिक अध ययन पद्धति को अपनाते हुए गूजरात विद्यापीठ अहमदाबाद को संशोधन इकाई के रूप में पसंद किया गया है।

संशोधन समस्याः शोध परियोजना की विषयवस्तु

अहिंसक सम्पोषित जीवनशैली समय की मांग है, मानवता की पुकार है तथा सह–अस्तित्व का आधार है। गांधी विचार व मानवीय मूल्यों पर संचालित उच्चशिक्षण में बुनियादी तालीम के सिद्धांतों की अनुप्रयुक्ति के लिए समर्पित गूजरात विद्यापीठ सतत ऐसा शिक्षण–प्रशिक्षण प्रदान करता है जिससे वैयक्तिक संतुष्टि के साथ साथ समाजिक उपादेयता में अभूतपूर्व वृद्धि होती है। इस व्यवस्था का जीवनशिक्षण और उसके परिणाम ही जानने व समझने की जिज्ञासा को बढ़ाते हैं।

गूजरात विद्यापीठ की समन्वित शिक्षण प्रणाली जीवन का प्राण बनी हुई है, यहाँ विद्यार्थी शिक्षण के दरम्यान सहज प्रायोगिक व्यवस्थाओं के माध्यम सामूहिक जीवन जीना सीखता है, जीवन यापन के सम्पोषीय कौशल्य विकसित करता है और व्यक्ति,समाज व समष्टि के अनुबंध को समझते हुए जीवन में एकीकार करता है तदानुरूप लोकोपयोगी जीवनशैली अपनाने हेतु प्रेरित होता है।

आज के आधुनिक शिक्षण जगत में विद्यार्थियों का वह सामाजिक सरोकार विकसित नहीं हो पा रहा है जिसकी आवश्यकता समतामूलक व समरस समाज के लिए महसूस की जाती है। शिक्षा वह है जो मानव के व्यवहार का नियमन व नियंत्रण करे जबकि अधिकांशतः वर्तमान शिक्षण–प्रशिक्षण स्वतंत्रता के नाम पर निरंकुशता को बढ़ावा दे रहा है जिससे समाज संगठन की व्यवस्थाएं टूट रही हैं, संवेदनाएं कम हो रही है, जीवन यापन के लिए शार्टकट का बेफाम उपयोग सर्वत्र दिखाई दे रहा है ऐसे में यह जानना व समझना रुचिकर बन जाता है नई तालीम व्यवस्था की विद्यापीठ में ऐसा क्या है कि जिसने अहिंसक जीवनशैली के शिक्षण के माध्यम से सफलता के सोपान खड़े किए है जो समाज को पूरे दृढ़ संकल्प के साथ निरंतर आगे बढ़ाने के प्रयोग शिक्षित–दीक्षित होने के पश्चात भी रहे हैं। गांधीजी इसी तरह की सभ्यता के विकास में सच्चे स्वराज की स्थापना व रचनात्मक समाज निर्माण का स्वपन साकार होता देखते हैं।

अध्ययन का उद्देश्य–

अध्ययन का उद्देश्य अहिंसक जीवनशैली के उन प्रतिमानों की सैद्धांतिक पृष्ठभूमि तराशने के साथ साथ गूजरात विद्यापीठ के उच्च शिक्षण प्रभाग में बुनियादी शिक्षण–प्रशिक्षण के प्रयोगों व उसके सकारात्मक परिणामों से वाकिफ होना है जिसने अहिंसक सम्पोषीय जीवनशैली को जीवन में आत्मसात करने की सीख को आकार दिया है।

शोध पद्धति–

इस लघु शोध प्रबंध परियोजना पर कार्य करने के लिए अहिंसक समाज रचना व जीवनशैली के प्रतिमानों की सैद्धांतिक समझ को उपलब्ध गांधी साहित्य (गांधी हेरीटेज पोर्टल तथा पुस्तकालय में उपलब्ध साहित्य) के आधार पर समझने का प्रयास किया जायेगा। इसके दूसरे भाग में गूजरात विद्यापीठ के उच्च शिक्षण के तीनों परिसर (अहमदाबाद, रांधेजा एवं सादरा ग्रामीण परिसर) पर आजादी के पश्चात विशेषकर 2004 के पश्चात हुए सम्पोषीय जीवनशैली के शिक्षण–प्रशिक्षण से जुड़े प्रयोगों के विश्लेषित किया जायेगा।

सैहार्द व शांतिपूर्ण अहिंसक समाज के निर्माण में प्रस्तुत शोध परियोजना की उपयोगिता (सम्पोषीय जीवनशैलीकेशिक्षण – प्रशिक्षण में गूजरात विद्यापीठ की भूमिका)–

यह शोध गांधीजी के संपोषीय व संयमित जीवनशैली के विचारों के शिक्षण प्रशिक्षण (नई तालीम आधारित) के माध्यम से चरित्र अर्थात् प्रयोग में लाने का कार्य विद्यापीठ

की उच्चशिक्षण व्यवस्था के द्वारा किया जा रहा है। यह वर्तमान भौतिकतावादी समाज को एक नई दिशा देगा, एक आदर्श स्थापित करेगा तथा आज के समय असंभव सी लगने वाली इन व्यवस्थाओं के प्रति विश्वास व इच्छाशक्ति को दृढ़ से दृढ़तर बनाने में महत्वपूर्ण योगदान सुनिश्चित कर सकेगा। यह शोध वर्तमान पीढ़ी के लिए जीवनोपयोगी शिक्षण–प्रशिक्षण के माध्यम से भावी पीढ़ी के हितों की सुरक्षा की गारंटी प्रदान कर सकेगा।

4 गूजरात विद्यापीठ के अहिंसक सम्पोषीय जीवनशैलीलक्षी प्रयोगः एक विश्लेषण

गूजरात विद्यापीठ अहमदाबाद परिसर में महादेवभाई देसाई समाज सेवा महाविद्यालय के विभिन्न स्नातकोत्तर विभाग, शिक्षण महाविद्यालय, गांधी अध्ययन शाखा एवं शांति संशोधन केन्द्र, रांधेजा परिसर में ग्रामीण प्रबंध अध ययन केन्द्र एवं महादेवभाई देसाई ग्राम सेवा महाविद्यालय तथा सादरा परिसर में सूक्ष्म जीवाणु विज्ञान विभाग तथा बायोगेस संशोधन केन्द्र, शारीरिक शिक्षण महाविद्यालय एवं महादेव भाई देसाई ग्रामसेवा महाविद्यालय में विविध विषयों में छात्रावास शिक्षण के माध्यम से उच्च शिक्षण के क्षेत्र में विभिन्न प्रवृत्तियों का संचालन शिक्षण व्यवस्था के अभिन्न अंग के रूप में अनवरत किया जा रहा है जो विद्यार्थी में अहिंसक सम्पोषीय जीवनशैली के गुणों व मूल्यों का विकास करता है। इनका सार संक्षिप्त विवरण निम्न बिन्दुओं के अन्तर्गत दिया जा रहा है–

– मूल्य आधारित शिक्षण

विद्यापीठ के विभिन्न विभागों द्वारा जो विषय पढ़ाए जाते हैं उनके सैद्धांतिक तकनीकी पहलुओं को गांधी विचार के साथ जोड़कर पढ़ाने सिखाने का कार्य अध्यापकों द्वारा किया जा रहा है। अर्थात् इन विषयों की सैद्धांतिक पृष्ठभूमि को सामाजिक उपादेयता, समाज के अंतिम व्यक्ति के लिए उपयोगिता को समझने समझाने का प्रयोग किए जा रहे हैं। शोधार्थी 2004 से इस व्यवस्था का सक्रिय प्रतिभागी एवं साक्षी रहा है तथा 1990– 92 में विद्यार्थी के रूप में भी प्रत्यक्ष साक्षात्कार किया है। अनुभव व अवलोकन में पाया गया है कि इससे विद्यार्थी में लीक से अलग हटकर विषय की व्यावहारिक उपादेयता के प्रति सम्पोषित समझ विकसित होती है जो उसके विभिन्न तकनीकी पहलुओं को समझने व व्यावहारिक निर्णय लेने में सर्वोदय का दृष्टिकोण प्रदान करती है।

– ग्रामजीवन पदयात्रा

विद्यापीठ द्वारा 2007 से गांधी जयंती पर 5 दिवसीय ग्रामजीवन पदयात्रा का प्रयोग शुरु किया गया है। इसमें विद्यार्थी एक टुकड़ी में अपने अध्यापक के साथ जाकर गांवों में रहते है, गांव गांव पदयात्रा करते हैं, गांव वालों के परंपरागत ज्ञान व कोठासूझ से सीखने का प्रयास करते है, उनके साथ रहकर स्वच्छता, साक्षरता, व्यसन मुक्ति व अश्पृश्यता निवारण आदि मुद्दों पर कार्य करते हैं, मुक्त संवाद कर वर्तमान सामाजिक प्रवाहों से साक्षात्कार करते हुए गांधी विचारों का प्रचार–प्रसार करते हैं। इसके अलावा गांव का रहन–सहन कैसा है, गांव किस मायने में कितने स्वाबलंबी बने हैं, जैविक खेती को लेकर ग्रामीण समुदाय में क्या स्थिति बनी है आदि विविधलक्षी शोध पदयात्री विद्यार्थी व शिक्षक द्वारा पूर्ण जिज्ञासा व सिद्दत के साथ किए जाते हैं। इस यात्रा ने गुजरात के लगभग सभी ग्रामीण व आदिवासी विस्तारों में यह कार्य किया है। विद्यापीठ के विद्यार्थी भूकंप, बाढ़ आदि प्राकृतिक आपदाओं में राज्य में नहीं अपितु देश विदेशों में जाकर अपने सेवा कार्य की अमिट छाप छोड़कर आए हैं और जीवनयापन के मानवीय संवेदनायुक्त व्यवहारों का अनुभव करके भी आए हैं।

– ग्राम शिल्पी निर्माण प्रोत्साहन योजना

ग्राम शिल्पी निर्माण प्रोत्साहन योजना2007 के पश्चात प्रारंभ किया गया विद्यापीठ का अभिनव प्रयोग है जिसके मूल में विद्यापीठ के स्थापना उद्देश्यों से जुड़ी मूल संकल्पना है कि विद्यार्थी यहाँ से स्नातक होकर अपने गांव में वापस लौटे तथा ग्रामोत्थान का कार्य करे। इस परियोजना के तहत विद्यापीठ द्वारा गांव में रहकर गांव की जरूरतों को समझ कर अपनी तरह से लोक सहकार के साथ स्वतंत्र रूप से ग्रामीण विकास के कार्य करने के इच्छुक स्नातकों एवं अनुस्नातकों को पर्यावरण शिक्षण संस्थान अहमदाबाद के संयुक्त तत्त्वावधान में गांव में काम करने की विशिष्ट तालीम प्रदान की जाती है, कुछ समय उन्हें वित्तीय सहायता भी दी जाती है। इसके भी गुजरात राज्य व बाहरी राज्यों में बहुत ही आशातीत परिणाम मिले हैं हालांकि यह राह कठिन है किन्तु यह अहिंसक जीवनशैली के विचार को समाज के मध्य ले जाने का एक बेहतर विकल्प है।

– छात्रालय जीवन एवं समूहजीवन के आचार–विचारों का शिक्षण

विद्यापीठ का विद्यार्थी छात्रालय में निवास करता

है जिसमें उसकी सम्पोषीय दिनचर्या का नियमन होता है। वह वहाँ अनुशासित होकर जीना सीखता है। भोजन की तैयारी हो या परिसर की सफाई वह सभी में निष्ठा के साथ भागीदारी करते हुए अपने समस्त कार्य लेट्रीन बाथरूम सफाई, अपने खाने के बर्तनों की सफाई, कपड़े धोना आदि जीवन जरूरी कार्य स्वयं करना सीखता है। छात्रावास में सुबह की प्रार्थना से शुरूआत से सकारात्मकता, आध्यात्मिकता व चरित्र की दृढ़ता को पाने का अभ्यास करता है। समूह भोजन में भोजनमंत्र साथ साथ रहने, बैठने व खाने आदि में अपनेपन व सहकार की भावना को दृढ़ करता है। इस तरह का प्रशिक्षण प्राप्त कर वह अपने आपको सामाजिक प्राणी के रूप में ढालता है। *वह सफाई में कार्य आने वाले* यंत्र–झाड़ू का निर्माण भी स्वयं करता है तथा गृहपति द्वारा बताई गई हर जिम्मेदारी का निर्वाह निष्ठा व ईमानदारी से करते हुए स्वयं को जिम्मेदार नागरिक के रूप में विकसित करता है।

– समूह प्रार्थना एवं कांतन

विद्यापीठ बुनियादी तालीम परंपरा का अभिन्न अंग समूह प्रार्थना व कांतन है। इससे अध्ययन–अध्यापन सत्र का दैनिक शुभारंभ होता है। ज्ञान की आराधना में निर्मल विचार व मन को ध्येय पर स्थिर रखने उद्देश्य इसमें निहित है। कांतन क्रिया का ध्येय विद्यार्थी को अपनी जरूरतों के स्वाबलंबी बनाने की प्रक्रिया से भावनात्मक व भौतिक रूप से संबद्ध करना है। वह यहाँ मूलभूत हाजतों के प्रति सजग रहते हुए श्रम साध्यता की आराधना करता है। वस्त्र स्वाबलंबन के क्षेत्र में वह यहाँ सूत कातने से लेकर वस्त्र निर्माण तक की विभिन्न प्रक्रियाओं से रूबरू होते हैं।

– श्रम साध्यता एवं उद्यमिता के प्रति आत्मविश्वास वृद्धि की दिशा में उद्योग की अवधारणा का अमलीकरण

विद्यापीठ के हर एक विद्यार्थी द्वारा शाम को एक घंटे नियमित उद्योग की प्रवृत्ति से जुड़ना होता है जिसमें वह अपने समूह अपनी रूचि वाले समाजोपयोगी उद्योग प्रवृत्ति का चयन करता है। इस समय साबुन बनाना, पैरदान बनाना, मोमबत्ती, विक्स, बाम, राखी बनाना, आंवला का जूस, सोलार रिपेरिंग, कम्यूटर रिपेरिंग, आई कार्ड बनाना, खेती कार्य, बेकरी बनाना, सूत की माला बनना, जैविक खाद तैयार करना, पानी नल आदि का रिपेरिंग कार्य आदि विविध प्रकार की प्रवृत्तियां विद्यार्थियों की अभिरूचि के अनुरूप लोचशीलता के साथ संचालित हो रही हैं। इससे विद्यार्थी में आत्मविश्वास बढ़ता है और वह आगे जाकर अपने घर गांव में वापस लौटकर इस अनुभव के आधार व्यावसायिक पैमाने पर इन प्रवृत्तियों के संचालन द्वारा आजीविका का निर्वाह बड़ी आसानी से कर लेता है।

–अध्यापकों का गांधीविचारोन्मुखी अभिमुखता कार्यक्रम एवं गांधी कथा का समाज में प्रचार–प्रसार

पूर्व कुलपति श्री नारायणभाई देसाई द्वारा बेड़छी आश्रम में विद्यापीठ में कार्यरत सेवकों के लिए भी 10 *दिवसीय शिविर* लगाए गए जिसमें वे गांधी विचार आधारित श्रमसाध्य जीवनशैली व मूल्यों का साक्षात अनुभव कर सके तथा सर्वांगीण विकास के सामाजिक अनुबंध की परतों को खोल सकें, उन्हें फिर से लोकोपयोगी रूप में विद्यार्थियों के समक्ष प्रस्तुत कर सकें। गांधीजी के जीवन प्रसंगों की कड़ी को तीन खण्डों में "मारु जीवन एज मारी वाणी" ग्रंथ में संकलित करते हुए अत्यंत रोचक तरीके से आदर्णीय श्री नारायणभाई देसाई द्वारा गांधीजी का जीवन चरित्र न सिर्फ लिखा गया अपितु उन्होंने कुलपति रहते हुए विद्यापीठ परिवार के अलावा समाज के विभिन्न वर्गों तक गांधी विचार को पहुँचाने का कार्य गांधी कथा के माध्यम से किया गया जिसकी अमिट छाप सभी के मन पर पड़ी। इस प्रयोग ने गांधी विचार की अनुप्रयुक्ति के प्रति समाज की श्रद्धा को दृढ़ से दृढ़तर बनाने में अभूतपूर्व योगदान दिया।

सोलार पार्क व गांधी हेरिटेज वाक के अभिनव प्रयोग विद्यापीठ को अहमादाबाद परिसर में गैर परंपरागत अक्षय ऊर्जा को लेकर विविध प्रयोगात्मक उपकरण लगाए गए जिसमें विद्यार्थियों की सीधी भागीदारी होती है, बरसाती पानी को जमीन में उतारने हेतु बनाए गए खंभाती कुंए, बरसाती पानी के संग्रह हेतु विभिन्न परिसरों पर सौराष्ट्र के विशिष्ट कारीगरों द्वारा बनाए गए भू–गर्भ माटला टांके आदि विद्यार्थियों को कुदरती संसाधनों के समुचित उपयोग का शिक्षण प्रदान करते हैं जिसे वह अपने व्यक्तिगत व सार्वजनिक जीवन में आकार देकर अहिंसक सम्पोषीय जीवनशैली को अपना सकता है एवं शांति पूर्ण अहिंसक समाज की स्थापना का हिस्सा बन सकता है।

5 उपसंहारः

अहिंसा व शांति की भावी दशा–दिशा

अहिंसक जीवनशैली सम्पोषित विकास की आधारशिला है। इसमें हम अपने लिए कोई भी निर्णय लेते समय (उपभोग, उत्पादन अथवा आजीविका संबंधी) यह ध्यान रखते हैं कि इस निर्णय से समाज के अंतिम छोर पर रहने वाले व्यक्ति को क्या फायदा होगा अथवा मेरे निर्णय विशेष का अन्य व्यक्तियों के हितों व समष्टि घटकों पर विपरीत प्रभाव तो नहीं पड़ेगा। गांधी विचार में यही शिक्षण–प्रशिक्षण बुनियादी तालीम के रूप में प्रस्थापित है। इसी से सभ्य समाज की जड़े मजबूत बनती हैं, समाज में समरसता, शांति व समृद्धि समन्वित व संपोषित स्वरूप में आती है।

गूजरात विद्यापीठ वर्तमान प्रचलित शैक्षणिक प्रवाह से परे गांधी विचारों में श्रद्धा रखते हुए जिस तरह से विद्यार्थियों तैयार करने सतत उद्यम कर रही है उससे समाज में नैतिकता की सोच, गांव को एक अलग दृष्टि से समझने, श्रम साध्यता की ओर उन्मुख रहने एवं पारस्परिक प्रेम, सामुदायिक सद्भावना दिखाई अवश्य पड़ रही है, भले ही आधुनिक भौतिकतावादी जीवन संस्कृति के प्रभाव में संघर्ष करती हुई धूमिल सी लगती हो। बुनियादी शिक्षण के द्वारा स्वाबलंबन की सुवास बिखराने का कार्य विद्यापीठ के ग्रामशिल्पी स्नातको– जल्दीप ठाकर, नीलम भाई, सुरेशभाई मुस्तुकानभाई आदि के द्वारा किया जा रहा है और समाज में इन मानवीय मूल्यों के प्रति विश्वास जगाकर लोक–क्षमतावर्धन किया जा रहा है।

ग्राम जीवन पदयात्रा से गांव और ग्रामीणों के ज्ञान–व्यवहार को समझने की जो श्रद्धा व संवेदना विद्यापीठ समुदाय के सदस्यों (विद्यार्थी एवं अध्यापक दोनों) में उत्पन्न हुई है उसके दीर्घगामी परिणाम जीवनोपयोगी शिक्षण–प्रशिक्षण की व्यवस्था में दृष्टिगोचर होते रहेंगे। स्वच्छता, बरसाती पानी का संग्रह, भू–गर्भ जल संग्रह, अक्षय ऊर्जा, विद्यार्थियों के माध्यम से छात्रावास की आवश्यकताओं की पूर्ति हेतु जैविक खेती उत्पादन के प्रयोग तथा विभिन्न प्रकार के उद्योगों के द्वारा उनमें इस सम्पोषित जीवनशैली के प्रति विश्वास पैदा करने का जो उद्यम किया जा रहा है वह सराहनीय है एवं उसका कोई अन्य विकल्प नहीं है।

विद्यापीठ ने सृष्टि संस्था के के साथ जुड़कर जैविक खेती करने वाले किसानों को रविवार के दिन विद्यापीठ परिसर उत्पाद विक्रय की जगह प्रदान करके संस्था व सामाजिक अनुबंध को मजबूत करने की दिशा में अभिनव पहल की है तथा लोगों सम्पोषीय अहिंसक जीवनशैली की प्रचार–प्रसार हो, विद्यार्थी भी इसके भागीदार व साक्षी बन सकें इसकी भी व्यवस्थाएं सुनिश्चित की गई हैं।

जब वर्तमान विद्यार्थी समुदाय में यह धारणा उभरने लगी कि गांधीजी ने जो कहा जो प्रयोग किए उनके दायरे आज बदल चुके है। ये आर्दश रूप से भले श्रेष्ठ विकल्प हों किन्तु व्यावहारिक दृष्टि से क्या? इस प्रवर्तमान लोक अवधारण का खण्डन करने की दिशा में सेवा संस्था की संस्थापिका स्व. इलाबेन भट्ट द्वारा लिखित पुस्तक अनुबंध (100 मील का दायरा स्थानीय हो सकता है) परिवर्तित व्यवस्थाओं के आलोक में स्वदेशी के नूतन स्वरूप को व्यक्त करते हुए अहिंसक सम्पोषीय जीवनशैली का मार्गदर्शन प्रदान करती है। उन्होंने उत्पादन व उपभोग व्यवस्था में स्वाबलंबन और स्वदेशी की भावना से एकाकार करते हुए प्रकृति अनुकूल जीवनशैली के अद्भुत लोक प्रयोगों को सामने रखकर इस विश्वास को दृढ़ किया कि गांधी भूत नहीं अपितु सुन्दर वर्तमान और सुरक्षित भविष्य है।

आज भारत के वर्तमान प्रधानमंत्री ही नहीं अपितु संपूर्ण वैश्विक समुदाय संपोषित विकास की दिशा में गांधी विचार आधारित जीवनशैली के उन्नत मार्ग पर चलने की कवायद कर रहा है जिसका शिक्षण–प्रशिक्षण उच्चशिक्षण स्तर पर गूजरात विद्यापीठ के विभिन्न अभ्यासक्रमों के माध्यम से निरंतर दिया जा रहा है जो उन्हें भावी कर्मभूमि निर्माण हेतु समुचित संपोषीय मार्गदर्शन प्रदान कर सकेगा।

सन्दर्भ

– गांधी मोहनदास करमचन्द (1909)– हिंद स्वराज, अनुवादक– अमृतलाल ठाकोरदास नाणावटी, नवजीवन प्रकाशन (अगस्त1959), अहमदाबाद
(यह किताब द्वेष धर्म की जगह प्रेम धर्म सिखाती है, हिंसा की जगह आत्म बलिदान को रखती है तथा पशुबल से टक्कर लेने के लिए आत्मबल खड़ा करती है। यह सभ्य समाज अर्थात् अहिंसक सम्पोषीय

जीवनशैली के शिक्षण–प्रशिक्षण की "गीता" है)

- गांधी मोहनदास करमचन्द– मंगल प्रभात, अनुवादक– अमृतलाल ठाकोरदास नाणावटी, नवजीवन प्रकाशन (अगस्त1958), अहमदाबाद
  (गांधीजी ने यरवडा जेल से आश्रमवासियों के लिए जो प्रवचन लिखे वे एकादश व्रतों के नाम से संकलित हुए, इन व्रतों का यम–नियम की भांति पालन करने की अनिवार्यता हर आश्रमवासी के लिए गांधीजी द्वारा की गई यदि इसी तरह की संयमित जीवनशैली व समाजोपयोगी जीवन निर्वाह के प्रतिमान अपने जीवन में स्थापित कर लिए जाते हैं तो निश्चित तौर पर सम्पोषितता को लाया जा सकता है।)
- गांधी मोहनदास करमचन्द– रचनात्मक कार्यक्रम एवं उनका रहस्य, अनुवादक– काशीनाथ त्रिवेदी, नवजीवन प्रकाशन (अगस्त1946), अहमदाबाद
  (इस पुस्तक में अहिंसक सम्पोषीय जीवनशैली के संदर्भ में जीवन निर्वाह हेतु रचनात्मक कार्यों का वर्णन किया है जिसके आलोक में लोक एवं प्रकृति अनुकूल आजीविका प्रवाहों को समझाया गया है।)
- देसाई नारायणभाई– मारु जीवन एज मारी वाणी, नवजीवन प्रकाशन, अहमदाबाद
- भट्ट इलाबेन– अनुबंध, सेवा संस्था अहमदाबाद
- भावे बिनोबा– लफंगा पैसे का अनर्थकारण, यज्ञ प्रकाशन, वडोदरा

PRABANDHAN GURU

(ISSN 2321-4295, RNI No. UPENG/2010/38376)

(A Peer Reviewed Refereed Multidisciplinary Research Journal with greater emphasis on Management & Information Technology)

CALL FOR PAPER

Prabandhan Guru is an international peer-reviewed refereed Research Journal of Management & Information Technology published by **Shri Ram Group of Colleges,** Muzaffarnagar. The Journal seeks to provide a platform to research scholars, practicing managers, teachers and students of all the streams to present their research findings and share their views and experiences. It aims at providing high quality research materials and reports worldwide to academicians, consultants, IT professionals, management developers, industrialists, research associates/scholars.

The journal aims at disseminating information about recent developments in the field of management and information technology by way of research articles, book reviews, summary of Ph.D. thesis, short communications and case studies on emerging and relevant issues. The Journal also provides exploration and open discussion of interdisciplinary endeavour to the various prevailing problems of Management and Information Technology.

We invite original Empirical Research Paper. Articles, Review Papers, Executive Experience Sharing, Book Reviews and Case Studies, Short Communication on Emerging and Relevant Issues and Problems, Summary of Ph.D. thesis from functional areas of Management and Information Technology for publication in Prabandhan Guru. Papers received and acceptance for publication is subjected to a blind review by the subject specialist panel and their comments.

Special Attention : *To encourage promising scholars: three papers will be awarded as best article and authors will be honoured with a certificate and monetary rewards.*

GUIDELINES FOR CONTRIBUTORS/AUTHORS

1. A copies of the manuscript, typed in English (Times New Roman, 12, 1.5 line space) or in Hindi (krutidev 010, 14, 1.5 line spaces), one inch margin on all sides of A4 size paper should be main by author to journalsrgc@gmail.com or dr.ashfaqali.09@gmail.com
2. The length of a paper should not exceed 20 pages including tables, diagrams, illustrations etc. Short communications relating to book reviews, review articles should not exceed more than 5 pages.
3. Papers should be accompanied by a declaration that the material is original, has not been published elsewhere in part or full and the same has not been submitted for publication in any other book/Journal or otherwise and declaration for transferring authority of

publication to Prabandhan Guru. All correspondence will be held with the first author only.

4. The cover page should contain the title of the paper, author's name, designation, affiliation, official address, contact number and e-mail address. The next page should contain an abstract of not more than 250 words, along with key words. The main text should not contain the author's name.

5. All submitted papers will be the property of Shri Ram Group of Colleges and subjected to peer review. The decision of the Editorial Board will be final.

6. All tables must be consecutively numbered using Arabic numerals with appropriate titles. All notes and sources to table should be given at the bottom of the respective table.

7. Footnotes in the text should be numbered consecutively in plain Arabic superscripts. All the footnotes, if any, should be typed under the heading 'Footnotes' at the end of paper immediately after 'Conclusion'.

8. Reference should be listed at the end of the Paper in alphabetical order of the author, giving the author's surname first followed by initials. If more than one publication by the same author is listed, the items should be given in chronological order.

9. The References should be embedded in text in the American Psychological Associatin (APA) 7th Edition style, examples are as follows :

For Book :

Format : Last name, Initials. (Year). Book title. (Editor/translator initials, Last name, Ed. or Trans.) (Edition). Publisher.

Reference entry : Anderson, B. (1983). Imagined communities: Reflection on the origins and spread of nationalism. Verso.

In-text citation (Anderson, 1983, p. 23)

For Book Chapter:

Format Last name, Initials. (Year). Title of chapter. In Editor initials. Last name (Ed. Or Eds.) Book title (pp. page range). Publisher. DOI if available

Reference entry Belsey, C. (2006). Poststructuralism. In S. Malpas & P. Wake (Eds.). The Routledge companion to critical theory (pp. 51-61). Routledge.

In-text citation (Belsey, 2006, p. 55)

For Journal Article:

Format Last name, Initials. (Year). Article title. Journal Name, Volume (Issue), Page range. DOI or URL

Reference entry Mounier-Kuhn, P (2012). Computer science in French universities: Early entrants and latecomers. Information & Culture: A Journal of History, 47(4),414-456.

In-text citation (Mounier-Kuhn, 2012)

Prabandhan Guru, ISSN : 2321-4295
Vol: XI, Issure: 1&2, Jan-Dec 2020
RNI : UPENG / 2010 / 38376

SUBSCRIPTION FORM

To,
Editor,
Prabandhan Guru,
Shri Ram Group of Colleges,
Muzaffarnagar

Sir,
I/We wish to subscribe to your bi-annual Journal **"Prabandhan Guru"** for one year/three years/five years/ life time from January/July ....to December/June ....as categirt Student/ Individual/Institution/other.
The subscription amount of Rs. ....for one year/three years/five years/life time is being remitted through RTGS/NEFT (Prabandhan Guru A/c No.: 2514000100168790, IFSC: PUNB0251400, Punjab National Bank, Industrial Area, Muzaffarnagar OR by Demand Draft payable at Muzaffarnagar. You are requested to kindly mail the journal at the office/residential address.

Yours faithfully,

(Signature with Name)

Name: (Prof/Dr/Mr/Ms) ....
Designation: ....
Name of Institution / Industry ....
Address: ....
....PIN...
Residential Address ....
....PIN...
Phone No (O) ....(R)...
Mobile (O) ....(R)...
E-mail ID: ....

Details of Subscription Fee :

Draft /Cheque No	Name of Bank	Amount	Date

SUBSCRIPTION RATE

Period	Student	Individual	Institutions/Others
1 Year	Rs. 150	Rs. 200	Rs. 300
3 Years	Rs. 400	Rs. 550	Rs. 850
5 Years	Rs. 650	Rs. 900	Rs. 1400
Life Time	Rs. 2000	Rs. 3000	Rs. 5000

OTHER INFORMATION

- The Journal invites good & original articles only.
- Retail Selling price of the journal per copy Rs. 100/-
- Subscription can be sent only by means of an Account Payee Demand Draft /Cheque drawn in favour of **"Prabandhan Guru"** payable at **Muzaffarnagar.** OR remitted through RTGS / NEFT.
- All communications should be addressed to: The Editor, Prabandhan Guru, Shri Ram Group of Colleges, Parikarma Marg, Muzaffarnagar Uttar Pradesh, Pin Code 251001, India. Ph.: 09917160786, e-mail: journalsrgc@gmail.com

For Website:

URLs are not longer preceded by "Retrieved from", unles a retrieval date is needed. The website name is included (unless it's the same as the author), and web page title are italicized.

Walket, A. (2019, November 14). Germany avoids recession but growth remains weak. BBC News. https:// www.bbc.com/news/business-50419127

For ebooks

The format, platform, or device (e.g. Kindle) is no longer included in the reference, and the publisher is included.

For Government Publication :

Ontario Ministry of Children and Youth Services. (2010, April 27). Your preschool child's speech and language dvelopment.

http://www.children.gov.on.ca/htdocs/English/topics/earlychildhood/speechlanguage/brochur e_preschool.aspx

For Unpublished PG. Dissertations and Ph.D. thesis:

Author, A.A. (year). Title of doctoral dissertation or master's thesis (Doctoral dissertation or master's thesis). Retrieved from Name of Database. (Accession or Order No.)

In-text citation: (Author, year, p. X)

All manuscripts editorial correspondence should be addressed to

The Editor, Prabandhan Guru
Shri Ram Group of Colleges
Parikarma Marg, Muzaffarnagar (U.P.)-251001 M : 9917160786
E-mail: journalsrgc@gmail.com
dr.ashfaqali.09@gmail.com

Statement about Ownership and Other Particulars of the Periodical Prabandhan Guru

Form IV

See Rule 8 of the Newspaper (Central) Rule 1956

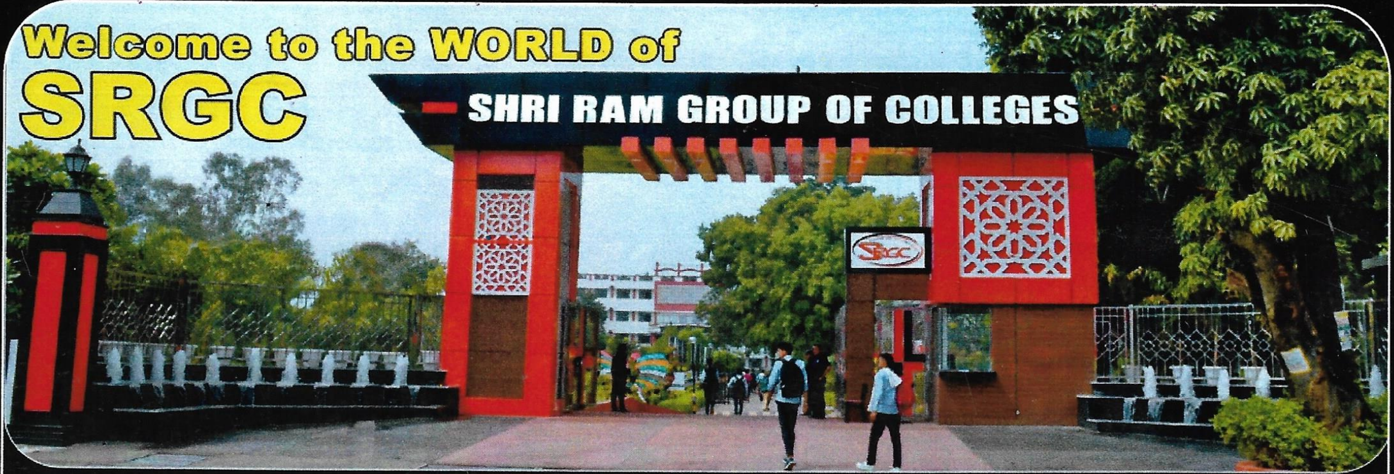
1.	Publisher's Name	:	Dr. S. C. Kulshreshtha
	Whether Citizen of India	:	Yes
	(If foreigner, State of Country of origin)		
	Address	:	Dr. S. C. Kulshreshtha Shri Ram Charitable Trust 1298, Civil Lines South Circular Road, Muzaffarnagar- 251001 (UP)
2.	Periodicity of the Publication	:	Half Yearly (Two issues per year)
3.	Printer's Name	:	Dr. S. C. Kulshreshtha, Chairman
	Whether Citizen of India	:	Yes
	(If foreigner, State of Country of origin)		
	Address	:	Dr . S. C. Kulshreshtha Shri Ram Charitable Trust 1298, Civil Lines South Circular Road, Muzaffarnagar- 251001 (UP)
4.	Name of Address of Individuals who own the Newspaper and Partner of the Shareholders	:	Shri Ram Charitable Trust 1298, Civil Lines South Circular Road, Muzaffarnagar (No partners or share holders)
5.	Printed at	:	Indian Press (Ashok Singhal) 73, South Bhopa Road, New Mandi Muzaffarnagar -251001 (UP)
6.	Place of Publication	:	Shri Ram College Opp. Almaspur Tele. Exchange Muzaffarnagar -251001 (UP)
7.	Editor's Name	:	Dr. Pragati Saxena
	Whether Citizen of India	:	Yes
	(If foreigner, State of Country of origin)		
	Address	:	Dr. Pragati Saxena Shri Ram College Muzaffarnagar-251001 (UP)

I, Subhash Chandra Kulshreshtha hereby declare that the particulars given above are true to the best of my knowledge and belief.

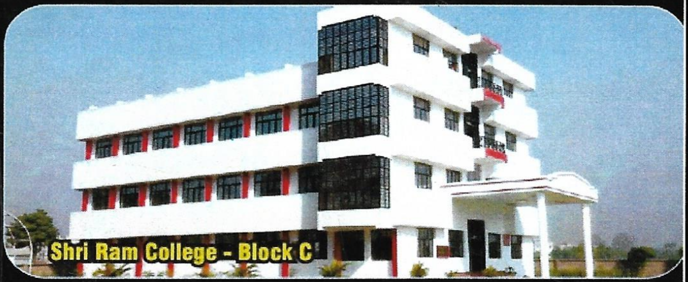
Sd/-

Signature of the Publisher

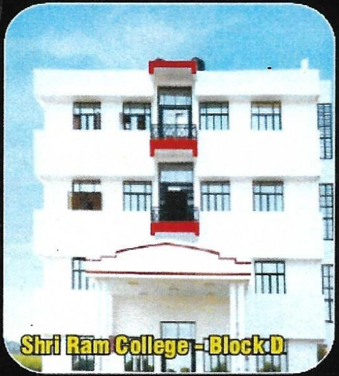

Transform your DREAMS into REALITY @
SRGC
Shri Ram Group of Colleges
Approvals
Affiliations
Website: srgcmzn.com
E-mail: src_mzn@rediffmail.com
SHRI RAM COLLEGE, MUZAFFARNAGAR
A++
Grade Certified College by
NAAC
Ranked among the Top 25 NAAC Accredited Colleges in India
"get ready for a great future"
Shri Ram College
MCom | MAJMC | MFA | MEd | MPEd | MSc (Maths) | MSc (Chemistry) | MSc (Zology)
MSc (Botany) | MSc (Biotech, Microbio, Computer Sc, Home Sc) | BEd | BPEd | BPES | DElEd
BBA | BCA | BCom | BAJMC | BVoc (Yoga) | BSc (PCM) | BFA | BSc (CBZ) | BSc (Agri)
BSc (Biotech, Microbio, Home Sc) | MSc-Agronomy | MSc-Agricultural Chemistry & Soil Science
Shri Ram College of Law
BALLB | BComLLB | LLB
Shri Ram Group of Colleges (IC)
BTech / Polytechnic (CE, ME, EE, CSE, ECE) | BArch | MBA | MCA | DPharm
Shri Ram College of Pharmacy
BPharm | DPharm
Shri Ram Polytechnic
Polytechnic (CE, ME, ME-Auto, EE, ECE, CSE) | ITI (Electrician, Fitter, Turner, Machinist, Welder, COPA, HSI, FDT)
Scholarship more than ₹ 10 Crores Available
Contact @ Engg- 9927079966, 7088013180, Arch- 9917111139, Poly- 9837755504, 9917116655, Management- 9259339759, Law- 9927227744, HSc- 8800538281, Fine Arts- 9719402220, Pharmacy- 9919966070, Other Courses- 9358348700
Campuses : Parikarma Marg/ Circular Road/ Roorkee Road, Muzaffarnagar

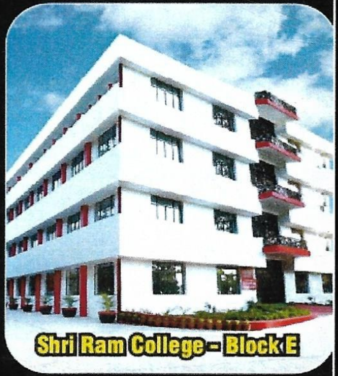



Shri Ram College - Block A

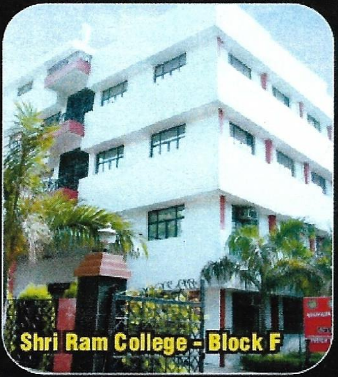

Shri Ram College - Block C

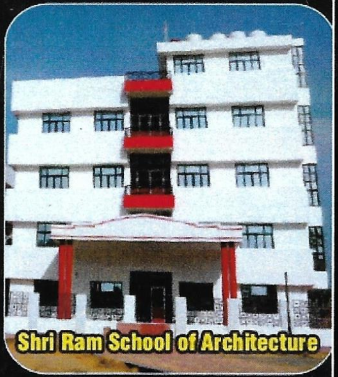

Shri Ram College - Block B


Shri Ram College - Block D


Shri Ram College - Block E

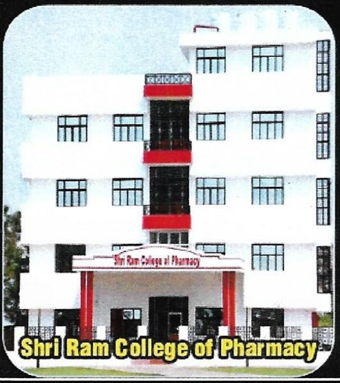

Shri Ram College - Block G

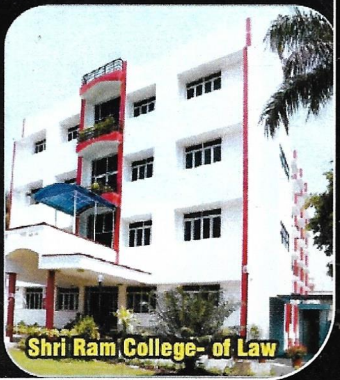

Shri Ram College - Block F


Shri Ram School of Architecture


Shri Ram College of Engineering

Shri Ram Polytechnic


Shri Ram College of Pharmacy


Shri Ram College- of Law