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RESEARCH ARTICLE

POST COVID ERA AND THE INFLUENCE OF ONLINE HEALTHCARE PLATFORMS ON THE HEALTH-SEEKING BEHAVIOUR OF ADULTS

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ABSTRACT

NEED & OBJECTIVES OF THE STUDY:

Good living conditions include basic shelter, food, and clothing but the aspect of access to quality healthcare has become one of the essentials of livelihood, especially in this post-COVID era. The post-COVID era has also marked the digital evolution where the role of social media is inevitable to a wider range such that it has acquired the position among the social institutions influencing diverse populations on all aspects due to its multiple users. This multiplicity of users has demanded the interference of social media in all spheres of life even in the field of health and medicine. It has opened up new ways of access for sharing information and social support, due to increased connectivity and direct participation bringing changes in the illness behavior.

METHODOLOGY:

The study tries to understand the influence of online healthcare platforms on health health-seeking behavior of young adults in contemporary society by adopting a quantitative methodology with self-structured questionnaire for data collection.

RESULTS:

The study results state that online healthcare services have developed a new platform of interaction between the doctor and the patient resulting in the evolution of traditional health-seeking behaviour. It also infers that health-seeking behavior is dynamically aligned with modernity.

KEYWORDS

digital evolution, health seeking behavior, health seeking information, social media, post-COVID era

INTRODUCTION

HEALTHCARE AND ONLINE PLATFORMS

Social media as one of the core components of online platforms means "the activities, practices, and behavior among communities of people who gather online to share information, knowledge, and opinions using conversational media" [1–3]. It is widely used for disseminating information from one individual to another assisted by popularity and utilization for the cycle of dissemination making social media a universal platform. This collective platform has assimilated into all spheres

of life and various disciplines such as public administration, governance, and healthcare. By entering the field of healthcare, it has altered the previous mode of healthcare interaction between the patient and the professionals virtually facilitated by social media, particularly focusing on its awareness, promotion, public relations, and crises communication [4–6].

Earlier, Internet services in healthcare assisted service providers currently the reference information function of the Internet makes it a medium for interaction with a wide range of users. This increase in population with access to the internet makes social media a strong force with potential impact. Previously, patients paid little attention to the quality, safety, and experiences of other patients to make choices that largely depended on factors like reputation, recommendation, and proximity of the informant [6–13]. Media has become an effective means for healthcare professionals and patients to share opinions, feedback, photos, audio, and videos collecting necessary information to expand their professional knowledge and care for patients [11,12,14,15]. Further, the utilization of social media and other online platforms empowers patients to widen their knowledge on various diseases, their symptoms, cures, and cost-effective care. Enabling people to track their personal health progress and access other infra-structural facilities such as fixing appointments, availing consultation, checking and reserving hospital beds and professionals [6,12–15]. Consequently, it provides ability for patients to express themselves, share their experiences, absorb others, and spread health knowledge beyond the boundaries of hospitals or local clinics [5,12,16–18].

HEALTH-SEEKING BEHAVIOR AND ONLINE HEALTHCARE

Health-seeking behavior (HSB) can be described as 'any action or inaction undertaken by individuals who perceive themselves to have a health problem or to be ill for the purpose of finding an appropriate remedy.' As a concept, HSB consists of actions to sustain good health, prevent ill-health, and any state marking the exodus of good health [16,19]. From the patient's perspective, HSB can be understood as the response towards discomfort rather than to a specific diagnosed disease that was unidentified by them before medical consultation [13,20,21]. HSB is regarded as the way in which people seek medical attention for their ailments. While online HSB is emerging as one of the potential sources of health-seeking behavior refers to the organization-sponsored websites and other social media sites offering telemedical services or other healthcare services [1,6,22]. Bennett, a social psychologist, has delineated five indispensable uses of social media in hospitals such as for customer service, community outreach, patient education, public relations, and crisis communication. Furthermore, professional reviews including blogs, tweets, and advertisements providing content with therapeutic evidence and recognized procedures consequently educated patients and doctors about various medical conditions [3,10–13,23,24].

Much of the literature on healthcare organizations and social media focuses on networking and information sharing. Many studies found that patients find it easier to describe their experience without modification of emotional context which provides necessary coping skills, support, and resources for other patients [5,12,25–27]. Some studies outlay the challenges of social media in healthcare by questioning the issues of privacy, usability, manipulation of identity, misinformation, and other security issues [6,11,13,15].

Further, various sociological underpinnings such as the functionalist perspective including the person's sick role theory that conceptualises sickness or illness as a social right and deviance affecting the societal functioning, while the symbolic interactionism tends to stigmatise illness and the health seeking behaviour of individuals. The conflict perspectivist proclaims illness as the struggle between power and equality where the poor suffer and the rich benefits the healthcare services. Apart from these perspectives there are various sociological theories that tends to escalate the effectiveness of online healthcare services [28]. One such theory that this study favours is the technology acceptance model (TAM) designed by Fred Davis to predict the willingness of individuals to accept the instruction of new technologies in their daily lives. This model posits the key feature of motivation and the possibilities of influence with perceived ease of usage and its usefulness [11,14,28].

From these sources and insights, the study tries to understand the influence of social media on the health-seeking behavior of young adults in contemporary society explicitly addressing the replacement of the real world with the virtual world of

reality satisfying the individual's drive for companionship. Therefore, the study is an attempt to understand the influence of online healthcare services on the health-seeking behavior of young adults by challenging the traditional means of HSB and witnessing its replacement with social media or technology.

METHODS AND MEASURES

The study population included young adults 18-25 years old in Vellore district, Tamil Nadu, India. The study is a cross-sectional, quantitative [29] descriptive research design with health-seeking behavior as the dependent variable and online healthcare as the independent variable. The study employed a quantitative methodology and was conducted by using a self-constructed questionnaire as the tool of data collection. The study population was selected based on the individual voluntaring using simple random sampling to ensure the representativeness of the sample, accuracy of analysis, and wide availability of users. The study adopted simple random sampling by using power analysis to devise the minimum sample size [30] of 80 for a larger effect. Therefore, the total sample size of the study is 120 wherein 13 samples were eliminated due to missing and incomplete data thus 107 samples were considered for analysis.

Prior to the data collection the study was subjected to XIV Institutional Ethical Committee for Studies on Human Subjects and clearance obtained. Further, the study was conducted on a voluntary basis by seeking individual consent through informed consent and their willingness to participate in the study after a detailed explanation of the study.

MEASURES

The study has adopted a self-constructed questionnaire with a detailed description of the study containing information about the study purpose, the right to withdraw from the study, and data privacy and confidentiality statement. Individuals who decided to participate in the survey were asked to sign the informed consent and later the researcher started the survey by distributing the survey link to the participants. The questionnaire contained questions related to demographic factors, usage of social media, health-seeking behavior such as mode of treatment, preference of hospital, and its related factors. While online HSB was assessed using the scale titled 'e-health impact' constructed by Laura Kelly [31]. The scale consists of 26 items measuring four dimensions such as attitude towards online health information, attitude towards sharing health experience, understanding and motivation for seeking online consultation, and confidence and motivation towards online health-seeking behavior. The questionnaire was arranged according to the objectives of the study and converted to Google Forms. The constructed Google forms were then circulated among the participating individuals who gave their consent so as to ease the process of data collection. Later, the collected data was analyzed using SPSS 20 (Statistical Package for Social Sciences) and MS Excel.

The collected data was analyzed using descriptive statistics by calculating the mean and standard deviation. Correlation coefficients and multiple linear regression were employed to understand the relationship between attitude, confidence, identification, understanding, motivation, self-assurance and inspiration towards online health-seeking behavior. While the basic statistical comparison was made for attitude towards health-seeking information and health-sharing experience to gender, nature of family, and preference of consultation using cross-tabulation and chi-square to test their association in the following hypothesis:

- **$H_{o}1$**- The attitude towards sharing health experience is not associated with the respondents' preference of treatment and type of hospital referred for consultation.
- **$H_{o}2$**- The attitude towards sharing health experience is not associated with the respondents' preference of treatment and type of family.
- **$H_{o}3$**- There is no significant relationship between the study variables such as the attitude towards consultation, confidence & identification, understanding & motivation, and self-assurance & inspiration.
- **$H_{o}4$**- Confidence & Identification and Understanding & Motivation do not significantly predict the respondent's attitude towards online consultation.

RESULTS AND DISCUSSION

The study population consisted of young adults in the age group 18-25 years with 21 years as the mean age group among the study population. Two-thirds of the respondents (76.6%) are male while the remaining one-third (23.4%) were females. A predominant proportion of the respondents (92.5%) were Hindus and the remaining (8.5%) were from other religions. Six out of ten respondents belong to the nuclear family followed by joint family (33.6%) and single-parent family with less than 5%. Almost all the respondents possessed a smartphone, laptop, and internet connection of their own which implies that the study population rightly represents in the study with an understanding that technology has intruded into the lives of individuals holding an indispensable place without any replacement or alteration for it.

PREFERENCE OF TREATMENT

80% of the respondents preferred the online mode of consultation for their treatment during post-COVID due to the fear of infection spreading, social isolation, availability of specialists, and access to higher quality treatment. Thereby, displacing space by replacing hospital infrastructure [12,14] with home ambiance, especially for minor illness while hospitals were considered as a specialised infrastructure for treating major illness. It ensures more comfortability by easing the transportation cost, at the same time it involves the risk of wrong self-diagnosis and treatment due to miscommunication [6,11,12]. Previous studies have found that the decision for preference of treatment was often influenced by factors such as age, gender, socio-economic status of the women, the severity of illness, the interactive nature of social media, access and quality of service, etc. It can be inferred that these services are influenced by both individual and environmental factors [3,12,30,32].

ATTITUDE TOWARDS HEALTH-SEEKING BEHAVIOR

The relationship between online health-seeking information and online health-sharing experience was tested using correlation (two-tailed) analysis and it was found that the tested relationship was significant at the level $r=0.372$ $p<0.01$. About 59.8% and 56.1% of the respondents had a better attitude for seeking health information and sharing health experiences online respectively. These results shows that almost half of the respondents have a positive attitude towards online healthcare services mostly the young adults report that usage of social media for health-seeking information also depends on the virality or popularity of the person at the same time the presence of pseudo professionals, celebrities and other commoners who carry out paid promotions opens the possibility of misguiding the audience on the health seeking services [6,11,14,21,26,33].

The study further analyzed the attitude for health information seeking and sharing health experience of the respondents with that of their demographics such as gender, nature of family, and the mode of consultation to understand the influence of factors for social construction on health-seeking behavior of the respondents. The term health sharing experience in the study includes sharing of health-related experience or trauma undergone, treatment process, feedback about the treatment & staff behavior, suggestions to others with similar illnesses, etc., The attitude towards health sharing experience and online health-seeking information of the respondents was categorized into poor, fair, good, and excellent based on the descriptive statistics with mean value (21 and 15) and standard deviation (4 and 3) respectively.

From Table 1 it can be inferred that both genders (male 58.5% and female 48%) have a heightened good attitude for health sharing experience. Also, 52.8% of the respondents were from a joint family, 57.8%, and 57.1% from a nuclear and single-parent family have good attitude towards health sharing experience. Similarly, respondents with both modes of consultation (offline 57.8% and online 40%) are equally comfortable sharing their health-related experience with professionals and others. As the fear of illness that the patient develops increases their curiosity to know about the symptoms, treatment, cure, and prevention usually gathered from various sources mostly reflects the previous experience of the affected patients. Also, this is used for determining the preferences for treatment such as the place (e.g., hospital) its infrastructural facilities, doctor/specialist for consultation, and other reasons such as financial and environmental conditions.

TABLE 1 ATTITUDE TOWARDS HEALTH INFORMATION SHARING AND SEEKING OF THE RESPONDENTS

	Attitude towards health-sharing experience			
	Poor	Fair	Good	Excellent
Gender				
Male	7.3%	26.8%	58.5%	7.3%
Female	8%	40%	48%	4%
Family				
Joint	13.9%	30.6%	52.8%	2.8%
Nuclear	4.7%	28.1%	57.8%	9.4%
Single parent	0	42.9%	57.1%	0
Consultation				
Offline	7.8%	29.4%	57.8%	4.9%
Online	0	40%	20%	40%
	Attitude towards online health seeking information			
Gender				
Male	6.1%	22%	57.3%	14.6%
Female	4%	8%	68%	20%
Family				
Joint	2.8%	16.7%	66.7%	13.9%
Nuclear	7.8%	20.3%	56.2%	15.6%
Single parent	0	14.3%	57.1%	28.6%
Consultation				
Offline	5.9%	18.6%	59.8%	15.7%
Online	0	20%	60%	20%

Table 1 also sets out the attitude for health-seeking information through online platforms which include gathering health-related information through online services. The post-pandemic era, coupled with declining social support, has led to the penetration of online access into the field of medicine. At the same time changing dimensions of the severity coupled with the specialist for treatment of the disease has led to the incorporation of online medical services in the daily life of the individuals where the respondents claim the utilization of online information services for healthcare includes reviewing the best hospital for treatment, searching availability of doctor, booking an appointment, small health alignments like skin problem, hair fall related issues, telemedicine, counseling, and secondary consultation/opinion. The online services of fitness and diet consultation, its related yoga, Zumba classes, the increasing awareness for pregnancy and childcare, pre and post-natal care, parenting classes, etc., are some of the noticeable examples of increased online health awareness replacing reality. Similar results were seen between genders and nature of family with the attitude for online health-seeking information. As increasing online influencers and their followers, commercial advertisements, paid online promotions, and wide publicity for online telemedicine shopping in websites like Amazon, MedPlus, PharmEasy, Netmeds and 1mg have been a catalyst for the increasing attitude for online health-seeking information. Respondents claim that factors such as transportation charges due to drifting (constant movement for consultation), long waiting hours, and overcrowding can be avoided by adopting online healthcare services.

The association of health sharing information was tested with the respondents' preference of treatment, the type of hospital for consultation and the type of family by using chi-square test of association. The relation between the respondents' attitude for health sharing experience was found to be significantly associated with the preference of treatment and respondents from joint family ($\chi 2$ (3, 36) = 17.94, $p < 0.001$, $\Phi = 0.706$). Also, there is a significant association between the attitude for health sharing experience with preference of treatment and private hospital consulting respondents ($\chi 2$ (3, 87) = 8.68, $p < 0.05$, $\Phi = 0.316$). Thereby, the hypotheses $H_0 1$ and $H_0 2$ are rejected proving the significant association between the tested variables.

ONLINE HEALTH-SEEKING BEHAVIOR

The rapid technological development coupled with globalization has increased internet usage among people to seek information specifically in the post COVID era is due to its variety and vast information available online, affordability, accessibility, convenience, interactivity, and anonymity [6,10–12,14,15]. In the study, 77% of the respondents were online health information seekers who seek information mostly for their family members (81%). The information sought includes information regarding symptoms, diagnosis, treatment, remedial tips, and measures thereby enabling them to deal with health issues, make decisions, and gain knowledge about their sickness. Previous studies claim that health-seeking behavior online has a positive impact on the patient because prior knowledge of health conditions assists them in making better decisions and due to the development of self-assurance.

TABLE 2 CORRELATION BETWEEN VARIABLES OF ONLINE HEALTH-SEEKING BEHAVIOUR

	Attributes	1	2	3	4
1	Attitude towards consultation	1			
2	Confidence & Identification	0.728**	1		
3	Understanding & Motivation	0.691**	0.731**	1	
4	Self-assurance & inspiration	0.765**	0.938**	0.905**	1

**Significant at 0.01 level (two-tail)

The results in Table 2 shows that there is a significant relationship between attitude towards consultation, confidence & identification, understanding & motivation, and Self-assurance & inspiration at the level of 0.01. The relationship of attitude towards consultation with confidence & identification (*r=0.728 p<0.01*), understanding & motivation (*r=0.691 p<0.01*), and self-assurance & inspiration (*r=0.765 p<0.01*) are statistically significant with each other. Similarly, the relationships of confidence and identification with understanding & motivation (*r=0.731 p<0.01*) and self-assurance & inspiration (*r=0.938 p<0.01*) is also significant. The relationship of understanding & motivation with self-assurance & inspiration is (*r=0.905 p<0.01*). These results infer that online health-seeking behavior is influenced by the factors such as attitude confidence and identification, understanding and motivation, self-assurance and inspiration by rejecting $H_0$3 as these factors are accountable for the development of trust [11,28] in the online platform used for health information seeking leaving an impact over the behavior of the individual.

Table 3 presents the results of multiple linear regression analysis conducted for the study variables dealing with the respondent's attitude towards online health seeking behavior. It was found that the respondent's attitude towards telemedicine or the online healthcare consultation services was predicted by the attributes of confidence and identification (β=0.369, p<0.000) and understanding and motivation (β=0.476, p<0.000) at a prediction value/explained variance of R^2= 63.6% (F (2,104) = 90.79, p<0.000) thereby, rejecting $H_0$4. In other words, the developed attitude towards online health seeking behavior in this post-COVID era is significantly predicted or influenced by the process of identification, understanding, confidence, and motivation involved within the online healthcare platforms. But the attribute of self-assurance and inspiration did not show any significant prediction towards online health seeking behavior of the respondents.

TABLE 3 RESULTS OF MULTIPLE LINEAR REGRESSION FOR THE STUDY VARIABLES

Variables	B	SE	t	p	95% CI
Constant	8.38	2.15	3.88	0.000	[4.106, 12.66]
Confidence & Identification	0.428	0.109	3.91	0.000	[0.211, 0.645]
Understanding & Motivation	0.704	0.140	5.04	0.000	[0.427, 0.980]

This finding supports the theoretical foundation of the study proving the impact of motivation and confidence combined with the identification and comprehending skills of the respondents to significantly play a crucial role in the construction

and development of individual's perception towards online healthcare services. Additionally, the concepts of social trust, support [10,28], and networking triggers the online healthcare communities to replace the traditional settings [6,14,28].

Further, the detailing on the respondent's medical awareness adds significance to the findings where most of the respondents (76.6%) who know their medical history prefer online consultation which regard to the family member's preference for online consultation 77.7% of the respondents choose online health appointments based on their awareness of medical knowledge. The above observation proves that health factors of confidence, understanding, motivation, and self-assurance are vital for the preference of online health-seeking behavior. Most (80 %) of the respondents who prefer private hospitals claim to utilize online treatment for accessibility, educational concerns, socio-economic factors, awareness of treatment and further measures. Furthermore, the fear of pandemic, social distancing, social isolation of the infected, frequent curfews, governmental and other administrative restrictions, and increased usage of social media during the pandemic have led to the high penetration of online platforms into healthcare services. The Information-seeking behavior theory states that 'information seeking is the purposive acquisition of information from selective information carriers which is considered as the coping strategy for patients as they navigate and synthesize the information to make informed decisions about their health' [9,11,12,19,30,34]. Presently, the respondents utilize online health services for basic information undergo selective self-evaluation of the available information to ensure its credibility. Further, the lack of rigid policy interventions on the rising medicolegal issues further challenging the accreditation, ethical consideration of practice & patients, credibility, and acceptance of telemedicine [15].

SOCIAL MEDIA INFLUENCE ON HEALTH-SEEKING BEHAVIOR

The widespread globalization with its intrusion in various disciplines especially in healthcare services has led to new avenues for knowledge sharing multiple changes in the patterns of health behavior of the individuals. This study also concentrates on comprehending the influence of social media on the conduct of those who seek health care. Technology and mobile phones have become one of the essential tools in the contemporary era and were possessed by all the individuals in the study and witnessed by their utilization of various social media platforms like WhatsApp, Instagram, YouTube, Snapchat, Facebook, etc., and search engines related to HSB including Mayo Clininc, Symptomate, Everyday Health, MedlinePlus, Healthdirect, Medindia, Babycentre, Pharmeasy, Netmeds, Tata's 1mg, etc., for checking symptoms and find easy and cost-effective home remedies including emergency care. The category of people who mostly utilized online platforms for medical consultations were young adults either for minor issues or to care their elderly. Some claimed it was for their pregnant siblings regarding maternal exercises, motivation, and post-natal care claiming the perceived usage and usefulness of technology in the evolving social behavior of the individuals marking the acceptance of technology. From these results, it can be observed that social media is occupying the healthcare sector has distanced time and space as mentioned by famous sociologist Antony Giddens in his book '*Time and Space in Social Theory*'. He claims '*emptying time as a precondition for the emptying of* space' especially observed in the modern era focuses on time and space distinction as the consequence of modernity including different aspects of integration and coordination of society working separately ignoring its properties of association such as proximity and nearness [10,12,15,35]. Modernity has separated the physical presence of the individual which has been made possible even in the field of healthcare. Thus, the higher the technological advancement the higher is the separation from the real world.

CHANGING SOCIAL CONSTRUCTION OF THE SICK ROLE

Most of the anthropological studies categorized HSB as preventive, illness, and sick role behavior. Talcott Parsons in his book '*the social system*, 1951' introduced the concept of *sick role* referring to the primary role performed by a person when he/she is ill or sick. By adopting the sick role, the person is relieved from other responsibilities making sick role as deviance from social life affecting the normal functioning of society. It is the legitimate role sanctioned by the formal healthcare system mediated by the healthcare services and facilities [36–39]. The longevity of the sick role is influenced by various social, economic, environmental, and cultural determinants. India's cultural differences potentially influence patients' attitude towards understanding the illness, apprehending its symptoms, diagnosis, treatment, and consequences. Further, socializing influencers such as the family, religion, and media adds to the construction on perceptions of health & illness by anticipation towards health care system contributing to the Goffman's understanding of illness. For example, a child suffering from fever and body tiredness is taken to the place of worship with the belief that

the child would be a victim of an evil eye. Similarly, people related all their illnesses and conditions from birth to death to various customs and practises [19,30,38,40–42]. These, practices result in noticeable behavioral change towards illness, health, its prevention and cure which are unlearned once the benefit of health is reached. Thereby, individuals' response to illness and its healthcare system is diverse and dynamic. Especially the intrusion of online healthcare services coupled with its popularity has led to the evolution of new forms of diagnosis, treatment, and care thereby, bringing complexity and changes in the existing healthcare infrastructure and preferences. These changing norms and perception of illness has changed the notion of illness from a taboo or deviance to performance of the social system mediated by internet and technology [28]. The evolving medical facilities, improving socio-economic conditions of people, increasing expectations for better healthcare, and changing human behavior makes the social construction of sick role as a socially dynamic concept of investigation.

FUTURE DIRECTIONS AND LIMITATIONS OF THE STUDY

Aligning with the theoretical consideration of the illness and the sick role, the study has tried to portray the evolving nature of illness with the developing healthcare infrastructure facilities aimed at equal accessibility by all the citizens. Further, the study would recommend for the inclusion of social security support systems for the online health consulters to effectively ensure their needs to provide quality health support to all. Thereby, boosting the achievement of Sustainable Developmental Goal 3 (Quality health for all). The study involves the risk of generalizing the information with caution due to the randomness in collecting the sample and the cross-sectional nature of the study limited to young adults whose behavioral changes are dynamic. The rapid development of the medical field has brought in various medical improvements such as telemedicine, AI and machines, and other technological improvements opens crucial aspects of future interrogation. Especially, dealing with its potential acceptance, social good approach, experience, and its implications to real-world. The study did not focus on the risks and benefits of adopting online health information and its behavior, the changing ways of patient-centered care, and the evolving patterns of healthcare behavior.

AUTHOR CONTRIBUTIONS

Both authors contributed equally to the conceptualization, methodology, writing, reviewing, editing, and approval of the submitted version of the manuscript.

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DECLARATION OF INTEREST STATEMENT

The authors report there are no competing interests to declare.

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