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Investigating Health Information Behavior of Patients With Chronic Illness Using Social Networking Sites: A Health Belief Model Approach

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ABSTRACT

This study aims to investigate the health information seeking and sharing behavior of patients with chronic illnesses and to assess the role of health belief model (HBM) and digital health literacy (DHL). A quantitative, cross-sectional study was undertaken comprising 450 respondents recruited from Bahawal Victoria Hospital (BVH), Bahawalpur Institute of Nuclear Medicine and Oncology (BINO), and Shahida Islam Teaching Hospital (SITH), Pakistan. The data were collected using a questionnaire. The results revealed that the most commonly used SNSs for health information were YouTube and Facebook. In addition, the respondents presented a high level of perceived severity and perceived susceptibility, an increased perception of benefits, and a strong intention to seek and share health information via SNSs. Respondents scored moderately on perceived barriers and low on digital health literacy, which implies that they found it challenging to critically appraise online resources. The results have several implications for healthcare organizations, which can develop strategies to increase digital health literacy among patients. Besides, such institutions can benefit from using social media to communicate health information, ensuring that such posts are evidence-based. At the same time, medical libraries should be considered in developing such interventions to increase patients' digital health literacy. Significance of such studies stems in its contribution in literature on digital health communication by providing insight examining the impact of DHL in seeking and sharing behavior of health information. The study also provides empirical evidence from Pakistan, where the potential impact of social networking sites on health information has been insufficiently explored.

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Introduction

The Health Belief Model (HBM) is a widely accepted theoretical model to predict and explain health transforming behavior. The theory posits that health practitioners can encourage individuals to engage in certain behavior if they identify the potential risk of disease, comprehend the severity of the health illness, and have belief in positive outcomes of the recommended health practice, and expect few barriers while undertaking the health practice. The study used the health belief model to provide perspective how patients utilize social media platforms to gather health information. In addition to the HBM, there is a need to assess the role played by health literacy in influencing online health information-seeking behavior. Thousands of people worldwide suffer from by chronic conditions such as diabetes, cardiovascular disease, and cancer; necessitating continuous access to health information and sustained medical care (WHO, 2025), People with chronic illnesses often encounter delicate healthcare requirements, including ongoing education, counseling, and Self-control abilities (Bodenheimer, Lorig, Holman, & Grumbach, 2002). While the significant number of studies exists regarding internet and social media utilization among Pakistani patients; nevertheless, there is limited research evidence concerning the online health information-seeking behaviors of patients with chronic illnesses. Previous literature on the influence of digital technology on healthcare in Pakistan focuses on internet use among the Pakistani population and has minimal information on patient-specific behaviors of health information-seeking. Additionally, it is crucial to address the knowledge gap in understanding the health information-seeking behaviors of patients seeking care in the Southern Punjab area of Pakistan.

The present study is aimed to strengthen the prevailing body of knowledge on health information-seeking behavior amongst chronic disease patients in Pakistan. This study will be carried out at Bahawal Victoria Hospital (BVH), Bahawalpur Institute of Nuclear Medicine and Oncology (BINO), and Shahida Islam Teaching Hospital (SITH). By combining health belief model and digital health literacy to predict healthcare information-seeking behavior of patients, this research study will produce practical insights for healthcare administrators and policymakers, and information specialists.

Literature Review

Health information seeking has changed significantly due to the advancement of digital communication technologies. It has shifted from relying on traditional sources such as physicians, libraries, newspapers, and television to using online resources to find health information. Social networking sites have gained prominence as they allow people to communicate interactively and provide and receive information and support. Factors affiliated to social and psychological challenges influence the seeking of online health information(Jacobs, Amuta, & Jeon, 2017; Mills & Todorova, 2016) ; psychological traits like mental health anxiety, insecurity, self-efficacy, and internet user's efficacy forecast the utilization of social networking platforms for accessing online health information. Lifestyle, cultural, and economical elements are also linked to the seeking of online health information (Lagoe & Atkin, 2015; Weaver III et al., 2010). A prior study (Shamlou, Saberi, & Amiri, 2022) shown that psychological elements affect the motivation to pursue online health information. These elements include perceived behavioral control, attitude, and subjective norms. The findings revealed that attitude is the paramount factor affecting the desire to pursue online health information.

Patients with chronic conditions that need continuing treatments rely on social networking sites (SNS) for psychological support, diagnosis and treatment, and peer encouragement (Ziebland & Wyke, 2012). Social media sites like Facebook, Twitter, Whatsapp, and Instagram have become into important forums for healthcare debates. These platforms allow users to communicate the effects of treatment, seek emotional support, and exchange ideas without geographical or chronological limits (Gruzd,

Hernández-García, & Networking, 2018). Chronic patients gain from social networking sites (SNS) in two ways: they develop communal identities within the illness experience and they serve as repositories of crowd-sourced information (Attai et al., 2015) .According to research, regular participation in online healthcare networks is connected with improved psychological stability, treatment compliance, and patient empowerment (Bartlett, Coulson, & counseling, 2011).Unfortunately, there are concerns about the uncontrolled nature of user-generated material, such as being bombarded with disinformation, privacy infringement, and psychological trauma from negative experiences(Chew & Eysenbach, 2010).

(Willis, 2018) demonstrated that participation in online health communities and engagement with user-generated content predict greater adherence to medical advice when patients manage chronic illnesses. In general, users' attitudes and intentions may affect their health-related behaviors, which is evident in the study since patient participation in online health communities improves their adherence to medical treatment. This way, the study helps understand the influence of social networks on health-related behavior and provides evidence on how they can be used to improve populations' health status.

Past research has established that patients with chronic illnesses use online resources to seek health information to increase their knowledge about the condition, reduce uncertainty, adhere to recommended treatments, and obtain social support from others going through similar experiences (Zaghloul et al., 2025). Prior research (Malik, Islam, Ahmad, Mahmood, & Science, 2023) concluded that perceived barriers drastically influenced chances of maintaining a healthy lifestyle. Patients with chronic illnesses can communicate with each other virtually to exchange information and social support through the proliferation multiple social media platforms including Twitter, Facebook, and health-specific groups. Such tools can offer numerous benefits to patients, including confidentiality, access to information twenty four hours, and the opportunity to communicate with others who are geographically distant but facing similar health problems(Loncar-Turukalo, Zdravevski, da Silva, Chouvarda, & Trajkovik, 2019; Zhang et al., 2020).

Chronic illnesses are the primary causes of mortality and impairment. As chronic diseases become more common and healthcare expenses escalate, researchers and policymakers are exploring methods to enhance access to information regarding chronic diseases while also reducing expenses.Digital resources may be an important tool in disseminating health information to patients and educating them on their conditions. However, some studies have shown that patients with chronic diseases may not be as likely to seek online health information (Zhao, Zhao, & Song, 2022)

However, researchers have noted the challenge of health information quality on social networking sites. More recently, Mark Zuckerberg in January 2025, stated that Meta will cease employing independent third-party verification services, claiming that they triggered "too much censorship" while being largely ineffective at curbing misinformation, despite evidence of their effectiveness at reducing belief in demonstrably false claims. This represents unwillingness by major platforms to seriously engage with the problem of content moderation, likely due to the immense costs it would impose on their business model and the loss of profit from users consuming divisive content (Denniss & Lindberg, 2025).Other factors include the presence of advertisements, health information commercialization, and recommendation algorithms that make it difficult for patients to make optimal health decisions. Therefore, the effectiveness of health information sought online is determined by an individual's proficiency in digital health information. Digital health literacy (DHL) is identified as "the ability to actively seek, retrieve, understand, and evaluate health information from electronic sources and apply the information to improve health". Therefore, to ensure the ease of use and accessibility of resources, it is essential to assess patient's DHL levels and determine the things that might impact them. (Zaghloul et al., 2025).

The significance of the present study lies in the modern requirement to properly understand the significance of digital health literacy (DHL) regarding the usage of online health resources, since it is expected that DHL of the highest level determines greater adaptability when interacting with digital services and portals(Baron-Epel et al., 2026) Moreover, DHL is a concept that has prompted researchers to conduct studies on health information seeking and sharing behavior. People with adequate digital health literacy skills can assess health information on social media networks, critically evaluate the information, compare information from different sources, identify reliable resources, and make appropriate health decisions.

Digital health literacy exhibits some of the unique attributes in comparison with health literacy. The patients who lack human interaction while accessing health care through digital tools may experience negative consequences. It may hinder its potential to procure health-related information as well as optimal use of the gathered data to co-create or co-produce value and produce health promotion and risk prevention services. It is essential for health-care organizations to focus on increasing patients' ability to navigate the digital environment to help them achieve the high level of value co-creation capability, which is possible in the health-care ecosystem(Palumbo, Nicola, & Adinolfi, 2022)

People with inadequate digital health literacy are susceptible to accessing health information from unreliable sources and are incapable of making optimal health decisions. Previous studies have separately examined the digital health literacy and impact of health beliefs on health information behavior. However, there is a need to understand the relationship between the constructs and how they interact to influence health information seeking and sharing behavior on social networking sites among patients with chronic illnesses. This study seeks to fill this research gap by examining the role of health belief and digital health literacy on health information behavior on social networks especially among those living with chronic illnesses in Pakistan.

Theoretical Framework

The present research study based upon the health belief model (HBM) is a widely recognized behavioral framework utilized to provide insight and predict behaviors of individuals associated with health, including their intention to perform specific health behaviors. It was developed by (I. M. J. H. e. m. Rosenstock, 1974) and later modified by (Janz & Becker, 1984). According to the health belief model, individuals are susceptible to take action towards preventing diseases when they perceive severity and susceptibility to illness, recognize benefits of a certain behavior, and expect few barriers when performing the health-promoting activity. Since it was formulated, the health belief model has been widely applied to understand health information seeking, preventive health practices, health communication, and technology-mediated health care(I. M. Rosenstock, Strecher, & Becker, 1994; Strecher, Rosenstock, & medicine, 1997).

In particular, health belief model can explain patterns of seeking and sharing health information in social networks of patients with chronic diseases. Patients of such conditions are extremely inclined to seek remedies or seek assistance from online platforms and discussion forums. Their determination to pursue and disseminate health information is influenced by perceived susceptibility, seriousness, advantages, and barriers, along with their competence in digital health literacy. Thus, the current study explores social media health information-seeking behavior of patients based on modified health belief model. The original HBM was modified with adding concept of Digital Health Literacy (DHL) that has gained much attention among researchers recently.

Perceived severity concept concerns the way people cognitively perceive the seriousness of medical conditions and the possible consequences or negative effects that the disease can bring(Wang, Huang, Pan, & Bai, 2021).The consequences of illness can be both medical, for example, significant disability or death, and social, for example, domestic life. Previous studies have

shown that health-related Internet use, including the use of Internet health resources, adherence to dietary and physical activity recommendations, cancer screening behavior, and dengue early detection(Siddiqui, Ghazal, Bibi, Ahmed, & Sajjad, 2016) . These behaviors were significantly associated with perceived severity.

Perceived susceptibility signifies to a human's perception of their chance of being diagnosed with a particular condition. Individuals' beliefs of their susceptibility to a certain health concern significantly enhance the probability of engaging in information-seeking and sharing behaviors. Studies have shown a significant correlation between perceived susceptibility to health issues, particularly acute or chronic illnesses, and involvement with social networking platforms, a healthy lifestyle, and preventive healthcare practices (Shewasinad Yehualashet et al., 2021).

Perceived benefit derived from the Health Belief Model signifies an individual's conviction in the capacity of a behavior to mitigate the risk of disease or improve health results(Li, 2013; I. M. J. H. e. m. Rosenstock, 1974).

Perceived barriers are people's beliefs about the challenges and difficulties that prevent them from engaging in health information seeking. In the context of the Health Belief Model, perceived barriers signifies personal perceptions of challenges that prevent participation in healthy lifestyles (Stellefson et al., 2013; Zhao et al., 2022).

Digital Health Literacy

The health belief model omits a concept of digital health literacy an important factor in online health information retrieval and dissemination. Digital health literacy refers to the ability of an individual to identify, interpret, evaluate critically, and utilize health information obtained from digital and online platforms. Patients with sufficient digital health literacy can find reliable health information and avoid misinformation; thus, they are likely to effectively manage their chronic diseases through health information seeking and sharing. The current study measures digital health literacy as a critical factor that promotes intentions of patients to interact with health information found in social networks.

The current framework provides a conceptual structure in which the health information seeks and shares intentions of patients with chronic diseases are placed. Patients' attitudes to seek and share health information within social networks are determined by their perceived severity, susceptibility, benefits, barriers, and digital health literacy. The framework was built on the health belief model and modified by adding a significant predictor of social media health information-seeking behavior, namely digital health literacy. Thus, the current study aims to analyze online health information-seeking behavior of patients with chronic diseases based on the proposed conceptual framework to provide an adequate understanding of their health information-seeking tendencies in Pakistan's health care environment.

Research Methodology

Research Design

This research deployed a quantitative cross-sectional sampling method to assess chronic disease patients' health information seeking and sharing behavior through employing social networking sites. A quantitative approach was preferred since it allows objective examination of the interrelationships between studies constructs while enabling statistical evaluation of the respondents' perceptions and behaviors. The cross-sectional survey design was appropriate to estimate the target population's health information-seeking and sharing behaviors at a specific period in time.

Research Tool

A comprehensive research questionnaire was developed and administered to the sampled patients diagnosed with chronic illnesses. The tool comprised two sections. The first section captured the Demographic information of respondents, encompassing gender, age, and educational background, and occupation, and disease type, length of the illness, hospital, and social networking sites' (SNS) usage patterns. The second section consisted of items measuring the

study's constructs, specifically perceived severity, perceived susceptibility, perceived benefit, perceived challenges to digital health competence, intentions to seek health information, and intentions to share health information. Each variable was assessed on a five-point Likert scale, with 1 representing Strongly Disagree and 5 denoting Strongly Agree. The survey was initially carried out in English, and patients were provided with verbal explanations as required.

Data Collection Procedure

The data were collected from chronic disease patients in three tertiary care hospitals: Bahawal Victoria Hospital (BVH), Bahawalpur Institute of Nuclear Medicine and Oncology (BINO), and Shahida Islam Teaching Hospital (SITH) in South Punjab, Pakistan. The three hospitals were purposively selected due to their significant number of chronic disease patients, such as cancer, diabetes, hypertension, and asthma. Moreover, a convenience sampling procedure was used to select the study sample because it is an appropriate strategy when a researcher has limited time and resources. In this case, the researcher could only reach out to patients who visited the hospitals' outpatient departments and treatment units during the data collection period. The patients received verbal explanations about the study's purposes and were assured of their right to withdraw from the study at any stage. Written consent was obtained from the participants, and only 450 responses were included for analysis.

Data Analysis Procedure

Prior to analysis, Survey responses were encoded and recorded into the Statistical Package for the Social Sciences (SPSS). At the outset, descriptive statistics such as frequencies, percentages, means, and standard deviations had been generated to analyze the socio-demographic traits of the participants, along with the their SNS usage behaviors and responses to specific items. The descriptive analysis helps provide summary statistics for the sampled patients' health belief model (HBM) constructs, Digital health literacy skills, and health information-seeking and sharing behaviors. Then, the data were screened and checked for coding accuracy. The reliability and validity of the constructs were evaluated using appropriate statistical techniques, including Cronbach's Alpha for testing reliability and validity procedures. Lastly, the findings are presented descriptively using tables and written explanations to interpret the results better.

Results

Respondents' Demographic Profile

The respondents' gender has a significant representation with 54.92% of the sample size consisting of males while 45.08% were female. From this, it can be seen that female and male patients are equally likely to seek and share health information from social media. A total of 450 chronic illness patients were selected for this study. The sample size had a significant representation of patients seeking treatment from the three chosen tertiary hospitals. Concerning the age of the respondents, 41.19% of the respondents were between the age bracket of 20 and 30 years followed by those aged 31 to 40 years at 34.55%. From the remaining 24.36%, 12.36% were aged above 40 years while 11.9% were below 20 years. The study shows that young adults are more likely to use social media platforms to gather health information Looking at the number of respondents for different illness conditions, the analysis shows that 33.64% of patients had cancer while 29.29% were suffering from hypertension. From the remaining 36.59%, 27.36% had diabetes while 9.38% had asthma. In summary, it can be seen that a large percentage of patients were diagnosed with cancer, hypertension, or diabetes

The study further looked at the distribution of the respondents in relation to the hospitals that had been chosen for the study. Looking at the general distribution, 34.10%, 33.64%, and 32.27% of the respondents respectively belonged to Shahida Islam Teaching Hospital (SITH), Bahawal Victoria Hospital (BVH), and Bahawalpur Institute of Nuclear Medicine and Oncology (BINO). Thus, it can be seen that the distribution of the

respondents was quite evenly spread among the three hospitals.

Social Media Use for Health Information Seeking

The descriptive analysis of the usage pattern of the social networking sites shows that the patients frequently used the sites to seek and share health information. According to the analysis, it was found that out of all the social media platforms, 41.2% of the respondents primarily used YouTube to gather health information from the internet while 35.2% used Facebook. On the other hand, 18.8% of the respondents used Instagram. Fewer patients used Twitter (2.7%), WhatsApp (0.9%), and others (1.1%). This suggests that the most used social media platforms for health information purposes are those which allow for the use of videos and other interactive media such as Instagram, YouTube, and Facebook. On the other hand, it was found that 66% of the respondents used social media to seek health information for between 2 and 3 hours. From the remaining 34%, 27% used the platforms for 4–5 hours however, only 8% used them for over 5 hours. From this, it can be seen that the patients regularly use the sites to seek health information without being overly dependent on the platforms. Looking at the percentage of time spent on social media, 43% of the respondents used the sites for between 1 and 2 hours. Further, 27% of the respondents used the platforms for less than an hour while 15% and 14% used the sites for between 2 and 4 hours and over 4 hours daily respectively.

Concerning the level of the patients' overall perception of health, 57% and 21% respectively had a good and very good perception of health. However, 15% of respondents also had a fair perception of their health. On the other hand, only 8% had a poor perception of health. This suggests that although patients were suffering from chronic illnesses, it did not affect their overall perception of health. Looking at the type of information that patients searched for on the most frequent basis, 50% of the respondents indicated that they sought healthy lifestyle information. Further, 20% of the patients searched for health management information while 14% and 13% looked for emotional support and illness-specific information respectively. Finally, 4% of the patients did not have a preferred type of information to gather from social media. It thus appears that patients use the platforms to seek general health information rather than specific information related to their illness.

Table 1*: Social Networking Sites (SNSs) Usage Pattern*

Social Networking Sites	Frequency	Percentage
Facebook	154	35.2
Instagaram	82	18.8
Twitter	12	2.7
Youtube	180	41.2
WhatsApp	4	.9
Other	5	1.1
How often do you spend time on social media for health-related purposes?		
2-3 hours	288	66%
4-5 hours	116	27%
More than 5 hours	33	8%
How much time do you spend on SNSs daily?		
Less than 1 hour	118	27 %
1-2 hours	189	43%
2-4 hours	67	15 %
More than 4 hours	63	14 %
Your Perceived overall health?		
Very Good	90	21%
Good	250	57%
fair	64	15%
Poor	33	8%
What health information are you concerned about?		
Health Management	87	20%
Healthy Lifestyle	219	50%
Emotional Support	59	14%
Illness	55	13%
No Concern	17	4%

Descriptive Statistics of the Constructs of the Health Belief Model

Descriptive statistics were generated to examine the respondent's level of agreement with each of the statements included in the Health Belief Model and Digital Health Literacy. The following analysis presents the mean scores and standard deviations recorded for each of the constructs included in the study.

Perceived Severity

Based on the descriptive analysis, the respondents showed higher perceived severity when it comes to health-related concerns that they find discussed in social networking sites as evidenced by the mean score of 3.53 to 3.87. The most positive mean was for the statement regarding respondents thinking that they could have health issues discussed in social networking sites (M = 3.87, SD = 1.128), with 79.9% agreeing or strongly agreeing. In the same way, 81.2% of the respondents said they were concerned about

developing health problems (M = 3.76, SD = 1.039). The perception of having a high likelihood of experiencing these health issues had a relatively low mean (M = 3.53, SD = 1.300); however, almost 69.1% of the respondents agreed or strongly agreed. In summarizing the results, it was found that respondents perceived the health-related problems discussed in the social networking sites as real, they thought that these problems could be a real problem in their health, namely the perception of seriousness as proposed by the Health Belief Model was high.

Table 2: *Perceived Severity*

Statements	Mean	SD	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
My chance of getting health-related issues mentioned/discussed on social networking sites is high.	3.53	1.300	47(10.8%)	75(17.2%)	13(3.0%)	204(46.7%)	98(22.4%)
I am worried about the likelihood of contracting health-related issues mentioned/discussed on social networking sites	3.76	1.039	24(5.5%)	54(12.4%)	4(0.9%)	229(52.4%)	126(28.8%)
There is a chance that I may experience health problems that are mentioned/discussed on social networking sites.	3.87	1.128	17(3.9%)	64(14.6%)	7(1.6%)	269(61.6%)	80(18.3%)

Perceived Susceptibility

The results of perceived susceptibility show that respondents, in general, had a relatively high mean score between 3.80 – 3.86 indicating that they felt 'vulnerable' to health problems mentioned in the social network sites. The level of agreement to the statement, "Discussing health-related issues on social networking sites can create significant problems," was highest (M = 3.86, SD = 1.147), with 76.4% of respondents agreeing and strongly agreeing. Likewise, 77.8% agreed that the impacts of such health problems are serious (M = 3.82, SD = 1.113); and 77.1% reported fear of suffering of such health problems (M = 3.80, SD = 1.161). These results indicate that participants indicated that chronic health conditions were serious and that they felt at risk of experiencing them, that align with the Health Belief Model.

Table 3: *Perceived Susceptibility*

Statements	Mean	SD	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The consequences of the health-related issues mentioned/discussed on social networking sites are serious for me.	3.82	1.113	27(6.2%)	42(9.6%)	28(6.4%)	225(51.5%)	115(26.3%)
Contracting the health-related issues mentioned/discussed on social networking sites is likely to cause major problems for me.	3.86	1.147	23(5.3%)	52(11.9%)	28(6.4%)	195(44.6%)	139(31.8%)
I am afraid of suffering from health-related issues mentioned/discussed on social networking sites.	3.80	1.161	30(6.9%)	48(11.0%)	22(5.0%)	216(49.4%)	121(27.7%)

Perceived Benefits

The mean score for the respondents' recognition of the advantages of gaining health information from social networking sites was between 4.02 and 4.13, with high scores indicating strong recognition. There was a general consensus on the value of health information found on social networking sites (M = 4.13, SD = 0.761), with 92.7% of respondents agreeing or strongly agreeing. Similarly, more than 87% of respondents found health information on social networking sites beneficial, helpful, gives them more knowledge about their illness, offers emotional support, and helps them find treatment options. From the results of this study, it can be concluded that respondents saw social networking sites as useful tools to access health related information and support.

Table 4: *Perceived Benefits*

Statements	Mean	SD	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Health information available on social networking sites could be beneficial.	4.02	.889	13(3.0%)	28(6.4%)	7(1.6%)	280(64.1%)	109(24.9%)
Health information available on social networking sites could be valuable.	4.13	.761	6(1.4%)	20(4.6%)	6(1.4%)	285(65.2%)	120(27.5%)
Health information available on social networking sites could be helpful.	4.08	.837	11(2.5%)	20(4.6%)	11(2.5%)	277(63.4%)	118(27.0%)
Health information available on social networking sites can help me gain better understanding of my illness.	4.10	.834	8(1.8%)	26(5.9%)	6(1.4%)	271(62.0%)	126(28.8%)
Health information available on social networking sites can help me to provide emotional support.	4.03	.886	7(1.6%)	36(8.2%)	14(3.2%)	258(59.0%)	122(27.9%)
Health information available on social networking sites can help me to discover new treatments for my condition.	4.05	.916	12(2.7%)	30(6.9%)	10(2.3%)	256(58.6%)	129(29.5%)

Perceived Barriers

Although respondents had a positive attitude towards social networking sites, there were also perceived barriers to use, with mean scores between 3.90 and 4.03. Lack of health information access due to limited digital health literacy (M = 4.03, SD = 0.999) was the largest perceived barrier, followed by concerns about the credibility of the information, understanding complex health information, and balancing the time spent discussing health related issues (all M = 4.02). Information overload, privacy concerns, credibility concerns, and lack of communities for illnesses were cited as limiting their use of social networking sites by more than 84% of those who responded. The results suggest that participants appreciate having access to online health information, but continue to worry about the quality, accessibility, and trustworthiness of this information.

Table 5: *Perceived Barriers*

Statements	Mean	SD	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
It is challenging to find relevant health information on social networking sites due to information overload.	3.90	1.138	29(6.6%)	43(9.8%)	4(0.9%)	229(52.4%)	132(30.2%)
It is challenging to discuss sensitive health issues on social networking sites due to privacy concerns.	3.90	1.039	19(4.3%)	48(11.0%)	1(0.2%)	258(59.0%)	111(25.4%)

It is challenging to determine whether health information on social networking sites is credible.	4.02	.975	12(2.7%)	43(9.8%)	2(0.5%)	247(56.5%)	133(30.4%)
It is challenging to balance time spent on social networking sites for health-related discussions.	4.02	.977	15(3.4%)	37(8.5%)	2(0.5%)	252(57.7%)	131(30.0%)
It is challenging to understand complex health information shared on social networking sites.	4.02	.958	14(3.2%)	37(8.5%)	1(0.2%)	260(59.5%)	125(28.6%)
It is challenging to access health information on social networking sites due to limited digital health literacy.	4.03	.999	15(3.4%)	38(8.7%)	7(1.6%)	235(53.8%)	142(32.5%)
It is challenging to find patient communities that address my specific chronic illness on social networking sites.	3.97	1.052	18(4.1%)	46(10.5%)	2(0.5%)	236(54.0%)	135(30.9%)

Digital Health Literacy

Based on the descriptive analysis, the mean scores of the respondents' digital health literacy vary between 2.40 and 2.54, indicating a generally low level. The majority of respondents did not agree to have knowledge of health resources on social networking sites and their location, the ability to judge the credibility of health information found on these sites, and the skills needed to use them effectively for health-related decision making. The lowest mean score was in confidence using social networking sites to answer health questions (M = 2.40, SD = 1.439) and the highest was confidence using health information on social networking sites (M = 2.54, SD = 1.432). In general, the findings suggest a high degree of activity on the social networking sites, but that few respondents have the skills necessary to identify, evaluate and confidently use health information found online.

Table 6: *Digital Health Literacy*

Statements	Mean	SD	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I know what health resources are available on social networking sites.	2.45	1.465	167(38.2%)	109(24.9%)	6(1.4%)	109(24.9%)	46(10.5%)
I know where to find helpful health resources on social networking sites.	2.49	1.463	162(37.1%)	104(23.8%)	7(1.6%)	121(27.7%)	43(9.8%)
I know how to find helpful health resources on social networking sites.	2.50	1.443	156(35.7%)	111(25.4%)	7(1.6%)	123(28.1%)	40(9.2%)
I know how to use the health information i find on social networking sites to help me.	2.54	1.432	144(33.0%)	120(27.5%)	10(2.3%)	120(27.5%)	43(9.8%)
I know how to use social networking sites to answer my health questions.	2.40	1.439	168(38.4%)	114(26.1%)	8(1.8%)	105(24.0%)	42(9.6%)
I have the skills I need to evaluate the health resources I find on social networking sites.	2.44	1.451	164(37.5%)	114(26.1%)	4(0.9%)	112(25.6%)	43(9.8%)
I feel confident inn using information from social	2.48	1.503	168(38.4%)	105(24.0%)	4(0.9%)	105(24.0%)	55(12.6%)

networking sites to make health decisions.

Health Information Seeking Intentions

The descriptive results show that there was a high intention to seek health information from social networking sites, ranging from 3.71 to 3.77. People's strongest intention was to continue seeking health information in the future (M = 3.77, SD = 1.156), followed by their thoughts about others' health experiences before making health decisions (M = 3.74, SD = 1.129). More than three-fourths (76%-79%) of respondents agreed or strongly agreed with all four statements, indicating positive intentions to keep using social networking sites as a source of health information.

Table 7: *Health Information Seeking Intentions*

Statements	Mean	SD	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I intend to keep seeking health information on social networking sites I need to.	3.71	1.210	40(9.2%)	51(11.7%)	8(1.8%)	235(53.8%)	103(23.6%)
I am willing to keep seeking health information on social networking sites that I am interested in.	3.71	1.095	21(4.8%)	67(15.3%)	15(3.4%)	247(56.5%)	87(19.9%)
I intend to keep seeking health information on social networking sites in future.	3.77	1.156	30(6.9%)	54(12.4%)	11(2.5%)	233(53.3%)	109(24.9%)
I am willing to consider others' health experience on social networking sites before making a health decision.	3.74	1.129	25(5.7%)	63(14.4%)	9(2.1%)	242(55.4%)	98(22.4%)

Health Information Sharing Intentions

The results also indicate that on average, the respondents felt very motivated to share health information on social networking sites with scores ranging from 3.70 to 3.78. Respondents also indicated that they would share health information that would be beneficial to others, information that is personally relevant to them, and their own health experiences (M = 3.70-3.74). In general, about 76-78% agreed or strongly agreed with these statements, which illustrate that social networking sites are not only information sources, but also valuable tools for sharing health-related information and support with others with chronic condition.

Table 8: *Health Information Sharing Intentions*

Statements	Mean	SD	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I plan to share health information on social networking sites that is helpful to other people.	3.74	1.228	35(8.0%)	60(13.7%)	10(2.3%)	210(48.1%)	122(27.9%)
I will try to share health information on social networking sites that I am interested in.	3.70	1.150	26(5.9%)	69(15.8%)	9(2.1%)	237(54.2%)	96(22.0%)
I intend to share health information on social networking sites to support others	3.78	1.123	22(5.0%)	65(14.9%)	8(1.8%)	236(54.0%)	106(24.3%)
I am willing to share my health experience on social networking sites.	3.70	1.156	27(6.2%)	68(15.6%)	9(2.1%)	236(54.0%)	97(22.2%)

Discussion

The current study aimed to investigate the behavior of people with chronic illnesses concerning the seeking and sharing of health information on social networking sites. This was achieved by employing the Health Belief Model (HBM) together with Digital Health Literacy. The discussion presented below focuses on the most salient findings of the study. Generally, the analysis revealed that most of the respondents who used social media were young adults. This demonstrates that patients preferred to use the platforms to gather health information. This conclusion is supported by the fact that 41.19% of the respondents were between the ages of 20 and 30 years. Other researchers have also found similar results when investigating the impact of technology on the behavior of patients. The results show that younger generations are particularly susceptible to use digital platforms to collect information concerning health in contrary to older generations who are less likely to do so. Further, the study found that there is virtually equal representation of female and male patients when it comes to the use of social media to seek and share health information.

In the current study, the most prevalent illnesses were cancer, hypertension, and diabetes. This implies that patients used the platforms to continuously monitor their health status. This conclusion is supported by the fact that the vast majority of patients used the sites to constantly update themselves on existing health information on their respective illnesses. This observation is in line with research that indicates that chronic disease patients regularly visit digital resources to gain access to the latest information on their conditions. It was further found that the patients preferred to use YouTube and Facebook to obtain health information. This can be attributed to the fact that apart from containing the latest information, the platforms were user-friendly and interactive. The analysis further revealed that the patients perceived most illnesses to be serious and that they were highly susceptible to developing them. The Health Belief Model stipulates that the recognition of the severity as well as sensitivity to illness encourages individuals to gather more information on the disease and take precautions to avoid or manage it. Therefore, the fact that patients acknowledged the seriousness of illnesses and their likelihood of developing them influenced their decision to use social media to seek further information. On the other hand, the analysis showed that although the respondents identified a number of perceived benefits associated with using the sites, they also acknowledged the existence of numerous barriers.

The study further revealed that the patients generally had a high intention as well as willingness to seek and share health information through social media. This observation emphasizes the significance of the study as it shows the extent to which social networking sites could potentially be used to communicate health information to patients. It further indicates that the platforms can be used to promote disease prevention, detection, and control as the patients are highly likely to share any useful information that they come across. Additionally, the fact that the respondents indicated a high willingness to provide support to fellow patient's further supports this point as it implies that the patients can help each other to manage their conditions.

The current study further supports the use of the HBM to predict the likelihood of patients to seek health information from social media. The fact that the patients reported high rates of perceived severity and susceptibility demonstrates that they understood the impact that the chronic illnesses had on their health. Further, the analysis illustrated that the respondents were highly likely to benefit from engaging in health information seeking behaviors. This shows that the perceived benefits largely influenced their intention to use social media to manage their conditions. However, the low levels of digital health literacy that were recorded illustrate that the patients failed to fully understand the significance of health information that they gathered from the platforms. As such, the findings emphasize the need for healthcare workers to ensure that the patients are more digitally literate so that they can easily access and utilize health information.

Policy Implications

The findings of this research carry significant practical implications for healthcare stakeholders, practitioners, and librarians, as well as public health agencies. First, healthcare institutions need to consider digital health literacy as an integral element of chronic disease management. Healthcare professionals should invest more effort in teaching patients about how to seek, Assess and incorporate health information accumulated from online platforms. Critically. It will help reduce the impact of misinformation on patients using social networks to look for solutions to their health problems. Second, government agencies need to create official accounts on social media to spread verified and evidence-based health information among the general population. This strategy will improve the credibility of healthcare organizations while helping patients with chronic diseases make safer health-related decisions online.

Third, hospitals should encourage healthcare professionals to share health information using social networking sites. This recommendation is based on the fact that most patients trust the recommendations made by physicians and nurses. The presence of medical professionals on social media can help patients with chronic diseases reduce their reliance on untrustworthy internet resources. Moreover, the current study also has implications for medical librarians and information officers. Libraries can play a critical role in promoting digital health literacy by introducing training sessions that teach patients how to find, access, and assess the quality of electronic health information. In particular, medical librarians should advise patients on which electronic health resources to use for a specific purpose and help them determine the credibility of the information found. I think that involving medical librarians in patient education programs can be beneficial to healthcare institutions because they understand the importance of evidence-based practices. Finally, policymakers should develop national strategies that can help eliminate health information insecurity and ensure that patients with chronic diseases receive high-quality healthcare services despite the increasing amount of misleading data on the internet. Collaboration between healthcare organizations, universities, technology companies, and government agencies can help create safer digital ecosystems for patients with chronic diseases.

Limitations and Future Research

Even though the research executed several important contributions to the existing body of knowledge, it had several limitations that future researchers should take into account when designing similar studies. First, this study used A cross-sectional approach limited the potential to draw logical conclusions on the identified associations. Additionally, future studies should adopt a longitudinal design to reveal the complex patterns of patients' behavior over time. Second, the current study employed a convenience sampling strategy and was conducted among patients at three tertiary hospitals located in southern Punjab, Pakistan. As a result, the conclusions drawn might not be generalizable to patients receiving services at other types of facilities or residing in different regions. Future studies should use a random sampling strategy and recruit study participants from a diverse range of settings. Third, the present research primarily relied on self-reported evidence, which is susceptible to multiple biases, such as recall and social desirability biases. Future studies can use mixed-methods approaches, such as interviews and focus group discussions, to complement the quantitative findings derived from questionnaires. Even though this paper focused on the Health Belief Model and Digital Health Literacy, future studies can consider other frameworks, such as the Theory of Planned Behavior, Unified Theory of Acceptance and Use of Technology, Social Cognitive Theory, and Protection Motivation Theory, to develop a more comprehensive understanding of the phenomenon. The following future research directions were identified: examining how patients' behavior is affected on various online platforms, comparing the patterns of behavior among patients with different diseases, exploring age-related differences in

health information behavior, and assessing possible interventions that can help patients with chronic diseases evaluate the credibility of health information found on the web.

Conclusion

The growing popularity of social media has significantly changed the way patients with chronic diseases interact with health information. This paper provides empirical evidence that patients' health beliefs, as explained by the HBM, along with their digital health literacy levels, are key factors that influence their intentions to use social networks to seek and share health information. By integrating the concepts of Digital Health Literacy and Health Belief Model, this study added to the previous research findings on patients' health information behavior by demonstrating in which manner patients' health beliefs guide their decisions regarding using social networking platforms to engage in health information-seeking and sharing activities. The findings of this research provide various practical consequences for managers, policymakers, and librarians in healthcare organizations and highlight the importance of educating patients about how to avoid health information security threats. In addition, this paper makes a significant contribution to the body of knowledge in the fields of health informatics, health communication, and Library and Information Science by providing insights into patients' health information behavior in the context of social media in Pakistan, where previous research on this topic was limited. Lastly, this study offers valuable suggestions to healthcare administrators, policymakers, and medical librarians on how to help patients with chronic diseases improve their digital health literacy and effectively use social networking sites to manage their conditions. Overall, improving patients' digital health literacy levels and building their capacity to evaluating online content critically will enable individuals to adopt safe and healthful lifestyles. choices while promoting the improvement of their health status in the long run.

Ethical Statement

The ethical approval for this study was obtained from the relevant ethical review board. The study followed the principles outlined by the Declaration of Helsinki, and informed consent was obtained from each study participant. In addition, the participants were assured that their identity would remain confidential, and their responses would not be disclosed publicly.

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Informed Consent Statement

All participants included in the study declared their informed consent.

Conflict of Interest

The researcher claim that they do not possess any conflicts of interest.

Data Availability Statement

Data sets produced in this study can be obtained from the corresponding author subject to a valid request. The data is not accessible to the public as it includes information that may violate the participants' privacy.

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