

Online Health Information Behaviour

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Abstract — In today's digital age, the internet serves as a fast, cost-effective, and accessible medium for accessing health-related information. The availability of audiovisual content and the ability to obtain direct insights from medical experts have further enhanced the appeal of online health information among users. This study primarily aims to explore the connection between individuals' online health information seeking patterns and the outcomes that follow after their search. To analyse these relationships, Smart PLS-SEM (Partial Least Squares Structural Equation Modelling) is employed to examine the interplay among the key variables. Findings reveal that an individual's motivation to seek health information online significantly influences post-search actions, such as modifying health practices, consulting a healthcare provider, or disseminating the acquired information to others. The study underscores the importance for healthcare professionals to recognize the underlying motivations and behavioural intentions driving consumers' engagement with online health resources.

Keywords— online health information seeking behaviour, behavioural intention, post-search behaviour, perceived behavioural control, health belief model.

I. INTRODUCTION

The internet has become an integral part of everyday life, deeply embedded in how individuals access information, particularly in the realm of health. With its widespread availability, the digital landscape offers a fast, cost-effective, and accessible means for people to obtain health-related knowledge [1]. In today's technology-driven world, many individuals turn to the internet as their initial source of medical information, while others continue searching online even after receiving a professional diagnosis [2]. Online health information seekers can be described as individuals—whether patients, caregivers, or concerned individuals—who use digital platforms to gather knowledge about health conditions in an effort to better manage their well-being [3]. The growing appeal of online health searches is further enhanced by the availability of multimedia content and opportunities to directly access expert insights, making digital resources increasingly favored among health-conscious users.

A variety of online channels—such as institutional websites, social media networks, virtual support communities, and personal blogs—serve as effective avenues for disseminating health information to the public [4]. Engaging in online health searches often empowers individuals, fostering a greater sense of involvement in their healthcare decisions [5]. Undeniably, the rise of online health information seeking behavior (HISB) has transformed the traditional patient-doctor dynamic, altering how individuals interact with and perceive medical

professionals. However, exposure to unreliable or incorrect health content online can result in confusion, anxiety, and poor health choices. Reviewing past research reveals a consistent focus on identifying the factors that drive people to seek health information online. Yet, relatively few studies have explored the actual outcomes or consequences of such behavior [6]. The current study addresses this gap by proposing a conceptual framework designed to examine the link between online health information seeking and its aftermath. Potential post-search outcomes include a patient's inclination toward self-treatment, withholding critical health details from clinicians, verifying a doctor's diagnosis independently, or engaging in peer discussions to share personal health experiences.

II. THEORETICAL BACKGROUND

In this section, relevant literature from the past researches on health information seeking behavior is discussed. Theories like TPB model, MGB and HBM model forms the basis for model of this study.

1. Seeking Health Information: Online

Health Information Seeking Behaviour is defined as the ways in which people seek knowledge about their health issues, risks in treatment, side-effects of medicines and also preventive measures [7]. With the emergence of self-health management, the online health information seeking behavior has skyrocketed [8]. The inquisitiveness and curiosity in people has led to search for health information through internet [4].

2. Rationale for study

A combination of content-specific models and content-free models has been used to clearly explain this multifarious health behaviour [9]. Some of the content-specific models are model of goal-directed behaviour (MGB) and Health Belief Model (HBM).

3. Behavioural Theories

Theory of Planned Behaviour is one of those cornerstone theory which investigates the complex human behaviour [10]. This theory proposed that one's behavioural intentions and behaviours are shaped by their attitude, subjective norms as well as perceived behavioural control [10]. Model of goal-directed behaviour emerged as an improvement over Theory of Planned behaviour. Model of goal-directed behaviour also solves the queries raised for explaining TPB.

4. Model of Goal Directed Behaviour

The distinguishing feature of TPB and MGB lies in initiating any behaviour. Model of goal directed behaviour suggests that, any behaviour commences with the 'desire'. This desire gives rise to some behavioural intention, which then leads to behavioural intention and later exhibiting actual behaviour.

MGB is based on Expectancy-Value model [11]. Also this model proposed that frequency and recency of behaviour manipulate the equation of one's desire, attitude, intention and actual behaviour. But it was found that frequency of earlier behaviour is only related with desire and intention, whereas recency of behaviour was not able to influence one's actual behaviour. In recent past years, MGB has gained lot of attention in understanding the mechanism of human behaviour. MGB has found its application in the disciplines like information seeking behaviour, motivation for classic music, behaviour towards online piracy, etc [12].

5. Health Belief Model

HBM model is commonly utilized in different research to comprehend the intricate health behaviour [13,14]. Health Belief Model is also used to study consumer health behaviour in the fields of self regulated treatment, physician visits, etc. which is also catered in this study.

6. Study Model

Based on the above literature, the proposed model is diagrammatically represented in figure 1 .

7. Proposed Hypothesis

The above literature gives strong support to the notion that individual human behaviour gets initiated with the development of desire for a particular behaviour. This desire in turn initiates some behavioural intention which ultimately leads

to positive or negative human actions. Based on these learning's, in this study we want to test how desire for online HISB can lead to the formation of behavioural intention to visit physician. In this study, we are also investigating the relationship between developing the intention and actually paying a visit to physicians. Based on above discussed notions, the following hypothesis is hypothesized:

Conceptual Model

- H1: An individual's desire for online health information seeking behaviour is a predictor for one's behavioural intention to visit physician.
- H2: There exists a relationship between an individual's intention to visit physician and actually visiting physician.
- H3: There exists a relationship between an individual's intention to visit physician and altering health condition.
- H4: There exists a relationship between an individual's intention to visit physician and sharing information about the physician with others.

The extant literature suggests that more recent behaviours help in developing one's desire to exhibit online HISB and frequency of past behaviour develops an individual's intention to show post-search outcomes. The following hypotheses are formed:

- H5: Recent past online HISB is associated with the individual future desire to search health information online.
- H6: Frequency of past online HISB is associated with the individual future intention to search health information online.

With reference to MGB theory, this study measures the effect of perceived behavioural control on one's desire to exhibit online HISB. As HISB is believed to be an individual activity thus, relationship with desire is investigated. Perceived behavioural control is an individual's confidence to execute some specific behaviour. Past studies based on MGB verified a significant influence of individual's perceived behavioural control on one's desire. Self-efficacy is one's belief about their own capabilities to accomplish certain tasks. The past studies provide convincing evidence that self-efficacy is a strong predictor of one's intention. Based on this, following hypotheses were framed.

- H7: Perceived behavioural control shares a positive relationship with one's desire to show online HISB.
- H8: Self-efficacy shares a positive relationship with one's behavioural intention to show online HISB.

In order to explain and predict health related behaviours, a psychological model in the form of health belief model is given. In this study we tried to confirm the relationship between various antecedents of HBM and an individual's desire to exhibit health related behaviours [13]. In a study, health related behaviours are found to be the function of perceived barriers to taking action. Perceived barrier is an individual's evaluation of the hurdles to some behaviour change [14]. Even when an individual identifies a health condition as hazardous for him but existence of barriers prevents him in exhibiting online HISB. Based on past literature, the HBM antecedents are employed as antecedents to one's desire, and following hypotheses are formed:

- H9: Perceived susceptibility of an individual towards a health condition has a positive impact on one's desire for online HISB.
- H10: Perceived barrier in an individual towards a health condition has a positive impact on one's desire for online HISB.
- H11: Perceived importance by an individual towards a health condition has a positive impact on one's desire for online HISB.
- H12: Perceived severity towards a health condition has a positive impact on one's desire for online HISB.
- H13: Perceived benefit by an individual about online HISB is a significant predictor for one's desire for online HISB.

In this study, the relationship between perceived susceptibility and online post search behaviour is studied. Not just perceived susceptibility also the relationship of perceived severity is studied with online post-search behaviour with respect to visiting a physician. Based on this literature the current model explores the effect of health belief model's constructs on online post-search behaviour. The following hypotheses are framed:

- H14: Perceived susceptibility towards a health circumstance is positively associated with an individual to self treat his/her condition.
- H15: Perceived susceptibility towards a health circumstance is positively associated with an individual to visit a physician.
- H16: Perceived severity towards a health circumstance is positively associated with an individual to visit a physician.
- H17: Perceived benefit about online health information is positively associated with one's intention towards online HISB.
- H18: Perceived benefit about online health information is a strong predictor for an individual to self-treat their condition.

- H19: Perceived benefit about online health information is a strong predictor for an individual to visit a physician.
- H20: Perceived benefit about online health information is a strong predictor for an individual to share information with others.

This research also investigates the mediation role of one's intention on the relationship of perceived benefit from health information and post-search behavior. The extant literature provides subtle evidence where mediation role of perceived benefits on one's attitude and intentions is confirmed [15]. But the role of intentions mediating different relationships is missing in the extant literature. The following hypotheses are developed:

- H21: The relationship between perceived benefit from health information and an individual's behavior to self-treat their condition is mediated by an individual's intention to exhibit online HISB.
- H22: The relationship between perceived benefit from health information and an individual's behavior to visit a physician is mediated by an individual's intention to exhibit online HISB.
- H23: The relationship between perceived benefit from health information and an individual's behavior to share information with others is mediated by an individual's intention to exhibit online HISB.

III. RESEARCH METHODOLOGY

For this study the questionnaire is prepared based on validated measurement scales used in previous research. A 7-point Likert type scale was used to enhance the sensitivity of the questionnaire. The questionnaire was divided into two sections. First section includes 36 questions to measure the different constructs of the model. The second section includes 8 questions on demographic profile as well as internet habits of health information seekers and their health status.

In this study exponential non-discriminating snowball technique which is a cross-sectional approach was used. This technique helped in collecting large amount of sample in short span of period. The questionnaire was disseminated through social media platform like Facebook and Whatsapp. The questionnaire form was generated by the help of Qualtrics survey software.

In a research it was recommended a ten-on-one ratio for a sample which employs factor analysis technique. Based on this, the recommended number of respondents is 360; as the questionnaire consists of 36 items [16].

For doing the analysis, Smart PLS2 is used to execute structural equation modelling technique to understand the relationship between variables under study. The main purpose to use partial least square structural equation modelling (PLS-SEM) as it is found to be more robust method when the data collected is expected to be non-normal or the sample size is small [17].

Based on the theories and concepts discussed in the literature review segment, a structural model was developed in PLS. The proposed hypotheses are represented by the sequence of constructs in the developed structural model. Later, the measurement model was developed which explains the association of survey questions and latent variable.

For the analysis, 429 responses were collected. In this study females (57.7%) were more as compared to males (41.3%). Most respondents are bachelor's degree holders (52.5%), followed by master's degree holders (19.1%), diploma holders (14.2%), high school graduates (11.9%), and doctorate degree holders (2.3%). About 30.6% are above the age of 50, while 30.3% are between 30-39 years old. 26.3% are in between 20-29 years of age, followed by 12.6% between 40-49 years; only one respondent is below 20 years old. Most respondents (420, around 97.9%) go online to access health information, of which 383 respondents (89.28%) share the searched information.

IV. RESULTS

In this study SmartPLS 2.0. was utilized to employ partial least square analysis method. For measuring the internal consistency and validity of the given measures, measurement model will be tested first. This is followed by the testing of structural model which helps in establishing the hypothesized relationship.

1. Measurement Model

The loading values for all the measure items were ranging from .70 to .93 which is higher than .70. All the values of composite reliability were greater than .70. The AVE values were ranging from .67 to .82, which is higher than .50 [17]. For determining discriminant validity, Fornell-Larcker criterion and heterotrait-monotrait ratio (HTMT) was used. The threshold value for HTMT as suggested by some researchers is .85 [18] whereas a value of .90 is also proposed [19]. In this study all the HTMT values were below .85, demonstrating discriminant validity. Discriminant validity was also supported by Fornell-Larcker criterion, where the values in the diagonal were higher than the other values in the same row and column.

2. Structural Model

In the structural model casual relationships between the various constructs, path coefficients and R² value were examined. The results indicated that an individual's desire (H1;

$\beta = .63, p < .01$), frequency of past online health information seeking behavior (H6; $\beta = .13, p < .01$), self-efficacy (H8; $\beta = .09, p < .05$) and perceived benefit (H17; $\beta = .11, p < .01$) are found to be significant predictors of one's behavioral intention to search health information online. The variance explained is 62.7%.

The findings highlighted that an individual's intention (H3; $\beta = .19, p < .01$), perceived susceptibility (H14; $\beta = .14, p < .01$) and perceived benefits (H18; $\beta = .34, p < .01$) are strongly associated with an individual's behavior to self-treat some health condition, with 23.45 of variance explained.

The results for H2 ($\beta = 0.184, p < .01$) and H19 ($\beta = 0.186, p < .01$) indicate that intention and perceived benefit have a significant impact on the individual to consult a physician for a health condition; explaining 12.1% of the variance. However, the results for H15 and H16 indicate that perceived susceptibility and perceived severity do not significantly predict whether an individual will consult a physician for a health condition.

This study indicates that an individual's intention (H4; $\beta = .32, p < .01$) and perceived benefit (H20; $\beta = .30, p < .01$) from the health information significantly influences an individual's behavior to share the same health information with others. The variance explained in this case is 27.3%.

The results revealed that recency of past online health information seeking behavior (H5; $\beta = .23, p < .01$), perceived behavior control over the information (H7; $\beta = .34, p < .01$), perceived barrier of an individual towards a health condition (H10; $\beta = -.08, p < .1$), perceived importance of health (H11; $\beta = .09, p < .05$) and perceived benefit from health information (H13; $\beta = .19, p < .01$) are found to be very strong predictors of one's desire to search health information online with 40.4% of variance explained. However, perceived susceptibility of an individual towards health information and perceived severity are found to have insignificant relationship with one's desire to exhibit online health information seeking behavior.

In the study we also tested the mediating effect of intention. Intention was reported to be a significant mediator in arbitrating the mechanism between perceived benefit and post search behavior i.e. alter condition (H21; $\beta = X, p < .01$), visit physician (H22; $\beta = X, p < .05$) and share information (H23; $\beta = X, p < .01$)

IV↓	DV: Alter Condition	DV: Visit Physician	DV: Share Information	DV: Intention	DV: Desire
Direct effects				0.619***	
Desire					
Frequency				(0.077) 0.142***	
Intention	0.186***	0.174***	0.318***	(0.049)	
Perceived	(0.06)	(0.065)	(0.044)		-0.088*
barrier Perceived					(0.042) 0.327***
behavioural					(0.0656)
control Perceived	0.335***	0.186***	0.302***	0.108***	0.194***
benefit Perceived	(0.0554)	(0.053)	(0.052)	(0.035)	(0.047) 0.086**
importance of					(0.044)
health Perceived		0.06 ^{NS}			-0.037 ^{NS}
severity Perceived	0.14***	(0.056) 0.068 ^{NS}			(0.049) -0.023 ^{NS}
susceptibility Recency	(0.051)	(0.065)			(0.06) 0.234***
Self-efficacy				0.093**	(0.051)
				(0.043)	
R2	0.234	0.121	0.273	0.627	0.404
Path↓			β	Std. Error	p-value
Indirect effects				0.018	0.01***
Perceived benefit □ Intention □ Alter condition					
Perceived benefit □ Intention □ Visit physician				0.018	0.013**
Perceived benefit □ Intention □ Share information				0.018	0.000***

V. DISCUSSION

Among the health providers and health information seekers online HISB phenomenon is a growing concern. The proposed model is again reviewed in this section in the light of the results obtained.

1. Relationship among Desire, Intention and post-search behaviours

In this study it is strongly supported that one's desire to search health information online spurs the intention to perform

behavior. The results also strongly recommend that one's intention to search health information online is a significant predictor of post-search behavior in terms of altering health condition, visiting physician or sharing the same information with others. The results indicate lower predictability as reported by previous studies.

2. Mechanism of Frequency and Recency of past behaviours on Intention and Desire

The frequency of past behaviors is not at all correlated with one's desire, whereas, it is found to be a strong predictor for one's behavior intention.

In this study recency of past online health information seeking behavior shares a significant relationship with one's desire of seeking health information online among the health consumer.

3. Mechanism of Perceived Behavioral Control and Self-Efficacy

The results of present study suggests that perceived behavioral control is a strong predictor of one's desire to exhibit online HISB, similarly self-efficacy also shares a significant relationship with one's intention to show online health HISB.

4. Mechanism of determinants of Desire

The constructs like perceived susceptibility, perceived severity of health condition and perceived barrier were found to share insignificant relationship with one's desire to exhibit online HISB. This is in contradiction to the previous literature .

5. Mechanism of Perceived Susceptibility and Perceived Severity on post-search behavior

The results revealed a positive and significant relationship between perceived susceptibility and an individual's behavior to self treat his/her condition. While, it was observed that both perceived susceptibility and perceived severity are insignificant predictors of one's behavior to visit a physician post-search.

6. Mechanism of Perceived Benefit with Intention and Post-search Behavior

The findings of this study indicates that perceived benefit not only develops one's desire to exhibit online health information seeking behavior but also it predicts one's intention to perform online health inquiry for correcting their health condition. This is consistent with the findings in the context of online shopping intention.

7. Mediating role of Intention

The study is unique as it aims at investigating the mediating role of one's behavioral intention on the relationship of perceived benefit and post-search outcomes. The results indicated a partial mediating effect of behavioral intention on the relationship between perceived benefit and post search outcomes.

VI. CONCLUSION

This research coupled both content-free and content-specific models to study the online health information seeking behavior. The model was proposed based on the constructs from model of goal-directed behavior and health belief model. The study is relevant as it is investigating the online trend towards health information which has many positive as well as negative implications for the whole mankind. The results reported that

desire to exhibit online health information seeking behavior is a strong predictor in developing one's intention to carry out behavior. This knowledge is very useful for the medical practitioners to provide better services to their health consumers in order to cope up with the rising industry's competition.

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