

DETERMINANTS OF ONLINE HEALTH INFORMATION SEEKING BEHAVIOR AMONG UNIVERSITY YOUTH IN SRI LANKA

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ABSTRACT

In the present society, online platforms play a pivotal role in shaping how individuals access health information among younger generations. The objectives of this study were to investigate the factors influencing online health information-seeking behaviour among university youth, to identify the level of eHealth literacy among university youth, and to analyse the relationship between these factors and online health information-seeking behaviour among university youth. The Theory of Reasoned Action (TRA) was used as the theoretical foundation for this research. Applying a quantitative cross-sectional design, data were collected via an online survey from 91 management undergraduates. The collected data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) with the objective of analysing relationships among variables, fitting the model, and testing. Findings reveal that social media is the predominant source of health information, while lack of time and limited search skills are major barriers. The average eHealth literacy score was moderately high, indicating digital readiness among younger generations. The results reveal that behavioural intention and eHealth literacy significantly influence online health information-seeking behaviour. Furthermore, attitudes and subjective norms were found to shape behavioural intention strongly. These findings highlight the relevance of social and psychological factors in digital health behaviours. The study contributes theoretically by validating the TRA model in the Sri Lankan context. Further results provide insights into the design and development of eHealth systems for the young generation.

KEYWORDS: Online health, information-seeking behaviour, eHealth literacy

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1. INTRODUCTION

The Internet is described as a global broadcasting platform which enables information transmission, interaction and collaboration between people and their communication devices, regardless of their geographical location.

The field of Information and Communication Technology (ICT) is also rapidly evolving on a global scale with the advancement of modern technologies. The rapid expansion of internet usage has become a common practice among people worldwide. The Internet continues to transform how people communicate with each other, coordinate the flow of goods and services, and exchange knowledge across the globe (Lee & Clement, 2019). It has become a critical part of our daily lives, with its growing impact on individual consumers and large economies alike.

The Internet serves as an effective medium for the communication of information on various topics. An increasing number of people use the internet to search for diverse information, such as health-related content, educational materials, access to online databases, exploration of theoretical concepts, and the use of interactive tools to enhance the understanding of complex ideas (Nor Intan Shamimi & Nurul'Aini, 2018). The way in which individuals access information has changed significantly due to the development of the internet, particularly among teenagers. Young people are the most active internet users across all age groups, utilizing internet platforms primarily for information seeking and communication (Obasola & Agunbiade, 2016). With the growing availability and acceptance of online social networks as platforms for sharing information, user interactions with these networks have become a revolutionary aspect of modern technology (Obasola & Agunbiade, 2016; Lee & Kim, 2022).

According to Digital and Social Media Marketing Stats and Facts of Sri Lanka (2018), 6.71 million people use the internet, constituting 32% of the total population. Among them, 20% are mobile internet users, indicating that a significant portion of Sri Lanka's population actively uses the internet.

With modern trends, internet users can access various types of information needed for daily life, education,

and other requirements. There are multiple online health resources, such as health-related websites, online encyclopaedias (e.g., Wikipedia), health portals (e.g., MIMS, MedlinePlus, WebMD), internet forums, and social media that provide health-related information. Users require skills to effectively access and utilize online health information for decision-making, which are referred to as eHealth literacy skills (Norman, Skinner, & Norman, 2006). eHealth literacy is a component of health literacy.

Health literacy is commonly defined as the ability to obtain, process, and understand basic health information and services required for making significant health decisions (Ghaddar et al., 2012). Similarly, eHealth is defined as "the ability to search, find, understand and evaluate health information from electronic information sources and use this information to diagnose or resolve a specific health problem" (Norman et al., 2006). Hence, eHealth Literacy can be identified as a broader concept. This study aims to identify the factors influencing online health information-seeking behaviour and the eHealth literacy level among management undergraduates in Sri Lanka.

Several studies have investigated the factors influencing online health information-seeking behaviour and eHealth literacy levels across different groups (Nor Intan Shamimi & Nurul'Aini, 2018; Ghaddar et al., 2012; Laki, 2016). However, only few studies have conducted in this research area and lack of understanding especially in the field of online health information seeking behaviour in the Sri Lankan context. Therefore, it is crucial to identify the factors affecting online health information-seeking behaviour in Sri Lanka.

The internet is an effective medium of communication, facilitating the sharing of information. Various internet platforms offer health-related information resources. Due to the effectiveness of the internet, many university students utilize it for multiple purposes, including academic activities. As highlighted in the introduction, the rapid advancement of internet technologies has led to a large percentage of the younger generation adopting internet-based tools such as blogs, social networks, and video and

podcasting platforms. Jones (Escoffery et al., 2005) found that 86% of 2,501 college students had gone online, with email (62%) and instant messaging (29%) being the most frequently reported online communication activities. Only 5% or fewer college students used web boards, chat rooms, and newsgroups.

Among these populations, university students in Sri Lanka benefit from free Wi-Fi facilities provided by the government, leading to high internet usage. Despite this high internet usage, there is a lack of data on how many undergraduates turn to online sources for health-related concerns. This study specifically addresses how management undergraduates respond to this issue by investigating the factors influencing their online health information-seeking behaviour.

While numerous studies have examined eHealth literacy levels among clinical students, nursing students, and healthcare providers within international and Sri Lankan contexts, no statistics are available regarding eHealth literacy levels among youth in Sri Lanka. This brings to the key research problem: What are the factors influencing online health information seeking behaviour among university youth? Sri Lankan undergraduates may use the internet a lot, yet little is known about how they seek health information online and why. To develop eHealth strategies targeted at young populations, a clear investigation of these factors is necessary.

The primary objective of this study is to investigate the factors influencing online health information-seeking behaviour among university youth. The specific objectives are:

1. To identify the level of eHealth literacy among university youth.
2. To determine the factors influencing online health information-seeking behaviour among youth.
3. To analyse the relationship between these factors and online health information-seeking behaviour among university youth.

Conceptual Definitions

Subjective Norms: Subjective norms refer to two aspects including how individuals behave and how others will judge the actions of the person in a particular social and cultural setting (Gong, Han, Li, Yu, & Reinhardt, 2019). Subjective norms influence behaviour by dictating what is accepted or rejected in a given context (Laki, 2016).

Intention: Behavioural intention is defined as “an individual’s subjective probability that he/she will perform the behaviour” (Ajzen, 2014). Intention reflects a decision-making process involving deliberation and commitment (Ajzen, 2014).

eHealth Literacy: eHealth literacy refers to “an individual’s ability to search, find, understand, and evaluate online health information for decision-making” (Norman et al., 2006). It significantly impacts online health information-seeking behaviour (Ghaddar et al., 2012; Moazzam et al., 2018). The commonly used eHealth literacy scale (eHEALS) assesses an individual’s digital health literacy level (Moazzam et al., 2018).

Attitudes: it can be defined as an individual’s evaluation of performing a behaviour (Erdelez S., 2008). An individual’s reaction or decision to use or avoid a particular product or service is influenced by their attitudes (Laki, 2016). This ultimately shapes the individual’s behaviour toward the services needed, which may change through personal experiences (Laki, 2016). Attitude toward an activity is characterized as a positive or negative evaluation of the behaviour performed by individuals. It involves the decision of whether performing a behaviour is good or bad, as well as a general determination of whether an individual is willing or unwilling to perform the behaviour (Garner et al., 2021). According to Damian, health information-seeking is valuable and positive for both healthcare providers and patients (Laki, 2016).

Significance of the Study

Theoretical Contribution: The study context by itself contributes to the theoretical knowledge of the e-health literacy research domain. This study examines the behaviour of management undergraduates which

was a gap in the research literature. Future, understanding the e-Health literacy of undergraduates is particularly relevant with the high literacy rate and the increasing use of digital technologies. Further, the finding captures a diverse group of young people since the participants are management undergraduates.

The allocation of the Theory of Reasoned Action (TRA) model is another contribution. This research confirms the model valid in e-health research and confirms the influencing factors on online health information-seeking behaviour.

Practical Contribution: The study offers valuable practical insights for healthcare providers, policymakers, and digital health platform developers. As digital health services become increasingly prevalent, understanding the health information-seeking behaviours of university students is essential for designing effective e-Health interventions. These insights can guide the development of user-friendly and trustworthy digital health platforms aimed at younger audiences.

2. LITERATURE REVIEW

To satisfy an information goal, there must be a mechanism for searching for information. This process is referred to as information seeking (Ahadzadeh & Sharif, 2017). Information-seeking behaviour can be defined as the totality of human behaviour in relation to sources of data that can be used, including both active and passive information-seeking and the use of information (Laki, 2016). The pattern of information resource use, time spent searching for information, challenges in information retrieval, and information-searching proficiency shape the information-seeking behaviour of health professionals (Laki, 2016). Most research on this topic is based on demographic profiles and their impact on online health information-seeking behaviour.

Although there is no universally agreed definition of health information-seeking, Lambert and Loiselle (2007) attempt to consolidate the field by offering a generalized definition. They describe health information-seeking (HIS) as the ways people acquire information, including details about their health, health promotion activities, and risks associated with health matters (Hiebert, Leipert, Regan, & Burkell,

2018). Furthermore, health information-seeking can be defined as the process of searching for information required for an individual's health-related decision-making (Mirzaei et al., 2021).

Health information-seeking behaviour is a demonstration of self-health management (Ahadzadeh & Sharif, 2017). This behaviour encourages personal health knowledge, shapes individuals' judgments, beliefs, and attitudes toward a healthy lifestyle, and motivates them to make informed decisions regarding their health (Ahadzadeh & Sharif, 2017). Recent global research also highlights that during the COVID-19 pandemic, youth engagement with online health information increased significantly, indicating a strong need for critical digital health literacy (Wong & Cheung, 2021).

On the other hand, health information-seeking behaviour (HISB), or seeking health information online, serves as a guide to improving the quality of life and enhancing an individual's health status. Therefore, obtaining information from online resources has become an essential part of daily life (Mirzaei et al., 2021). Furthermore, it is commonly regarded as the "way by which people obtain information about health, disease, health promotion, and health risks" (Lambert & Loiselle, 2007).

Online health information seeking (OHIS) has been shown to impact medical consultations and the relationship between patients and doctors (Wong & Cheung, 2019). Nowadays, people increasingly prepare for consultations with doctors by gathering information online and often discuss this information with their doctors. Additionally, with the information they find online, individuals tend to verify and question the data provided by physicians (Wong & Cheung, 2019).

Factors Influencing Online Health Information-Seeking Behaviour

Various studies have been conducted to identify the factors influencing online health information seeking behaviour in different contexts, which include clinical students, nursing students, and healthcare providers. Many researchers have applied the Theory of Reasoned Action (TRA) and the Technology Acceptance Model (TAM) as a theoretical foundation

to examine the influencing factors. It is found that the perceived usefulness, perceived ease of use, and subjective norms significantly influence the user's intention to seek health information online (Xia et al., 2017). The urgency of problematic situations has a negative moderating impact on the relationship between perceived ease of use and user intention, as well as the relationship between subjective norm and user intention. These studies integrate TRA and TAM to analyse these factors (Xia et al., 2017).

Similarly, Damian Laki (2016) extended the TRA model by introducing health information needs, incorporating person-related and situation-related variables as key factors affecting online health information-seeking behaviour. A summary of key research findings and their theoretical foundations is presented below.

Table 1: Summary of Factors Based on Theoretical Models

Article	Model Used	Identified Factors
Laki, 2016	TRA	Health information needs, Attitudes, Subjective norms, Intention, Behaviour
Ahadzadeh & Sharif, 2017	TAM	Perceived usefulness, Perceived ease of use, Attitude
Xia et al., 2017	TAM, TRA	Perceived usefulness, Perceived ease of use, Subjective norms, Online health information-seeking intention
Ahmad & Khan, 2017	TAM	Perceived usefulness, Perceived ease of use, Intention to use

Beyond predefined theories such as TRA and TAM, other studies have identified additional factors influencing online health information-seeking behavior. These factors are summarized in Table 2.2.

Table 2: Summary of Additional Factors Influencing OHISB

Identified Factors	Article
Gender, Marital status, Course programmes, Frequencies, Perceived behavioural intention	(Nor Intan Shamimi & Nurul'Aini, 2018)
Health literacy	(Ghaddar et al., 2012)

Health literacy	(Moazzam et al., 2018)
Behaviour, Attitudes	(Escoffery et al., 2005)
Situational factors, Health literacy, Computer literacy	(Lee & B., 2014)
Health status, Online health information-seeking behaviour, eHealth literacy	(Wong & Cheung, 2019)
eHealth literacy, Patient activation, Web-based health information-seeking behaviour	(Lee & Clement, 2019)

Numerous studies emphasize eHealth literacy as a crucial factor influencing online health information-seeking behaviour. Based on the models and factors discussed, this study primarily focuses on the Theory of Reasoned Action for further investigation.

3. METHODOLOGY

Theoretical Background

Many reviewed studies have applied TRA and TAM to explore online health information-seeking behaviour (Table 2.1). While TAM is used to analyse technology adoption and intention to seek online health information, it may not be the most suitable model for studying behavioural aspects of online health information-seeking. Given that this study focuses on human behaviour, the most relevant theoretical foundation is the Theory of Reasoned Action. Ahadzadeh & Sharif (2017) state, "While the TRA model is proper in predicting and explaining any human behaviour, the TAM framework is appropriate in explaining and predicting any technology acceptance."

Theory of Reasoned Action: The Theory of Reasoned Action (TRA) can be used to understand the behaviour of online health information-seeking. TRA is a multifaceted behavioural model (Laki, 2016). The TRA model defines the relationship between attitudes, subjective norms, intentions, and behaviour. According to this model, an individual's actions are determined by their behavioural intention. The intention is influenced by both a person's attitude and their subjective norms (Laki, 2016). This theory also suggests that if the outcome of an activity appears

beneficial to the individual, they may intend to engage in that specific behaviour or may participate (Laki, 2016).

The conceptual model of this study is built on the Theory of Reasoned Action, initially conceptualized by Martin Fishbein and Icek Ajzen as an advancement over Information Integration Theory (Ajzen, 2014). This model consists of five key constructs. Attitudes toward the intention to seek online health information and subjective norms directly influence behavioural intention to seek online health information. Additionally, behavioural intention and eHealth literacy are the variables that directly impact online health information seeking behaviour. Therefore, based on the Theory of Reasoned Action, this study adopts the following model.

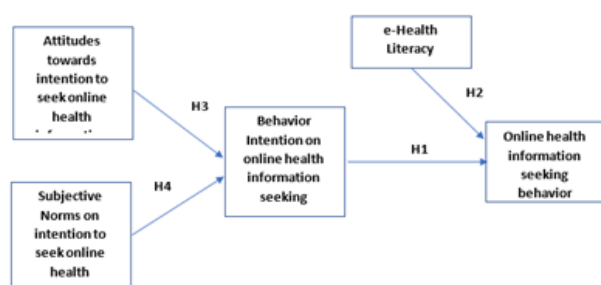


Figure 1: Conceptual Model

This study was conducted as a quantitative research approach, utilizing statistical analysis through a systematic investigation. It employed a cross-sectional design to collect data at a single point in time. The study was conducted in Sri Lanka, specially targeting management undergraduates at the University of Sri Jayewardenepura to examine the factors influencing online health information seeking behaviour among management undergraduates in Sri Lanka.

Due to time constraints, the study focused on a sample population of management undergraduates from the University of Sri Jayewardenepura, selected using a convenience sampling technique. While the target population comprised all management undergraduates in Sri Lanka's national universities, the study was limited to this university. Based on an ex-ante power analysis (Anticipated effect size = 0.15, Desired statistical power level = 0.8, Number of predictors = 5

and probability level = 0.05), a minimum sample size of 91 was required at a 0.05 probability level. Consequently, data were collected from 91 management undergraduates, ensuring a representative sample for the study.

Survey Instrument

A structured online questionnaire was used for data collection and it got Likert-scale and demographic questions. Answer options for all attitude and behaviour items were graded on a 5 point Likert-scale from 1 (strongly disagree) to 5 (strongly agree). The questionnaire was divided into the following sections:

Attitudes (4 items): These assess students' opinion about the Internet for health information (e.g., "Using Internet for seeking health information and health is a good idea").

Subjective Norms (3 items): These assess perceived social pressure to look for health information online (e.g., "People who influence my behaviour think I should use Online Health Content Sources").

Behavioural Intention (3 items): These assess the students' intentions to actually seek health information online (e.g., "I would like to use the Internet to seek health information").

eHealth Literacy (8 items): Based on the eHEALS scale, these items assess the students' perceived skills in finding, evaluating, and using online health resources (e.g., "I know how to use the Internet to answer my health questions").

Online Health Information Seeking Behaviour (6 items): These items measured actual information seeking behaviour and decision making process (e.g., "I use different keywords for e-Health as the online search progresses").

Demographic Information: Gathered information on gender, year of study, self-rated health issues, Internet access devices, frequency of Internet use, preferred sources of health information and perceived barriers to accessing online health resources.

Data Analysis

The data collected were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) with the objective to analyse relationships among variables, fit the model, and test the significance of hypothesized paths.

Ethical Considerations

Ethical consideration was made in this study concerning obtaining informed consent, voluntary participation, and anonymity. Also, participants were informed about the study and the use of their data.

Limitations of the study

Despite the valuable contributions of this study, certain limitations must be acknowledged. First, the research was conducted exclusively among management undergraduates at the University of Sri Jayewardenepura, which limits the generalizability of the findings. Expanding the study to include students from other universities in Sri Lanka would offer a more comprehensive understanding of online health information-seeking behaviour across different academic disciplines. Additionally, data collection was conducted via an online survey, which restricted direct interaction with respondents. Face-to-face interviews or a mixed-methods approach could potentially yield more accurate and nuanced insights, particularly in health-related studies. Furthermore, while this study applied the Theory of Reasoned Action (TRA) model and focused on e-Health literacy, other factors, such as social influence, trust in health information, and general health literacy, could also play significant roles in shaping online health information-seeking behaviour. Exploring these additional factors would enhance the depth of understanding in future research. Finally, the study sample was disproportionately made up of students from the Department of Information Technology, who likely have a higher level of familiarity with digital technologies than their peers in other disciplines. This could have skewed the results, highlighting the need for more diverse samples in future studies.

4. RESULTS

The sample comprised 91 respondents, with 64% female and 36% male. The majority (42.9%) were

from the Department of Information Technology, while others belonged to various departments. Most respondents rated their health status as good (52.7%) or very good (36.3%). Nearly all participants used the internet, with 49.5% accessing it multiple times a day. Smartphones (90.1%) and laptops (75.8%) were the primary devices for internet access.

Social media (78%), video-sharing sites (71.4%), and online encyclopaedias (33%) were the most common sources of online health information. However, barriers such as lack of time (75.8%), a weak reading culture (54.9%), unreliable resources (37.4%), and limited search skills (22%) hindered access to reliable health information.

The eHealth literacy score of the respondents was 28.63, indicating a relatively high level of digital health literacy. Most respondents demonstrated strong skills in using the internet to find and utilize health information. However, the ability to distinguish high-quality from low-quality sources was lower. Overall, the study concluded that management undergraduates had a good level of eHealth literacy.

The reliability and validity of the study's measurement model were assessed using established statistical methods. Reliability analysis ensured the consistency of the measurement items. Indicator reliability was verified through factor loadings, with all item loadings exceeding the 0.7 threshold, confirming strong individual item reliability (Hair et al., 2011). Internal consistency was estimated using Cronbach's Alpha and Composite Reliability, both of which exceeded 0.7 across all constructs, establishing robust internal reliability.

Validity analysis assessed the accuracy of the constructs in measuring the intended concepts. Convergent validity was established using the Average Variance Extracted (AVE), with the threshold value of >0.5, indicating that each construct adequately explains its associated indicator. Discriminant validity was established using Fornell and Larcker's criteria, ensuring each construct was distinct from others in the model. These findings confirmed the measurement model is reliable and valid, supporting the robustness of the study's theoretical framework.

The study tested four hypotheses to identify factors influencing online health information seeking behaviour among management undergraduates in Sri Lanka. Measurement model analysis and structural model analysis using SMART PLS 3 were used to analyse the data. The results are summarized in table 4.1 below.

Table 3: Hypotheses Testing Results

Hypotheses	Path Coefficient	P-Value	Decision
H1: Behaviour Intention positively influences Online health information-seeking behaviour	0.324	0.001	Supported
H2: e-Health Literacy positively influences Online health information-seeking behaviour	0.554	0.000	Supported
H3: Attitude positively influences Behaviour Intention	0.579	0.000	Supported
H4: Subjective Norm positively influences Behaviour Intention	0.270	0.001	Supported

All hypotheses were supported. Behavioural intention (H1) and e-Health literacy (H2) significantly influence online health information-seeking behaviour, with path coefficients of 0.324 ($P = 0.001$) and 0.554 ($P = 0.000$), respectively. These results align with previous studies that identified a relationship between behavioural intention and actual behaviour (Ajzen, 2014), as well as the link between e-Health literacy and online health-seeking behaviour (Wong & Cheung, 2019).

Attitudes (H3) and subjective norms (H4) significantly influence the behavioural intention to seek online health information, with path coefficients of 0.579

($P=0.000$) and 0.270 ($P=0.001$), respectively. These results align with the previous findings demonstrated that attitudes and social influences positively shape an individual's intention to seek online health information (Ahmad & Khan, 2017; Xia et al., 2017).

Overall, this study confirms that behaviour intention, e-Health literacy, attitudes, and subjective norms play a crucial role in online health information-seeking behaviour among undergraduates.

5. CONCLUSION

The first objective of this study was to identify the level of eHealth literacy among youth. It is revealed that Sri Lanka youth has higher level of digital health literacy demonstrating strong skills in using the internet to find and utilize health information.

The second objective of this study was to determine the factors influencing online health information-seeking behaviour. Existing literature has largely focused on clinical and nursing students. There was a gap in examining the behaviour of other categories of youth. This finding provides a novel contribution to understanding how factors such as behavioural intention, e-Health literacy, attitudes, and subjective norms impact the online health information-seeking behaviour of management students.

With the finding it is confirmed that the Behaviour Intention, e-Health Literacy, Attitudes and subjective norms are the key determinants of the online health information-seeking behaviour.

6. RECOMMENDATIONS

Furthermore, the research identifies the most frequently used online sources for health information—social media platforms, video-sharing sites, and online encyclopaedias—suggesting potential channels for healthcare providers to consider when disseminating health information.

To improve online health information-seeking behaviour among university students, several recommendations are proposed. First, universities should integrate web-based health education programmes into their curricula to enhance students' ability to access, evaluate, and utilize online health information effectively. Such programmes could help

students develop critical skills in identifying reliable health resources, thus empowering them to make informed decisions. Additionally, offering training programmes that focus on improving students' ability to search for and critically assess online health information would be beneficial. These programmes could also educate students on how to navigate misinformation and biases prevalent on digital platforms. Furthermore, universities should consider establishing a dedicated web portal that offers credible, student-centred health information. Such a platform could be linked to university medical centres, ensuring that students have easy access to reliable health resources. By implementing these strategies, universities and healthcare providers can better engage students with trustworthy online health information, promoting healthier behaviours and more informed decision-making.

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