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Knowledge, Attitude, and Perception of Patients Towards Their Illness After Searching Web-Based Health Information in A Tertiary Level Hospital in Manila: A Cross-Sectional Study

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ABSTRACT

Background: The internet has become a major source of health information particularly among younger and educated individuals. However, the quality of online health content varies, raising concerns about its impact on patients' knowledge, attitude, and perception. In the Philippines, where internet usage continues to grow, there is limited date on how patients use web-based health information and how it influences their healthcare decisions. This study examines the effects of online health information on patients' knowledge, attitudes, and perceptions, focusing on how factors like age, gender, and education, marital and economic status affect their engagement with digital health resources

Objective: This study aims to determine the patients' knowledge, perception, and attitude towards their illness after seeking web-based health information in a tertiary-level hospital in Manila. Specifically, to Identify the sociodemographic profiles of respondents, to determine the utilization of Google and other online platforms to gather health information, to evaluate the impact of online health information on patients' health knowledge and beliefs and assess the association between patients' sociodemographic profiles and the effects of health information on their knowledge and beliefs.

Methodology: : A quantitative cross-sectional study was conducted among 94 adult patients from the OPD of Mary Johnston Hospital who were willing to participate and were digitally knowledgeable. Data were collected using a self-constructed validated questionnaire. The data was analyzed using SPSS 27 software. Descriptive statistics, such as frequency and percentage distributions, were used to examine respondents' sociodemographic profiles, Pearson's r correlation was utilized to assess the relationship between sociodemographic factors and the effects of web-based health information on patients' knowledge, attitude, and perception (KAP).

Results: The results show that younger respondents, particularly those aged 18-34, had higher knowledge, attitude, and perception (KAP) scores regarding the use of web-based health information. Female respondents demonstrated significantly higher KAP scores compared to males, indicating that they were more proactive in seeking and utilizing online health resources. Additionally, respondents with higher educational attainment and middle-income class were more likely to exhibit better KAP scores, highlighting the influence of sociodemographic factors on the effectiveness of web-based health information.

Conclusion: The study concludes that web-based health information significantly influences the knowledge, attitudes, and perceptions of patients, particularly among younger, female, and more educated respondents. While online resources can empower individuals by enhancing their health knowledge, they also pose challenges, such as increased anxiety. There is a need for more reliable, user-friendly online health platforms to support patients in making informed health decisions. Future research should focus on a more diverse sample and explore the long-term effects of web-based health information.

Keywords: Cyberchondria, Dr Google, Web-based Health Information, Health Knowledge, Attitudes, Perception

INTRODUCTION

The number of Internet users searching for health-related topics rises substantially each year. This study aimed to determine whether patients' knowledge of health and disease from the Internet had an impact on them and how this information could affect their patient management strategies [1]. The emergence of new opportunities has led to changes in the demands of society. More people are using the Internet for medical purposes and require more access to e-health facilities than ever before [2].

A new type of patient, known as the e-patient, emerged who actively sought information about health and diseases and expected a doctor-doctor relationship [3]. Patients are better equipped for their visit, as they are well-informed and have gathered information beforehand, leading to them asking relevant and important questions during the doctor's appointment. In contrast, patients frequently encounter inaccurate information sources that lead to inadequate diagnosis and treatment from their physician [4]. The Internet can be advantageous in providing important information to both patients and doctors, but it can also be harmful if it is not used correctly. The impact of new technologies on patients' health-related activities is a topic of concern, with questions being raised about their expectations [5].

The Internet's near-unlimited range has resulted in most people using it without interruption. The vast amount of information available can prompt patients to respond in diverse ways, including emotional and motivational, or facilitate different behaviors that are essential for the diagnosis and treatment [6]. By elaborating on and clarifying information that patients have learned and instructing them on how to make the Internet a useful resource, doctors should be involved in it [7].

The potential for reaching your physician through email or online, and whether a healthcare provider has its own website, are becoming more influential in influencing patient choice [8]. By utilizing their medical records and communicating with doctors, patients can become more involved in the therapeutic process. The impact of the Internet on patients' behavior and health decisions is being studied more frequently, but the data is still uncertain and lacking sufficient evidence [9].

The researcher is prompted to conduct a survey study on the effect of accessible online health among patients. Several articles have been scrutinized by the researcher in various online journals, both local and international, and have shown a very limited number of local studies that tackle the effect of online health information on patients. The researcher got very interested in pursuing the topic to be able to contribute to the existing fund of knowledge. The present study aims to determine the effect of accessible online health information on the attitudes and beliefs of patients towards their illness.

SIGNIFICANCE OF THE STUDY

The Mary Johnston Hospital is one of the leading tertiary hospitals in the locality. It caters to a wide variety

of diseases and is equipped with state-of-the-art facilities. The institution's goal is to provide our patients with a safe, effective, appropriate, and meaningful healthcare environment, delivered by the most competent, caring, and compassionate team of medical professionals and support staff. In order to meet the standards of high-quality care, relative to the effect of online health information on the management of patients, with this study, clinicians in this department could design a specific approach to treatment and management that would ensure a favorable patient outcome.

There is a palpable lack of local studies designed to collate and analyze data, particularly on the knowledge, attitude, and perception of patients towards their illness after seeking online health information. In this regard, the information generated from this study will be used in the future as a guide and basis for conducting prospective studies with large-scale populations from a nationwide perspective. The findings of this study will be of great value to the following:

Government. This study may be deemed informative to the Department of Health. It will provide them with a wide range of data gathered from reliable sources, including an extensive review of related literature and a comprehensive discussion on the effect of accessible online health information on patients.

Patients and relatives. The findings of the study would be beneficial among patients consulted at the healthcare institution to have the assurance of proper care and medical attention relative to their diseases and to correct misconceptions acquired from online sources regarding health, treatment, and etiology of diseases.

Future Researchers. This study may provide information for further research and investigation on this growing public health issue. This study will raise awareness about the effect of online health information on the attitudes and beliefs of patients. This study will serve as a basis for future researchers to undertake similar studies so that the effect of accessible online health information on the management of patients can be further studied.

OBJECTIVES OF THE STUDY

General Objective

The primary aim of this study is to assess the Knowledge Perception and Attitude of Patients towards their Illness after searching for Web-based Health Information.

Specific Objectives

At the end of this research investigation, the following specific objectives will be attained:

1. To identify the sociodemographic profile and information of the selected respondents in terms of:
   - Age;
   - Sex;
   - Marital Status;
   - Educational Attainment;
   - Socioeconomic status;
   - Frequency of Internet Use for health purposes; and
   - Primary Source of Health Information.
2. To determine the utilization of Google and other online sites relative to self-diagnosis among patients such as Facebook, TikTok, and YouTube.
3. To evaluate the effects of online health information on health knowledge and beliefs among patients.
4. To determine the association of the patient's sociodemographic profile and the effects ofhealth information on their health knowledge and beliefs.

SCOPE AND LIMITATIONS OF THE STUDY

This study is intended to gather information primarily based on the declared objectives in this research paper. The study focused on evaluating patients' understanding, attitudes, and perceptions of their illnesses following their research on health information via web pages.

The researcher presented the data through a summary of tables with interpretations, conclusions, and recommendations. The researcher utilized a self-constructed survey questionnaire validated by an expert to collect data from the selected respondents. In line with establishing these areas, the researcher considered the following limitations of the study: The researcher intended to field the study in one research locale. There was no comparative study conducted that involved patients from several medical institutions. Therefore, this was considered a limitation since the data that were collected were not sufficient to represent all patients in the country regarding the effects of online health information on the management of patients. There is no assumption that the findings served as a representative of the whole healthcare industry, region, and country, as the study focused on a single-center institution without covering a large sample. Consolidation of data using a computer program and a statistical tool was used for the data treatment after the data collection.

Furthermore, it should be noted that the opinions, explanations, and concepts presented are based on the researchers' courses of study and on the availability of data and information needed in the study.

REVIEW OF RELATED LITERATURE

Every year the number of internet users searching for health-related topics increases. The purpose of the study was to determine if patients' knowledge of health and disease from the internet had an impact on them and how this information could affect their patient management strategies [10]. The internet has changed the lifestyles of many people. Internet health information services have become increasingly attractive as the availability and immediacy of information services provided by the internet continue to improve and patients' private information can be concealed [11].

The new variety of patient is known as the e-patient, and they seek health and disease-related information. Patients are better prepared for their visit because they are well-informed and have collected information prior to their doctor's appointment, which enables them to ask pertinent and important questions during the visit [12]. In order to satisfy their own health information requirements, people opt to obtain health information online due to a dearth of medical resources. The majority of the online health information that patients seek on the internet pertains to diseases, nutrition, treatments, and physical and mental health. The variable quality of online health information has a significant effect on patients [13]. Patients' perceptions of the credibility of information influence their use of the Internet as a frequent and preferable source of health information. The Internet has progressively become an important source of health information, although physicians remain the most popular source of health information [15].

Patients are more likely to encounter inaccurate information sources that lead to inadequate diagnosis and treatment. If the internet is not used correctly, it can be harmful to both patients and doctors. The impact of new technologies on patients' health-related activities is of concern, with questions being raised about their expectations [16]. Online health information seeking can have an impact on physician-patient relationships. Patients who want to follow the course of treatment can obtain more health information. The rapid development of the internet has changed the access of patients to health information and has affected the existing physician-patient relationship. Patients can get health information online to meet their needs [17].

The vast majority of Internet users do not experience interruptions because its range is close to being unlimited. The enormous quantity of information can elicit a variety of responses from patients, including emotional and motivational ones [18]. It is essential for physicians to educate patients on how to utilize the Internet effectively. The emergence of new opportunities has prompted changes in societal demands. More people are using the internet for medical purposes, necessitating an expansion of health care facilities. Internet search results for health information indicate that extreme situations, such as advice that contradicts standard medical opinion or complex data provided by health care professionals, can lead to misinterpretation, confusion, and other issues for patients [19]. Obviously, the availability of health information on the internet is transforming many patients from passive recipients of medical services to active participants in the medical process, which poses new challenges for a great number of physicians [20].

The impact of the internet on patients' behavior is being studied more frequently, but the data is still uncertain and lacking sufficient evidence. Whether a healthcare provider has its own website or not it is becoming more influential in influencing patient choice because of the potential for reaching your physician through email or online [21]. Patients can communicate with their doctors using their medical records. The internet has attracted a lot of attention to the physician-patient relationship [22]. The relationship between patients and physicians is the most important one. Patients lack understanding of diseases, and communication barriers between physicians and patients cause a number of problems [23].

Physician-patient communication is a complex clinical behavior whose main goal is to share medical information to improve the education of clinical diagnosis, treatment, and specific diseases [24]. The quality of physician-patient communication affects the physician-patient relationship. In the past, physicians made decisions and patients obeyed them, which constitutes the traditional physician-patient relationship. Patients and medical staff advocate the transition to mutual participation, that is, shared power and responsibility [25]. Previous studies have shown that processing patients' online health information-seeking behavior in daily consultation can improve the quality of medical services. In an ideal physician-patient relationship, patients should be guided instead of looking for online health information independently. However, at present, patients are mainly looking for online health information by themselves, and they are unable to control the quality of the information and other aspects [26].

In partnership with their physicians, patients have been increasingly seeking and using internet health information to become more active in managing their own health. Positive and negative effects can be found in the interactions between patients and their doctors [27]. The impact of internet health information on the patient-physician relationship and patients' compliance with their treatment regimen is important to understand. The impact of a patient's use of Internet health information on various elements that describe the interactions between a patient and her physician is examined through a theoretical model based on principal agent theory and the information asymmetry perspective [28].

A strong base of support for individuals with health challenges is generated by the large community of patients who find themselves in similar medical situations thanks to the Internet. Those who are homebound as a result of illness will benefit from this support. Increased patient knowledge can help reduce doctor errors. Many patients use the Internet to find simple information on diet and exercise rather than complex information on specific conditions [29]. The effect of Internet use on the patient-physician relationship in specialty clinic settings has not received much attention, despite the fact that some researchers have investigated the possible effects of Internet use on the patient-physician relationship in primary care settings. Basic healthcare information most often delivered to patients in the primary care

setting is of most interest to the majority of internet users and has the greatest chance of improving patient wellbeing by encouraging modifications to routine self-care behaviors [30].

In their study, Calderon and Chua explore the increasing role of social media in healthcare and analyze the related ethical issues and healthcare professionals' roles and responsibilities in the Philippine context. The researchers state that while social media has become a vital source of information on health and healthcare for both healthcare practitioners and the public, it creates a range of dangers for users. Specifically, social media supports spreading false or misleading information on health and care issues, facilitates privacy violations, and blurs the line between private and professional life. The authors develop particular ethical guidelines to address the identified risks and allow healthcare providers to use social media correctly. The provided rationale is based on scholarly work that also discusses the implications of social media use in medicine and emphasizes the double nature of social media as an opportunity and a source of professional risk [32].

The Philippine Statistics Authority reveals critical insights into internet accessibility among Filipinos, with over 50 million people having internet access as per the 2020 Census of Population and Housing. The data indicates that more than half of the total households in the Philippines have internet access, a pivotal factor when considering how Filipinos can retrieve health information online. With the highest internet access reported in the National Capital Region at 74.6% and other regions like CALABARZON and Central Luzon having access rates above the national average, there is a significant opportunity for health education and information dissemination through digital platforms. Conversely, the relatively low internet access in regions like Zamboanga Peninsula, at 28.5%, highlights the digital divide that could impact populations' ability to obtain crucial health information. These statistics are essential for healthcare providers and policymakers to understand where and how to effectively focus their online health information strategies to reach a broader audience [33].

OPERATIONAL DEFINITION OF TERMS

To clearly understand the terminologies and concepts used in this study the following terms are defined operationally and conceptually.

Knowledge- patient's understanding and awareness of how to navigate and evaluate medical information available on the internet

Attitude- how patients respond positively or negatively about the information gathered on the internet.

Perception – how patients interpret medical information they encounter on the internet. This can influence their trust in online information and their decisions regarding their health and well-being.

Sociodemographic Profile- This refers to the information of respondents which provides description such as their age, sex, marital status, educational attainment, clinical presentation, comorbidities, socioeconomic status, and their primary source of health information relative to health and medication.

Cyberchondria: compulsive searching of health-related information online, leading to increased anxiety or distress about one's health.

e-patient: a person who actively engages in their own healthcare through the use of digital tools and online resources

Web-based health information. This refers to an online platform being used by patients to increase knowledge of, competence with, and engagement in health decision-making strategies. However, this can be used by patients to self-diagnosis and medication.

METHODOLOGY

The research method used in this study is a quantitative cross-sectional type. Data was gathered from the OPD patients of Mary Johnston Hospital and investigated the relationships between variables or outcomes. Each respondent was asked the same questions to ensure that the entire data sample can be analyzed fairly. The data was supplied in a numerical format, and was analyzed in a quantifiable way using statistical methods. This design was used to analyze and interpret the demographic profile of the respondents. It was descriptive in purpose, gathering demographic profile, and identifying effects of online health information affects patients. It was correlational in purpose to analyze and identify possible relationships between the identified variables.

Study Design

This is a cross-sectional study. Data collection was done with the use of a self-constructed questionnaire that had been validated by an expert. It aimed to determine the frequency, percentage and other statistical calculations thus identifying this study as quantitative research.

Population and Sample Size Estimation

The main participants of the present study were patients from the out-patient department of Mary Johnston Hospital. All eligible participants were recruited in the study. The sample consisted of adult patients defined as subjects age 18 or older, who agreed to take part in the research.

Sample size was be obtained using the Krejcie-Morgan equation considering the essential measure of a level of accuracy as well as the required confidence level based on the existing population available for this study. The formula is as follows:

$$n = \frac{X^2 Np(1-p)}{[e^2\,(N-1) + X^2\,p(1-p)]}$$

Where:

N = population size (120)
X2 = chi-square value at 95% confidence level with a degree of freedom of 1 (1.96)
p = proportion of the population (50% if unknown)
e = margin of error (5%)

TOTAL: 92

Samples were selected through purposive sampling wherein participants were selected based on the given criteria. Out of the 102 patients who took part in the initial evaluation, only 94 were found to meet the specific criteria required for the study. This means that eight (8) individuals did not meet the necessary standard, particularly affecting their knowledge and access to gadgets. As a result, the final analysis was based on the responses of 94 participants

Inclusion Criteria

- All available adult patients from the OPD of Mary Johnston Hospital who are willing to take part in the study.

Exclusion Criteria

- Respondents who are minor
- Patients from other hospital
- Respondents who do not own or have access to gadgets (e.g., smartphones, tablets, computers, or laptops)

Validation of Questionnaire

The validation of the questionnaire among 50 participants in the pilot study was conducted to ensure its

appropriateness and reliability in measuring the intended constructs. The questionnaire was designed to assess the knowledge, perception, and attitude of patients regarding their illness after searching for web-based health information. This involved evaluating the effects of online health information on the patients' health knowledge and beliefs, as well as the association between the patients' clinical demographic profile and the effects of health information on their health knowledge and beliefs. The questionnaire has undergone rigorous validation, overseen by a registered psychometrician, to ensure its reliability and validity. Specifically, 8 questionnaire items related to the clinical demographic profile and information of respondents were reviewed, with all items being accepted. Similarly, in subsets focusing on patient knowledge, attitudes, and perceptions towards their illness after searching web-based health information, all relevant questionnaire items were accepted during the validation and reliability process. This highlights the relevance, clarity, and alignment of the questionnaire with the research objectives, ensuring effective capture of patient behaviors, attitudes, and perceptions regarding seeking health information online

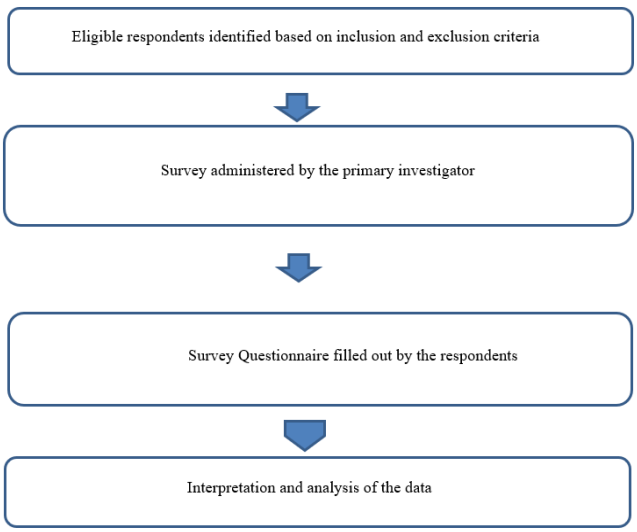
Reliability testing results of the three subscales assessed are as follows: subset 1, 'Knowledge about Patients towards their Illness,' obtained a Cronbach's alpha of 0.673, Subset 2, 'Attitudes about Patients towards their Illness,' achieved a Cronbach's alpha of 0.679, and Subset 3, 'Perceptions of Patients towards their Illnesses,' yielded a Cronbach's alpha of 0.702, which generally indicates an acceptable level of reliability. However, values higher than 0.95 are not necessarily good, since they might be an indication of redundance (Hulin, Netemeyer, and Cudeck, 2001)

Data Collection

The recruitment for the study strictly adhered to the inclusion and exclusion criteria set by the researcher, with voluntary consent obtained from participants. The enrollment process and securing of written consent were primarily conducted by the principal investigator. The researcher commenced the study only after receiving clearance from the MJH Ethics Review Committee. No subject participated in the study without documented informed consent.

During the data collection process, efforts were made to ensure that respondents understood the questions and instructions uniformly. This preliminary phase assessed the clarity of the questions, the sufficiency of response categories, and identified any systematic issues. Participants included in the pilot study did not take part in the main research. The method of data collection was done using a self-administered survey questionnaire that had been validated by an expert, as most respondents were computer literate.

Flowchart/ Algorithm of Procedure



Data Analysis

All data were analyzed using the statistical tool SPSS version 27. Correlational analysis using the Pearson r coefficient was conducted to determine the association between the sociodemographic profile and the effects of web-based health information among patients in terms of their knowledge, attitude, and perception.

ETHICAL CONSIDERATIONS

Prior to the initiation of the study, the study protocol and informed consent, along with any subsequent amendments, were reviewed and approved by the Mary Johnston Hospital Institutional Ethics Review Board.

There was no direct benefit for the subjects participating in the study; however, the results may have indirect benefits.

The study posed no risk, as the primary investigator only collected data on the effects of online health information on patient management. No intrusive techniques or diagnostics were utilized, and patient information was not released.

Before a subject's participation, written informed consent was obtained by the investigator after providing an adequate explanation of the aims, methods, anticipated benefits, and potential risks of the study. Informed consent was collected immediately after the selection of participants. The consent form was signed and personally dated by both the subject and the person conducting the informed consent discussion. One copy of the signed informed consent was given to the subject.

The investigator preserved the confidentiality of all subjects participating in the study and ensured that the subjects' anonymity was maintained. The risk to the subjects' privacy was minimal, and no sensitive information was obtained. All data were encoded using a password-protected Excel spreadsheet, with a code number assigned to each patient. The researchers intended to fully adhere to the provisions of the Data Privacy Act of 2012.

CONFLICT OF INTEREST

The principal and supervising investigators have no conflicts of interest to declare.

RESULT

Statistical Hypothesis:

The null hypothesis (H_0) assumes that sociodemographic factors such as age, gender, education, marital and economic status do not significantly affect the KAP scores of patients after they engage with online health information.

The alternative hypothesis (H_1) suggests that these sociodemographic factors have a significant effect on the KAP scores of patients after they engage with online health information, as implied by the research objectives and findings where younger, female, and more educated individuals showed better engagement and outcomes from web-based health information.

Statistical Analysis: The data was analyzed using Statistical Package for Social Science (SPSS) 27 software to be able to calculate the correlation and the significance of each variable being utilized in the study. Frequency and Percentage Distribution using the Descriptive statistical calculation were used to find the sociodemographic profile of patients and their utilization of several online sites on getting various health information as well as the effects of web-based health information on the knowledge, attitude, and perception of patients towards their illness. Correlational analysis using Pearson r were used to determine

the association of sociodemographic profile and the effects of web-based health information among patients in terms of their knowledge attitude, and perception.

Table 1. Summary Distribution of the Sociodemographic Profile of the Respondents

Characteristics (N = 94)	Frequency (n)	Percentage (%)
Age (in years)		
18 – 24	16	17.0
25 – 29	23	24.5
30 – 34	16	17.0
35 – 39	8	8.5
40 – 44	9	9.6
45 – 49	5	5.3
50 – 54	6	6.4
55 – 60	9	9.6
> 61	2	2.1
Sex		
Male	21	22.3
Female	73	77.7
Marital Status		
Single	52	55.3
Married	36	38.3
Annulled	1	1.1
Widow	3	3.2
Prefer not to say	2	2.1
Educational Attainment		
Elementary	1	1.1
High School	26	27.7
Vocational	15	16.0
College	35	37.2
Graduate Degree	17	18.1
Income Class		
Poor	4	4.3
Low Income	35	37.2
Middle Class	51	54.3
Upper Middle Class	4	4.3
Frequency of Internet Use for Health Purposes		
Daily	80	85.1
Weekly	14	14.9
Primary Source of Health Information		
Google		
Yes	57	60.6

No	36	38.3
Facebook		
Yes	5	5.3
No	89	94.7
YouTube		
Yes	22	23.4
No	72	76.6
Medical Journals		
Yes	7	7.4
No	87	92.6
Social media		
Yes	51	54.3
No	43	45.7
TikTok		
Yes	19	20.2
No	75	79.8
Vlogs		
Yes	6	6.4
No	88	93.6

The combined count of respondents, totaling 94, is primarily centered among the younger age categories. The most numerous groups involve respondents aged 25 to 29, comprising 24.5% of the total sample. The second largest sample shares an equal percentage of 17. 0% is represented by the respondents from 18 to 24 and 30 to 34 years old. The older categories demonstrate a prominent decrease in representation, accounting for only 2.1% of 61 and over.

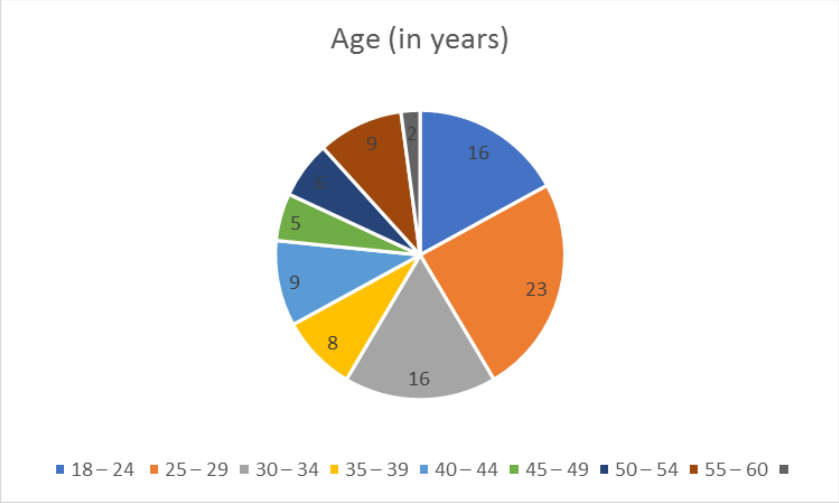


Figure 1. Age of the Participants

There is a significant gender disparity, as females constitute 77.7% of the sample compared to males at 22.3%. This skewed gender distribution might influence the generalizability of the findings to a broader population.

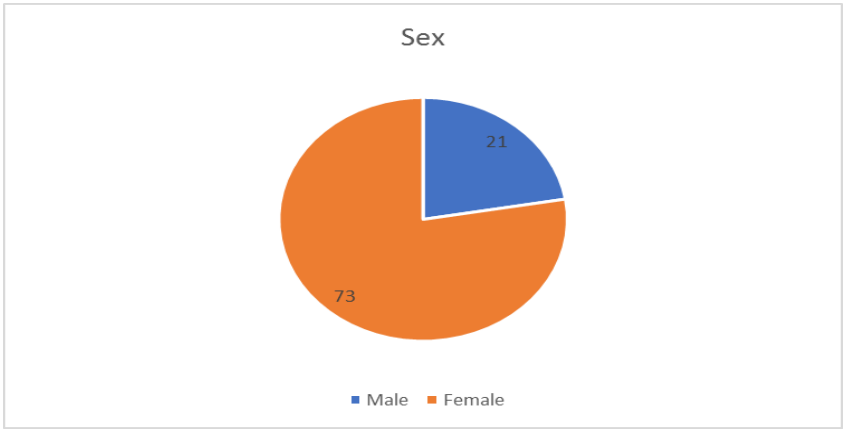


Figure 2. Sex of the Participants

Regarding marital status, a majority of the respondents are single (55.3%), while married individuals make up 38.3%. Other categories, including widows and those preferring not to disclose their marital status, account for smaller proportions at 3.2% and 2.1%, respectively, with annulled respondents at 1.1%.

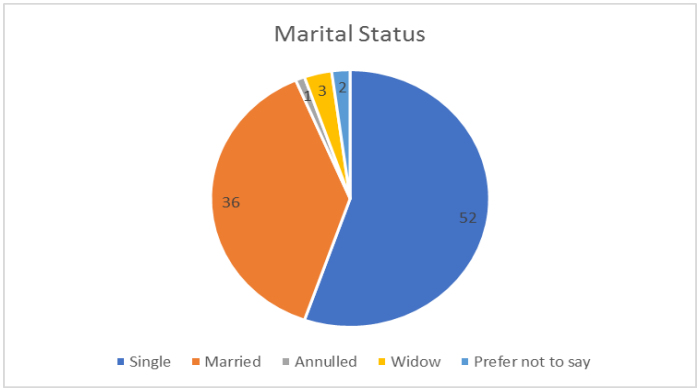


Figure 3. Marital Status of the Participants

In terms of educational attainment, the largest group of respondents are college graduates, comprising 37.2% of the sample. High school graduates follow at 27.7%, with 18.1% having obtained a graduate degree. Vocational training has been completed by 16.0% of the respondents, and a minimal 1.1% have only an elementary education.

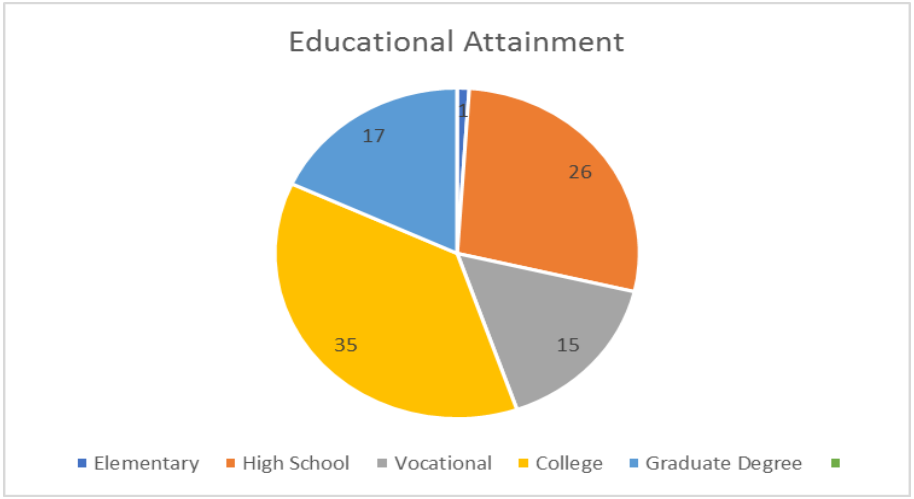


Figure 4. Educational Attainment of the Participants

Income class distribution shows that the majority of respondents are middle class (54.3%), with a substantial portion also falling into the low-income category (37.2%). The poor and the upper-middle class represent 4.3% of the respondents.

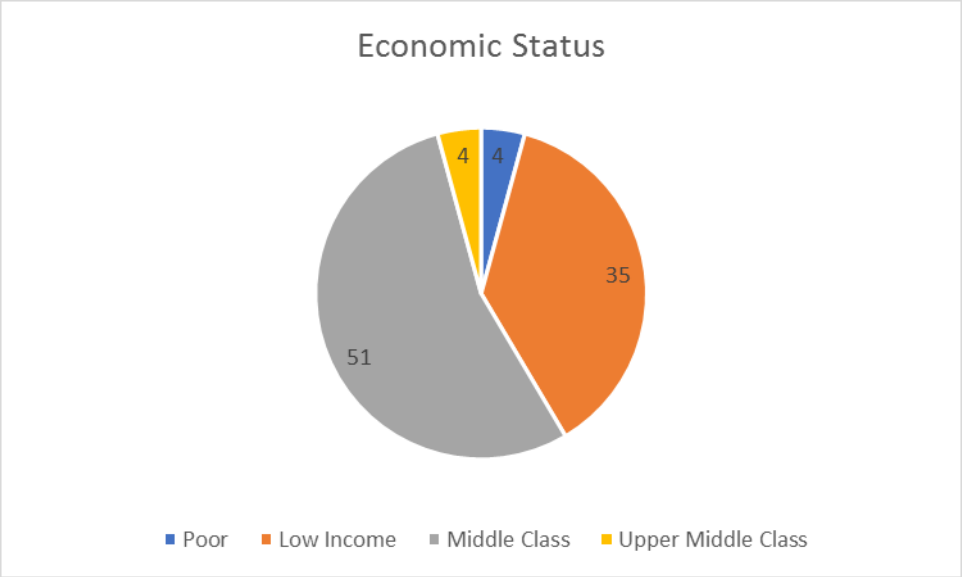


Figure 5. Economic Status of the Participants

Internet usage for health purposes is extraordinarily prevalent, with the overwhelming majority of respondents, wherein a staggering 85.1% rely on the web for medical information daily, while the remaining 14.9% access online wellness resources weekly. Unsurprisingly, Google is the number one destination, tapped by over three-fifths of participants for their health queries. Other digital channels play secondary roles in how individuals obtain medical knowledge, with Facebook, YouTube, medical journals, social networks, TikTok, and vlogs achieving considerably lower but still significant utilization rates ranging from a modest 5.3% to a still sizeable 54.3%. Though Google dominates as people's first reflex, diverse digital diagnosticians supplement its counsel.

Overall, the respondents in this study are primarily young, female, single, and college-educated, with a majority falling into the middle class. They exhibit high internet usage for health information, predominantly relying on Google is strongly associated with higher Knowledge, Attitude, and Perception (KAP) scores, especially among younger respondents aged 25-29. Females and individuals with higher education and income levels tend to have significantly higher KAP scores, while older, less educated, and lower-income respondents exhibit more moderate to low KAP levels. Education plays a crucial role, with college graduates showing better health literacy and more positive attitudes and perceptions toward health information. This sociodemographic profile is critical for understanding the context in which these individuals seek and utilize web-based health information.

Table 2. Summary Distribution of the Web-based Health Information among the patients

Characteristics (N = 94)	Frequency (n)	Percentage (%)
Health Information commonly looked up by patients		
Nutrition/Diet		
Yes	49	52.1

No	45	47.9
Medications		
Yes	40	42.6
No	54	57.4
Medical Procedures		
Yes	13	13.8
No	81	86.2
Symptoms and Disease		
Yes	34	36.2
No	59	62.8
Confirmation of Doctor's advice		
Yes	33	35.1
No	61	64.9
Specific conditions		
Yes	8	8.5
No	86	91.5

Table 2 presents the types of health information that patients commonly search for online, revealing several key trends. A significant portion of the respondents (52.1%) frequently look up information related to nutrition and diet. This indicates a high interest in maintaining or improving dietary habits and overall health through nutritional information. Additionally, 42.6% of the respondents search for medication information, suggesting a substantial interest in understanding the drugs they are prescribed or considering for their conditions. However, the majority (57.4%) do not seek medication information online, indicating a potential reliance on healthcare providers for this information.

Information on medical procedures is much less frequently sought, with only 13.8% of respondents looking up this information. This little percentage could indicate a dependence on healthcare personnel for procedural information or a lack of interest or comprehension of such specifics. Conversely, 36.2% of participants utilize the internet to seek information regarding symptoms and disorders. This suggests a significant dependence on web sources to comprehend the symptoms they may be encountering or the diseases they may be worried about. Despite this, a majority of 62.8% do not use the internet for this purpose, possibly preferring professional medical advice or needing more trust in online information.

Regarding the confirmation of doctor's advice, 35.1% of respondents turn to the internet, showing a tendency to verify or further understand medical advice they receive. The majority (64.9%), however, do not engage in this behavior, which might indicate a higher trust in their healthcare providers or less inclination to double-check information. Finally, only 8.5% of respondents look up specific conditions online, suggesting that specific condition searches are not common practice among the respondents.

Table 3. Summary Statistics of the Knowledge, Attitude, and Perception of Patients on the Utilization of Web-based Health Information

Statement	Mean	Standard Deviation	Descriptive Rating
Knowledge Factor			
I am confident in using the internet	4.30	0.58	Strongly Agree
It is easy and convenient to use the internet to search about my health condition such as common symptoms and treatment	4.04	0.65	Agree
I can find answers to my health questions online	3.88	0.70	Agree
Internet gives me health information such as common symptoms and treatment	3.97	0.71	Agree
Online health information teaches me about diet and healthy lifestyle to improve good health and nutrition	3.95	0.56	Agree
I am well-informed and able to ask relevant questions about my disease once I visit my doctor	3.66	0.68	Agree
Grand Arithmetic Weighted Mean	**3.97**		**Knowledgeable**
Attitude Factor			
I usually ask the doctor for suggestions or questions about the diagnosis or treatment of diseases which I have found out on the Internet	3.81	0.71	Agree
I usually ask the doctor for additional laboratory and diagnostic screening tests based on the ideas I gathered from the Internet	3.77	0.81	Agree
I usually self-medicated and relied on the information I gathered from the Internet without consulting my doctor	2.94	0.73	Neutral
I usually search the Internet when I feel something wrong with my body	3.81	0.72	Agree
I don't usually cancel doctor's appointment after I read articles about my perceived illness	3.82	0.69	Agree
I am more likely to visit a doctor after searching online articles about my perceived illness	3.69	0.76	Agree
Grand Arithmetic Weighted Mean	**3.64**		**Good**

Perception Factor			
I feel anxious and fearful once I am looking for health information online	4.01	0.63	Agree
I feel more relieved when I am done reading internet sources about health	3.45	0.73	Agree
I feel more worried about my symptoms after the search	3.66	0.70	Agree
I have noticed changes in my symptoms after searching for health information online related to my symptoms	3.19	0.72	Neutral
I experienced changes in thinking about my health as a result of the new knowledge I gathered online and possibly different approach to managing my health	3.38	0.70	Neutral
I believe my physician is willing to discuss online information with me	4.11	0.73	Agree
Grand Arithmetic Weighted Mean	**3.63**		**Good**

The above table summarizes the statistical analysis of patients' knowledge, attitudes, and perceptions regarding the use of web-based health information. The knowledge factor shows that respondents feel confident using the internet, with a mean score of 4.30, indicating strong agreement. Furthermore, they perceive the internet as a user-friendly and efficient tool for researching their health concerns, including typical symptoms and treatments, as indicated by a mean score of 4.04, demonstrating consensus. The respondents usually concur that they are able to locate solutions to their health inquiries on the internet (mean score of 3.88) and that the internet furnishes them with health-related material regarding prevalent symptoms and remedies (mean score of 3.97). In addition, individuals hold the belief that accessing health information online aids in their understanding of nutrition and promoting healthy habits (mean score of 3.95). Furthermore, they perceive this knowledge as empowering them to ask pertinent questions to their healthcare providers (mean score of 3.66). The arithmetic weighted mean of 3.97 suggests that respondents have a high level of general knowledge.

In terms of attitudes, respondents generally agree that they ask their doctors for suggestions or questions about diagnoses or treatments found on the internet (mean of 3.81) and request additional laboratory and diagnostic screening tests based on information gathered online (mean of 3.77). They have a neutral stance on self-medicating based on online information without consulting their doctors (mean of 2.94). Respondents agree that they search the internet when they feel something is wrong with their body (mean of 3.81) and do not usually cancel doctor's appointments after reading online articles about their perceived illness (mean of 3.82). They are also more likely to visit a doctor after reading online articles about their symptoms (mean of 3.69). The grand arithmetic weighted mean of 3.64 suggests that respondents have a generally positive attitude toward using the internet for health information.

Regarding perception, respondents generally agree that they feel anxious and fearful when looking for health information online (mean of 4.01). However, they also feel more relieved after reading internet sources about health (mean of 3.45) and experience increased worry about their symptoms after the search (mean of 3.66). They are neutral about noticing changes in their symptoms after searching for health

information online (mean of 3.19) and experiencing changes in their thinking about health due to new knowledge gathered online (mean of 3.38). Respondents agree that their physicians are willing to discuss online information with them (mean of 4.11). The grand arithmetic weighted mean of 3.63 indicates that respondents have a generally positive perception of utilizing web-based health information. Overall, these results reflect that while respondents find web-based health information useful and feel knowledgeable, their attitudes and perceptions reveal a mix of confidence and anxiety about the accuracy and impact of the information they find online.

Table 4. Summary Statistics of the Association of Sociodemographic Profile and the Effects of Web-based Health Information on Patients' KAP

Correlated Factors	r	α	p-value
Knowledge Score vs. Sociodemographic Profile	0.49	0.05	0.010*
Knowledge Score vs. Age	0.50	0.05	0.010*
18 – 24	0.92	0.05	0.010*
25 – 29	0.92	0.05	0.010*
30 – 34	0.58	0.05	0.015*
35 – 39	0.58	0.05	0.020*
40 – 44	0.41	0.05	0.060ns
45 – 49	0.38	0.05	0.066ns
50 – 54	0.25	0.05	0.066ns
55 – 60	0.20	0.05	0.071ns
> 61	0.15	0.05	0.076ns
Knowledge Score vs. Sex	0.49	0.05	0.010*
Male	0.20	0.05	0.075ns
Female	0.78	0.05	0.020*
Knowledge Score vs. Marital Status	0.48	0.05	0.010*
Single	0.75	0.05	0.020*
Married	0.70	0.05	0.030*
Annulled	0.40	0.05	0.051ns
Widow	0.35	0.05	0.055ns
Prefer not to say	0.20	0.05	0.059ns
Knowledge Score vs. Educational Attainment	0.49	0.05	0.010*
Elementary	0.25	0.05	0.059ns
High School	0.40	0.05	0.051ns
Vocational	0.44	0.05	0.020*
College	0.70	0.05	0.015*
Graduate Degree	0.65	0.05	0.011*
Knowledge Score vs. Economic Status	0.49	0.05	0.010*
Poor	0.20	0.05	0.058ns
Low Income	0.71	0.05	0.000*

Middle Class	0.78	0.05	0.017*
Upper Middle Class	0.25	0.05	0.079ns
Attitude Score vs. Sociodemographic Profile	0.64	0.05	0.003*
Attitude Score vs. Age	0.65	0.05	0.003*
18 – 24	0.95	0.05	0.000*
25 – 29	0.95	0.05	0.000*
30 – 34	0.99	0.05	0.000*
35 – 39	0.88	0.05	0.019*
40 – 44	0.80	0.05	0.020*
45 – 49	0.39	0.05	0.057ns
50 – 54	0.39	0.05	0.066ns
55 – 60	0.29	0.05	0.066ns
> 61	0.25	0.05	0.076ns
Attitude Score vs. Sex	0.60	0.05	0.076ns
Male	0.22	0.05	0.08ns
Female	0.98	0.05	0.000*
Attitude Score vs. Marital Status	0.66	0.05	0.003*
Single	0.99	0.05	0.000*
Married	0.97	0.05	0.000*
Annulled	0.67	0.05	0.03*
Widow	0.39	0.05	0.056ns
Prefer not to say	0.29	0.05	0.091ns
Attitude Score vs. Educational Attainment	0.66	0.05	0.003*
Elementary	0.25	0.05	0.073ns
High School	0.47	0.05	0.061ns
Vocational	0.66	0.05	0.011*
College	0.98	0.05	0.000*
Graduate Degree	0.92	0.05	0.000*
Attitude Score vs. Economic Status	0.65	0.05	0.004*
Poor	0.33	0.05	0.052ns
Low Income	0.91	0.05	0.001*
Middle Class	0.99	0.05	0.000*
Upper Middle Class	0.35	0.05	0.059ns
Perception Score vs. Sociodemographic Profile	0.57	0.05	0.024*
Perception Score vs. Age	0.57	0.05	0.024*
18 – 24	0.99	0.05	0.000*
25 – 29	0.99	0.05	0.000*
30 – 34	0.95	0.05	0.002*
35 – 39	0.58	0.05	0.020*
40 – 44	0.39	0.05	0.060ns

45 – 49	0.39	0.05	0.066^{ns}
50 – 54	0.29	0.05	0.066^{ns}
55 – 60	0.29	0.05	0.071^{ns}
> 61	0.22	0.05	0.076^{ns}
Perception Score vs. Sex	0.57	0.05	0.024*
Male	0.22	0.05	0.09^{ns}
Female	0.92	0.05	0.000*
Perception Score vs. Marital Status	0.57	0.05	0.024*
Single	0.90	0.05	0.000*
Married	0.85	0.05	0.000*
Annulled	0.60	0.05	0.04*
Widow	0.29	0.05	0.076^{ns}
Prefer not to say	0.20	0.05	0.075^{ns}
Perception Score vs. Educational Attainment	0.57	0.05	0.024*
Elementary	0.25	0.05	0.063^{ns}
High School	0.31	0.05	0.069^{ns}
Vocational	0.55	0.05	0.011*
College	0.84	0.05	0.000*
Graduate Degree	0.88	0.05	0.000*
Perception Score vs. Economic Status	0.57	0.05	0.024*
Poor	0.29	0.05	0.062^{ns}
Low Income	0.81	0.05	0.000*
Middle Class	0.83	0.05	0.000*
Upper Middle Class	0.33	0.05	0.066^{ns}

Legend: r – Pearson r Coefficient, * – Significant, ns – Not Significant

Table 4 presents the correlation between the sociodemographic profiles of respondents and the effects of web-based health information on their knowledge, attitudes, and perceptions. The table uses Pearson's r coefficient to measure the strength and direction of the associations, with a significance level (α) of 0.05. Statistically significant results with ($p < 0.05$) suggest that sociodemographic characteristics, such as age, income, or education, play an important role in influencing patients' understanding, attitudes, and perceptions of health information found online.

The correlation of knowledge score with sociodemographic profile shows a moderate positive correlation ($r = 0.49$) significant at p-value < 0.010.

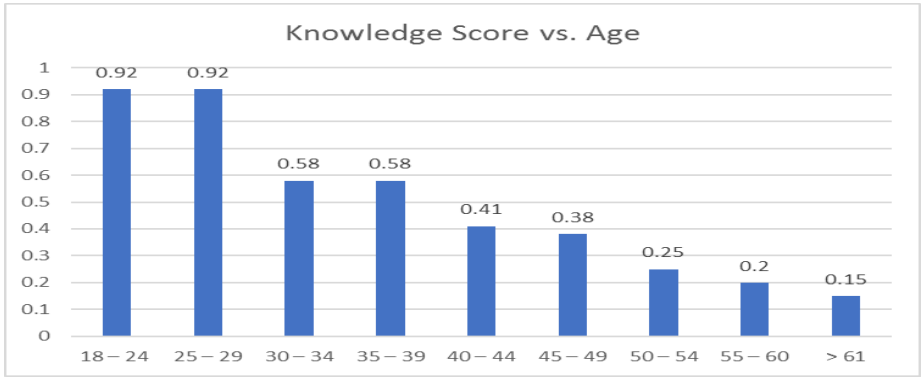


Figure 6. Knowledge Score Versus Age

Figure 6 shows a significant positive correlation between knowledge scores and age, with younger respondents, particularly those aged 18 to 34, demonstrating higher knowledge scores from using web-based health information, while older age groups show a gradual decline in knowledge acquisition.

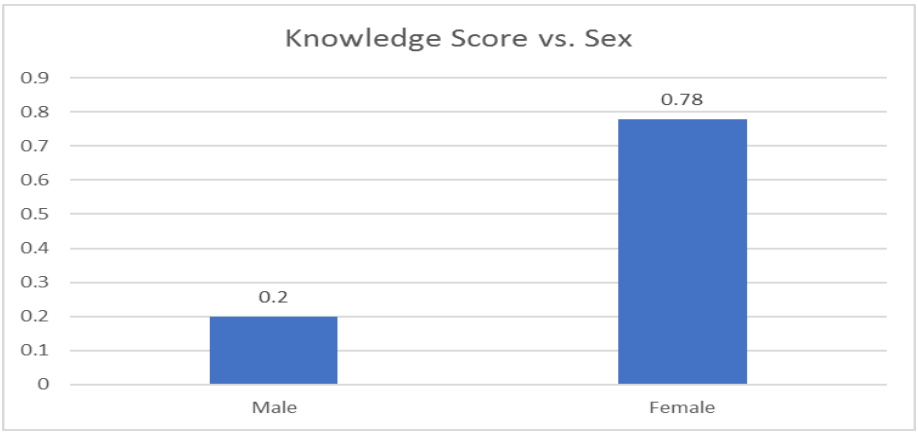


Figure 7. Knowledge Score Versus Sex

Figure 7 illustrates a significant positive correlation between knowledge scores and sex, with female respondents displaying higher knowledge scores from web-based health information compared to male respondents.

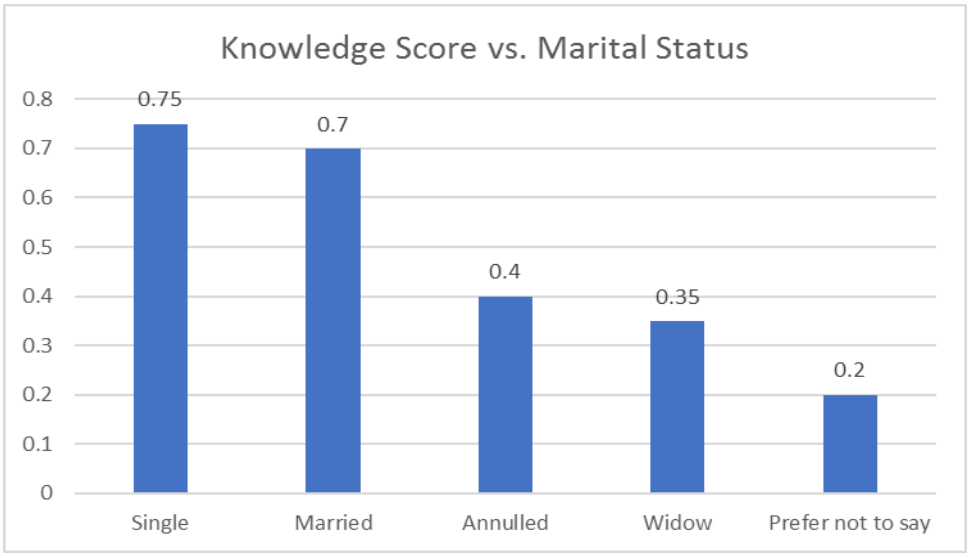


Figure 8. Knowledge Score Versus Marital Status

Figure 8 shows that single respondents tend to have higher knowledge scores from web-based health information compared to married, annulled, and widowed individuals, indicating that marital status influences knowledge acquisition.

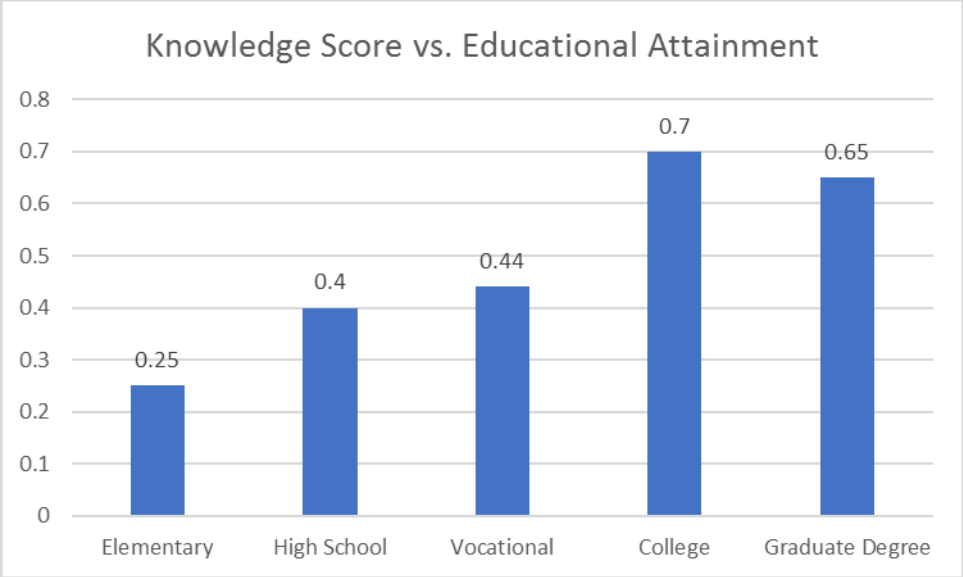


Figure 9. Knowledge Score Versus Educational Attainment

Figure 9 shows that knowledge scores generally increase with higher education levels, peaking at the college level. The increase in knowledge scores up to the college level likely reflects improved critical thinking skills and access to information.

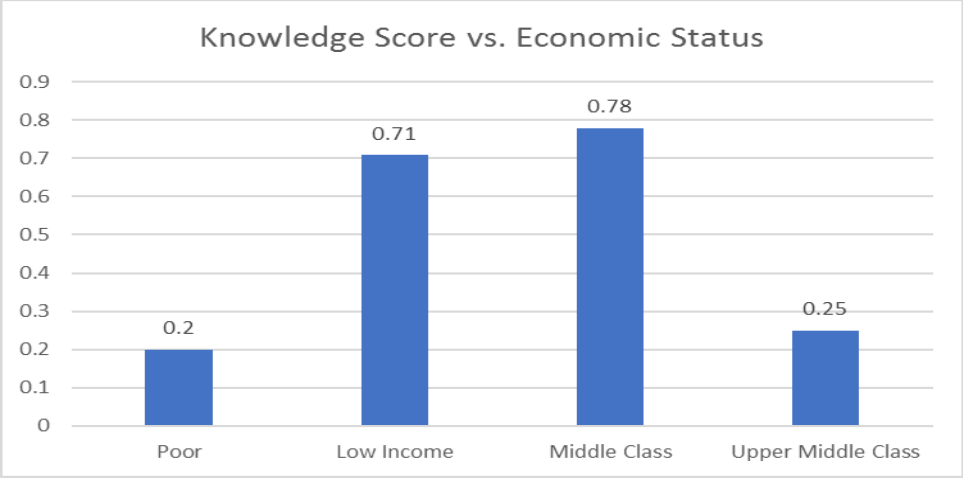


Figure 10. Knowledge Score Versus Economic Status

Figure 10 shows that knowledge scores increase from the poor to middle Class but drop for the Upper Middle. The rise in knowledge scores from the poor to the middle class might be due to better access to education and resources. However, the drop for the Upper Middle Class could be because they focus more on relying on experts or spend less time on self-learning.

The attitude score also shows a significant and stronger positive correlation with the sociodemographic profile, with an r value of 0.64 and a p-value of 0.003.

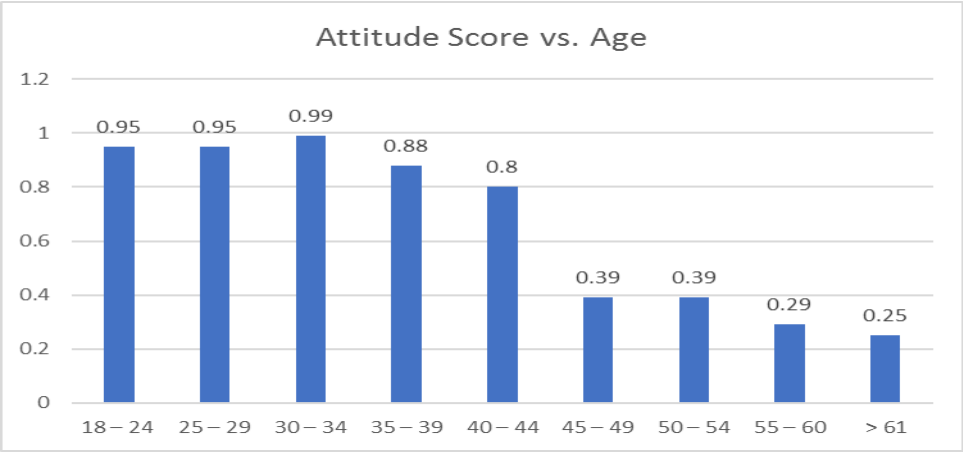


Figure 11. Attitude Score Versus Age

Figure 11 shows this strong correlation suggests that the respondents' attitudes towards using web-Individuals with higher education levels or younger age groups might be more open to seeking and trusting health information found online.

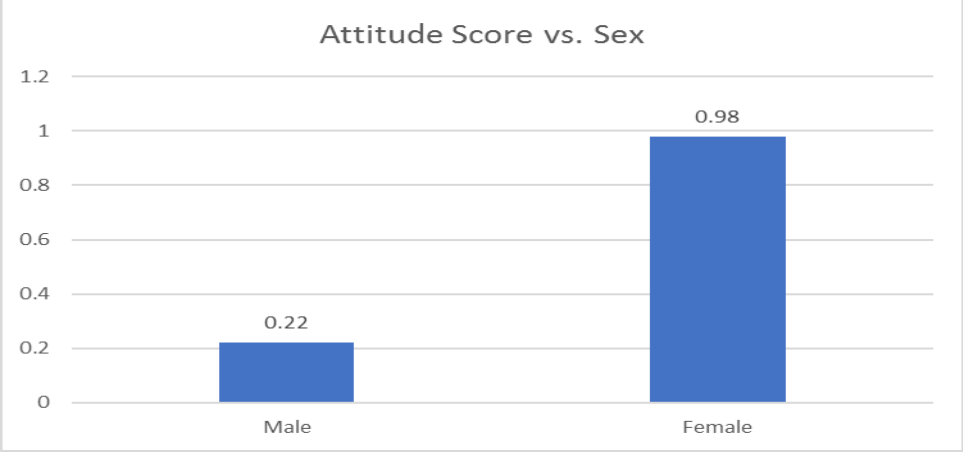


Figure 12. Attitude Score Versus Sex

Figure 12 demonstrates a significant positive correlation between attitude scores and sex, with female respondents exhibiting more positive attitudes toward using web-based health information compared to male respondents.

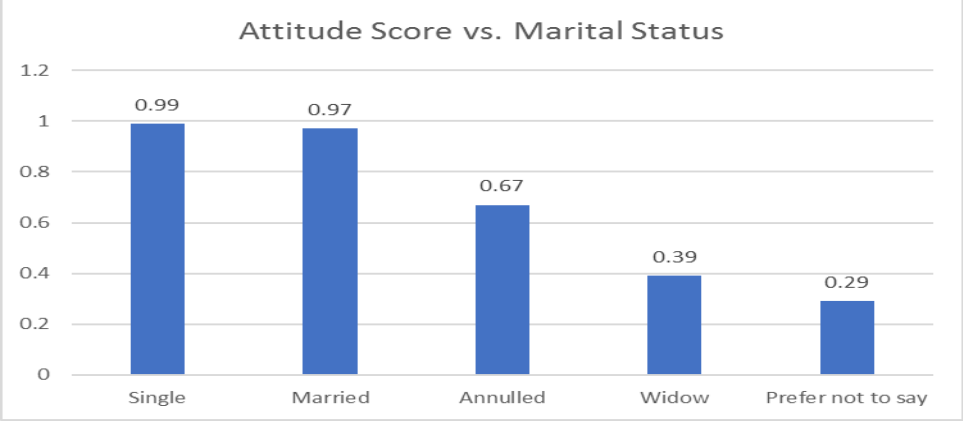


Figure 13. Attitude Score Versus Marital Status

Figure 13 shows that single respondents have more positive attitudes toward using web-based health information compared to married, annulled, and widowed individuals, indicating that marital status significantly influences attitudes.

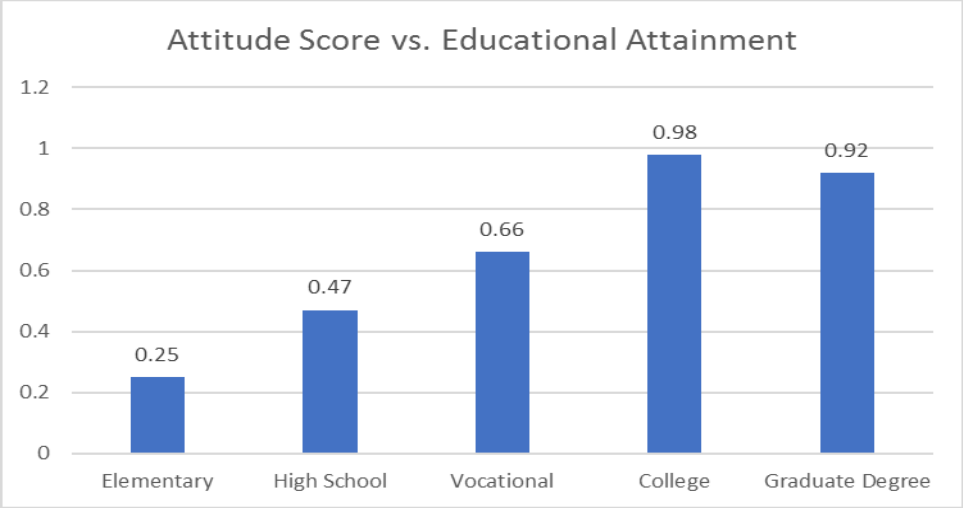


Figure 14. Attitude Score Versus Educational Attainment

Figure 14 shows that respondents with higher educational attainment, particularly those with college and graduate degrees, exhibit more positive attitudes toward using web-based health information compared to those with lower levels of education.

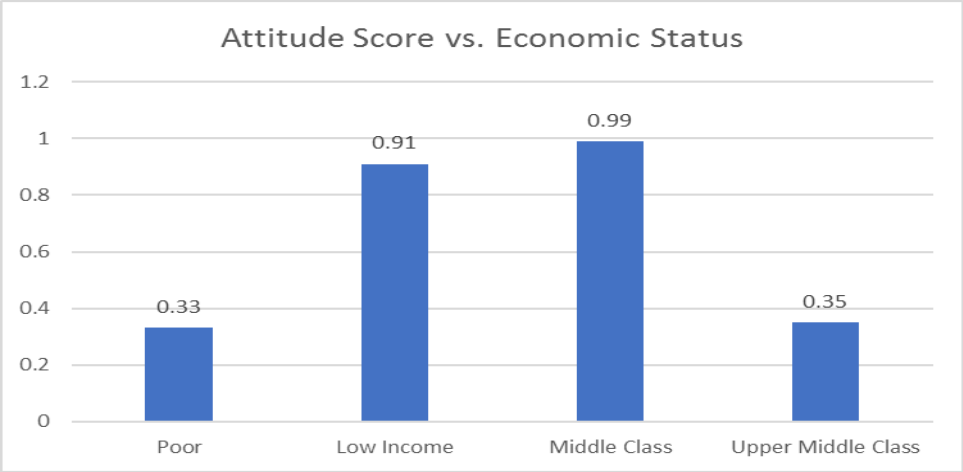


Figure 15. Attitude Score Versus Economic Status

Figure 15 demonstrates that respondents from middle and low-income classes have more positive attitudes toward using web-based health information compared to those from poor or upper-middle-class backgrounds.

Moreover, there is a strong positive relationship between the perception score and the sociodemographic profile, as evidenced by a correlation coefficient (r) of 0.57 and a p-value of 0.024.

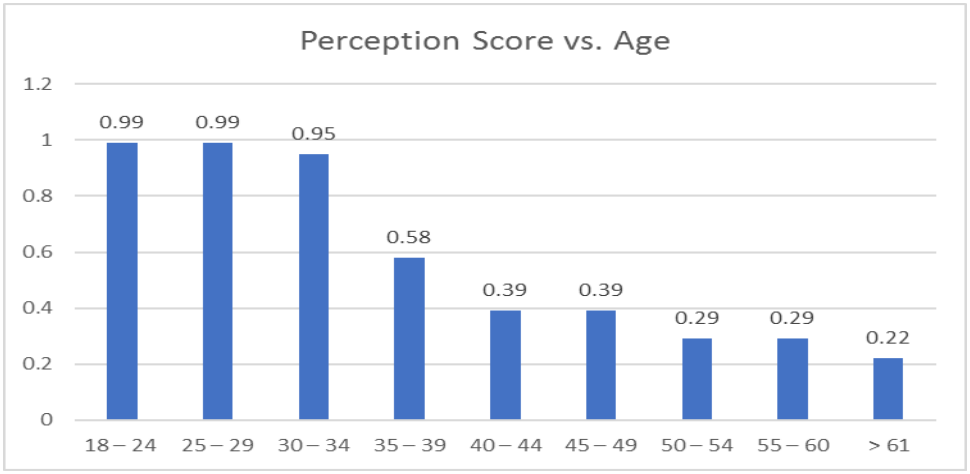


Figure 16. Perception Score Versus Age

Figure 16 reveals that younger respondents, particularly those aged 18 to 34, exhibit more positive perceptions of web-based health information compared to older age groups, indicating a generational difference in perceptions.

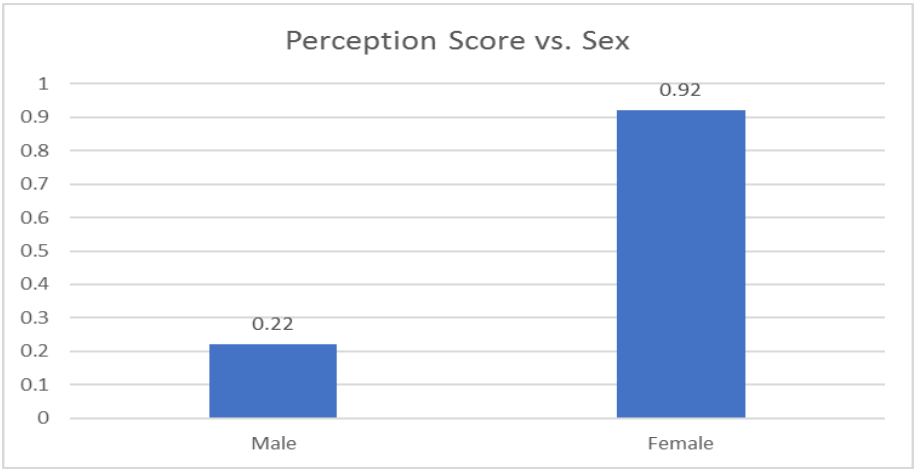


Figure 17. Perception Score Versus Sex

Figure 17 illustrates that female respondents have more positive perceptions of web-based health information compared to male respondents, indicating a gender-based difference in how online health resources are perceived.

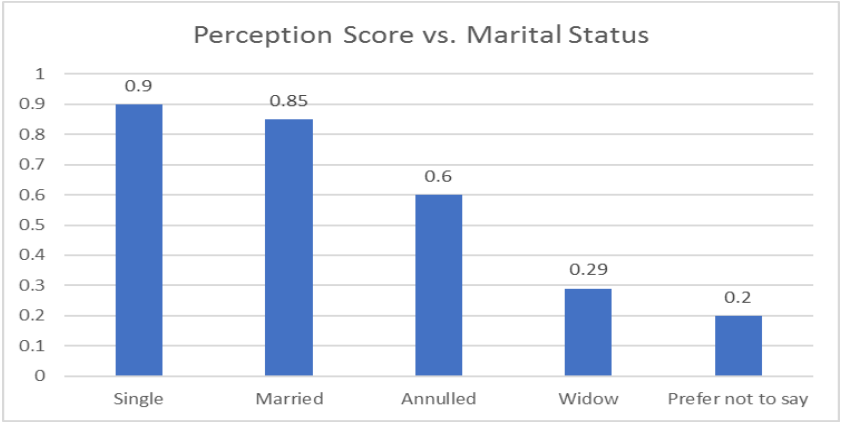


Figure 18. Perception Score Versus Marital Status

Figure 18 shows that single respondents have more positive perceptions of web-based health information compared to married, annulled, and widowed individuals, indicating that marital status influences their perception of online health resources.

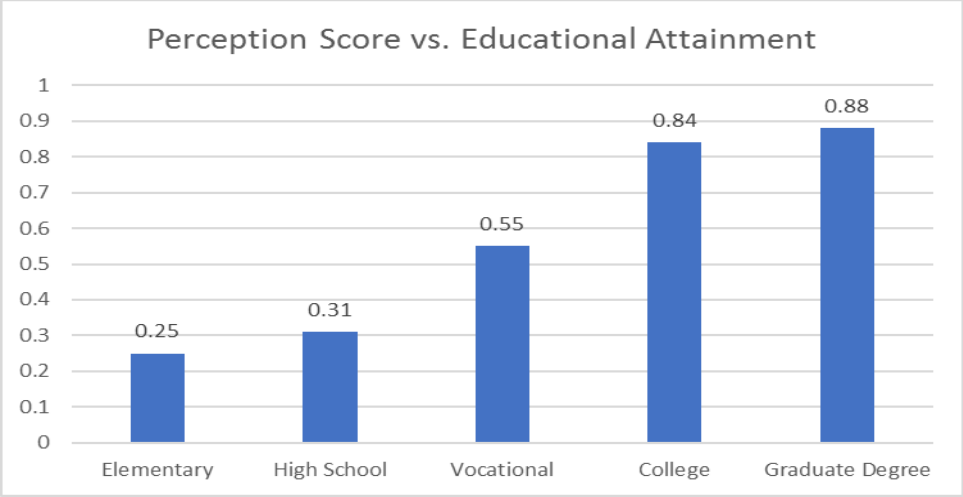


Figure 19. Perception Score Versus Educational Attainment

Figure 19 demonstrates that respondents with higher educational attainment, particularly those with college and graduate degrees, have more positive perceptions of web-based health information compared to those with lower educational levels.

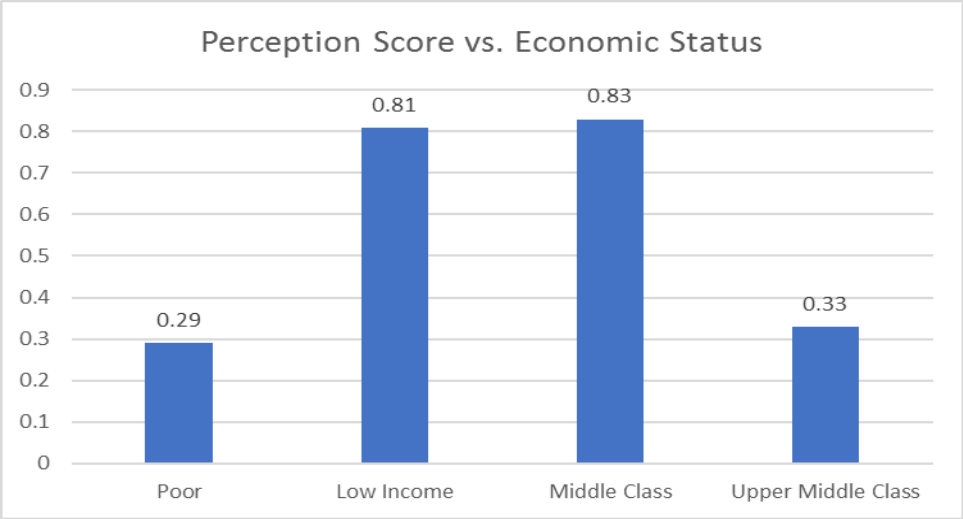


Figure 20. Perception Score Versus Economic Status

The figure above indicates that respondents from middle and low-income classes have more positive perceptions of web-based health information compared to those from poor or upper-middle-class backgrounds.

The KAP (Knowledge, Attitude, and Perception) scores highlight significant differences across various sociodemographic brackets in the study. Younger respondents, especially those aged 18 to 34, showed the highest engagement with web-based health information, reflecting higher digital literacy and confidence in using the internet for health-related purposes. Women also demonstrated significantly higher KAP scores than men, suggesting that they are more proactive in seeking and utilizing online health resources.

Moreover, single individuals, particularly younger and more educated respondents, tend to have stronger attitudes and more positive perceptions toward online health information. This group is more likely to trust the information they find online and use it to make informed health decisions, while those who are older or less educated show lower scores in all KAP dimensions, indicating a digital divide in health literacy.
Educational attainment and income levels also play a crucial role in shaping respondents' engagement with online health information. Individuals with college degrees or higher education tend to have higher KAP scores, showcasing their ability to critically assess and apply web-based health information effectively. Similarly, middle-class respondents scored higher, likely due to better access to technology and digital health platforms. On the other hand, respondents with lower income or less education, such as those with vocational or high school education, showed lower KAP scores, reflecting a potential barrier in accessing and trusting web-based health resources. However, respondents in the upper middle class scored low because they might be more skeptical about the accuracy of online health information thus they prefer professional healthcare advice since they can afford and trust them easily. These findings underscore the need for targeted interventions to address disparities in digital health literacy among different demographic groups, ensuring more equitable access to reliable online health information.
Overall, the results from Table 4 highlight the importance of considering sociodemographic factors when evaluating the effects of web-based health information on patients. This implies that sociodemographic characteristics such as age, gender, degree of education, and income level, significantly influence how patients acquire knowledge, form attitudes, and perceive online health information, suggesting a need for tailored approaches in providing digital health resources to diverse populations.

DISCUSSION

The results of this study are necessary to understand sociodemographic factors related to web-based use amongst patients and how these characteristics relate to patient knowledge, attitudes, and perceptions. The sample is primarily young, female, never married, and college-educated, with the majority being middle class. This result corroborates with other studies showing that younger and more educated people mostly use the internet for health information [34].
The significant prevalence of internet usage for health-related purposes, with 85.1% of participants utilizing it on a daily basis, highlights the crucial function of the internet in the distribution of health information. According to the survey, 60.6% of respondents rely on Google as their main source of health information. This finding concurs with Din et al. [35] research, which found that Google is the most often used search engine for health-related inquiries. Nevertheless, alternative sources such as Facebook, YouTube, and medical publications are infrequently utilized, indicating a dependence on readily available and user-friendly platforms.
The types of health information sought online by patients reflect their primary health concerns and interests. Over half of the respondents (52.1%) look up information related to nutrition and diet, indicating a proactive approach to managing their health through dietary choices. This finding is supported by similar studies that highlight the increasing interest in nutritional information among internet users [36]. Conversely, fewer respondents search for information on medical procedures and specific conditions, which may indicate a preference for consulting healthcare professionals for more complex health issues.
The study also uncovers a notable association between sociodemographic variables and the impact of web-based health information on patients' knowledge, attitudes, and perceptions. The strong positive connection ($r = 0.49$, $p = 0.010$) between knowledge scores and sociodemographic profiles indicates that

individuals with higher levels of education and income are better equipped to comprehend and make use of online health information. Lee et al. [37] provided evidence supporting the notion that individuals with greater levels of education possess superior skills in critically assessing internet health information.

Sociodemographic characteristics had a substantial impact on attitudes towards using web-based health information ($r = 0.64$, $p = 0.003$). Individuals who are younger and have higher levels of education are more inclined to actively search for and have confidence in online health information. This is indicative of their increased familiarity with technology and their inclination towards independent learning. This aligns with the Technology Acceptance Model, which suggests that the perception of how easy a technology is to use and how valuable it is, affects the decision to embrace that technology [38].

The sociodemographic factors have a similar impact on the perception of web-based health information, with a correlation coefficient of 0.57 and a p-value of 0.024. Individuals with higher levels of education and income exhibit greater confidence and ease while utilizing internet health resources. Nevertheless, there has been a documented surge in worry and apprehension associated with searching for health information on the internet, indicating a necessity for more dependable and comforting sources. These findings align with the research conducted by Powell et al. [39], which observed that internet health information has the potential to empower individuals but can also result in heightened worry.

The psychological impact of using Google for health information searches among patients is multifaceted. While Google provides easy access to a vast array of health-related data, which can empower patients by enhancing their knowledge and enabling them to make informed decisions, it also introduces significant psychological challenges. Patients often experience anxiety and fear due to the overwhelming amount of information and the difficulty in distinguishing between reliable and unreliable sources. This phenomenon sometimes referred to as cyberchondria, can lead to increased stress and worry about potential health issues, exacerbating symptoms and potentially leading to unnecessary medical consultations. The variability in the quality of information and conflicting advice can further contribute to confusion and mistrust in online health resources, highlighting the need for better guidance and the development of more reliable, user-friendly online health platforms.

The study has several limitations that should be considered when interpreting the results. The sample is not representative of the general population, as it is skewed towards young, female, and college-educated individuals. This limits the generalizability of the findings. Additionally, the cross-sectional design of the study does not allow for the determination of causality between sociodemographic characteristics and the effects of web-based health information.

Future research should aim to include a more diverse and representative sample to enhance the generalizability of the findings. Longitudinal studies could provide insights into how the use of web-based health information evolves over time and its long-term effects on patients' health outcomes. Furthermore, qualitative studies could explore the reasons behind the preferences for certain types of health information and the sources used.

CONCLUSION

This study underscores the significant role of web-based health information in the lives of young, educated, middle-class individuals, particularly females. The high frequency of internet use for health purposes and the predominant reliance on Google highlight the importance of accessible and user-friendly online health resources. Patients primarily seek information on nutrition, diet, and general health concerns, reflecting a proactive approach to health management. However, there is less inclination to search for

more complex medical information, suggesting a continued reliance on healthcare professionals for these needs.

The correlation between sociodemographic factors and the effects of web-based health information on knowledge, attitudes, and perceptions is evident. Higher education and income levels are associated with greater confidence and ability to utilize online health information effectively. Younger individuals are more likely to trust and use online resources, which indicates a generational shift towards digital health literacy. However, the study also reveals that while web-based health information can enhance knowledge and positively influence health attitudes, it can also cause anxiety and fear, emphasizing the need for reliable and reassuring sources.

RECOMMENDATION

The future researchers should aim to include a more diverse representative sampler to enhance the generalizability of the findings. Longitudinal studies could also provide insights into how the use of web-based health information evolves over time and its long-term effects on patient's health outcomes. This could give us a better idea of the real impact of online health information on people's lives.

Finally, qualitative studies could also explore the reasons behind the preferences for certain types of health information sources they used. Understanding their reasons could lead to the development of online health resources that are more practical and better suited to what the general population needs.

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