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ONLINE HEALTH INFORMATION SEEKING BEHAVIOR AND PERCEIVED TRUST ON HEALTH COMMUNICATION CHANNELS AMONG UNDERGRADUATE STUDENTS OF DHAKA, BANGLADESH

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ABSTRACT

Background: Channels which communicate health information include traditional and digital platform. Television, print newspaper and radio are part of the traditional platform while digital social media sources include YouTube, Blogs, Facebook, Twitter (X) and online newspaper. Internet is now a resource of high value for obtaining information about health related issues that allow individuals to actively engage in their health-related decision making. **Aim:** Our study aims to observe the behavior regarding seeking information about health online and perceived trust on those online health communication channels among the students (undergraduate level) of Dhaka City in Bangladesh. **Materials and Method:** The cross-sectional research was done in 2023 (from January to December) with participants from 4 different institutions of Dhaka, Bangladesh (Enam Medical College, Jagannath University, Mandy Dental College and Daffodil University). Three hundred and eighty four participants studying for bachelors' degree from any one of the mentioned institutions were included in this research. Data was gathered using a pretested consisting of questions in regards to socio-demographic status, behavior of seeking information about health online, and perceived trust on online platforms that communicate health information. For measuring perceived trust on online channels, the items were adopted from the Health Information National Trends Survey (HINTS) scale. **Results:** The majority (63%) of the study participants were ≥21 years old; the mean age was 20.98±1.18 years. Males were 53.4% and 46.6% were females; male-female ratio was 1.5:1. Fifty-two percent of participants had medical/dental background. Majority of the subjects made use of the internet to obtain information regarding health within the week before survey (55.5%) and 89% seemed to prefer digital platform when compared to the preference for broadcast channels (11%) for information related to health. The mean of perceived trust on online channels was observed to be 3.13±1.64; online newspapers were the most trusted (3.03), while Facebook was the least trusted (2.41). Younger respondents aged ≤20 years reported higher perceived trust in online health information than those aged ≥21 years (p<0.05). A higher perceived trust was also observed among female students compared to male students (p<0.05). However, there was no statistical significance found regarding correlation of educational background and institutions among the students (p>0.05). Those who preferred digital channels exhibit much greater levels of trust on those online channels compared to those who preferred broadcast channels (p<0.05).**Conclusion:** Students (undergraduate level),in order to obtain information related to health) use the internet on regular basis and have a preference for digital media over broadcast channels.The most trusted means for receiving communication related to health was observed to be online newspapers.

Keywords: Health information, Social media, Health knowledge, Communication, Students

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INTRODUCTION

Channels that communicate information regarding health are the media for reaching a target audience with information related to health information. These channels include traditional and digital platform. Television, print newspaper and radio are part of the traditional platform while digital social media sources include YouTube, Blogs, Facebook, Twitter (X) and online newspaper[1]. Digital channels have become popular, in past few years, through the online distribution of audios, pictures, and videos. Digital media encompass a world of diverse contents such as interactive games, online newspapers, podcasts, streaming music or video platforms, and multi-platform apps[2]. Access to the internet makes those digital media available at people's fingertips and those are becoming useful resource to support health communication. Being in touch with such digital media make people engage in well-informed decision making in healthcare. For an example, day-by-day more people are moving on from traditional health information sources (including newspapers, journals, and doctors' offices) to the internet-based newspapers and digital social media as becausehigh volume of health information is readily and easily available there. People are now attempting to play an active role in taking care of their own health and the health of their near ones like friends and family and thus seeking medical and pharmaceutical information frequently[3-6]. Day by day the internet is becoming the primary source of health information[6-8]. For example, statistics showed that 55% of the European population aged 16-74 years sought online health information related to injury, disease, nutrition, improving health or similar in 2020[9]. To be specific, young adults are the highest in number who embraced new information technologies in therecent decades[10,11]. In 2023, International Telecommunication Union (ITU) reported that 79% youths (i.e., 15-24 years age group) use the internet worldwide, which is 14 percent more than that reported for the remaining global population; in low-income countries, 15-24 years age group are almost twice as likely to use the internet than other people in those countries[12]. They use computers and the internet widely for many of their daily activities including information regarding health[10,11,13].

Seeking information of health online is a familiarized fact in our modern daily life in this digital era; however, many internet users often fail to choose credible and valid sources across different online media and platforms. They hardly know how to verify an online source's credentials. Therefore, in many cases, they unknowingly spread misinformation and disinformation[13-15]. For example, evidence showed that digital sources of health information broke the internet with misleading, false or inaccurate contents since the COVID-19 pandemic outbreak[16,17]. Therefore, despite numerous advantages of online health information easy access, there are concerns regarding its trust worthiness, accuracy, and quality[13,14]. Trust is a psychological state known as the intention to accept vulnerability based on positive expectations of another person's intentions or behavior under risky and interdependent circumstances[18]. Since the internet has emerged as easily accessible and user-friendly source of health information, researchers acknowledged the significance of trustworthiness and responsible use of those online contents to ensure health and safety of the users[13-15].

Researchers of several countries of the world have delved into this subject of research. However, reports on Bangladeshi youths about their behavior of obtaining information on health online and perceived trust on those digital channels. As university students (undergraduate) are the most important part of young adults and day-to-day most exposed to different kinds of health information available on

the internet, we proposed this study to observe online health information seeking behavior and perceived trust on those online health communication channels among students (undergraduate level) of Dhaka City in Bangladesh.

MATERIALS AND METHOD

Study setting and participants

The study performed is cross-sectional in nature and was conducted in 2023 (January to December). The recruits were chosen from students of four different institutions (Enam Medical College, Daffodil University, Mandy Dental College). Three hundred and eighty four students became participants of this research work. Here convenience sampling technique was adopted since participants and institutions for the study was selected as per convenience.

Selection criteria

Included in the study were those students enrolled for bachelors' degree at selected institutions. Excluded were those who did not use technology like computer, internet, and mobile phone. The study also excluded students of nationalities other than Bangladeshis.

Outcome measures

In this study the independent variables included socio-demographic characteristics of participants like age, level of education, and behavior of seeking information pertaining to health, for example, use of internet, and channels of preference for obtaining information regarding health. The perceived faith on online platforms for obtaining information about health were the dependent variables.

Data collection tool and procedures

In order to gather the data, a questionnaire (pre-tested structured) was used which included the demographic characteristics related questions and questions related to perceived trust on digital platforms. For measuring perceived trust on online health communication channels, the items were adopted from the HINTS tool[19]. Respondents were asked to rate on a scale from 1(not at all) to 4 (a lot), in general, on how to what extent they would rely on the information about health topics available from: Facebook, YouTube, Twitter (X), Blogs and online newspaper. The response options for each item were dichotomized as"0=low trust" (considered through 1=not at all and 2=a little)and "1=high trust" (responded through 3=some and 4=a lot). Finally, the scores of the five online channels were summed up to determine the trust on online channels for information related to health among the respondents. Initially, the questionnaire was developed in English and then its Bangla translation was done. In order for the English to be translated to Bangla, the method used was that of Back-translation[20]. The version in Bangla was reviewed by public health and English linguistics experts. This review was then followed by the Bangla version being blind translated back to English. Using the two versions, a draft questionnaire was created. Pretesting was then carried out by gathering data from two institutes that were similar.

Statistical analysis of data

The data was analyzed first using descriptive statistics to display the participants' sociodemographic traits and average perceived levels of trust. We conducted Shapiro-Wilk and Kolmogorov-Smirnov (K-S) tests and examined the corresponding *p*-values to determine if the perceived trust scores are distributed normally. To evaluate the link between other variables and perceived trust on online channels, the independent samples Mann-Whitney U Test was used as normalcy was not followed by both of the perceived trust scores (PKolmogorov-Smirnov=<0.001;PShapiro-Wilk=<0.001). At the 95% confidence interval (CI), *p*-value <0.05 was considered significant. MS-Excel 2019 sheet and the Statistical Package for the Social Sciences (SPSS) version 25.0 for Windows was used for performing the analysis..

Ethical Approval

This study was approved by the Institutional Review Board (IRB) of the National Institute of Preventive and Social Medicine (NIPSOM), Dhaka, Bangladesh (NIPSOM/IRB/2023/06).

RESULTS

Among 384 study participants, the majority (63%) were ≥21 years old with 20.98±1.18 years as the mean age. The male-female ratio was 1.5:1. Among the participants 52% had medical/dental background. Information regarding health were pursued through use of internet by most participants within the week before survey (55.5%) and 89% preferred digital channels while 11% opted for broadcast channels for information pertaining to health (Table 1). Among the students, mean perceived trust on online channels was 3.13±1.64 (with a range from 0 to 5), which indicates high perceived trust on online channels for health information.

Among the online channels the highest (3.03) perceived trust for health information was found in online newspapers and the lowest (2.41) was on Facebook. Perceived trust on Twitter (X), YouTube and Blogs were found 2.43, 2.67 and 2.61 respectively (Table 2). Perceived trust in online channels for obtaining information related to health was greater among respondents aged ≤20 years (mean=3.32) than among those aged ≥21 years (mean=3.00)(p<0.05). A higher perceived trust on online channels was also observed among female students (mean=3.33) compared to male students (mean=2.93) (p<0.05). However, correlation of educational background and institutions with recent internet use did not show any statistically significant difference among the students (p>0.05). Those who preferred digital channels exhibit much greater levels of trust on those online channels (mean=3.06) compared to those who preferred broadcast channels (mean=3.64)(p<0.05) (Table 3).

Table 1: Demographic featuresand online health information seeking behavior of the study participants (N=384).

Demographic features	Frequency	Percentage (%)
Age (in years)		
20 and less	142	37
21 and higher	242	63
Sex		
Male	205	53.4
Female	179	46.6
Students' educational institution type		
Medical	200	52.1
Non-medical	184	47.9
Internet used within last 1 week for obtaining information on health		
Yes	213	55.5
No	171	44.5
Channels preferred for obtaining information on health		
Digital channels	342	89
Broadcast channels	42	11

N=Total number of study participants

Table 2: Perceived trust on online channels for health information (N=384)

Online channels	High Trust	Low Trust	Mean (SD)
	Frequency (Percentage)	Frequency (Percentage)	
Facebook	200 (52.08)	184 (47.92)	2.41 (.733)
Twitter	206 (53.65)	178 (46.35)	2.43 (.753)
YouTube	246 (64.06)	138 (35.94)	2.67 (.726)
Blogs	274 (71.35)	110 (28.65)	2.61 (.828)
Online newspapers	324 (84.38)	60 (15.62)	3.03 (.805)

N=Total number of study participants, Multiple responses present

Table 3. Demographic features and perceived trust on online health communication channels association.

Demographic features	Mean (SD)	Mean Rank	Mann-Whitney U	Wilcoxon W	Z	*P*-value
Age (in years)						
20 and below	3.32(1.65)	215.79	16556.500	47184.50	-2.129	.033[S]
21 and above	3.00(1.62)	191.03				
Sex						
Male	2.93 (1.72)	188.64	17556.500	38671.500	-2.152	.031[S]
Female	3.33(1.52)	112.97				
Students' educational institution type						
Medical	3.25(1.52)	207.87	18526.000	38626.000	-1.304	.192[NS]
Non-medical	3.00(1.74)	193.13				
Internet used within last 1 week for obtaining information on health						
Yes	3.26(1.55)	208.11	17836.500	32542.500	-1.559	.119[NS]
No	2.94(1.73)	190.31				
Channels preferred for obtaining information on health						
Digital channels	3.06(1.64)	196.23	5988.000	70249.000	-2.208	.027[S]
Broadcast channels	3.64(1.50)	236.93				

S=significant; NS=not significant; SD: Standard Deviation.

DISCUSSION

Social media and other online channels offer exceptional opportunities to inform young people's learning about health, and to have a range of impacts on their health and wellbeing behaviours[21]. However, a significant amount of unsolicited and unregulated health information (often misleading or false) on those online platforms reaches young people which mayexert negative impact on their health and wellbeing[11,21].In our study, the participants' mean age was 20.98±1.18 years and mostly belonged to the ≥21 years age group. Males were 53.4% and 46.6% were females. Similar trends were observed by several previous studies[22-24]. On the contrary, in Scotland a research showed a female predominance (70%) and age limit was 14-18 years.[10]

Regarding perceived trust on digital channels, high perceived trust was observed on digital channels for obtaining information on health compared to traditional broadcast channels. In our study, the highest perceived trust for health information was found in online newspapers. This finding is in congruence with the previous study done in Bangladesh[24]. In our study, YouTube was trusted much more than Twitter (X) and Facebook. Similarly, in another study, a significantly higher perceived trust was found on YouTube and online support groups[25]. However, another study showed that greater frequency of encountering TikTok and Twitter was related to greater trust on information provided from the respective social media platform compared to Facebook[26]. Overall social media has a huge impact on western youths (i.e., cultural difference) in seeking health related information[10,11,21,22,25,26].

In this study, more perceived trust on online channels for obtaining information on health was exhibited by the students in the age group of ≤20 years compared to those in the ≥21 years age group. Some of the previous research reported that older individuals have less faith on digital channels in comparison to younger adults for information on health, which is similar to our finding[27-29]. One of our key findings was the gender difference in perceived trust in digital communication channels, as female students reported higher perceived trust in digital health information channels than their male counterpart. Similar observations were reported in previous research as gender difference is a predictor in amount of health information sought from the internet and perceived trust on those sources[25,29,30]. In this study, trust on digital channels for health information regarding educational institute (medical/dental vs. others) and frequency of internet use showed no difference. However, previous studies showed the difference in reliability on different online platforms based on the education levels of the users and amount of time spent on digital world[29,30].

To improve students' ability to judge the credibility and trustworthiness of health-related contents found in online platforms, 'digital citizenship'education and training needs to be incorporated in the curriculum[15,21]specifically designed to teach them the way of accessing websites providing information on health, reliable contents recognition and ability of misinformation detection, as well as techniques of using the internet, maintaining etiquette and ensuring security while using the internet.

CONCLUSION

It was revealed in this study the students enrolled in the undergraduate level regularly access the internet and prefer digital platform over channels broadcasting information on health. Online newspapers are found to be the most trusted among health communication channels. Therefore, any future health communication campaigns could focus on leveraging this medium to disseminate accurate and reliable health information.

Besides, necessary steps should be taken to make social networking platforms like Facebook, Twitter (X), or YouTube more trustworthy, as those social media already have secured millions of users. Young adults exhibited their huge presence on social media channels; hence, our national health communication strategies should prioritize engaging this demographic through various digital platforms.

LIMITATIONS

The independent and dependent variables were evaluated simultaneously because this study employed a cross-sectional study design. Therefore, there is no evidence of a temporal relationship between the independent and dependent variables. Moreover, this study relied on self-reported data, which made it susceptible to recall bias. However, using experimental methods to compensate such recall bias was difficult for us due to time and financial constraint. Future research is warranted to focus on measuring perceived trust on online channels for health information using actual performance-based tests and assessing factors through interventional study designs to get more implementable data for public health policy.

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