

HEALTH INFORMATION SEEKING BEHAVIOR OF COLLEGE STUDENTS IN THE SULTANATE OF OMAN

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ABSTRACT

OBJECTIVES: To study various types of health information seeking behavior (HISB) among college students in Oman and to study the factors affecting students' HISB and sources of health information (HI).

METHODS: Survey was conducted in six colleges in different governorates of Oman collected in 2014 and in 2016. English to Arabic translated questionnaires were used to collect data from undergraduate students. SPSS was used, descriptive statistics and chi-square tests at $p < 0.05$ were done for data analysis.

RESULTS: Personal sickness (89% in 2014 and 88% in 2016) and family sickness (94% in 2014 & 92% in 2016) were the common factors affecting/initiating HISB. Health messages in print (65% in 2014 & 2016) & electronic media (62% in 2014 & 66% in 2016) are main initiating factors for seeking HI. Internet (89%), family members (85.8% in 2014 & 88.9% in 2016), experts-non doctors (82.8% in 2014 & 81.8% in 2016) & doctors/medics (75.7% in 2014 & 83.9% in 2016) were the common sources of HI. WhatsApp (51.6% in 2004 & 45.3% in 2016) and general websites (46.3% in 2014 & 48% in 2016) were the commonest media sources of HI. Gender and other demographic variable were not significantly associated ($p > 0.05$) with HISB of students.

CONCLUSION: Personal/family sickness & media were the common factors affecting/initiating HISB. Majority of student are seeking HI from internet, family members, experts-non doctors & doctors/medics. WhatsApp and internet were the commonest media sources of HI. HISB needs to be documented for theorizing messages, developing social and health initiatives.

KEY WORDS: Health Education (MeSH), Health Literacy (MeSH), Health Information Seeking Behaviour (Non-MeSH), Health Communication (Non-MeSH), Health Information (Non-MeSH).

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vidual as a decisive agent in promoting 'good' health seeking behavior.⁶ Studies on HISB help to understand how people use various sources for imparting health need and this in turn helps improving health information services.⁷ There exists a lack of clarity on concepts associated with health information. Lamber D, et al reported that a clearer understanding of HISB can be helpful to health communications in designing effective interventions.¹

Health communication takes place from one-to-one conversations to digital interactions such as texting and blogging and social media connections, a process leading to health literacy. Health literacy is considered to be one of key factor in this context as it is a measure of the individual ability to read, understand and act on instructions provided by the medical expert through campaign or doctor.⁸ There are various definitions of health literacy ranging from individual static definitions to individual dynamism and from individual system to public health.⁹⁻¹³ Based on a review of the cited definitions and panel of expert consultation, health literacy is defined as; "The degree to which individuals can obtain, process, understand, and communicate about health-related information needed to make informed health decision".^{3,13}

Researches in health literacy have focused on the ability to read health information and its impact on personal health and there is a call for studies to have broader view of health literacy.¹⁴ People with low health literacy poorly understand health information disburshed by health professionals and are more prone to poorer health outcomes than with people from lower socio-economic

INTRODUCTION

Health Information Seeking Behaviour (HISB) is one of the well documented studies which are used as ground information to develop effective health communication initiatives, health promotional activities and psychological adjustment illness.¹ With the passage of time HISB has evolved as a tool for engaging people amid understanding with health care systems keeping in view their

respective socio-cultural, demographic and economic circumstance.² As an individual-level construct, HISB refers to person's ability to comprehend and act on health information.^{3,4} Research shows that person with less health information may have limited knowledge about their health problems, higher health care cost, higher hospitalization rates and worse health status than people with adequate information and literacy.⁵ However, there is a growing literature that oppose indi-

status.^{9,15} Studies have focused on the nature of information seeking behaviors, the factors that enforce population to seek information on illness, wellness and lifestyle matter related to health.^{5,8,16} At times, health information may be confusing even to highly educated owing to the technical language and changing nature of health information across sources. Communication problems with health professionals can negatively impact the outcome of medical care for some patients and may increase the risk of hospitalization.¹⁷ Ultimately, quality health care service and improved health literacy can lead to effective communication and right decision.¹⁵

The Sultanate of Oman is one of the developed countries in Middle East region with a population of more than 4,500,000 and youth contributing to 30% to the total population.¹⁸ In terms of healthcare, Oman is now one of the world's advanced nations. Oman has high rate of e-literacy and internet use is a much popular medium as in any developed country. However, there is no such study on the HISB in youth and students of Oman. This study was conducted to study various types of health information seeking behavior among college students in Oman and to study the factors affecting students' health information seeking behavior and sources of health information. The study would be of immense importance as it would identify the health information needs of people which could help policy makers to customise their messages for future communication initiatives. Also, it would assess ways of making communication easier between health care professionals and the clients. Understanding how audience use mass media will guide media practitioners involved in generating health messages to have a better idea and improve their content to be comprehensible for the masses.

METHODS

The data was collected from college students at the six Colleges of Applied Sciences (CAS) in Oman. These colleges are located in prominent cities spread

across Oman and are among important higher education institutions in the country.

The survey questionnaire was developed by the researcher and was initially validated through a pilot study both with English and Arabic version. Questionnaire comprised of six sections of questions based on the relevance of the study.

First section was designed for demographic profiling and second section to study personal health status of respondent so as to study the impact of personal health on health information seeking behavior. Next three sections had the Likert Scale questionnaire to study under what conditions the respondents seek health information, the sources used by students for health information and usage of mass media as information source with focus on internet and mobile applications. In the final sections, students were asked to rate credibility, timeliness and information quality of health information messages available in media based on their experience.

Survey questionnaire were distributed to 200 students pursuing under graduate program of CAS during May 2014 and July 2016 respectively. Sample for the study was chosen using convenient sampling and two different groups of students comprising 100 each 2014 and 2016 were surveyed. All students pursuing bachelors program at the time of study and were in their third or final year of respective course were included in study. Oman is basically an Arabic speaking country with all students pursuing Arabic medium at school level. Hence, questionnaire was translated in Arabic and tested for translation proof by language professionals thus to ensure originality in translation.

SPSS IBM version 21 was used for data analysis and descriptive statistics to study the information seeking pattern and the influence of socio-demographic variables on health information seeking habits. Appropriate statistical test was applied for establishing the robustness of the study.

RESULTS

Demographic Profile

The demographic data of the respondent shows that majority of the respondents were females comprising 62% in 2014 and 72% in 2016 respectively while male respondents included 38% in 2014 and 28% in 2016.

The distribution data showed that most (89%) of respondents in 2014 were aged between 18-22 years and in 2016. Interestingly, 98% of survey respondents were between 21-24 years and 2% above 24 years. The data set shows that respondents were mostly from communication major (65% in 2014 and 63% in 2016) followed by Business major (25% in 2014 and 34% in 2016) and rest of the respondents were from Design major course. The average monthly income of the respondents was 100 OMR (Omani Riyal, local currency) which shows that majority of them are receiving only Government funding for pursuing higher education and are not involved in any part-time jobs.

The respondents were asked to describe their personal health status. Among the survey respondents in 2014, 83% of them reported themselves in normal health, 12% described themselves to be healthy while only 5% rated themselves in weak health status. In 2016 data, more than 80% described themselves to be normal, 14% in healthy and only 6% as weak. This was to understand if students' health status affected their health information seeking behavior and according to the data, overall 95% of the respondents were healthy.

Factors affecting HISB

The first part of the study analysed the factors affecting health information seeking behavior and analysed the intensions of search for information. Active and passive¹⁹ information seeking behavior were studied by asking in which of the situations they search for health information under a listed 12 situations from personal sickness to referring health topics in social media, providing a structured four point Likert scale.

TABLE I: FACTORS AFFECTING/ INITIATING HEALTH INFORMATION SEEKING BEHAVIOR

Categories	2014		2016	
	Mostly / More Likely (%)	Less Likely / Never (%)	Mostly / More Likely (%)	Less Likely / Never (%)
Personal Sickness	89	11	88	12
Family Sickness	94	6	92	8
Friend/Peer Sickness	76	24	83	17
Talked about diseases	80.8	19.2	75.7	24.3
Teacher discussing diseases in class	72.9	27.1	72.8	27.2
Health info. In Class Notes	57.9	42.1	66	34
Improve personal health in gym	63	37	66	34
Climate change/Natural disaster	73	27	61.6	38.4
Health information in Television	63.6	36.4	71.8	28.2
Health information in Newspaper	70.4	29.6	69	31
Health information in Magazine	59.6	40.4	63.2	36.8
Health information in Radio	61.2	38.8	65	35
Health information in Internet	65.7	34.3	68.3	31.7
Health information in Facebook etc.	53.5	46.5	61.8	38.2
Health information in SMS	59.6	40.4	69.1	30.9
Health information in WhatsApp etc.	60.6	39.4	70	30
Health info. In PSA	56.6	43.4	62	38

TABLE II: RESPONDENTS CHOICE OF SOURCE FOR HEALTH INFORMATION

Categories	2014		2016	
	Mostly / More Likely (%)	Less Likely / Never (%)	Mostly / More Likely (%)	Less Likely / Never (%)
Internet	89	11	89	11
Family	85.8	14.2	88.9	11.1
Experts - non doctors	82.8	17.2	81.8	18.2
Doctors / Medics	75.7	24.3	83.9	17.1
Friends/Peer	66.4	33.6	70.9	29.1
Teachers	43	57	50.5	49.5
From MOH/Hospital Websites	61.5	38.5	66.7	33.3
Govt./Public Health Officials	16.3	83.7	27.6	72.4
Colleges of Applied Sciences	30.2	69.8	36.8	63.2
Public Library	27.5	72.5	35.4	64.6
From Magazine	45.2	54.8	51.5	48.5
From Newspaper	45.2	54.8	48.5	51.5
From Television	43.3	56.7	37.4	63.6
From Radio	36	64	46.5	53.5

According to the data in 2014 (Table I), more than 90% of the respondents are more likely to involve in active information seeking when they experience health problem at personal, family level

and among family relations. About 76% of the students reported of searching health information when their friends or peer group members are sick while 89% of them reported that they are more

likely to search for information after being involved in conversations where people talk about health problems. The data shows that students are likely to being affected by health information after

TABLE III: MEDIA AS SOURCE OF HEALTH INFORMATION

Categories	2014		2016	
	Mostly / More Likely (%)	Less Likely / Never (%)	Mostly / More Likely (%)	Less Likely / Never (%)
Oman TV	32.3	67.7	33.3	67.7
Other TV	34.8	65.2	36.4	65.2
Radio	24.2	75.8	28.3	75.8
Newspaper	27.2	72.8	37.4	72.8
Magazine	28.5	71.5	28.1	71.5
General Websites	46.3	53.7	48	53.7
Health Websites	34.4	65.6	19.8	65.6
Email	28.3	71.7	43.2	71.7
FB/Youtube/G+ etc	41.8	58.2	44.9	58.2
Phone/SMS	40	60	43.5	60
Smart Phone Apps	42.2	57.8	43.5	57.8
Whatsapp/Chat Apps.	51.6	48.4	45.3	48.4
Health Apps	37.2	62.8	42.4	62.8

referred about the same in class lectures. According to the data, 72% of them were interested in further information searching after being discussed in class by teacher and 58% research about health topics after referring to such in class notes.

According to the data in 2016 (Table I), majority of the students (89%) are likely to involve in active information search about health when they or their family members experience health problems and 83% reported that they are likely or always seek information while their friends or peer group are sick. About 76% of respondents were most probably searching for health information based on peer group discussion and topics of health concerns. The data revealed that 72% of students seek health information when discussed by teacher in the class while 66% seek health info after referring the same in class notes.

Media and HISB

The respondents were asked about the role of media as an agent for initiating information seeking habits. According to the data from 2014, majority of the students more often involved in information searching activity after encountering health messages in media. The data re-

vealed that 65% are likely to respond to print media messages, 62% to television or radio. Internet and online based media had similar impact in affecting information seeking habits. The study reported that 64% are more like to browse for health information in the internet, 54% after encountering in social media including YouTube or Facebook affected their HISB while 61% reported that health topics in mobile applications positively affected their information seeking behavior. The study reported that 60% students' HISB was likely affected by health messages circulated through mobile based social media applications like WhatsApp and Snapchat.

According to the 2016 data, majority of students involve in passive or unintentional information seeking after referring to health topics in media. The data shows that more than 65% of students reported that they more often search for detailed information when they encounter health topics in media including print and 66% were likely to respond to health messages in TV and radio. More than 68% of them often browse online for details after referring health topics in the internet while 62% of them passively respond to social media messages and public service advertisements. The study reported that

70% students' HISB was likely affected by health messages circulated through mobile based social media applications like WhatsApp and Snapchat.

In both 2014 and 2016, more than half of the students respond to media messages on health and search for further information. The impact of television is increased by 8% from 2014 to 2016 while radio has increased by 4% and print media remains the same over the two years of study respectively. The role of online media including social media and mobile applications on the HISB of students has increased from an average of 60% in 2014 to 69% in 2016 respectively.

Sources of Health Information

Respondents were asked to rate their preferences in choosing various sources when they are in need for health information. According to the study in 2014, students most likely (89%) preferred internet as a source. They were likely as much as 80% probable of using doctors and other health professionals as primary source of information (Table II). The students were 86% likely to use family members as also primary source of health information. Only 16% students choose public health professionals as sources.

According to the 2016 data, majority of the students (89%) choose internet and family as the most popular sources. More than 80% students preferred doctors and other health professionals as primary sources of health information. Among mass media, majority preferred to use Internet as source for health information, only 48% listed print media as a likely source while only 37% preferred television.

Overall, internet was the most popular media source of health information among students while family, doctors and other professional were highly preferred sources. During both year of study, students rated teachers and college library a less likely source for health information.

Media as a Source of Health Information

The respondents were asked to rate how often media have been a source of health information from their past experiences.

Among the students surveyed in 2014, only about 32.3% had received health information from Oman TV or any other television channels (Table III). Radio was the least used medium (24%) for health information while only around 25% of respondents had used newspaper and magazines as source of health information. General websites were the average popular as 46% had used them for health information while only 36% had used health websites. More than 40% of students reported to have used social media and mobile applications for sharing health information. Based on the overall data in 2014, chat applications in mobile phones including WhatsApp was the most used source (51%) among students.

The respondents of the 2016 study reported to have limited use of media as source for health information. The data shows that only about 33.3% had experienced television as source for health information. More than 37% cited newspaper as a source while 28% students had received health information from magazines. While a minimum of 28% students used radio as a source. General websites were the most (48%)

preferred among the study respondents while health websites were the least (19%) used source among students. Students were more inclined to online media, 44% of students had received health information from social media including Facebook, Youtube, mobile phone applications including chat applications like WhatsApp.

The data shows that, among Omani youth, print and broadcast media had a limited role to play in mediating health information. The popularity of radio for informative messages has been minimum during both 2014 and 2016. The data reveals that more than 50% of students have less likely to have used media for health information, but internet and mobile applications seems to be most popular source of information among students.

Gender and HISB

The study found that there is no statistically significant relationship between gender and health information seeking habits. According to the data in both years of study among, there is no statistically significant difference in how female and male members involve in active information seeking habits ($p > 0.05$)

According to the data from Chi Square test, male and female respondents are likely to respond equally to media messages except in radio. The analysis found that there is statistically significant relationship among gender and health messages in radio; male are more likely than female respondents to involve in passive information seeking 2014 $\{\chi^2 = 6.146, p = 0.013\}$ and 2016 $\{\chi^2 = 4.604, p = 0.032\}$ respectively. No statistical association were found between other demographic variables and health information seeing behavior among students.

Overall, the study population had similar demographic characteristics and no significant differences in how they involve in HISB.

DISCUSSION

HISB is an existing pattern of behavior among students in Oman. Majority of the

students were more likely to involve in seeking health information when they experience health problems at personal level, thus involving in active information search. They were also more likely to involve in passive information seeking as an after effect of referring to health topics in interpersonal and group communication. Majority of students from both year of study reported that media messages on health were more likely to positively affect their HISB.

HISB has important role in promoting maintaining and restoring health of people.²⁰ Our study found that internet was the most preferred source of health information among students in Oman. The growing importance of online media and its popularity among youth was identical in the study. Many youth across developed countries find internet as the primary source of health information.²¹ In US, about 80% of internet users seek online health information for common diseases.²² People search health information from internet more than they trust it as a reliable source.²³ Internet offers platform for exchanging interactive and tailored message to niche audiences spread across any part of the world instantly and simultaneous receives feedback. Many young people prefer internet as a source of information to ensure confidentiality and privacy of information seekers.²⁴ However, use of health information from internet instead of attending physician can lead to detrimental effects on health as credibility and quality of web-based information about health is not established.²⁵

Another important finding of this study was that students were seeking health information from family members and non-doctors. In this era of patient's autonomy in decision making, patients obtain information from every possible source. Studies have shown that people seek health related information from sources other than doctors.²⁶⁻²⁸ According to Al-Mandhari A et al, due to strong role of family members in the decision-making, health care-seeking behavior in Oman relies very much on the

advice of family member.²⁹ A study from India also showed that family was the most common and trustworthy source of health information for young people.³⁰

Social media was another source of HISB by students in our study. Social media (Facebook, YouTube etc.) has an important role in fast communication of health related information among general public, patients and health professionals. In United States, about 39% of use social media such as Facebook for health information and in UK, Facebook is the 4th most popular source of health information.³¹ Advantages of health information seeking through social media include more available, shared, and tailored information, increase accessibility and increase interactions among people and health professionals. However, concerns about the quality and reliability of available information are the main limitation in use of social media in seeking health information.³¹⁻³³

Mobile applications were also identified as a preferred source of health information by the students. Use of mobile apps and SMS are popular in dissemination of health information and preventive health messages. Studies have shown effectiveness of mobiles use in various health preventive campaigns'.^{34,35} Although use of mobile apps and social media in health intervention is lacking scientific evidence, in future, more promising results can be expected by better understanding of the technologies.³⁶

Popular media forms, television, newspapers and magazine were used by only 40% of students while radio was the least preferred medium for health messages. It has been documented previously that information about diseases and treatments are communicated better through traditional media.³⁷ However, in young people, the use of print media, television and radio are not as popular as internet as source for health information. This could be due to the fact that 90% of the youth have access to internet on their mobile phones.³⁰

Although, majority of our study population comprised of female students,

there was no statistically significant relationship between gender and HISB. Women are the ones advocating for other members of the family, for parents, children, friends or going to the internet to help someone find information. Osborne said, "Women are very important conduits of health information and need to understand the information because they may be in the role of explaining it to someone else."¹² Shubha HS³⁰ from India showed that 63% of females and 37% of males used internet more than once a week for health information, however, results were not tested for significance.

Comparing the data collected in 2014 and 2016, there was no significant differences in HISB of students, as similar pattern was visible across both years of study. An increasing role of internet and decreasing role of newspapers and television was found among youth population. The role of college facilities including library and teachers were limited across both years of study. Interpersonal channels of health information like doctors, other health professionals and family member were preferred over mass media for sourcing health information.

CONCLUSION

The survey study examined the Health information seeking behavior of students in Oman and the role of media in imparting health information. Evidences found in this study shows that students were likely to involve in active and passive information seeking behavior. Personal sickness & family sickness were the common factors affecting/initiating HISB. Majority of student are seeking health information from other family members, experts/non-doctors & doctors/medics. WhatsApp and internet were the commonest media sources of HI. HISB needs to be documented for theorizing messages, developing social and health initiatives. A scope for understanding how youth process health information and its impacts on their health should be explored.

The popularity of online medium was substantial with the research findings

as most students preferred internet as source for health information. Evidences from this study offers insight for health campaigners in Oman targeting youth population to use internet based sources for future initiatives. Further studies should be conducted to understand how young population process health information and its impact on their health. An understating of online media habits will help in developing effective health initiatives targeting youth in Oman.

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CONFLICT OF INTEREST

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Following authors have made substantial contributions to the manuscript as under:

KS: Concept and study design, Acquisition of data, drafting of manuscript, final approval of the version to be published.

VRJ & UM: Analysis and interpretation of data, critical revision, drafting of manuscript, final approval of the version to be published

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.