

Original Research Article

Online health information seeking among patients attending primary care clinics in Bahrain: a cross-sectional study

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ABSTRACT

Background: Online health information seeking is prevalent among patients nowadays and this might influence the medical consultation outcome and affect the patient-doctor relationship. Objective was to determine the prevalence of online health information seeking behavior among primary care clinics attendees in Bahrain and the impact on patient-doctor relationship.

Methods: Patients attending primary care clinics in Bahrain were asked to complete a previously adapted self-administered questionnaire that studied demographical data, frequency of online use in general and for health-related information and pattern of online health information seeking including reasons searched for and sources used. The logistic regression analysis done to explore respondent's characteristics with health seeking behavior online.

Results: Ninety-seven percent (97%) of the study population used the internet and (94.7%) had searched for online health information. The two main types of information sought were disease-related information (88.7%) and complementary and alternative medicine (55%). Fifty-three percent used reliable sources (i.e., Ministry of Health (43.3%), hospital websites (14.9%), medical encyclopedias (e.g., PubMed and Medline plus) (17.4%). Approximately (39.3%) use social networks to find information (including Facebook and Twitter). Convenience and usability were the main reasons (88.9%). Fifty-five percent (55%) asked or shared health information they found online with their doctor.

Conclusions: Online health information seeking is highly prevalent in Bahrain among primary care clinic attendees. Sources were chosen mainly for their convenience, availability and being easily understood. A good number shared health information found online with their physicians. Physicians should be aware about patients' online health seeking behavior and address that during consultation.

Keywords: Bahrain, Online health information seeking, Primary care

INTRODUCTION

Online health information-seeking behavior defined as seeking and receiving messages or information to reduce the uncertainty associated with health status and build confidence on the context of health that involves

obtaining information on health treatments, alternative medicine, nutrition and physical exercises.¹

WHO statistics in 2017 showed that 47% of the world population is connected to the internet, 99% had mobile lines and 47% households had computers. Variables

influencing digital health literacy are: age, health status, educational background, digital literacy skills and motivation for seeking information.²

WHO described a phenomenon called “Information overload”. Around 575 million results are returned by Google when searching for ‘cancer’ and around 250 million returned for ‘diabetes’.²

Almost 72% of USA adults’ internet users search for health information and more than a one-third of them search the internet for self-diagnosis. While 59% of European Union people have used the internet to search for health-related information.²

Seeking health information through online sources has positive and negative impacts. Advantages include searching health related information, which can complement the health care services. It can also enable patients to directly interact with their physicians to discuss their health conditions without concerns about emotional expression and immediate reactions. Additionally, social media can provide various social and group support.³

In the contrary, patients might use unreliable sources to get their online health information especially with the lack of trusted Arabic sources. Furthermore, many physicians lack the awareness about different health information contents that are available online.

Literature review

A systematic review of 22 studies found that patients use social media mainly to complement their needs that are not addressed by their physicians who may not provide emotional support in a satisfactory way.³

Also, it found that patients are concerned that physicians might not be updated to the latest guidelines or advances in therapy.³

Moreover, it also showed that social support was the commonest purpose of search which includes emotional, esteem, information and network support.³

Furthermore, three cross-sectional studies described the “online health information seeking behavior” in different parts of the world and by different means.

One study was conducted in Hong Kong found that 97.44% were using internet and 87.44% were using it to find health-related information.

Few (26.88%) reported asking their doctor about information found online but most doctors (56%) were reported as showing little or no interest. The main sought topic online was for new symptoms or change in health (70%).⁴

The most popular source was the online encyclopedia for convenience.⁴

Another study in Saudi Arabia showed that 83.3% were using WhatsApp as the main application, 18% were using social media to search about medicine-related information on a weekly basis.⁵

Around 90% prefer to receive medical information from trusted official sources.⁵

One more study conducted in Saudi Arabia found that only 39% were internet users. From which, 71.6% were using internet to seek health-related information.⁶

No previous similar studies were found in Bahrain.

Aim

To increase the awareness of health care professionals about the patients’ online health information seeking behavior and provide better health care services.

Objectives

To determine the prevalence of online health information seeking behavior among patients attending primary care clinics in Bahrain. To study the socio demographic factors that influence online health information seeking behavior. To assess the impact of online health information-seeking behavior on patients’ attitudes.

METHODS

Study setting

The kingdom of Bahrain provides its primary health services through 25 health centers and 3 health clinics spread across five health regions in all governorates of the kingdom. These centers provide curative, preventive, and rehabilitation services for the family and the society. All citizens and residents were registered for treatment in the health center of their residential area.⁷

Seven health centers from all five health regions were selected; these were the health centers that serve the largest number of the population. The selected health centers were: Muharraq Health Centre, Shaikh Jaber Al Ahmed Al Sabah Health Centre, Yousef Abdulrahman Engineer Health Centre, Hamed Kanoo Health Centre, Mohammed Jassim Kanoo Health Centre, Ahmed Ali Kanoo Health Centre and Naim Health Centre.

The estimated daily attendance with 95% confidence level and daily selection needed number are represented in Appendix 2.

The study was carried out during the period from May 2021 till June 2022.

Study design

This study was a cross-sectional, anonymous, paper-based self-administered questionnaire survey.

Study population and sample size estimation

The study population were patients attending the primary care clinics in Bahrain.

For sample size estimation, the formula for cross-sectional studies was used, where the sample size:

$$n = \frac{Np(1 - p)}{\left(\frac{d^2}{z^2_{1-\frac{\alpha}{2}}}\right) \times (N - 1) + p(1 - p)}$$

whereas N was the estimated population size attending the selected health centre for morning clinics from Sunday to Thursday, (see Appendix 2) a hypothesized proportion (p) of 0.5 and a margin of error (d) of 0.05, the minimal sample required to reach 95% CI was 378. A total of 453 questionnaires were distributed, of which 443 (97.7%) were returned.

Of the questionnaires returned, 10 were excluded from the analysis because of the many missing data (e.g., missing most of the demographic data or an entire questionnaire section). Final number of participants was 433.

Sampling technique

From each selected health centre 30-60 respondents were selected during morning time for 10 days until the required number was reached.

Adults attending the main waiting area within each health centre were approached and invited to complete the questionnaire. Adults 18 years or above and attendees who were able to complete the questionnaire in Arabic or English language were included in the study. Those who were under 18 years, illiterates or unable to complete the questionnaire in Arabic or English version were excluded.

Questionnaire development

A self-administered questionnaire was used which was adapted from previous Hong Kong study in 2017: "Online Health information seeking and eHealth Literacy among patients attending a primary care clinic in Hong Kong". The original questionnaire was reviewed by 5 experts and content validity of each question was done. The item level content validity index (CVI) of all questions included were rated as 1.00 which indicates relevance.⁴

A permission from the original authors was obtained and the questionnaire translated into an Arabic version.⁴

An initial pilot study was undertaken with 5 Arabic speakers using the "think aloud technique" to assess the understanding of the questionnaire and time taken to answer it. Reliability test was done after completion of the research giving a Cronbach's alpha of 0.425.

Data management and statistical analysis

Data processing and analysis: Responses were collected and entered in an excel sheet. All data generated were transferred to SPSS version 26, while all variables were labeled and frequency checks were run for each variable to check whether there are any discrepancies and were corrected if present.

Descriptive analysis was undertaken for each section of the questionnaire.

The study's primary end point was use of online health information. Continuous variable was expressed as mean (SD). Categorical and ordinal variables was expressed as proportion with 95% confidence interval. Chi-square and Fishers's exact test if the values were below five for strength of association between health seeking information and respondents' demographic characteristics, $p < 0.05$ was considered significant. Binary logistic regression analysis was done to explore respondent's characteristics with health seeking behavior online.

Little's multiple imputation method was used for data missing completely at random (MCAR).

Ethical consideration

A permission to use the original validated questionnaire was obtained from the original author. Ethical Research Committee approval was obtained before commencing the study. The per-mission to distribute the questionnaires on local health centers was obtained from the concerned authorized bodies. The consent was verbally obtained from all of the participants and complete confidentiality was assured to them. The purpose of the study was explained briefly at the beginning of the questionnaire. The answered questionnaires were stored safely without respondents' names or identities to ensure privacy.

RESULTS

Demographic characteristics of the study sample

The demographic characteristics of the study sample are presented in Table 1. Table 2 represents types of online methods used.

Around 55.7% (241/433) of the respondents were female. Respondents included were of all professional ranks and

were primarily belonging to the 30-49 years age group. Furthermore, 51.3% of the respondents had a secondary school qualification or lower, while the remainder had a higher educational level. Most of those surveyed thought their health was very good 80.6% (349/433) and 17.3% (75/433) thought it was good and only 2.1% (9/433) rated their health as poor. Additionally, 73% (316/433) had no chronic diseases requiring regular monitoring or treatment.

Table 1: Participants demographic characteristics (n=433).

Age (years)	n (%)
<30	172 (39.7)
30-49	197 (45.5)
≥50	64 (14.8)
Sex	
Male	192 (44.3)
Female	241 (55.7)
Education level	
Secondary or below	222 (51.3)
University or higher	211 (48.7)
Occupation	
Student	61 (14.1)
Employed	228 (52.6)
Retired/ unemployed	144 (33.3)
Health status	
Very good	349 (80.6)
Good	75 (17.3)
Poor	9 (2.1)
Chronic medical condition	
Yes	117 (27.0)
No	316 (73.0)

Table 2: Access and types of electronic tools used to access online health information (n=433).

	N (%)	95% CI
Internet access	421 (97.2)	95.5-98.6
Type of tools		
Desktop computer	46 (10.6)	7.7-13.5
Laptop computer	117 (27.0)	22.8-31.2
Tablet	32 (7.4)	5.1-10.3
Smartphone	399 (92.1)	89.2-94.5
Internet use frequency		
Monthly	13 (3.0)	1.6-5.1
Weekly	25 (5.8)	3.8-8.4
Daily	395 (91.2)	88.2-93.7
Hours of internet use per day		
<2	104 (24.0)	20.0-28.0
2-4	139 (32.1)	27.7-36.5
>4	190 (43.9)	39.2-48.6
Wearable monitoring health devices or apps		
Yes	132 (30.5)	26.1-34.8

Almost all respondents 97.2% (421/433) (95% confidence interval =95.5 to 98.6%) had access to the internet and the majority of them use the internet every day 91.2% (395/433) (95% confidence interval =88.2 to 93.7%) and spend more than 4 hours a day on the internet 43.9% (190/433) (95% confidence interval =39.2 to 48.6%).

Prevalence and patterns of online health information seeking

Among respondents who used the internet, 94.7% (410/433) (95% confidence interval =92.1 to 96.6%) had previously searched for online health information (Table 3). The majority indicated that they often looked for medical information online each month 68.6% (297/433) (95% confidence interval =64.2 to 73.0%).

Table 3: Respondents responses to internet use for health information (n=433).

	N (%)	95 % CI
Internet use for health-related information		
Yes	410 (94.7)	92.1-96.6
Frequency of internet use to find health information		
Monthly	297 (68.6)	64.2-73.0
Weekly	102 (23.6)	19.6-27.6
Daily	34 (7.9)	5.5-10.8
For whom the health information was found		
Myself	319 (73.7)	69.5-77.8
Family members	265 (61.2)	56.6-65.8
Friends or co workers	81 (18.7)	15.0-22.4
Tools used to look for health information online		
Desktop computer	33 (7.6)	5.3-10.5
Laptop computer	98 (22.6)	18.7-26.6
Tablet	28 (6.5)	4.3-9.2
Smartphone	392 (90.5)	87.4-93.1

In addition to searching for information for themselves 73.7% (319/433) (95% CI =69.5 to 77.8%) also searched on behalf of family members 61.2% (265/433) (95% CI =56.6 to 65.8%) and some searched for friends and colleagues 18.7% (81/433)

(95% CI=15.0 to 22.4%). The majority use cell phones 90.5% (392/433) (95% CI=87.4 to 93.1%) and laptops 22.6% (98/433) (95% CI=18.7 to 26.6%) to search for medical information online.

Content, sources and reasons for searching for medical information online

Table 4 shows type of information sought out by respondents. The two main types of information sought were disease-related information 88.7% (384) (95% CI=85.7 to 91.7%) and complementary and alternative medicine 55% (238) (95% CI=50.3 to 59.7%). In regards of search reasons, a total of 86.6% (375) (95% CI=83.4 to 89.8%) of respondents searched for information related to

health conditions. A small number of respondents sought information about behavior and lifestyle 26.3% (114/433) (95% CI=22.2 to 30.5%) or for knowledge and curiosity 49% (212/433) (95% CI=44.3 to 53.7%). Nearly half of the respondents 53.3% (231/433) (95% CI=48.6 to 58.0%) used reliable sources (i.e., university websites (3.5%), Ministry of Health (43.3%), hospital websites (14.9%), medical encyclopedias (e.g., PubMed and Medline plus) (17.4%).

Table 4: Contents, sources and reasons for online health information (n=433).

	N (%)	95% CI
Type of health information found online		
Disease related information	384 (88.7)	85.7-91.7
Complementary and alternative medicine	238 (55.0)	50.3-59.7
Health services and insurance	145 (33.5)	29.0-37.9
Reasons for searching about health information		
Related to health condition	2375 (86.6)	83.4-89.8
Lifestyle or behavioral changes	114 (26.3)	22.2-30.5
Knowledge or curiosity	212 (49.0)	44.3-53.7
Source of information found online		
Reliable sources	231 (53.3)	48.6-58.0
Social media	170 (39.3)	34.7-43.9
Others	324 (74.8)	70.7-78.9
Reasons for choosing those websites		
Recommended by professionals or trustworthy	109 (25.2)	21.1-29.3
Convenient and available	385 (88.9)	86.0-91.9
Others	56 (12.9)	9.8-16.1

Also, 39.3% (170/433) (95% CI=34.7 to 43.9%) respondents used social networks to find information (including Facebook and Twitter). However, the majority of respondents also used other sources 74.8% (324/433) (95% CI=70.7 to 78.9%) as 48.2% of them use online encyclopedias i.e., Wikipedia and Google and 25.5% used a video sharing site (Youtube). It was noted that other resources were included (e.g., news web-sites, blogs, Q and A sites, internet forums and commercial sites). The reasons for choosing those websites were convenience and usability as the main reasons 88.9% (385/433) (95% CI=86.0 to 91.9%) followed by professional's recommendations and trusted sources 25.2% (109/433) (95% CI=21.1 to 29.3%).

Sharing health information with physicians

Nearly half of the respondents 55.2% (239/433) (95% CI=50.5 to 59.9%) had ever asked or shared health information they found online with their doctor. Of these, 55% (238/433) (95% CI=50.3 to 59.7%) shared information with their doctor via email, print, or a screenshot from their cell phone (Table 5).

Table 5: Sharing health information with physicians. (n=433).

	N (%)	95% CI
Ever asked or discussed with doctor about health information found online		
Yes	239 (55.2)	50.5-59.9
Ever shared with doctor health information found online (e.g., e-mail)		
Yes	238 (55.0)	50.3-59.7
Ever asked or discussed with doctor about specific disease or diagnosis because of health information found online		
Yes	302 (69.7)	65.4-74.1
Ever asked or discussed with doctor about specific treatment/test/referral because of health information found online		
Yes	291 (67.2)	62.8-71.6
Were your doctors interested in hearing about health information found online		
Very interested	304 (70.2)	65.9-74.5
Not interested	79 (18.2)	14.6-21.9
Don't know/can't remember	50 (11.5)	8.5-14.6

In addition, 69.7% (302/433) (95% CI=65.4 to 74.1%) of the respondents had ever asked or discussed with their doctor about specific diseases or diagnosis because of the health information they found online, whereas 67.2% (291/433) (95% CI=62.8 to 71.6%) had ever asked or discussed with their doctor about specific treatments, tests or referrals because of the health information they found online.

When asked about the level of interest of the physicians, the perceived responses from the respondents were as follows: 70.2% (304/433) (95% CI=65.9 to 74.5%) perceived their doctors as being very interested in hearing about the health information they found online while 18.2% (79/433) (95% CI=14.6 to 21.9%) of the respondents perceived their doctors as being not interested.

A Chi-square test for independence (with Yate's continuity correction) for association between, (age, sex, education, occupation, health status and chronic medical condition) and use of online health seeking information. There was a significant difference between level of education and respondent's and health status in the use for online health information. Respondents with higher education level were highly likely to use the internet than lower level of education, χ^2 (1, n=433) =13.9, p=0.001, with small effect size phi.19 (Table 6).

Respondents reporting very good health were significantly more interested in seeking on line health information, than respondents with good or poor health, χ^2 (2, n=433) =8.7, p=0.013, with small effect size, Cramer's V .142 (Table 6).

Table 6: Relationship between demographic characteristic and internet use for health-related information (n=433).

	N (%)	95% CI	P value	Effect size
Age (years)				
<30	172 (39.7)	35.1-44.3	0.338	0.071
30-49	197 (45.5)	40.8-50.2		
≥50	64 (14.8)	11.4-18.1		
Sex				
Male	192 (44.3)	39.7-49.0	0.14	0.079
Female	241 (55.7)	51.0-60.3		
Education level				
Secondary or below	222 (51.3)	46.6-56.0	0.001	0.19
University or higher	211 (48.7)	44.0-53.4		
Occupation				
Student	61 (14.1)	10.8-17.4	0.136	0.096
Employed	228 (52.7)	48.0-57.4		
Retired/unemployed	144 (33.3)	28.8-37.7		
Health status				
Very good	349 (80.6)	76.9-84.3	0.013	0.142
Good	75 (17.3)	13.8-20.9		
Poor	9 (2.1)	0.1-3.9		
Chronic medical condition				
Yes	117 (25.2)	22.8-31.2	0.535	0.041

Phi, Cohen's effect size for 2x2 categories small =0.1, medium =0.3, large =0.5

Cramer's effect size for 2x3 categories small =0.07, medium =0.21, large =0.35

Table 7: Logistic regression model of prediction on use of internet for health-related information (n =433).

Covariates	N	OR	Lower	Upper	Sig.
Age (years)					
>50	64	1.0			
<30	172	0.3	0.01	6.7	0.4
30-49	197	0.5	0.1	4.0	0.5
Sex					
Male	192	1.0			
Female	241	1.1	0.4	2.9	0.9
Education					
<Secondary	222	1.0			
University or higher	211	10.0	2.1	44.1	0.003
Occupation					
Retired/unemployed	205	1.0			
Employed	228	0.6	0.22	1.8	0.4
Health status					
Good	75	1.0			
Poor	9	0.3	0.03	1.9	0.18
Very good	349	1.8	0.64	5.2	0.26
Chronic medical condition					
No	316	1.0			
Yes	117	1.4	0.4	4.2	0.6

Table 7 shows direct logistic regression performed among the 433 participants to assess the use of internet for health-related information, and the impact of a number of factors on the likelihood of using the internet.

The model contained six predictors (age, sex, education, occupation, health status and chronic medical condition).

The full model containing all the predictors was statistically significant $\chi^2 (8, n=433)=25.2$ $p<0.001$, indicating the model was able to distinguish between respondents who used or did not use the internet to seek health information. The model explained between 5.7% (Cox and Snell R^2) and 16.6% (Nagelkerke R^2) of the variance in the use of internet for health-related information.

Only education made a unique statistically significant contribution to the model, odds ratio 10.5 (95% confidence interval, 2.4 to 46.8). This indicated that respondents who were highly educated were 10 times more likely to seek health information on line.

DISCUSSION

The results of this study showed this study population internet usage is widespread and health information searches are very extensive. Almost similar age group was represented in Saudi study but with higher educational level and male predominance.⁵ Internet and social media use were high among all studies reviewed including our study.^{3,5,6}

For those who searched for health information online, most did searches for themselves and their family at least once a month. The mobile phone was the most widely used device for accessing the Internet in general, as well as searching for health information online, implying a desire for instant information. The search rate for health information on the internet is comparable to a study recently carried out in Hong Kong and published in 2019.⁴ Respondents with a higher level of education use the internet to obtain health-related information more often than those with a lower level of education. Respondents who reported being in very good health were significantly more interested in looking for health information online than respondents with poor health. This could be explained by the desire to maintain their good health status. On the contrary, the Hong Kong study found that fair or poor health was a predictor of searching for health information online.⁴ This conflicting result might be explained that in our population studied, the dominant age group was from younger age group less than 50 years who usually perceive their health as good. Also, patients with poor health status might come from lower socioeconomic status or lower educational level and would feel satisfied with whichever information or plan provided by their physician without the need for any additional search.

As noted in the previous Hong Kong study; age, gender, and occupation were not found to be predictors of online health information searches; however, the Hong Kong study found that chronic medical conditions were a predictor of online health information searches, contrary to what we observed in our research. This implies that the presence or absence of a chronic medical illness is not as important as the patient's own health perception.

The vast majority of respondents searched for health-related information primarily after noticing a new symptom or change in health, receiving a prescription for a new drug or a new line of treatment or after performing a new test and for their own general knowledge and curiosity while a small number of respondents were aiming to change their behavior and lifestyle. These Reasons of search were also observed in one of the Saudi

studies which was conducted among diabetic patients, however participants also searched for improving quality of life, dealing with psychological, emotional and mental aspects which was unfortunately not covered by our study.⁶

The previous finding about information seeking was also found in a systematic review which included 22 articles where the most common type of social media use was for social support involving information support.³ This might be because patients feel they need to know more about their condition than provided by their physicians or because the limited time of consultation does not allow for ideal information gathering.

Few respondents searched in preparation to talk to their doctor, and an even smaller number searched because they had doubts about their doctor's knowledge. This could be explained that there is still a strong confidence in doctors or a lesser desire to question the doctor's authority.

The two main types of information sought online were disease related information including symptoms, investigations, medications and about complementary and alternative medicine such as vitamins, supplements and healthy behavior.

This indicates that the interest of the general Bahraini population in alternative and complementary medicine is as much as their interest in conventional medicine. This might be due to their cultural belief that alternative medicine is safe, cheap, available and without need to seek medical advice.

Slightly more than half of the respondents sought health information from reliable resources such as medical encyclopedias (e.g., PubMed and Medline plus) and hospital websites.

However, the majority of respondents still used other less reliable resources such as online encyclopedias (including Wikipedia and Google), social media (including Facebook and Twitter) and video sharing sites (e.g., YouTube). Similar findings regarding use of social media (e.g., WhatsApp, Snapchat, YouTube) were also the main social media applications used in the Saudi study.⁵

The main reasons for choosing those resources were convenience, availability and being easy to understand compared to a smaller number of respondents who chose sources based on professional recommendations or level of trust. This suggests that the respondents were less concerned about the accuracy or quality of health information online, or unaware of the possible consequences of receiving inaccurate health information online and this shows the need to provide more accessible resources with more trusted and reliable health information.

Interestingly, nearly half of the respondents asked or shared health information they found online with their doctor which highly exceeds the level observed in the recent study done in Hong Kong. This might be correlated to the patients' perception of high level of interest from their doctors which implies good patient doctor relationship in Bahrain.

Relevance to clinical practice

Nowadays, the internet and social media has become one of the main platforms to gather information from; including health information.

Physicians should accept the fact that patients have other resources to gather their needed information rather than from doctors alone and should have the proper communication skills to accept and react towards the presented knowledge.

Failure to accept this might negatively influence patient doctor relationship and can result in patient dissatisfaction. Therefore, for better relationship and communication, physicians should facilitate and direct the patient to search for health-related information through trusted and reliable websites. Furthermore, physicians and official health care organizations should cooperate in creating such trustful, easily accessible and convenient resources.

Strength and weakness

The main strength of this study is the adequate sample size. On the other hand, the study population represent local health center attendees which might not represent the general Bahraini population. In addition, the study population was selected by using convenient sampling technique not randomly selected.

The study might be biased to the age group 30-49 years old. However, this could be to the fact that the majority of primary health care attendees are from this age range.

We tried to overcome this possibility of selection bias by increasing our sample size as much as Data collection time permitted.

The adapted questionnaire from previous Hong Kong study showed low reliability when applied on the Bahraini population.⁴

CONCLUSION

This is the first study regarding online health information seeking behavior conducted in Bahrain, keeping up with the uprising revolutionary use of the internet and social media nowadays in nearly all aspects of life including health.

Online health information seeking is highly prevalent among primary health care attendees in Kingdom of Bahrain. The most topics sought for are disease related information as well as complementary and alternative medicine. The use of reliable resources is common among the respondents; however, it is still less prevalent than the use of social media. Convenience and usability are the main reasons for choosing the resources followed by professional recommendations and trusted sources. Doctors should understand patients' health information seeking behavior and guide the patients towards the more reliable resources. This study provides better understanding of patients' behavior and fields of interest during their health search which gives the opportunity to guide future interventions.

Recommendations

We recommend future studies to be conducted on larger and broader population to overcome any bias.

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APPENDIX

Appendix 1: English version Questionnaire

SURVEY ON ONLINE HEALTH INFORMATION SEEKING

We would like to ask for your opinion and your experience of using the Internet for health-related information. There are no right or wrong answers, choose an answer that suits you the most.

Please check the appropriate answers, or write your answers in the spaces provided:

Can you tell us some basic information about yourself?

1 Age :

2 **Gender** Male Female

3 **Education Level** Primary or below Secondary Tertiary Post-graduate

4 **Occupation** Healthcare worker Free lance
 Student Retired / Unemployed
 Others (please specify):

5 **In general, would you say your health is...**
 Excellent Very good Good Poor

6 **Do you have any chronic medical condition?** (that require regular follow up or treatment) Yes No

7 **Do you use the Internet?** Yes No

8 **Do you mostly access Internet using...** (Please check all that apply)
 Desktop computer Laptop computer Tablet Smartphone

9 **How often do you use Internet?**
 Several times a week Every day Once a month or less Once a week Several times a day

10 **On average, how many hours do you use Internet per day?** Less than 1hour 1-2 hours 2-3 hours 3-4 hours More than 4 hours

11 **Do you use any wearable health monitoring devices or smartphone apps?** (e.g. pedometer/ heart rate monitor/ smart bracelet/ smart watch) Yes No

12 Have you ever used Internet to find health -related information ? Yes No

13 How often do you use Internet to find health information?

- Once a year or less Every few months Once a month Several times a month
 Once a week Several times a week Every day
-

14. Did you find the health information for...(Please check all that apply)

- Myself Family members Friends or Co-workers
-

15 Which tool did you use to look for health information online? (Please check all that apply)

- Desktop computer Laptop computer Tablet Smartphone
-

16 What kind of health information have you ever found online? (Please check all that apply)

- Symptom Disease/ Condition Service info (e.g. doctor, hospital)
 Medication Test/ Investigation Treatment and procedure
 Health insurance Alternative medicine Vitamins and supplements
 Healthy behaviors (e.g. diet, exercise, quit smoking)

Others (please specify):

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17 **Why did you find health information online?** (Please check all that apply)

- Noticing new symptoms or change in my health (Am I ill?) Finding/ selecting a doctor or healthcare facility
 - Preparing for a doctor's consultation/ to discuss it with my doctor
 - Being diagnosed with a new medical condition
 - Being prescribed with a new medication, test, or treatment
 - Having doubts about information given by my doctor
 - Dealing with an ongoing medical condition (e.g. diabetes, high blood pressure)
 - Deciding to change my behaviors/ daily routine (e.g. diet, exercise, quit smoking)
 - Hearing or seeing something in the news that you wanted to learn more about
- For knowledge or curiosity Others (please specify):

18 **On which websites did you find the health information?** (Please check all that apply)

- University Online encyclopedia (e.g. Wikipedia)
- Government Q&A site (e.g. Yahoo!)
- Commercial site (e.g. Amazon , personal care products)
- Hospital/ clinic Internet forum
- Non-profit health organization Social media (e.g. Facebook, Twitter)
- Medical encyclopedia (e.g. Pubmed ,Medline plus) Ministry of Health
- Video-sharing site (e.g. YouTube) News site
- Others (please specify): Blog

19 **Why did you choose those websites to find the health information?** (Please check all that apply)

- Recommended by professionals Easy to understand Usual habit
- (e.g., healthcare professionals, dietitians)

20 **Did you ever ask or discuss with your doctors about the health information found online?** Yes No

21 **Did you ever share with your doctors health information found online?** (e.g. by email/ print-out/ photos or screenshot on smartphone) Yes No

22 Did you ever ask or discuss with your doctors about specific disease or diagnosis because of the health information found online? Yes No

23 Did you ever ask or discuss with your doctors about specific treatment, tests or referral because of the health information found online? Yes No

Recommended by family or friends I think it's trustworthy Convenience Top results from search engines Others (please specify):

24 Were your doctors interested in hearing about the health information you found online?

Very interested Quite interested Slightly interested Not at all interested
 Don't know/ Can't remember

This is the end of survey. Thank you very much for your participation!

Appendix 2: The estimated daily attendance per health centre.

	Daily attendance	95% confidence level	Daily selection
Muharraq health Centre	300	341	34-55
Shaikh Jaber Al Ahmed AlSabah health Centre	299	341	34-55
Yousef Abdulrahman Engineer health Centre	400	351	35-57
Hamad Kanoo health Centre	550	360	36-59
Mohammed Jassim Kanoo health Centre	350	347	35-56
Ahmed Ali Kanoo health Centre	200	323	32-50
Naeem health Centre	250	335	36-53
Total Attendance	2349	2398	240-384
		378	37-55