



Research Article

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Online Health-information Seeking Behavior among Pregnant Women in Prenatal Clinics at King Saud Medical City, Riyadh

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Abstract

The Internet is becoming indispensable in daily life for many people, and it has changed the way people search for informational, entertainment and communication needs. The use of the Internet to acquire health information is increasingly common.

A modified questionnaire drawn from a previous study was used as this study's instrument. The study was a descriptive cross-sectional study, and the survey was completed by pregnant women in the waiting area of the Prenatal Clinics at King Saud Medical City of 210 questionnaires distributed, 190 were returned and 150 were valid, giving a response rate of 71.4%.

The study found that more than half of the respondents were using Google and other research tools to find pregnancy-related health information. They visited women's forums to obtain information about pregnancy, commercial pages for maternity and childhood health information, and sometimes used YouTube, Face book, and Twitter to find educational health content. The most researched topics on the Internet are fetal development, stages of pregnancy and changes during pregnancy.

Keywords

Online health-information; Pregnant women

Introduction and Background

The increased growth of information technology in recent years and expanded use of computer facilities and other mass media have led to the rapid transfer of information [1,2].

Internet-based health information is accessed from a variety of sources, including websites run by organizations, homepages owned by individual doctors, blogs authored by health advocates, caregivers or those pursuing self-help [3].

According to the Nursing Outcomes Classification (NOC), health-seeking behavior is defined as personal actions to promote optimal wellness, recovery, and rehabilitation. Understanding human behavior is a prerequisite to changing behavior and improving health

practices. Experts in health interventions and health policy became increasingly aware of human behavioral factors in quality health care provision. To respond to community perspectives and needs, health systems need to adapt their strategies, taking into account the findings of behavioral studies [4].

Recent studies reported that four in ten adults [5] and one in four adolescents [6] had searched for health information online. Recently, patients' use of medical information available on the Internet has been spreading rapidly in our country, as well as all over the world [7]. According to The Saudi Communications and Information Technology Commission (CITC) website, the number of Internet users reached 14.2 million by the end of 2012.

International literature further supports the notion that women are major consumers of the Internet during the prenatal period. According to the survey's results, more than three-quarters of childbearing women turn to the Internet for information about pregnancy and birth, and 16% of first-time mothers and 13% of experienced mothers rated the Internet as their most important information source [8].

In a large national survey of United States women, titled Listening to Mothers II, 200 mothers were interviewed by telephone and 1,373 mothers completed an online version of the survey [9]. In 2008 the study found that 11% of primiparous mothers and 7% of those who already have children cite the Internet as their first source of information on the topic of childcare issues, and that pregnant women spend a median of six hours per month looking for information about childcare [10].

Studies have indicated that females are more likely to use the Internet as a health information source than males. In a descriptive study of the use of the Internet by women seeking pregnancy-related information, more than 91% of pregnant women have access to the Internet and more than 84% use it frequently as a source of health information, especially in the early stages of pregnancy 79% had looked for information during the previous month, and the frequency of Internet searches varied from once per month to 62 times per month [11].

Research has been performed regarding online health information seeking and women's health; Andreassen [12] stated that women increasingly relied on the Internet to acquire health information in addition to traditional sources. In another study conducted in the United Kingdom in 2006, it was found that only 26.8% of patients had used the Internet to find information about a health problem [13]. Another study found that 47.3% of women cited the Internet as one of their first three sources of information about pregnancy [1].

A survey indicated that the majority of health information-seekers in the United States begin their search process at search engines such as Google or Yahoo, with 27% using a specific health-related website to start the search [3]. Almost 80% go on to search multiple sites.

Some of the top searches related to pregnancy are topics dealing with fetal development, nutrition during pregnancy [14] complications and stages of labor, pain relief and stories about motherhood. Other topics include the sale of products for mothers and children and breastfeeding [11].

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Authors have suggested that the motivation of patients to seek information, manage information and risks, as well as to exchange information in a consultation may enhance their empowerment [15], increase their health literacy [16] and improve shared clinical decision-making [11,17,18].

Descriptive data from surveys that probed the use of health information by Internet users in Australia and New Zealand found that frequent Internet searchers were more likely to take information from the Internet to their doctors and believe the Internet to be a more useful information source [19]. Females were less likely to email their doctors. More educated respondents were more likely to email their doctors and check website credentials. Larsson's study in 2009 found that most people seeking health information online did not speak with a health professional about the information they found during their most recent search, but most would have appreciated it if their caregiver had suggested relevant web sites. On the other hand, in another study aimed to describe the pattern and frequency of usage of the Internet as a source of health information among participants in antenatal classes, 80.2% of participants reported a willingness to share the information they had found [1].

In a Swedish study of pregnant women, over half (55%) of participants said that if their midwife suggested a site, they would visit it [11]. Patients experience difficulty in interpreting information on the Internet. Therefore, most appreciate the support of healthcare practitioners in the interpretation and contextualization of information. Discussions about searching for information on the Internet, with recommendations of trusted web sites and criteria for evaluating the quality of websites, could facilitate the exchange of information during consultations [17]. Primary care providers should recognize that patients are using the Internet as a resource for health and medical information and should be prepared to assist patients in evaluating the quality of information available on the Internet [20].

Evidence indicates that pregnant women and mothers of young children are active consumers of health information, including using the Internet as a popular destination for seeking information, support, and resources [21]. According to a survey conducted by Sillence et al. [22] as more people use the Internet as a source of health information, the issue of source credibility and trust in websites becomes more important.

Several studies have shown that medical information found on the Internet is not always reliable or current and that references may not be provided. According to the investigators, this is an important criterion for the judgment of the quality of the information [23].

Websites providing peer-reviewed collaborative information and forums providing accurate medical information on the web may gradually result in an improvement in the quality of medical information available [24].

An understanding of how pregnant women use the Internet as an informational tool is important to guiding the work of childbirth educators and childbirth practitioners worldwide. An understanding of the factors that influence women's decision-making in seeking information from the Internet and how they apply the information found to their pregnancies will provide necessary knowledge to facilitate the development of appropriate childbirth resources [7].

There is a huge lack of information about trustworthy Arab websites, as well as lack of information in Saudi Arabia about the frequency of the use of the Internet for obtaining health information,

especially among pregnant women; no data are available about the use of the Internet as a source of health information among pregnant women and how they seek online health information. This study will give health providers an idea of the role of Internet-based health education, so they can embrace and implement convenient online prenatal education and health programs. Thus, the aim of this study is to examine online health information-seeking behavior among pregnant women and to measure the knowledge, attitudes and practices of Saudi pregnant women who attend prenatal care clinics in Riyadh [25,26].

Materials and Methods

The study is a descriptive cross-sectional survey. The subjects were Saudi females who attended the antenatal clinics at King Saud Medical City in Riyadh, Saudi Arabia. A convenience sample of 150 women in the waiting area of the obstetrician/gynecologist outpatient department was taken during a period of three working weeks from March 23rd to April 10th, 2013; A total of 210 questionnaires were distributed to pregnant women in the waiting area of the obstetrician/gynecologist outpatient department by the researcher; some of the pregnant women refused to fill out the questionnaire, and some did not complete it. Of the 190 questionnaires returned, 150 were valid.

A modified questionnaire drawn from a previous studies [1] was used as this study's instrument. The questionnaire in its final form consisted of questions about Internet use, the frequency of using the Internet as a source of pregnancy information, preferences over other non-Internet sources, and attitudes generated due to the use of the Internet

Results

Demographic descriptive statistics

Table 1 shows the distribution of the study's sample according to the level of education. Fifty-three women (35.3%) have a high school degree, 47 women (31.3%) have an undergraduate degree, 23 women (15.3%) have an intermediate degree, 14 women (9.3%) have a diploma degree, 9 women (6.0%) have an elementary degree, and 4 women (2.7%) have a post-graduate degree.

Table 1 also shows the distribution of the respondents according to the type of residence they live in. More than half of the respondents, 91 women (60.7%), live in an independent apartment, 43 women (28.7%) live in a villa, 12 women (8.0%) live in simple houses, and 4 women (2.7%) live in other types of housing. It shows that the vast majority of the respondents, 106 (70.7%), are unemployed, while 44 women have jobs. Table 1 shows the distribution of the respondents according to age. Just over half of the respondents, 76 (50.7%), are between 26 and 35 years of age, 38 (25.3%) are 25 years old and below, and 36 women (24.0%) are over 35 years old. The average of the respondents' ages is 31.0 ± 6.4 .

The table shows that more than half of the respondents, 88 (58.7%), do not know their gestational age and 31 women (20.7%) are past 20 weeks of pregnancy. Additionally, we can see that 18 (12.0%) are between 11 and 20 weeks into their pregnancies. It shows the distribution of the respondents according to their other children. Twenty-seven women (18.0%) do not have other children, and 123 (82.0%) do. Thirty-six (24.0%) have two children, 30 (20.0%) have one child, and 21 (14.0%) have three children. Additionally, 17 (11.3%) have four children, 10 (6.7%) have five children, 6 (4.0%) have six children, and 3 (2.0%) have seven children.

Table 1: The distribution of the study sample according to their demographic data.

| Level of Education | Frequency | Percent |
|--------------------------|-----------|---------|
| Elementary School | 9 | 6.0 |
| Intermediate School | 23 | 15.3 |
| Secondary School | 53 | 35.3 |
| Undergraduate Degree | 47 | 31.3 |
| Post-Graduate Degree | 4 | 2.7 |
| Diploma | 14 | 9.3 |
| Total | 150 | 100.0 |
| The type of Residence | Frequency | Percent |
| Independent flat | 91 | 60.7 |
| Villa | 43 | 28.7 |
| Simple house | 12 | 8.0 |
| Other | 4 | 2.7 |
| Total | 150 | 100.0 |
| Work Status | Frequency | Percent |
| Yes | 44 | 29.3 |
| No | 106 | 70.7 |
| Total | 150 | 100.0 |
| Age | Frequency | Percent |
| 25 years and below | 38 | 25.3 |
| 26-35 years | 76 | 50.7 |
| More than 35 years | 36 | 24.0 |
| Total | 150 | 100.0 |
| Gestational Age in Weeks | Frequency | Percent |
| Unknown | 88 | 58.7 |
| Less than 10 weeks | 18 | 12.0 |
| 11-20 weeks | 13 | 8.7 |
| More than 20 weeks | 31 | 20.7 |
| Total | 150 | 100.0 |
| Having children | Frequency | Percent |
| No | 27 | 18.0 |
| Yes | 123 | 82.0 |
| Total | 150 | 100.0 |

Results of testing the research questions

What are the preferred sources of health information about pregnancy?

Table 2 shows sources of health information about pregnancy used by the respondents. Their physicians were the most common, with 35 (23.3%), followed by the Internet as a source with 32 women (21.3%), while mothers, relatives, and friends ranked third among the information sources about pregnancy with 22 women (14.7%). Their own experience ranked fourth with 14 women (9.3%), while health education at the hospital, radio & TV, and books, magazines, and brochures ranked fifth with 12 women (8.0%). Finally, nurses ranked sixth, among health information sources with a frequency of 11 (7.3%) of the total respondents. The data are shown in Figure 1.

What are the most visited websites for finding pregnancy health information?

In Table 3, a Likert scale of three choices (No, Don't remember, Yes) is used. From 1 to 1.66 is No, from 1.67 to 2.33 is Don't remember, and from 2.34 to 3 is Yes. The table shows the most important sites visited to find pregnancy-related health information as follows:

Women's forums such as Hawaa word, Hawaa world, Al-Farasha,

Al-Nesaai, Kwaitiyat forum, etc., ranked first with a mean of 2.48. This result indicates that the respondents always use women's forums to obtain health information about pregnancy.

Commercial pages with health information on maternity & childhood ranked second with a mean of 2.05, which indicates that respondents sometimes use commercial pages with maternity & childhood health information to find pregnancy-related health information.

Health education content on YouTube, Face book, and Twitter ranked third with a mean of 2.03, indicating that respondents sometimes use health education content on YouTube, Face book, and Twitter to find pregnancy-related health information.

Blogs about pregnancy and delivery ranked fourth with a mean of 2.01, indicating that respondents sometimes use blogs about pregnancy and delivery to find pregnancy-related health information.

The following websites came in last among the sources of pregnancy-related health information:

Websites of specialized physicians, with a mean of 1.53.

The Health Awareness page on the Ministry of Health Portal, with a mean of 1.33.

The Health Awareness page in the King Faisal Specialist Hospital Portal, with a mean of 1.31.

Website provided by the treating physician, with a mean of 1.29.

The King Abdulla Bin Abdulaziz Arabic Health Encyclopedia, with a mean of 1.27.

The overall mean is 1.70 which indicates that the respondents sometimes visit women's forums, commercial pages with information about maternity & childhood, and health education content on

Table 2: Distribution of the respondents according to their sources of health information about pregnancy.

| Source | Frequency | Percent |
|----------------------------------|-----------|---------|
| Physician | 35 | 23.3 |
| Nurse | 11 | 7.3 |
| Health education at the hospital | 12 | 8.0 |
| Their mother, friends, relatives | 22 | 14.7 |
| Internet | 32 | 21.3 |
| Own experience | 14 | 9.3 |
| Radio & TV | 12 | 8.0 |
| Books, magazines, booklets | 12 | 8.0 |
| Total | 150 | 100.0 |

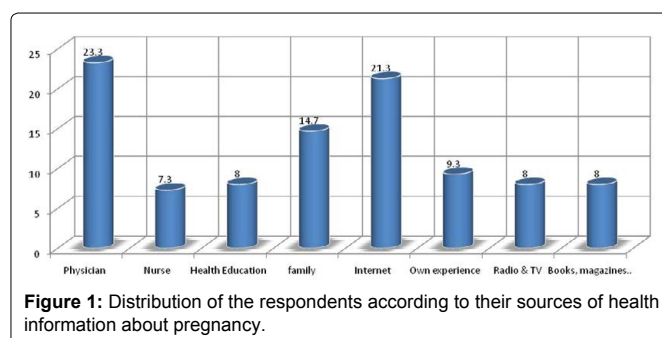


Figure 1: Distribution of the respondents according to their sources of health information about pregnancy.

Table 3: The most visited websites to find health information about pregnancy.

| | | No | Do not remember | Yes | | | | |
|---------------------|---|----|-----------------|------|------|------|------|---|
| 1 | Website provided by the treating physician | N | 114 | 28 | 8 | 1.29 | 0.56 | 8 |
| | | % | 76.0 | 18.7 | 5.3 | | | |
| 2 | King Abdulla Bin Abdulaziz Arabic Health Encyclopedia | N | 120 | 19 | 11 | 1.27 | 0.59 | 9 |
| | | % | 80.0 | 12.7 | 7.3 | | | |
| 3 | Health Awareness page on Ministry of Health Portal | N. | 115 | 20 | 15 | 1.33 | 0.65 | 6 |
| | | % | 76.7 | 13.3 | 10.0 | | | |
| 4 | Health Awareness on King Faisal Specialist hospital Portal | N | 116 | 22 | 12 | 1.31 | 0.61 | 7 |
| | | % | 77.3 | 14.7 | 8.0 | | | |
| 5 | A specialized physician website | N | 96 | 28 | 26 | 1.53 | 0.77 | 5 |
| | | % | 64.0 | 18.7 | 17.3 | | | |
| 6 | A blog about pregnancy and delivery | N | 63 | 22 | 65 | 2.01 | 0.93 | 4 |
| | | % | 42.0 | 14.7 | 43.3 | | | |
| 7 | Commercial page with information on maternity & childhood | N | 61 | 21 | 68 | 2.05 | 0.93 | 2 |
| | | % | 40.7 | 14.0 | 45.3 | | | |
| 8 | Health education content on YouTube, Facebook, and Twitter | N | 66 | 13 | 71 | 2.03 | 0.96 | 3 |
| | | % | 44.0 | 8.7 | 47.3 | | | |
| 9 | Women's forums such as Hawaa world, Al-Farasha, Al-Nesaai, and Kwaiyyat | N | 31 | 16 | 103 | 2.48 | 0.82 | 1 |
| | | % | 20.7 | 10.7 | 68.7 | | | |
| Overall mean | | | | | | 1.70 | 0.76 | - |

YouTube, Face book, Twitter and blogs about pregnancy and delivery to find pregnancy-related health information.

How do pregnant women in the study find health-related websites?

Table 4 shows that just over half of the respondents, 76 (50.7%), use Google and other research tools, while 34 women (22.07%) seek pages recommended by someone they know well (friends or family members). In addition, 23 women (15.3%) seek pages recommended by their treating physicians, and 17 women (11.3%) seek pages recommended in magazines and newspapers and on T.V. These results are also shown in Figure 2.

Where are pregnant women using the Internet to obtain health information?

Table 5 displays the respondents' distributions according to where they access the Internet. Over half of the respondents, 77 (51.3%), use the Internet at home, and one-third, 50 (33.3%), use the Internet through their mobile phones. In addition, 10 (6.7%) use the Internet at their workplace, 8 women (5.3%) use the Internet at relatives' homes, and 5 women (3.3%) use the Internet at a public place (café, library, or school). These data are shown in Figure 3.

How frequently are pregnant women using the Internet as a source of health information?

Table 6 shows the distribution of the respondents' skills in using the Internet. Nearly half of the respondents, 69 women (46.0%), have very good skills at using the Internet, 38 women (23.3%) have good Internet skills, 36 (24.0%) have ordinary Internet skills, 6 women (4.0%) have bad Internet skills, and (1) woman (0.7%) reported having very bad Internet skills.

Table 7 shows that 89 women (59.3%) spend less than 1 hour per day seeking health information on the Internet, 52 women (34.7%) spend between 1 and 3 hours daily and 9 women (6.0%) spend more than 3 hours seeking health information on the Internet each day.

This data are displayed in Figure 4.

What are the most searched topics among pregnant women?

Table 8 shows the most researched topics on the Internet by the respondents. Fetal development was the most common, with a frequency of 13 women (8.7%); stages of pregnancy and the changes that occur to pregnant woman, as well as nutrition during pregnancy, with 11 women (7.3%) each, ranked second. Newborn care and baby names ranked third, with 10 women (6.7%) each. Back pain during pregnancy, marital relationships during pregnancy and after delivery, normal delivery, care of the mother after delivery and breastfeeding ranked fourth. Delivery stages and products for women and babies ranked fifth, with a frequency of 8 women (5.3%) each, followed by diabetes and pregnancy with a frequency of 7 women (4.7%).

The topics that were ranked last among the most-researched topics on the Internet by the respondents included traveling during pregnancy, delivery without pain, and information about the hospital or treating physician, with a frequency of 5 women (3.3%) each. Finally, we see that psychological support after delivery ranked last among the topics, with a frequency of 4 women (2.7%).

What are the pregnant women's attitudes after finding information?

Table 9 shows the distribution of the respondents according to their actions after finding information on the Internet. Most respondents, 33women (31.4%), consulted a physician, and 28 women (26.7%) discussed the information with their husbands, friends, or their families. In addition, 27 women (25.7%) verified the information through other Internet sources, 10 women (9.6%) implemented what they learned directly, and 7 women (6.7) did not apply what they learned.

What are the pregnant women's feelings/beliefs towards the information they find on the Internet?

To answer the above question, the researcher calculated the

Table 4: The distribution of the respondents according to their way of finding websites.

| Website | Frequency | Percent |
|---|-----------|---------|
| Using Google and other research tools | 76 | 50.7 |
| Pages recommended by well-known persons (friends or family members) | 34 | 22.7 |
| Pages recommended by a physician | 23 | 15.3 |
| Pages recommended in magazines and on T.V. | 17 | 11.3 |
| Total | 150 | 100.0 |

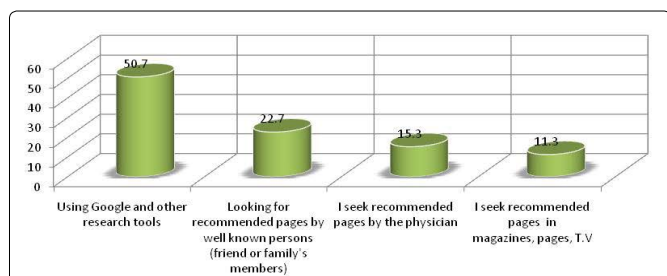


Figure 2: The distribution of the respondents according to their way of finding websites.

Table 5: The distribution of the respondents according to the location of their Internet access.

| Location | Frequency | Percent |
|----------------------------------|-----------|---------|
| At home | 77 | 51.3 |
| Workplace | 10 | 6.7 |
| At relatives' homes | 8 | 5.3 |
| At a public place (school, café) | 5 | 3.3 |
| Mobile phone | 50 | 33.3 |
| Total | 150 | 100.0 |

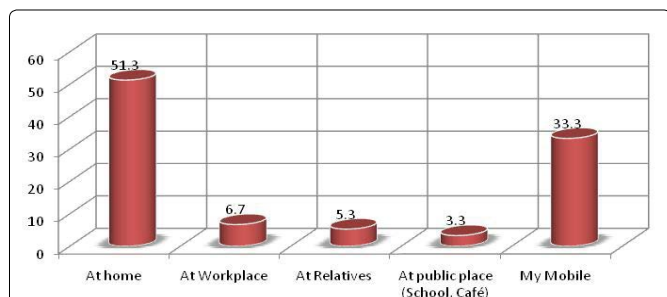


Figure 3: Distribution of respondents according to where they access the Internet.

frequencies, percentages, means, and standard deviations of the respondents' responses about the information they obtained through the Internet. The researcher ordered the statements according to their means as follows:

In Table 10, a Likert scale was used (Strongly disagree, Slightly disagree, Neither agree nor disagree, Slightly agree, Strongly agree). The range from 1 to 1.79 is "Strongly disagree," from 1.80 to 2.59 is "Slightly disagree," from 2.60 to 3.39 is "Neither agree nor disagree," from 3.40 to 4.19 is "Slightly agree," and from 4.20 to 5.0 is "Strongly agree."

Table 10 shows the axis of the respondents' feelings about the information they found on the Internet (9 statements, where 7 statements indicate agreement). Means range between 3.47 and 4.06 and are listed in the fourth category of the 5th progressive scale, which

ranges from 3.40 to 4.19. Two statements, 7 and 8, have means that range from 2.99 to 3.37. These means are listed in the 3rd category of the 5th progressive scale, which ranges from 2.60 to 3.39. The above result indicates a disparity in the respondents' trends about the information obtained from the Internet.

Statement No (6), "I feel the desire to exchange obtained knowledge with my husband or others," ranked first with a mean of 4.06 and standard deviation of 0.98, which indicates that there is a consensus among the respondents that they desire to exchange obtained knowledge with husbands or others.

Statement No. (4), "I feel that the information on the Internet is easy understandable," ranked second with a mean of 4.03 and standard deviation of 0.97, which indicates that there is consensus among the respondents that they feel that that the information on the Internet is easy understandable.

Statement No. (1), "I feel reassured that I will be able to obtain information on the topics that I'm interested in," ranked third, with a mean of 3.93 and a standard deviation of 0.98, which indicates that there is a consensus among the respondents that they feel reassured that they will be able to obtain information on the topics that they are interested in.

Statement No. (2), "I feel confident in asking new questions relating to health issues," ranked fourth, with a mean of 3.83 and a standard deviation of 0.99, indicating that there is a consensus among the respondents that they feel confident in asking new questions related to health issues.

Table 6: The distribution of the respondents according to their skills in using the Internet.

| Skills in using Internet | Frequency | Percent |
|--------------------------|-----------|---------|
| Very good | 69 | 46.0 |
| Good | 38 | 25.3 |
| Ordinary | 36 | 24.0 |
| Bad | 6 | 4.0 |
| Very Bad | 1 | .7 |
| Total | 150 | 100.0 |

Table 7: The distribution of the respondents according to their daily hours spent seeking health information on the Internet.

| Time Spent on Internet | Frequency | Percent |
|------------------------|-----------|---------|
| Less than 1 hour | 89 | 59.3 |
| 1-3 hours | 52 | 34.7 |
| More than 3 hours | 9 | 6.0 |
| Total | 150 | 100.0 |

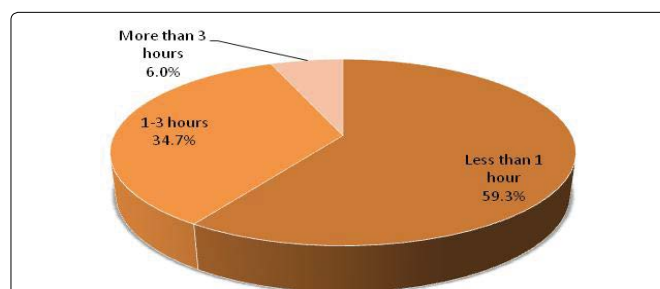


Figure 4: The distribution of the respondents according to their time spent seeking health information on the Internet each day.

Table 8: Distribution of the respondents according to their most-researched topics on the Internet.

| Most researched topics on Internet | Frequency | Percent |
|--|-----------|---------|
| Stages of pregnancy and the changes that occur in pregnant women | 11 | 7.3 |
| Diabetes and Pregnancy | 7 | 4.7 |
| Nutrition during pregnancy | 11 | 7.3 |
| Back pain during pregnancy | 9 | 6.0 |
| Travel during pregnancy | 5 | 3.3 |
| Marital relationships during pregnancy and after birth | 9 | 6.0 |
| Fetal development | 13 | 8.7 |
| Delivery stages | 8 | 5.3 |
| Delivery without pain | 5 | 3.3 |
| Normal delivery | 9 | 6.0 |
| Post-delivery depression | 5 | 3.3 |
| Post-natal care for women | 9 | 6.0 |
| Newborn care | 10 | 6.7 |
| Breastfeeding | 9 | 6.0 |
| Vaccines and immunization | 3 | 2.0 |
| Psychological support after delivery | 4 | 2.7 |
| Information about their hospital or physician | 5 | 3.3 |
| Products for the mother and infant | 8 | 5.3 |
| Baby names | 10 | 6.7 |
| Total | 150 | 100.0 |

Table 9: Distribution of the respondents according to their actions after finding information on the Internet.

| Action | Frequency | Percent |
|--|-----------|---------|
| I consult a physician | 33 | 31.4 |
| I implement what I have learned directly | 10 | 9.6 |
| I verify the information through more than source on the internet. | 27 | 25.7 |
| I discuss the information with my friends and family. | 28 | 26.6 |
| I don't apply what I have learned | 7 | 6.7 |
| Total | 150 | 100.0 |

Statement No. (5), "I agree with the information obtained from the Internet," ranked fifth, with a mean of 3.69 and a standard deviation of 0.89, indicating that there is a consensus among the respondents that they agree with the information obtained from the Internet.

Statement No. (3), "I trust in the published information on the Internet," ranked sixth, with a mean of 3.52 and a standard deviation of 0.04, indicating that there is a tendency among the respondents to trust information published on the Internet.

Statement No. (9), "I sometimes feel that the information is contrasted," ranked seventh, with a mean of 3.47 and a standard deviation of 0.16, indicating that there is a consensus among the respondents where they sometimes feel that the information they find is contrasted.

Statement No. (7), "I feel overwhelmed by the amount of existing information," ranked eighth, with a mean of 3.37 and a standard deviation of 1.13, which indicates that there is a similar amount of agreement and disagreement among the respondents where they sometimes feel that the information is contrasted.

Statement No. (8), "I feel some frustration with the difficulty of obtaining the information that I need," ranked ninth, with a mean of 2.99 and a standard deviation of 1.23, indicating that there is a similar amount of agreement and disagreement among the respondents

where they feel some frustration with the difficulty of obtaining the information they need.

The overall mean is 3.65, indicating that the respondents have positive feelings toward information obtained through the Internet. This is expressed in how the women desire to exchange their new-found knowledge and information with husbands or others, as well as feeling that the information on the Internet is easily understandable. Additionally, they feel reassured that they will be able to obtain information on the topics that they are interested in.

Discussion

The findings of this study provide insights into the patterns of online healthcare information-seeking behavior of pregnant women in Prenatal Clinics at King Saud Medical City, Riyadh. It shows that the most important sources of information about pregnancy for the respondents were their doctor for 23.3%, the Internet for 21.3%, and their mothers, friends or relatives for 14.7%. This finding is supported by previous studies, where patients in general find the physician to be the primary source of health information, followed by the Internet, because of a lack of time to ask their health professional questions, or because the information provided by the health professional was not clear or satisfactory, as well as to gain confidence in speaking to a health professional about a concern [7].

As the results shows that Internet-based health information is accessed from a variety of sources, including websites run by organizations, homepages owned by individual doctors supported of Hu, 2010 findings [3].

The most important websites visited by pregnant women to find pregnancy-related health information are women's forums, commercial pages with information about pregnancy, maternity and childhood, and pregnancy-related educational content on YouTube, Face book, and Twitter, and is agreed with Buultjens et al. [8] and the study of Declercq et al. and Larsson et al. [9,11].

Most of respondents use internet in early stage pregnancy same result of Larsson et al. [11]. The study found that their search process at search engines such as Google, as the result of Hu [3].

More than half of the respondents (51.3%) use the Internet at home, while 33.3% use the Internet on their mobile phones, and 3.3% use the Internet in a public place (coffee shop, library, or school). Approximately half of the respondents, 46.0%, have very good Internet skills, and 25.3% have good skills. With technological developments and the proliferation of electronic devices, anyone can have access to the Internet. Just one woman (0.7%) reported having very bad Internet skills.

The vast majority of the respondents (59.3%) spend less than 1 hour searching the Internet daily, while 34.7% spend between 1 and 3 hours daily on the Internet; this is consistent with findings in previous studies that indicate that most women had used the Internet on one or more occasions to access pregnancy information.

In This study ,The most researched topics on the Internet by the respondents include fetal development (8.7%), followed by stages of pregnancy, changes during the pregnancy period, and nutrition during pregnancy(7.3%), which ranked third, and newborn care and baby names, which ranked fourth (6.7%). As well as Some of the top searches related to pregnancy are topics dealing with fetal development, nutrition during pregnancy [14], complications and stages of labor, pain relief and stories about motherhood. Other

Table 10: Pregnant women's feelings/beliefs about the information they found on the internet.

| No. | Statement | N & % | Consent Degree | | | | | Mean | S.D | Order |
|-------------------------|---|-------|----------------|----------------|---------|----------|-------------------|------------|----------|-------|
| | | | Strongly agree | Slightly agree | Neutral | Disagree | Strongly disagree | | | |
| 1 | I feel reassured that I will be able to obtain information on the topics that I am interested in. | N | 2 | 11 | 32 | 56 | 49 | 3.93 | 0.98 | 3 |
| | | % | 1.3 | 7.3 | 21.3 | 37.3 | 32.7 | | | |
| 2 | I feel confident in asking new questions relating to health issues | N | 1 | 11 | 49 | 40 | 49 | 3.83 | 0.99 | 4 |
| | | % | .7 | 7.3 | 32.7 | 26.7 | 32.7 | | | |
| 3 | I trust information published on the Internet | N | 2 | 23 | 53 | 39 | 33 | 3.52 | 1.04 | 6 |
| | | % | 1.3 | 15.3 | 35.3 | 26.0 | 22.0 | | | |
| 4 | I feel that information on the Internet is easily understandable | N | 2 | 6 | 38 | 44 | 60 | 4.03 | 0.97 | 2 |
| | | % | 1.3 | 4.0 | 25.3 | 29.3 | 40.0 | | | |
| 5 | Sometimes I feel that the information is contradictory. | N | 2 | 8 | 54 | 57 | 29 | 3.69 | 0.89 | 5 |
| | | % | 1.3 | 5.3 | 36.0 | 38.0 | 19.3 | | | |
| 6 | I wish to exchange the information I found with my husband or others. | N | 3 | 4 | 37 | 43 | 63 | 4.06 | 0.98 | 1 |
| | | % | 2.0 | 2.7 | 24.7 | 28.7 | 42.0 | | | |
| 7 | I feel that the information on the Internet is easy to understand. | N | 10 | 17 | 60 | 33 | 30 | 3.37 | 1.13 | 8 |
| | | % | 6.7 | 11.3 | 40.0 | 22.0 | 20.0 | | | |
| 8 | I feel that I agree with the information that I get from the Internet. | N | 23 | 24 | 55 | 28 | 20 | 2.99 | 1.23 | 9 |
| | | % | 15.3 | 16.0 | 36.7 | 18.7 | 13.3 | | | |
| 9 | I feel some frustration about the difficulty of obtaining the information that I need. | N | 8 | 22 | 46 | 39 | 35 | 3.47 | 1.16 | 7 |
| | | % | 5.3 | 14.7 | 30.7 | 26.0 | 23.3 | | | |
| The overall mean | | | | | | | 3.65 | 104 | - | |

topics include the sale of products for mothers and children and breastfeeding [11].

Many of the respondents (31.4%) consult a physician or health educator after finding new health information to ensure that the information is correct, some women discuss the new health information with their husbands, friends, or families after finding it (26.7%), while others do not apply the information they found (6.7).

There are positive trends in the respondents regarding the information they receive through the Internet. These trends are represented in 1) their sense of wanting to exchange their new knowledge with their husbands or others, 2) their sense that information on the Internet is easy to understand, and 3) their feeling that they will be able to obtain information about the topics they care about.

Conclusion

More than half of the respondents were using Google and other research tools to find the required pregnancy-related health information. They visited women's forums to find pregnancy information, sometimes visited commercial pages with health-related information on maternity & childhood, and sometimes they visited YouTube, Face book, and Twitter to obtain health information. The most-researched topics on the Internet by the respondents include fetal development, stages of pregnancy and changes during pregnancy.

Recommendations

The rapid change in society in the use of the Internet has led to an increased reliance on the Internet as a source for health information and social support. Not enough reliable resources are available online for pregnancy-related health information, but the results of this study highlight that pregnant women tend to share their health-related concerns, views, and experiences with others. However, reliable Arabic resources that are available online for pregnancy-related health information are rare.

The findings of this study indicate the need for Internet-based health education programs. It is recommended that decision makers, managers, and health and social services developers create online patient communities supervised directly by health providers so that pregnant women can receive appropriate and updated information, have opportunities to share their views and everyday experiences, and can be in control of the decision-making process.

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