Women's Preferences for Cancer Related Information: Evidence from a National Survey

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Abstract： Background: Globally, breast cancer is the most frequently diagnosed cancer in women; it is also the leading cause of cancer death among women worldwide. Health information seeking is a health promoting behavior that empowers individuals; besides evidence suggests a link to preventive health behavior. The purpose of this paper was to investigate Jordanian women behavior, specifically seeking of cancer –related information, sources preferences, and looking at the determinant of seeking cancer related information. **Materials and Methods:** a cross sectional survey on a national representative sample of 1549 women. Face to face interviews were conducted in interviewees' household using a structured comprehensive questionnaire. **Results:** only 339 women (21.9%) had looked for cancer -related information; Internet was the most retrieved source (n=160; 32%). With regard to preferred sources for cancer related information health care providers were ranked first (93.5%), followed by TV (91.0%). Younger educated women who weren't with routine health care were more likely to actively seek cancer related information. **Discussion:** Internet is a potential channel for communicating cancer-related information; culturally appropriate Internet resources are mandated. Health care providers are powerful motivators in enhancing cancer related information seeking across the population, ultimately enhancing women engagement in preventive health behaviors such as cancer screening.

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Introduction

Cancer is a worldwide problem; millions of patients are diagnosed with different types of cancer throughout the world. More than half of the patients with cancer in the world present in developing countries (Jemal, Bray, & Ferlay, 2011). In Jordan, cancer is the 2nd leading cause of death after cardiac diseases and in 2009, the percentage of death due to cancer was 15.6% (Asad, Diab, Alhaj, & Nahar, 2010). In 2010, there were 6820 new cases of cancer; more than half of them were females (51.9%) (Tarawneh, Nimri, Arkoob, & Zaghal, 2010). Cancer statistics in Jordan shows that breast cancer was ranked the first of all cancer types accounting for 19.6 % of l new cancer cases, furthermore, it was ranked the first among cancer affecting women accounting for 36.8 %. Among females, breast cancer has the highest mortality rate when compared to other types of cancer. Globally, breast cancer is also the most frequently diagnosed cancer in women; it is also the leading cause of cancer death among women worldwide (International Agency for Research on Cancer, 2008).About half of the new cases were expected to occur in developing countries which may be attributed to low rates of screening and incomplete reporting as well (International Agency for Research on Cancer, 2008).

Health information seeking is a health promoting behavior that empowers individuals to cope and sustain a sense of personal control, which plays a role in decreasing uncertainty and stress associated with most diseases, especially cancer. There is abundant information available to the public they can seek out about different topics related -cancer. The public use various sources such as media and interpersonal sources to meet an array of information needs. Research has begun to examine the public's information-seeking experience with the growing body of health information publicly and availability (Akhu-Zaheya, Jagbir, Othman, & Ahram, 2013; Arora et al., 2008; Niederdeppe, Frosch, & Hornik, 2008; Rains, 2008)), and the public's preferences and curiosity of cancer related information (Akhu-Zaheya et al., 2013). Previous studies has identified the characteristics of people in the general population who vary in their likelihood of seeking information related to cancer (Sullivan & Finney, 2009) and their experiences with

publicly and availability of cancer-related information (Arora et al., 2008)

Building upon other researches; seeking cancer related information was found to be pivotal in shaping individuals health behavior. It was found that information seeking may be positively associated with preventive and screening behavior (Shim, Kelly, & Hornik, 2006). Moreover, seeking specific cancer-related information was associated with engaging in preventive and screening health behaviors (Kelly et al., 2010; Niederdeppe et al., 2007), improved lifestyle choices (Shim et al., 2006) and maintaining healthy weight, exercise, and fruit and vegetable consumption (Kelly et al., 2010). It is possible that the act of seeking information may reinforce a psychological commitment to motivate people and facilitate engagement in preventive health behaviors such as weight control, exercise and screening. All of which are directly linked to cancer. Furthermore, seeking information from interpersonal and social media would result in a perception of social support that contributes to the effects of seeking on behavior. How this occurs and its effects on preventive health behavior remain the subject of current research. What is unclear is the interplay between information seeking behavior with demographic and situation related factors. In this study we aimed at investigating Jordanian women behavior of seeking cancer – related information, sources preferences, and looking at the determinant of seeking cancer- related information.

Materials and Method

This was a cross- sectional survey design study. The sampling frame was based on the 2004 Population and Housing Census run by the Jordanian Department of Statistics (DOS) to ensure a national representative sample. The sampling frame was stratified by governorate, major cities, and urban and rural areas. Random selection of individual interviewee from each household was carried using Kish table procedure (according to guidelines from the Jordanian DOS). The final sample size in this survey was 3196 participants (18 years and older) with a response rate of 93%. For the purpose of this paper a total of 1549 women consisted the sample and were included in the analysis.

Instrument. The face to face interviews were conducted in interviewees' household using a structured comprehensive questionnaire. The questionnaire was designed by a national advisory committee that consisted from research experts from different research, clinical and academic institutions in Jordan. The survey questionnaire represented international surveys; especially the Health Information National Trends Survey (Hesse et al., 2005). However, for ethical and cultural consideration, the tool was revised and pilot tested to adapt the local context in Jordan. Field data spanned two months through Jordanian DOS, and covered the entire Kingdome. Participants were briefed about the purpose of the study, the procedure, and their rights to voluntarily participate, withdraw, or refuse to participate prior to the interview. Verbal informed consent was obtained; agreement to host interview in participants' house is a culturally appropriate method to obtain consent.

Variables and Measures.

Outcome Measures

Our primary dependent variable was cancer related information seeking (yes vs. no). We also questioned about the most retrieved source for information and the preferred source for cancer related information.

Independent Variables

We measured demographic factors that might be associated with cancer related information seeking behavior, this included age, education, and routine health care.

Statistical Analysis. Data were analyzed using the Statistical Package for Social Sciences (SPSS) software (version 17.0). Univariate descriptive statistics were used to describe sample characteristics and to describe cancer related information seeking behavior, and the preferred sources for cancer related information. Binary logistic regression was used to look at the determinate of Jordanian women cancer- related information seeking behavior.

Results

Participants. The sample for this study were a total of 1549 women, eighty percent of those women were housekeepers (n=1238), and only 12% were working (n=187). Ages ranged from 18 to 95 years with a mean of 39.3 years (SD=15years). Table 1 summarizes the sociodemographic characteristics of the participants.

Jordanian Women Cancer- Related Information Seeking Behavior. In this study, 339 women (21.9%) reported that they had looked for cancer -related information from many source. Looking specifically to the different sources retrieved, we found that the Internet is the most source (n=160; 32%) retrieved for cancer related information; followed by the books (n= 85; 17%); TV (n= 60; 12.1%) and Brochures (n= 57; 11%). Health care providers are one of least sources for cancer related information (n= 37; 7.4). Table (2) shows cancer related information women searched.

Women Source's Preference of Cancer -Related Information. Analyses to explore women's source preference of cancer- related information revealed that health care providers are the preferred source of cancer- related information (93.5%), followed by TV (91.0%), and brochures or pamphlets (84.5%). However, radio was the least preferable source for acquiring cancer related information (43.2%). Table (2) illustrates the findings.

Determinants of Women Cancer Related Information Seeking Behavior. Logistic regression analysis showed that age, education, health insurance coverage in addition to routine health care explained about 15.4% of women cancer information seeking behavior (*R* square = 0.154, *P* = 0.00). Furthermore, we found that younger (OR= 0.93, *P*= 0.01), educated (OR = 1.3, *P*=0.00) women were more likely to seek cancer related information. Also, we found that women who seek routine health care, were less likely to seek cancer related information (OR = 0.50, *P*= 0.00).

Discussion

Our study purposes were to look at- among women participated in the survey- the percentage of women seeking cancer -related information, the most retrieved and the preferred source of information; in addition to determinants of cancer related information seeking behavior. Seeking information using different channels is distinguished by the communication literature into: 1) interpersonal (face-to-face interaction such as friends, family, and doctors); and 2) mass media (printed and electronic). It also includes both intentional (active) and non-intentional (passive) information gathering activities. Information seeking is also defined as "the purposive acquisition of information from selected information carriers" (Johnson, 1997, P.184). Johnson's definition for information seeking implies active seeking, since passive seeking is not purposively obtained. However, with passive seeking, information is acquired while the individual engages in other activities, such as watching TV. With this aspect, our result is alarming; few women in our study had an active role in searching cancer related information. The low percentage of seeking cancer related information could be linked to the belief that information acquired from other habitual sources as TV would be enough or to the belief of no need for the information since she is free from diseases. Furthermore, it could be attributed to the individual's belief that they knew everything and the fear of receiving negative information, the less likely the individual will pursue an active search across all sources giving that more information could create confusion (Leydon et al., 2000). Additionally, there might be social and psychological factors that have to do with personality, motivation, and interest. Above all, being unfamiliar with the strategies (source, information needed, questions to ask, validation of information) of seeking information would contribute to the individual's avoidance of seeking information. However, this number would be enhanced, by shedding the light on the other promising findings of the study.

Our results indicate that among the top searched channels, is the Internet. This finding is promising, especially with wide spread of Internet access to people in Jordan. According to the DOS (2012), the percentage of households having access to the Internet at home is 47.3%; and 76 % of adults declared that when they need information, the first place they go to is the Internet (Ghazali, 2013). This result has important aspects to look at. The internet would play a vital part in promoting health behavior as reducing the risk of cancer; whereby cancer-related information is part of. This is especially for individual who monitor their health, they need more information and explanation than do those who simply want to move through an illness without attending the details (S. M. Miller, Shoda, & Hurley, 1996). Previous study declared that health information from the Internet has positive aspects for women living in rural communities and the increase in online health chats may provide the support needed (Warner & Procaccino, 2007).

The associations we observed between demographic characteristic (educated and younger women) and information seeking behavior and having the Internet as the most retrieved source; would provide potential leverage points for future Web-Based interventions. The Internet, used judiciously, could serve as a media resource for education and empowerment and would create active individuals to participant in health care decisions, and therefore experience more self-control and satisfaction. However, before developing any intervention, it is important for the communities being served to have input on what is needed. Moreover, it is important to know whether and how individuals use the Internet for information. It is essential to train individuals on using the Internet and on retrieving Internet health sources and assisting in evaluating the quality of medical information found on-line, which would help in finding reliable information. This would enhance self-efficacy in gathering cancer-related information, increase knowledge, and trigger the desired behaviors (Selsky, Luta, Noone, Huerta, & Mandelblatt, 2012). Evidence suggests a relation between active information acquisitions (seeking) and engaging in healthy behaviors (Kelly, Niederdeppe, & Hornik, 2009; Ramírez et al., 2013). Meanwhile, it is critically important to establish an official Web Site that is culturally sensitive with comprehensible language like that of National Cancer Institute (NCI), and Mayo Clinic which should increase the reach of Internet-based interventions. For example the NCI is an official cancer web site that has the responsibilities of information dissemination and providing programs related to cancer prevention (National Cancer Institute, 1937).

Although we found that the internet was the most retrieved source for cancer- related information, it was not reported as a preferred source for inquiring about cancer information. In fact, health care providers were the top preferred source for cancer related information.

In our Arabic culture the personal relationships are important, thus we expect that the impersonal nature of the Internet would be a barrier to use (E. A. Miller, West, & Wasserman, 2007; Redmond, Baer, Clark, Lipsitz, & Hicks, 2010). This also could be attributed to the beliefs that health care providers are a trusted source of information. This trust could be leveraged to deliver cancer control messages. Health care providers should encourage and be active listener to women, giving that it is uncommon for the individual to seek information, unless they are in need for. Our finding that the low percentage of seeking cancer related information among women who have routine health checkup would attribute to the individual's belief that health care providers told them everything. Health care providers could also benefit from our results and could use the Internet to efficiently prompt patients for screening examinations or other periodic health examinations.

Cancer is globally dreaded disease that can be prevented as well. Globally, breast cancer is the most frequently diagnosed cancer in women, it is also the leading cause of cancer death among women worldwide (American Cancer Society, 2013). About half of the new cases were expected to occur in developing countries, which may be attributed to low rates of screening and incomplete reporting as well. In order to impact low rates of compliance to screening guidelines, decision makers and health professionals are in charge of designing and implementing appropriate cancer prevention and control programs. Recently cancer prevention and control research highlighted the key role for behavioral variables in determining outcomes such as individual cancer risk, disease management, and treatment options. Primary cancer prevention (reducing cancer incidence among cancer free individuals) relies on adopting health-protective behaviors, such as exercise, smoking secession and eating a healthy diet. Modifiable behaviors are central to cancer control research; 50% of cancers could be prevented through adoption of healthy lifestyles (Collaborative Group on Epidemiological Studies of Ovarian Cancer, 2012). Using knowledge as a precursor for adopting healthy behaviors; perceptions and awareness of cancer risk and preventive measures promote effective behaviors towards cancer prevention and early detection (Karabulutlu & Reis, 2011). Indeed, Jordanian studies about cancer prevention and early detection found that women in general still lack adequate knowledge about cancer and screening methods (Alkhasawneh, 2007; Othman, Kiviniemi, Wu, & Lally, 2012). Correcting public misconception about cancer risk factors would serve as a proxy for being knowledgeable about these facts may increase women's' interest in engagement in healthy lifestyles, eventually preventing cancer. There is a great deal of information available to the public concerning lifestyle behaviors, through media coverage, and interpersonal sources of information that they can seek out. Cross-sectional evidence suggests a relation between active information seeking and engaging in healthy behaviors such as exercise, fruit and vegetables consumption in addition to screening for early detection of cancer (Kelly et al., 2010; Ramírez et al., 2013; Shim et al., 2006). It is possible that the information obtained through seeking teaches specific strategies and motivate the engagement in the healthy behaviors. Additionally, it was suggested that information seeking from interpersonal and social media may result in a perception of social support that contributes to the effects of seeking on behavior(Ramírez et al., 2013). This is an important finding that reinforces the role of the public information environment as an influence on health behaviors. Understanding how to motivate seeking is particularly important given a move toward Internet-based health promotion.

The new media as the Internet does not replace the old media as the TV, but it would augment the information obtained for other sources (Tian & Robinson, 2008). Based on our results an important point worth to mention – policy maker should pay attention for is the role of the TV in disseminating health related information, whereby it is also one of the preferred source of cancer related information. TV as well as the radio is viewed as more passive media channels for health information; though, It is hypothesized that they are the primary source of health information for individuals who are less health oriented (Dutta-Bergman, 2004). It was found that there is a relationship between the individual's health literacy and the channel used for seeking health information. Individuals with below basic and basic health literacy are more likely to seek information from Television and radio (Kutner, Greenberg, Jin, & Paulsen, 2006). Although the TV is considered a passive it is accessible to most of the population, thus it should be used to provide information and educational programming that will allow individuals to listen, act, seek more, communicate, and participate in the decisions. Previous studies results have indicated the positive impact of TV advertisements and news on health education and health change (Gerend & Magloire, 2008; Lemal & Bulck, 2011). However, we have to be aware to the channel women watched. In a previous study, it was found that the majority of participants are seeking non-local channel (Akhu-Zaheya et al., 2013).

Our study results provide estimates of a randomly selected national population based sample; our results also add to the evidence that information seeking about specific topics as cancer-related information is influenced by several psychosocial factors, including demographic factors such as age, education and being

female (Kelly et al., 2010; Selsky et al., 2012). Nevertheless, it is still subject to some limitations we should take into consideration when discussing the results. First, the cross-sectional design does not allow us to draw inferences regarding causality. Second, we rely on self-reporting and do not know whether reports correspond with actual usage or, more important, whether use of the Internet leads to greater knowledge or changes in behavior. Finally, the determinants (age, education, health insurance coverage and routine health care), we used were successful in explaining little of women health information seeking behavior, thus looking to other predictors is highly needed. Longo Model of "Expanded conceptual Model of health information seeking behaviors and the use of information for health care decisions" examines the variables (contextual and personal) that influence information seeking and information use. Contextual variables include health status (of the person for whom information is sought), healthcare structure and care delivery, for whom the information is being sought, and information environment factors. Personal variables include demographic and socioeconomic factors, personal and familial health history, and genetics education, culture, language, attitudes, and current health status. The model also provides knowledge about variables that would impact health information seeking behavior actively or passively and the decisions that individuals make when involved with health information to achieve the outcome of empowerment, health outcomes, satisfaction, locus of control, and activities of daily living (Longo, 2005). In addition we have to look at individual's health literacy, whereby it was found that low health literacy is associated with less frequent screening for diseases such as cancer (Williams, Davis, Parker, & Weiss, 2002) and variation in the channels used. We do not know to what extent seeking is an enduring personality trait or style, or whether it is a situation specific behavior.

We conclude that our findings underscore the importance of shedding the light on women information seeking behavior. Whereas it is not a common trend among Jordanian women, Internet was found to be one of the most retrieved sources of information. Thus, provide a potential channel for communicating cancer-related information. This potential should be facilitated by the expansion of culturally appropriate Internet resources. The findings also highlighted the potential roles of health care providers. Future research is needed to explore the effect of exposure to Internet information on patients' cognitions and behavior and should consider what health promoters can do to motivate seeking across the population and understand more details about the specific sources and content of the information used for decision making.

Table 1: Demographic Characteristics of participants

Criteria	Frequency	%
Age		
18-29	475	30.7
30-39	438	28.3
40-49	280	18.1
50-59	165	10.6
60 and above	192	12.4
Marital status		
Single	212	13.7
Married	1154	74.5
Others	183	11.8
Education		
Elementary or less	357	23.1
Preparatory to high school	745	48.1
Diploma and above	447	28.8
Employment		
Working	187	12.1
Not working	1362	87.9
Health insurance		
No	613	39.6
Yes	936	60.4

N= 1549

Table: 2 Sources of Cancer -related Information Women Retrieved and Preferred

Source		searched		preferred	
		F	**%**	**Much (*F*, %)**	**A little (*F*, %)**
1.	Books	85	17.1	229 (67.6)	110 (32.4)
2.	Brochures or pamphlets	57	11.3	287 (84.5)	53 (15.5)
3.	Family members and friends	34	6.8	227 (67.1)	112 (32.9)
4.	Health care providers	37	7.4	317 (93.5)	22 (6.4)
5.	Internet	160	31.9	204 (60)	136 (40.0)
6.	Newspaper	22	4.4	199 (58.9)	139 (41.2)
7.	Someone with cancer	21	4.2	253 (74.6)	86 (25.4)
8.	Radio	11	2.3	146 (43.2)	193 (56.8)
9.	TV	60	12.1	309 (91.0)	31 (9)
10.	Public lectures	13	2.5	251 (74)	88 (26)

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