



# BELIEFS AND PREFERRED COMMUNICATION CHANNELS TOWARD PATIENTS WITH CANCER IN JORDAN

M. AHMAD<sup>1</sup>, H. ESMEIRAN<sup>2</sup>, A. ALAFAFSHEH<sup>3</sup>, S. AL-GHABEESH<sup>4</sup>, Z. AL-HAMDAN<sup>5</sup>

<sup>1</sup>Clinical Nursing Department, University of Jordan, Amman, Jordan

<sup>2</sup>Nursing, Royal Medical Services, Amman, Jordan

<sup>3</sup>Nursing, King Hussein Cancer Center, Amman, Jordan

<sup>4</sup>Nursing, Al-Zaytoonah University, Amman, Jordan

<sup>5</sup>Faculty of Nursing, Jordan University of Science and Technology, Irbid, Jordan

**Abstract – Objective:** This study was designed to obtain a better understanding of the beliefs and preferred communication channels for cancer prevention and care in the Jordanian context.

**Patients and Methods:** A cross-sectional design was used to implement the study. A sample of 3,196 participants was recruited by using a stratified random sampling technique. The used questionnaire in this study consists of demographic variables, belief about cancer, preferred communication channels, and barriers of seeking cancer information.

**Results:** Respondents' mean age was 39 years. 51.5% of the sample were male. 76% of participants agreed that cancer could be cured, and 96% of them agreed that getting checked regularly for cancer would help find cancer when it is easy to be treated. 59% of participants disagreed that there is a social stigma associated with the diagnosis of cancer. 70% mentioned that they were willing to use alternative therapies instead of prescribed medicine. 75% reported that they preferred to get information about cancer from the healthcare providers. 82% of participants reported that there were no barriers for seeking information about cancer.

**Conclusions:** There has been critical detection for knowledge gaps and improper practices in various aspects of cancer control that warrant appropriate actions to be taken by relevant parties such as healthcare providers, outreach specialists, and policy-makers.

**KEYWORDS:** Cancer, Beliefs, Communication Channels, Education, Prevention, Jordan.

## INTRODUCTION

In 2015, cancer was recognized as a major health problem in Jordan, as the number of cancer patients increased progressively and the incidence rate of all cancer among Jordanians was about 68 per 100,000 population<sup>1</sup>. Cancer is the second-leading cause of death in Jordan after heart disease, as well as worldwide<sup>2</sup>. The main factor contributing to the projected increase in cancer cases is the growing proportion of elderly people. Changes in lifestyle have resulted in more exposure to cancer-promoting substances. This, together with the increased prevalence of tobacco use, changes in social and dietary habits, de-

creased physical activity, and exposure to other environmental risk factors, contribute to the increased cancer morbidity<sup>3</sup>. The rapid increase in the cancer burden represents a real crisis for public health and health systems worldwide<sup>3,4</sup>.

The beliefs about cancer play a significant role among patients and their families toward the cure from the disease. A study of 1,300 patients with cancer in the United States showed that positive beliefs have enabled patients to maintain sufficient spiritual, emotional, and physical health, thereby positively influencing their quality of life<sup>5</sup>. It is reported that people in Jordan believed that doing screening for cancer helps in the diagnosis and treatment of cancer. Unfortunately, it was found



that one out of every 10 individuals in Jordan had performed cancer screening<sup>6</sup>. Recent data are required to explore the beliefs toward cancer among Jordanian population.

Several studies have shown that health-related information could play a key role in reducing cancer cases and early detection through properly promoting cancer screening behaviors<sup>7,8</sup>. Health communication can substantially improve public health, and empower people by informing them of health-related issues, thereby allowing them to make a well-informed decision<sup>9</sup>. Health information seeking to expand knowledge in cancer care is a health promoting behavior that empowers individuals to cope with cancer. The public use various sources such as media and interpersonal relationships to meet a range of information<sup>10,11</sup>. However, there is some evidence of knowledge gaps, for example, different groups of population were found to have different awareness levels of the importance of cancer screening<sup>12</sup>. In 2012, the estimated age-standardized prevalence of daily smoking among men in the Eastern Mediterranean Region ranged from 43% in Jordan and 45% in Tunisia to 13% in Oman. This evidence of the knowledge gap shall inhibit effective cancer prevention and early detection for enhanced and effective treatment and prognosis.

Oral communication was found not to be adequate alone to teach cancer patients. Offering communication aids helped in patients understanding, especially with people who have low health literacy<sup>13</sup>. Abdullah et al<sup>14</sup> suggested that the media and the personal experience of knowing others with breast cancer have powerful effects on women's decisions to be screened. With greater media attention to breast cancer, women have become more fearful of disease, and they found women still want more information from their medical providers. Therefore, the purposes of this study were to obtain better understanding of beliefs and preferred communication channels in cancer prevention and care in the Jordanian context; and to identify the barriers for seeking information about cancer.

## Research Questions

This study aims to answer the following research questions:

1. What are the beliefs of Jordanian population toward patients with cancer?
2. What are the preferred communication channels to learn more about cancer?
3. What are the barriers for seeking information about cancer?

## PATIENTS AND METHODS

### Design and sample

A cross-sectional design was used to implement the study. The sample of the study was obtained from all the governorates in Jordan. A Stratified random sampling technique was used to reach the sample of 3,196 participants.

### Instrument

Health-care experts based on international references and measures have developed the study structured questionnaire. The purpose of the questionnaire was to measure the knowledge, attitudes, and practices toward cancer among Jordanian people in a national survey. International references/tools were used to guide the development of the questionnaire and ensure appropriate themes were selected for exploration<sup>1</sup>. In this study, the questionnaire was adapted to the local context by a panel of 10 experts in health fields who has established its content validity. The parts used from the questionnaire for the purpose of this study consisted of four sections: the first part was related to demographic variables; the second part was related to beliefs about cancer; the third part was related to the preferred communication channels to seek cancer information, and the fourth part was related to barriers for seeking cancer information.

### Data Collection and Processing

All the 50 recruited data collectors had baccalaureate level and all of them were females. The study took place all over Jordan in its 12 governorates. The data collectors were allocated to the region in which they were familiar with its geographic structure. All data collectors attended a two-weeks training sessions, followed by a pilot testing.

The data were collected through face-to-face interviews at the interviewees' homes. Theoretical and practical training sessions were performed to all interviewers on how to conduct the interview. Data collection began after piloting the questionnaire, and some modifications were followed. Data collection extended over 70 days. The time of the interviews took about 50 minutes.

The Statistical Package for Social Sciences (SPSS Inc., Chicago, IL, USA) was used for data analyses<sup>15</sup>. Data collection and data processing activities have been progressed simultaneously.

Interviewers obtained the responses of eligible respondents by calling back to interview eligible respondents who were not home at the time of the first visit. This method of rigorously observing each questionnaire has led to no missing data.

#### Ethical Considerations

The approval to conduct the study was obtained from the Scientific Research Committee at the relevant institution (Reference number: 2013-JU DAR-Ahmad). Once a participant was identified, the interviewer provided the necessary information about the significance, risks and purposes of the study. Target individuals were assured that participation is voluntary. Also, they were told to feel free to withdraw at any time. Participants also were assured that their responses will be treated confidentially by replacing the participants' names by serial numbers.

## RESULTS

### Demographic Characteristics

Respondents' mean age was 39 years, with roughly 78% of the participants being between 18 and 49 years of age. The total number of males was 1648 (51.6%), and the total number of females was 1548. This ratio in the survey is very close to the national female ratio (48.5%)<sup>16</sup>. Around three-quarter of the study sample was married and 20% were single. About 60% of the participants (n=1,902) reported having health insurance (Table 1).

### Beliefs About Cancer

About the possibility to be cured for cancer, 76% of participants agreed (strongly agree, agree) that

cancer could be cured. In addition, 96% of participants agreed that getting checked regularly for cancer would help find cancer when it was easy to be treated. 59% of participants disagreed that there is a social stigma associated with the diagnosis of cancer in Jordan. Moreover, 81% of participants agreed that it was better for cancer patients to know about their diagnosis. However, 69% of participants agreed that cancer can be equated with death and 70% of participants agreed that patients lose hope when they discover that they have cancer. Finally, almost all participants (98%) agreed that psychological needs of cancer patients and social needs of cancer patients should be addressed by experts to help patients endure cancer.

About the role of health professionals in helping family members of a cancer patient, 95% of participants agreed that physicians should deal with the emotional distress of family members of a cancer patient at the end of his/her life. Similarly, (96%) of participants agreed that nurses should deal with the emotional distress of family members of a cancer patient at the end of his/her life. Respondents were also questioned regarding the use of alternative therapies. Out of the 3,196 respondents in this study, almost 70% mentioned that they were willing to use alternative therapies (such as herbs, yoga, acupuncture, olive oil) instead of prescribed medicine.

### Communication Channels

Television: The majority of the participants (n=3,100; 97%) in this study watched television (TV) habitually. The mean number of hours they watched TV throughout a typical workweek was 18.4 hours (SD=13.7). Out of the total sample, 948 participants (26%) reported that they watched health segments on local TV channels in the past year. In contrast, the highest proportion of the participants 1,603 (45%) reported that they watch health/medical segments on TV other than the local TV channels in the past year. In the meantime, 1,054 (29%) participants reported that they did not watch health segments on TV channels in the past year (Table 2).

Radio: In this study, 2,189 (69%) of the participants reported that they did not listen to radio stations. Those who did (n=1,007) reported that the mean hours they used to listen to the radio on typical weekdays was 3.3 hours (SD = 7.6). Of the participants who listened to radio, 587 participants (55%) reported that they did not listen to health segments on radio stations in the past 12 months. Only 8% of the participants reported that they used to listen to health segments on local ra-

**TABLE 1.** Demographic characteristics, n=3,196.

Demographics	Category	N	%
Age	18-29	963	30.1
	30-49	1,543	48.3
	≥50	688	21.6
Gender	Males	1,648	51.6
	Females	1,548	48.4
Marital status	Single	636	19.9
	Married	2,338	73.2
	Others	222	6.9
Education	≤6th grade	615	19.2
	7th to 12 grade	1,638	51.3
	≥Diploma	944	29.5
Income	<500\$	1,495	46.8
	500-900	1,227	38.4
	≥901	452	14.8



**TABLE 2.** Frequency of watching health segments on TV channels in the past 12 months.

Frequency	Local TV channels		Not on local TV channels	
	n	%	n	%
More than once a week	283	29.9	510	31.8
Once a week	383	40.5	580	36.2
More than once a month	93	9.8	192	12.0
Once a month	145	15.3	268	16.7
Less than that	23	2.4	26	1.6
Do not know	20	2.2	27	1.7
Total	948	100.0	1603	100

dio stations more than once a month in the past year. On the other hand, 37% of the participants who listened to health segment ‘not on local radio stations’ reported that they listened to these stations once a week in the past 12 months. Moreover, 12% of the participants reported listening radio stations other than the local one, more than once a month in the past year.

Internet: The participants reported the mean hours of using the Internet for personal purposes on typical weekdays was 3.4 hours (n=888, SD = 8.5). Moreover, 2,308 (72%) participants reported that they did not use the Internet for personal purposes.

### Preferable Sources of Information to Learn More About Cancer

The responses to the preferred sources to learn about cancer are presented in Table 3. The results revealed that most of the participants (75%) reported that they preferred to get information about cancer from the healthcare providers. Moreover, 56% of participants preferred to get this information from the TV channels, while 44% of participants reported that they preferred to get information from someone with cancer.

### Barriers and preferable sources

**TABLE 3.** Preferable sources to access cancer information, n= 3,196.

Sources	Much preferred n (%)	Somewhat preferred n (%)	Little preference n (%)	Do not prefer at all n (%)
Books	1018 (31.8)	620 (19.4)	483 (15.1)	1075 (33.6)
Brochures or pamphlets	1366 (42.8)	684 (21.4)	341 (10.7)	805 (25.2)
Family members/friends/neighbors	1302 (40.7)	886 (27.7)	370 (11.6)	638 (20.0)
Healthcare providers	2384 (74.6)	427 (13.4)	144 (4.5)	241 (7.6)
Internet	823 (25.7)	329 (10.3)	300 (9.4)	1744 (54.6)
Newspapers	571 (17.9)	749 (23.4)	618 (19.3)	1258 (39.4)
Someone with cancer	1414 (44.3)	672 (21.0)	273 (8.5)	836 (26.2)
Radio	649 (20.3)	580 (18.1)	500 (15.6)	1468 (45.9)
TV	1776 (55.6)	784 (24.5)	271 (8.5)	366 (11.4)
Public lecture	1218 (38.1)	588 (18.4)	337 (10.6)	1053 (32.9)

### for information about cancer

In this study, 82% of the participants who looked for information about cancer reported that there were no barriers for seeking information about cancer. Seven percent of the participants reported their doubt about the quality of information and considered it as a barrier. Moreover, 160 participants (5%) reported that the information, which they found, was difficult to understand.

The highest percentages of the participants (74.6%) reported that the most preferable way to educate adults about cancer was healthcare providers. Moreover, TV was considered as a good way to educate adults about cancer (55.6%).

### DISCUSSION

The purpose of this study was to obtain a better understanding of beliefs and preferred communication channels in cancer prevention and care in the Jordanian context. Additionally, to identify the barriers and sources for information seeking about cancer. The significance of such study is to provide the necessary information to empower the decision-makers seeking to improve public awareness methods in the field of cancer knowledge, prevention, and early detection.



This study confirms that the participants usually agree that cancer is a curable disease and having a regular checkup would help in discovering cancer in the early stages which will increase the chances for the cure. However, a lower percentage of people in Jordan actually do cancer screening<sup>4</sup>. This might be attributable to the people perception that they do not need to do screening as long as they are free of symptoms. Other possible reasons are the cost of screening, poor knowledge regarding the importance of screening, lower socioeconomic status and not having access to screening clinics<sup>17</sup>.

Cancer-related stigma and myths about cancer are important problems that must be addressed since stigmas and myths about cancer can present significant challenges to cancer control, whereas efforts to increase cancer awareness are negatively affected<sup>18</sup>. Consistent with this study's findings that 70 % of the participants viewed cancer as equated with death and agreed that patients lose hope when they discover they have cancer. Furthermore, 41% of the participants agreed that there is a social stigma associated with the diagnosis of cancer in Jordan. This finding raises the importance of correcting these myths about cancer through awareness campaigns. The use of Complementary and Alternative Medicine (CAM) has been rapidly increasing among cancer patients<sup>19</sup>. In our study, when participants were asked about the use of alternative therapies, almost 70% mentioned that they were willing to use alternative therapies such as yoga, herbs, and acupuncture. In a study done on Malaysian cancer patients, it was found that CAM use is a common practice among Malaysian patients with cancer<sup>19</sup>.

Health communication can substantially improve public health, and empower people by informing, thereby allowing them to make well-informed decisions. It was found that individual who had access to relevant health information to be a critical factor in responding effectively to serious health challenges such as cancer<sup>20</sup>. It is a crucial point to assess the percentage of individuals seeking health-related information, particularly cancer-related information, which will assist in planning an appropriately by policy makers that will eventually increase public awareness<sup>21</sup>. Our efforts toward seeking health information are far lesser than the results which have been reported in prior studies. For example, little is known about dietary risk factors for colorectal cancer in developing countries. In Jordan, the incidence rate of colorectal cancer is increasing, and changes in the dietary pattern over the last 40 years may have played a role in this change. For illustration, there has been an increase in food energy intake, in

particular, cereal, meat, chicken, animal fat, and vegetable oil, and a decrease in fruit and vegetable consumption<sup>22</sup>. Overall results indicated that knowledge gaps and improper practices exist along several elements that could, if corrected facilitate the care, and may prevent and early detect cancer cases in Jordan. More outreaches and awareness are needed to promote appropriate cancer-related health information to the public<sup>23</sup>.

The majority of participants in this study watched TV habitually, and they watch health segments in a frequency of once a week, or once a month. Few participants (30%) reported that they used the radio and the Internet to seek information about cancer. This indicates that there is a need to present more health programs related to cancer prevention, screening, and treatment on local TV channels. Awareness is the 'number one' strategy to improve cancer prevention and control. People also need guidance in understanding that cancer is a complex disease and a media coverage that promotes a reduction of cancer-related stigma by providing information on topics such as declines in cancer incidence; improvements in screening and early detection; treatment options; palliative care; cancer survivorship; government efforts in cancer prevention and control; new research or funding devoted to cancer; and cancer-related activism. Training journalists on cancer myths and health reporting is a good way to breaking down cancer myths and misconceptions<sup>24</sup>.

The participants in this study reported that the most recently used sources of information about cancer were healthcare providers followed by TV, and brochures and pamphlets. This finding is consistent with other studies results that the common information sources were doctors, friends, and nurses; as well as TV, billboards, and the Internet. In addition, participants favored advertisements on the radio, community events, compact discs (CDs), newspapers, support groups, and by mail<sup>25</sup>. Older participants preferred physical mail, whereas, younger participants preferred the use of social media and audiovisuals<sup>26</sup>. In a Japanese study among Japanese adults, it revealed that the mass media such as TV/radio, the Internet, and newspaper were the most common source of information about cancer among the participants<sup>25</sup>. This indicates the important role of health-care professional in patient education in cancer prevention, and also, targeting special programs in the media to present scientifically based information related to cancer prevention.

The majority of the participants in this study reported that there were no barriers of seeking information about cancer. On the other hand, the participants raised the issue of the quality of information rather than its availability, as well as its



easiness to understand as other forms of barriers. Similar findings in another study that the main barriers in seeking information about cancer were the concerns about information quality, and difficulty in understanding obtained information<sup>17</sup>.

## STUDY LIMITATIONS

Equal participation from each selected block was not achieved. This limitation was handled by weighing the data before starting analyses.

## CONCLUSIONS

As knowledge considered an essential component, yet it is not a sufficient motivator to initiate preventive health behavior in the human lives. Throughout this study, there has been critical detection for knowledge gaps and improper practices in various aspects of cancer control that warrant appropriate actions to be taken by relevant parties such as healthcare providers, and policy-makers to reach adherent attitude to healthy living. The study results have provided general suggestions to improve cancer control efforts. Furthermore, study results indicated that knowledge gaps and improper practices by population exist along with other several elements that could, if corrected, facilitate the care of cancer in Jordan. There is a need for more outreaches and awareness to promote appropriate cancer-related health information to the public, preferably through trained healthcare professionals and local TV.

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## CONFLICT OF INTERESTS:

The Authors declare that they have no conflict of interests.

## REFERENCES

1. JORDAN CANCER REGISTRY. Cancer Incidence in Jordan. Amman, 2015.
2. WORLD HEALTH STATISTICS. WHO Library Cataloguing-in-Publication Data, 2013.
3. AHMAD M, AL-GAMAL E, OTHMAN A, NASRALLAH E. Knowledge, attitudes and practices towards cancer prevention and care in Jordan. Amman, 2011.
4. AHMAD M, DARDAS L, AHMAD H. Cancer prevention and care: A national sample from Jordan. *J Cancer Educ.* 2015; 30: 301-311.
5. TSAI TJ, CHUNG UL, CHANG CJ, WANG HH. Influence of Religious Beliefs on the Health of Cancer Patients. *Asian Pac J Cancer Prev* 2016; 17: 2315-2320.
6. AHMAD M. Knowledge and beliefs about cancer prevention and care in Jordan. *Int J Med* 2015; 1: 1-5.
7. ABI NADER E, KOURIE H, GHOSN M, EL KARAK F, KATTAN J, CHAHINE G, NASR F. Informational Needs of Women with Breast Cancer Treated with Chemotherapy. *Asian Pac J Cancer Prev.* 2016; 17: 41797-41800.
8. MANDALIYA H, ANSARI Z, EVANS T, OLDMEADOW C, GEORGE M. Psychosocial Analysis of Cancer Survivors in Rural Australia: Focus on Demographics, Quality of Life and Financial Domains. *Asian Pac J Cancer Prev* 2016; 17: 2459-2464.
9. ALNAZLY E, AHMAD M, MUSIL C, NABOLSI M. Hemodialysis stressors and coping strategies among Jordanian patients on hemodialysis: a qualitative study. *Nephrol Nurs J* 2013; 40: 321-327.
10. ECONOMIST INTELLIGENCE UNIT. The global burden of cancer challenges and opportunities, 2012.
11. AHMAD MM, AL-GAMAL E. Predictors of Cancer Awareness among Older Adult Individuals in Jordan. *Asian Pac J Cancer Prev* 2014; 15: 10927-10932.
12. AHMAD M. Awareness about cancer in the 12 governorates of Jordan: a correlational-comparative study. *Psycho-Oncologie* 2015; 9(1).
13. TASCİ-DURAN E, KOC S, KORKMAZ M. Turkish social. *Asian Pac J Cancer Prev.* 2014; 15: 7935-7940.
14. ABDULLAH M, MOHAMED AK, FOO YC, LEE CM, CHUA CT, WU CH, HOO L, LIM TO, YEN SW. Breast Cancer Survival at a Leading Cancer Centre in Malaysia. *Asian Pac J Cancer Prev* 2015; 16: 8513-8517.
15. IBM CORPORATION. IBM SPSS Statistics for Windows, Version 21.0 NY: IBM Corp., 2012.
16. DOS. Kingdom Indicators. Statistics. Amman, 2016.
17. MAMDOUH HM, EL-MANSY H, KHARBOUSH IF, ISMAIL HM, TAWFIK MM, EL-BAKY MA, EL SHARKAWY OG. Barriers to breast cancer screening among a sample of Egyptian females. *J Fam Community Med* 2014; 21: 119-124.
18. DAHER M. Cultural beliefs and values in cancer patients. *Ann Oncol* 2012; 23 Suppl 3: 66-69.
19. FAROOQUI M, HASSALI M, ABDUL SHATAR A, FAROOQUI M, SALEEM F, HAQ N, ET AL. Use of complementary and alternative medicines among Malaysian cancer patients: a descriptive study. *Journal of Traditional and Complementary Medicine* 2015.
20. HESSE B, NELSON D, KREPS G, CROYLE R, ARORA N, RIMER B, VISWANATH K. Trust and sources of health information: the impact of the Internet and its implications for health care providers: findings from the first Health Information National Trends Survey. *Arch Intern Med* 2005; 165: 12-26.
21. TORTOLERO-LUNA G, FINNEY R, HESSE B. Health and cancer information seeking practices and preferences in Puerto Rico: creating an evidence base for cancer communication efforts. *J Health Commun* 2010; 15(Suppl 3): 30-45.
22. TAYYEM R, BADAWI H, SHAWAWREH A, JAD-ALLAH H, ABU-OLEIM S, KHADER Y. Changes in eating pattern among Jordanians. *Dirasat Agric Sci* 2010; 37: 46-55.
23. AHMAD M. Jordanians knowledge and beliefs about cancer. *Global J Adv Pure Appl Sci* 2014; 4: 38-41.
24. PREETHA A, KUNNUMAKKARA A, SUNDARAM C. Cancer is a preventable disease that requires major lifestyle changes. *Pharm Res* 2008; 25: 2097-2116.
25. MIYAWAKI R, SHIBATA A, KAORI I, OKA K. Obtaining information about cancer: prevalence and preferences among Japanese adults. *BMC Public Health* 2015; 15: 145.
26. MUÑOZ-ANTONIA T. Don't neglect cultural diversity in oncology care. *J Natl Compr Canc Ne.* 2014; 12 (5 Suppl): 836-837.