



BELIEFS AND KNOWLEDGE ABOUT CANCER AMONG EDUCATED SAUDI WOMEN IN RIYADH CITY

Eman Abdullah Alzaidi^{1*}, Shayma Abdulwasea Asrar², Abdulrahman Mohammed Alhumoud³

¹Medical Intern from Almaarefa Colleges.

²Medical Intern from Almaarefa Colleges.

³Medical student in Almaarefa Colleges.

*Corresponding Author: Eman Abdullah Alzaidi

Medical Intern in KFMC.

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ABSTRACT

Introduction: Negative cultural beliefs as well as financial barriers could reduce early detection and affect provision of optimal care for cancer patients. Even with sufficient resources provided for a prevention program, inability to identify those internal obstacles could decrease the program impact. The main aim of this study was to determine the knowledge and misconceptions about cancer among Saudi educated women. **Methods:** This is a cross sectional study carried out in the form of a survey using convenient sample of 155 educated Saudi female. The study participants were interviewed personally in major commercial centres in Riyadh city. A written consent was obtained before data collection and the response rate was very high in this study, since the data collected by trained data collectors using personal interview method. The data were entered and cleaned, then analysed using SPSS software version 20. **Results:** About 32% of study participants think they have adequate information about cancer. While the majority believes, cancer is a common disease in Saudi Arabia. Around 60% think that all the people who have cancer almost die. Only 17% believe traditional methods such as herbs, spell, or oriental medicine could treat cancer. Around 37% think that cancer is a God punishment, and 25% think that evil eye and envy is a cause of cancer. **Conclusion:** this study found younger, more educated women, women with positive familial history of cancer, or women obtained information from scientific sources have significantly higher level of knowledge of cancer and less false beliefs and misconceptions.

KEYWORDS: Knowledge; Cancer; Misconceptions; Myths; Saudi.

INTRODUCTION

Cancer is responsible of high morbidity and mortality, especially in developed countries where 20% of deaths could be attributed to cancer.^[1] Internationally, the commonest types of cancer in men are lung, prostate, gastrointestinal, and liver cancer, while in women are breast, lung, cervical cancer.^[2]

About 90% of cancer burden is attributable to modifiable behavioural factors^[3], thus about third of cancer death could be prevented by risk factors modification.^[4] Early detection of cancer is usually associated with less morbidity and more survival rates.^[5] Patient delay in presentation of cancer was mainly attributed to low awareness of signs and symptoms among patients and their families.^[6,7] Other causes of patient delay such as misconceptions, negative beliefs, and financial issues.^[8,9] Awareness of aging as a risk factor of cancer among elderly patients was found to be very low.^[6] Patients with high awareness and less negative beliefs about cancer

were found to have more compliance even with aggressive options of management.^[10]

The misconceptions and false beliefs have found to affect healthcare of cancer patients starting from early detection or presentation and throughout treatment process until the stage of rehabilitation and survivorship.^[11] In Saudi Arabia, studies on cancer knowledge are few and usually focused on knowledge of breast cancer. They usually conducted at evaluation stage of breast cancer screening and control programs. These studies such as, a study in Qassim region^[12], study among school teachers in Buraidah^[13] and study among university students in Jeddah city.^[14] They found knowledge about breast cancer inadequate and could be an obstacle of early diagnosis. Also low level of knowledge about oral cancer was found among young adults in Jazan region.^[15]

A study conducted in Riyadh area aimed to assess the awareness of cancer among hospital attendants. The findings of that study revealed a low awareness of the

risk factors as well as treatment options of cancer.^[16] Negative cultural beliefs as well as financial barriers could reduce early detection and affect provision of optimal care for cancer patients. Even with sufficient resources provided for a prevention program, inability to identify those internal obstacles could decrease the program impact. The main aim of this study was to determine the knowledge and misconceptions about cancer among Saudi educated women. It is important to understand what Saudis falsely believe about cancer and its risk factors. The findings of this study could assist in planning of control programs targeting cancer patients.

MATERIALS AND METHODS

This is a cross sectional study carried out in the form of a survey using convenient sample of 155 educated Saudi female. There is no validated questionnaire investigating misconceptions and beliefs about cancer, because there are different misconceptions and beliefs in the different populations. The questionnaire used to collect the required information from the study participants had two parts. The first part was including questions about demographics such as age, sex, educational level, employment status, and familial history of cancer. The second part was including questions about misconceptions and false beliefs about cancer and its risk factors. The questions of this part were formulated according to cultural misconceptions and myths among Saudi community that have been found by previous studies¹⁶.

The closed ended questions were used in the questionnaire to facilitate statistical analysis. The study participants were interviewed personally in major commercial centres in Riyadh city. A written consent was obtained before data collection and after explaining the aims of study and confidentiality issues for the study participants. Generally, the response rate was very high in this study, since the data collected by trained data collectors using personal interview method.

The data were entered and cleaned, then analysed using SPSS software version 20. Demographic factors were categorized as following: age (≥ 20 , 21-30, and >30), education (high school or less and graduate or postgraduate level), and marital status (single, married, divorce/widower). The association between demographic factors and participants' knowledge was evaluated by Chi-square test. The significance tests were two sided and P value < 0.05 was considered significant.

RESULTS

A convenient sample of 155 educated Saudi females was selected, where the majority (76%) were 21-30 years old. The sample was homogenous regarding educational level, where 83% were either graduate or postgraduate students. The majority of the women were single and only 23% were employee in governmental institutions (table 1).

In regards to questions about belief of cancer such as "Do you think you have enough information and awareness about cancer", only 32% think they have adequate information about cancer. In another hand, most of the study participants believe cancer is a common disease in Saudi Arabia, where up to 81% answered (Yes); only 5% answered (No), while 14% answered (I do not know). On the question, "Do you think that all the people who have cancer almost die?" Around 60% answered (Yes); 35% answered (No) and only 5% answered (I do not know). On whether, the participants thought that modern medicine could cure cancer, approximately 77% think that modern medicine could cure cancer. While in regards to question "if traditional methods such as herbs, spell, or oriental medicine could treat cancer?" only 17% said (Yes), about 48% answered (I do not know), while 36% answered (No).

On the question, "do you think that cancer is a God punishment?" Around 37% answered (Yes); 30% (No) and 33.3% answered (I do not know). On the question "do you think that evil eye and envy is a cause of cancer?" Around 25% answered (Yes); 57% (No) and 18% answered (I do not know).

On the question about source of information about cancer, 73% said they obtained their information from the internet, scientific books and journals. While the remaining 27% said, they gained the information from media and society. Generally, the level of knowledge about risk factors associated with cancer among Saudi females was ranged from low to high level dependent on the type of risk factor (table 2). The knowledge and beliefs of educated Saudi females showed significant associations with some background factors such as educational level, familial history of cancer, and source of information. Generally, younger, more educated women, women with positive familial history of cancer, or women obtained information from scientific sources have significantly higher level of knowledge of cancer and less false beliefs and misconceptions (table 3).

Table (1): Demographic characteristics of the study participants.

Characteristics	Frequency	Percentage
Females	155	100%
Age groups		
≤ 20 years old	24	15.5%
21 – 30 years old	117	75.5%
31- 40	14	9.0%

Educational Level		
High school or less	26	16.8%
Graduate or postgraduate	129	83.2%
Familial history of cancer		
Negative familial history	7	4.5%
Negative familial history	148	95.5%
Source of information about cancer		
Media	16	10.3%
Scientific books and journals	57	36.8%
Internet	57	36.8%
Society	25	16.1%
Marital status		
Divorced/Widowed	2	1.3%
Married	36	23.2%
Single	117	75.5%
Total	155	100%

Table (2): The knowledge about risk factors associated with cancer among selected Saudi females.

The question about cancer knowledge	Increase chance (%)	Decrease chance (%)	No effect (%)	I don't know (%)
<i>Do you think smoking play role in developing cancer?</i>	140(92.1%)	2(1.3%)	6(3.9%)	2(1.3%)
<i>Do you think alcohol play role in developing cancer?</i>	119(78.3%)	1(0.7%)	13(8.6%)	17(11.2%)
<i>Do you think aging play role in developing cancer?</i>	89(58.6%)	2(1.3%)	50(32.9%)	11(7.2%)
<i>Do you think Exposure to Sun rays play role in developing cancer?</i>	96(63.2%)	13(8.6%)	27(17.8%)	15(9.9%)
<i>Do you think exposure to x-rays or ionic ray play role in developing cancer?</i>	123(80.9%)	2 (1.3%)	4(2.6%)	23 (15.1%)
<i>do you think Hormonal change (as use of contraceptive) play role in developing cancer</i>	83(54.6%)	4(2.6%)	32(21.1%)	33(21.7%)
<i>Do you think psychological stress anxiety as risk factor for cancer?</i>	31(28%)	45 (41%)	15 (14%)	17 (15%)

Table (3): Significant associations between the background factors and the knowledge of cancer.

The background factor		Variables of knowledge of cancer				Chi-square	P value
		do you think that evil eye and envy is a cause of cancer?			I don't know		
		Yes	No				
Educational level	High school or less	8 (30.2%)	12 (47.3%)	6 (22.5%)	8.066	0.018	
	Graduate or postgraduate	5 (3.6%)	89 (69.2%)	35 (26.9)			
Age group	≤20	0 0.0%	17 70.8%	7 29.2%	11.64	0.020	
	21 – 30	36 30.8%	57 48.7%	24 20.5%			
	>30	4 28.6%	5 35.7%	5 35.7%			
		do you think aging play role in developing cancer?					
Familial history of cancer		Increase chance	Decrease chance	No effect	I don't know	9.5	0.023
	Yes	88	2	44	13		

		59.9%	1.4%	29.9%	8.8%		
	NO	1 14.3%	0 0.0%	6 85.7%	0 0.0%		
Source of information	Media	5 31.2%	2 12.5%	6 37.5%	3 18.8%	30.2	0.000
	Scientific journals	41 71.9%	0 0.0%	12 21.1%	4 7.0%		
	Internet	33 58.9%	0 0.0%	19 33.9%	4 7.1%		
	Society	10 40.0%	0 0.0%	13 52.0%	2 8.0%		

DISCUSSION

This study investigated beliefs and knowledge among Saudi females about cancer. Generally, it found a moderate level of knowledge, which was unexpected due to the high level of education of the study participants where the majority were graduates or postgraduates. Most of the study participants believed, they have an inadequate knowledge about cancer, which reflected the insufficient effect of educational programs among Saudi community. This results were in agreement with study conducted by Ravichandran *et al.*, which found that 56.7% of Saudi adults demanded more information about cancer.^[16]

In the present study, about 60% believed cancer is ultimately fatal disease, this result showed a lower level of knowledge than findings of Schettino *et al.*, where only a third of Latinas in Houston city believed breast cancer is fatal. In the present study, 77% of educated Saudi females believed modern medicine could cure the cancer. This result was better than the results of Ray and Mandal, where 58.3% of study subjects in West Bengal believed cancer is treatable disease.^[17] In this study, only 17% of study participants believed the traditional methods such as herbs and spells could cure cancer, which reflected a good awareness regarding methods of cancer treatment.

In Saudi Arabia, studies showed a moderate to low level of knowledge about various types of cancer.^[15,16,18,19] In the present study, the findings showed high percentages of those who know about the well-established risk factors of cancer such as smoking and alcohol (92.1% and 78.3% respectively). However, this study found a low to moderate percentages of those who know about other risk factors such as aging, radiations, exposure to sun rays, and contraceptive pills (ranged between 28% and 59%). These results were in agreement with a study conducted by Amin *et al.*, where they found a low knowledge among adult Saudi women regarding risk factors of breast cancer.^[19] In addition, a low level of knowledge among general public was found in Al-Madinah Al-Munawara about the risk factors of gastrointestinal neoplasms.^[20] Another study, conducted in Jeddah, also found a lower awareness on cervical cancer than that found in the developed countries.^[18]

A study conducted by Ravichandran *et al.*, found that the majority of their participants agreed that tobacco and alcohol are significant risk factors, which was consistent with the findings of present study.^[16] In another hand, Loehrer Sr *et al.* found a half of the patients interviewed are not aware about smoking as a risk factor of cancer.^[21] However, this result was not surprising, since the survey was conducted among socially disadvantaged group. Schettino *et al.* found that 29% of Latinas considered pain as an alarming sign of breast cancer.^[22] In the present study, 73% of Saudi females said they obtained their information about cancer from the internet, scientific books and journals, but this could be justified by a high level of education among study participants. In another hand, Ravichandran *et al.* found TV/Radio was the most common source of information about cancer among Saudis hospital attendants in Riyadh area.^[16]

In regards to misconceptions and myths about cancer, this study found that more than third of study participants believed cancer is God punishment and about a quarter think that cancer is a result of evil eye. Ravichandran *et al.*, found that three quarter of Saudis believed fate increase chance of cancer occurrence, and 64.3% considered curse as a cause of cancer.^[16] This difference between the findings of the present study and study of Ravichandran *et al.*, could be attributed to the difference in the educational level between study samples.

Morgan *et al.*, found that urban Hispanic women had many misconceptions about cancer, such as the faith that bumps or bruises are causes of cancer.^[23] In addition, Pérez-Stable *et al.*, conducted a study aimed to compare misconceptions and myths about cancer among Latinas and Anglos. Misconceptions and myths about what causes cancer such as artificial sweeteners, use of microwave devices, and antibiotics were more among Latinas group.^[24] In addition, Denberg *et al.*, found that women had inaccurate beliefs about breast cancer screening.^[25]

Concerning limitations of the present study, the generalizability of this study was limited since the sample was a convenient sample of educated Saudi females in Riyadh city. This topic required a qualitative study to explore unidentified misconceptions and myths among Saudi community in different socio-demographic groups. Then, this qualitative study could be followed by

a large-scale survey to assess the prevalence of these misconceptions in addition to significant associated predictors. Internationally, there is no standardized questionnaire regarding knowledge and beliefs about cancer, which limited the ability to compare the findings of this study with the findings of other studies.

In another hand, there are several strengths of this study. For the first time, this study assessed the prevalence of misconceptions and myths among educated Saudi females.

CONCLUSION

In conclusion, this study found that the level of knowledge about risk factors associated with cancer among educated Saudi females was ranged from low to high level dependent on the type of risk factor. Generally, this study found younger, more educated women, women with positive familial history of cancer, or women obtained information from scientific sources have significantly higher level of knowledge of cancer and less false beliefs and misconceptions.

Conflict of interest

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REFERENCES

- Petersen PE. Oral cancer prevention and control—The approach of the World Health Organization. *Oral oncology.*, 2009; 45(4): 454-460.
- Torre LA, Bray F, Siegel RL, Ferlay J, Lortet-Tieulent J, Jemal A. Global cancer statistics, 2012. *CA: a cancer journal for clinicians.*, 2015; 65(2): 87-108.
- Gunn WG. Cancer: Principles and Practice of Oncology. *JAMA: The Journal of the American Medical Association*, 2001; 286(15): 1904-1905.
- Danaei G, Vander Hoorn S, Lopez AD, Murray CJ, Ezzati M, group CRAC. Causes of cancer in the world: comparative risk assessment of nine behavioural and environmental risk factors. *The Lancet.*, 2005; 366(9499): 1784-1793.
- Welch HG, Schwartz LM, Woloshin S. Are increasing 5-year survival rates evidence of success against cancer? *Jama.*, 2000; 283(22): 2975-2978.
- Ramirez A, Westcombe A, Burgess C, Sutton S, Littlejohns P, Richards M. Factors predicting delayed presentation of symptomatic breast cancer: a systematic review. *The Lancet.* 1999;353(9159):1127-1131.
- Macleod U, Mitchell E, Burgess C, Macdonald S, Ramirez A. Risk factors for delayed presentation and referral of symptomatic cancer: evidence for common cancers. *British journal of cancer.* 2009;101:S92-S101.
- Forbes L, Atkins L, Thurnham A, Layburn J, Haste F, Ramirez A. Breast cancer awareness and barriers to symptomatic presentation among women from different ethnic groups in East London. *British journal of cancer.* 2011;105(10):1474-1479.
- Robb K, Stubbings S, Ramirez A, et al. Public awareness of cancer in Britain: a population-based survey of adults. *British journal of cancer.* 2009;101:S18-S23.
- Mitchell E, Macdonald S, Campbell N, Weller D, Macleod U. Influences on pre-hospital delay in the diagnosis of colorectal cancer: a systematic review. *British journal of cancer.*, 2008; 98(1): 60-70.
- Kagawa-Singer M. A socio-cultural perspective on cancer control issues for Asian Americans. *Asian American and Pacific Islander journal of health.*, 2000; 8(1): 12.
- Jahan S, Al-Saigul AM, Abdelgadir MH. Breast cancer. Knowledge, attitudes and practices of breast self examination among women in Qassim region of Saudi Arabia. *Saudi medical journal.*, 2006; 27(11): 1737-1741.
- Dandash KF, Al-Mohaimed A. Knowledge, attitudes, and practices surrounding breast cancer and screening in female teachers of Buraidah, Saudi Arabia. *Int J Health Sci (Qassim).*, 2007;1(1):61-71.
- Sait WA, Al-Amoudi SM, Tawtai DA, Abduljabbar HS. The knowledge of breast cancer among young Saudi females. *Saudi medical journal.*, 2010; 31(11):1242-1244.
- Quadri MFA, Saleh SM, Alsanosy R, et al. Effectiveness of an intervention program on knowledge of oral cancer among the youth of Jazan, Saudi Arabia. *Asian Pac J Cancer Prev.*, 2014; 15: 1913-1918.
- Ravichandran K, Mohamed G, Al-Hamdan NA. Public knowledge on cancer and its determinants among Saudis in the Riyadh Region of Saudi Arabia. *Asian Pac J Cancer Prev.*, 2010; 11(5): 1175-1180.
- Ray K, Mandal S. Knowledge of cancer in West Bengal—a pilot survey. *Asian Pacific Journal of Cancer Prevention.*, 2004; 5(2): 205-212.
- Sait KH. Attitudes, knowledge, and practices in relation to cervical cancer and its screening among women in Saudi Arabia. *Saudi medical journal.*, 2009; 30(9): 1208-1212.
- Amin TT, Al Mulhim A, Al Meqihwi A. Breast cancer knowledge, risk factors and screening among adult Saudi women in a primary health care setting. *Asian Pac J Cancer Prev.*, 2009; 10(1): 133-138.
- Parvez T, Gungumji AA, Anwar MS, Al-Ahmadi SS. Awareness about causes of gastrointestinal tract (GIT) malignancies. *Journal of the College of Physicians and Surgeons--Pakistan: JCPSP.*, 2004; 14(2): 98-101.
- Loehrer Sr PJ, Greger HA, Weinberger M, et al. Knowledge and beliefs about cancer in a

- socioeconomically disadvantaged population. *Cancer.*, 1991; 68(7): 1665-1671.
22. Schettino MR, Hernández-Valero MA, Moguel R, Hajek RA, Jones LA. Assessing breast cancer knowledge, beliefs, and misconceptions among Latinas in Houston, Texas. *Journal of Cancer Education.*, 2006; 21.
 23. Morgan C, Park E, Cortes DE. Beliefs, knowledge, and behavior about cancer among urban Hispanic women. *Journal of the National Cancer Institute. Monographs.*, 1994; 18: 57-63.
 24. Pérez-Stable EJ, Sabogal F, Otero-Sabogal R, Hiatt RA, McPhee SJ. Misconceptions about cancer among Latinos and Anglos. *Jama.*, 1992; 268(22): 3219-3223.
 25. Denberg TD, Wong S, Beattie A. Women's misconceptions about cancer screening: implications for informed decision-making. *Patient Education and Counseling.*, 2005; 57(3): 280-285.