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Knowledge of Men and Women about Warning Signs of Cancer and Adoption of Preventive Behaviors

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ABSTRACT

This study attempted to assess the level of knowledge and awareness of men and women in Hirmand about the warning signs of cancer and adoption of preventive behaviors during 2012-2014. In this cross-sectional study, a total of 614 residents of Hirmand were selected through random cluster sampling. The data were collected through a self-structured questionnaire that consisted of three parts: demographic information and items related to knowledge of the participants about the warning signs of cancer and items related to adoption of preventive behavior against cancer. Data were analyzed through SPSS using statistical tests, ANOVA, Tukey, t-test and Pearson's correlation, where the significance level was considered to be $p<0.05$. The results showed that the average level of awareness about the warning signs of cancer and adoption of preventive behaviors were 58.3 ± 5.02 and 45 ± 8.05, respectively. Pearson's correlation indicated there is a significant relationship between the knowledge and adoption of preventive behaviors ($p<0.001$, $r=0.257$). Other findings demonstrated a significant relationship between marital status, education level, age groups, employment status, living place in different areas and source of information, knowledge and adoption of preventive behaviors ($p<0.05$). Awareness of cancer preventive measures can be facilitated by designing regular educational programs, informative workshops and the mass media so as to raise knowledge and awareness of the public about cancer prevention and the warning signs.*

Keywords: *knowledge and awareness, warning signs of cancer, preventive behaviors*

INTRODUCTION

The violent, uncontrolled growth of cells can lead to cancer which is about two hundred different types [1]. Clinically, cancers vary in terms of age of onset, rate of growth, cell differentiation status, visibility through diagnostic measures, invasion, metastasis capability, response to treatment and prognosis. By the current knowledge

of humans, it is possible to prevent cancer and make early diagnosis through identifying the potential risk factors aimed at decisive treatment of cancer in many cases. Hence, the cancer care system functions as one of the top priorities at any health care system [2].

The mortality rate of this disease is expected to be more than seven million people a year, which will reach fifteen million people by 2020 [3]. In Iran, cancer is the third cause of death [4]. More than nine thousand patients are living in Iran with a cancer diagnosis. It is expected that such figure will grow over the upcoming years. The most important factor contributing to cancer in Iran is higher life expectancy. The second factor is lifestyle changes. The third factor is environmental pollution involving weather. The fourth factor is infectious agents such as bacteria and viruses as pathogenesis for most common cancers, including Stomach, liver, cervix and lymphoma cancers. Most cancers among men involve stomach, prostate, bladder and colon, whereas they are breast cancer, colon, stomach and esophageal cancers among women [6]. Consumption of tobacco [7] and diets also play a greater role than genetic factors in etiology of cancer [2].

The methods of control and prevention of cancer include primary and secondary measures. The purpose of early prevention is to warn and increase awareness about certain well-known factors contributing to cancer, such as smoking and eating some foods which should be avoided. The secondary prevention refers to early diagnosis, pap smears, breast self-examination and testicle self-examination in men [8].

Concerning the primary prevention and warning signs of cancer, it is crucial to raise the public awareness. The cancer symptoms include change in urine and stools, wound that does not heal easily, abnormal bleeding from vagina, stiffness and mass in nipples, difficulty swallowing and digesting, changes in moles, dry and harsh coughs, and rapid weight loss [9].

Hence, the evaluation of public awareness about the warning signs, adoption of cancer prevention behaviors and identification of contributing factors can play a major role in proper orientation of health programs especially in the field of education in order to control and prevent diseases at the society. Therefore, this study intended to evaluate the knowledge and awareness about the warning signs of cancer and adoption of preventive behaviors among men and women in Hirmand*during 2012-2014.

MATERIALS AND METHODS

This was a descriptive-analytical cross-sectional survey. The population included all people living in the city and the suburban areas. This project required a sample size of 614 according to the inclusion criteria such as willingness to complete the questionnaire, permanent residence, no history of cancer, Iranian nationality, and age over 19 years. The subjects were selected through a stratified cluster random procedure. For that purpose, the population in Hirmand and the suburban areas were divided as clusters based on the coverage of several health centers including medical houses and stations. Each category of health centers and households under coverage yielded a random sample cluster. Accordingly, Hirmand entailed 11 categories and 11 clusters. Moreover, all men and women had equal chance of being selected as sample. Data were collected through interview, while the instrument involved a self-structured questionnaire comprising three parts, 9 items for demographic information, 19 items for assessing the warning signs of cancer, and 21 items for adoption of preventive behavior against cancer. The validity of the instrument was determined through content validity. In fact, the relevant literature including medical books approved by the Ministry of Health and similar studies were reviewed so as to prepare the research instrument. To verify the validity of the questionnaire, several specialists from university faculty members in pediatrics, pathology, infectious diseases and general practitioner, two faculty members from the Nursing and Midwifery and one laboratory senior expert were invited to leave comments and make any necessary modifications. The questionnaire was formulated and constructed upon approval of the experts. At the next stage, the questionnaire was handed to 20 individuals to calculate its internal reliability (85%) through Cronbach's alpha.

At the end, the questionnaires were collected. The data were analyzed through SPSS Version. 21.0. Statistical tests such as ANOVA, Tukey, t-test and Chi-square. The significance level was considered $p \leq 0.05$.

To determine the level of knowledge and awareness and adoption of preventive behaviors against cancer on three levels of good, average and poor, the scores ranged from zero to 33% as poor, from 33 to 66% as average and over 66% as good.

RESULTS

Due to the geographical dispersion of the population covered by Home of Health (cluster), the percentages were relatively identical, thus verifying the authenticity of sampling and normal distribution of urban and rural health centers (category) in Hirmand.

The mean score of knowledge, awareness and adoption of warning behaviors against cancer was 58.3±5.02, where the minimum and maximum score in awareness and prevention were zero and 16, respectively. There was a significant relationship between knowledge and marital status, education and age groups (P-value<0.05), where there was no such relationship with gender (Table 1). Furthermore, there was between a significant difference between knowledge based on information source, living place, employment status and death of relatives (P-value<0.05), while there was no such difference in case of relatives suffering from cancer (Table 2).

Table 1: Comparison of the average level of knowledge about the warning signs of cancer among the subjects in terms of demographic data

Variable		Number	Mean	Standard deviation	p-value
Gender	Female	309	4.95	3.48	(0.61).
	Male	305	10.5	3.68	
Marital status	Single	116	78/5	3.26	(0.000).
	Married	478	4.86	3.59	
	Divorced	3	0.11	3.61	
	Widow	17	3.29	3.69	
Education level	Illiterate	120	3.86	3.43	(0.000).
	Elementary	128	4.15	3.61	
	Elementary school	113	5.31	3.47	
	High-school	211	5.69	3.35	
	Associate degree	32	6.41	3.89	
	BS, student	10	8.4	3.37	
Age	19-25 years	180	5.74	3.55	**0.003
	Between 25 and 40	295	4.94	3.53	
	Between 40 and 55	95	4.25	3.30	
	Over 55 years	44	4.27	4.14	

** T-TEST* ***ANOVA*

There was statistically significant relationship between adoption of preventive behavior against cancer by gender, marital status, educational level, age groups, source of information, place of residence in different regions and employment status (p-value<0.05), while there was no such relationship with the death of family members and relatives suffering from cancer (Table 3).

According to Pearson correlation coefficient, there was a statistical relationship between knowledge and adoption of preventive behavior against cancer (p-value<0/05).

Table 2: Comparison of the average level of knowledge about the warning signs of cancer among the subjects in terms of demographic data

Variable		Number	Mean	Standard deviation	p-value
Sources of information	Radio and television	136	5.60	3.29	**0.002
	Newspaper and magazines	11	6.18	3.63	
	Reading books	19	6.32	4.06	
	Health and treatment staff	114	5.65	3.27	
	Acquaintances	21	3.38	2.18	
	Internet	5	5.20	4.49	
	Negligence	308	4.52	3.75	
Living place	Anushirvan	61	4.07	1.94	(0.000).
	Asak	60	7.20	2.88	
	Borj Mirgol	47	6.17	2.55	
	Khamar	60	4.35	1.95	
	Janimilk	63	5.05	2.55	
	Siadak	59	3.59	3.10	
	Urban health station	54	7.70	4.12	
	Ghergheri	58	1.66	2.62	
	Rahman	59	6.08	3.63	
	Shendel	46	5.11	4.40	
	Pupak	47	4.60	4.81	
Employment status	Unemployed	98	5.40	3.79	**0.001
	Housewife	264	4.63	3.41	
	Employee	39	6.54	3.49	
	Student	26	5.88	3.79	
	Farmer	75	5.75	3.93	
	Animal keeper	2	6.00	2.83	
	Driver	17	5.59	3.50	
	Worker	36	2.97	3.14	
	Retired	3	3.33	2.31	
	Freelance	54	4.96	3.13	
Death of relatives	Yes	66	6.23	4.21	**0.003
	No	546	4.87	3.48	
Relatives suffering from cancer	Yes	53	5.43	4.31	*0.46
	No	561	4.98	3.51	

** T-TEST ** ANOVA*

Table 3: Comparison of the average adoption of preventive behavior against cancer among the subjects in terms of demographic data

Variable		Number	Mean	Standard deviation	p-value
Gender	Female	309	47.69	7.97	**0.000
	Male	305	42.28	7.18	
Marital status	Single	116	44.74	7.76	**0.002
	Married	478	45.31	7.91	
	Divorced	3	47.33	8.02	
	Widow	17	37.82	10.94	
Education level	Illiterate	120	43.17	8.99	**0.002
	Elementary	128	43.87	7.69	
	Elementary school	113	45.19	7.30	
	High-school	211	45.99	8.04	
	Associate degree	32	47.91	6.36	
	BS, student	10	49.10	8.33	
Age	19-25 years	180	45.19	7.21	(0.000).
	Between 25 and 40	295	46.12	8.21	
	Between 40 and 55	95	43.18	7.84	
	Over 55 years	44	40.70	8.83	
Sources of information	Radio and television	136	45.43	7.06	**0.018
	Newspaper and magazines	11	47.45	8.45	
	Reading books	19	48.42	7.90	
	Health and treatment staff	114	45.17	7.83	
	Acquaintances	21	39.81	6.90	
	Internet	5	49.20	4.08	
	Negligence	308	44.74	8.51	
Living place	Anushirvan	61	43.34	5.72	(0.000).
	Asak	60	47.35	4.80	
	Borj Mirgol	47	48.91	6.41	

	Khamar	60	45.05	12.13	
	Janimilk	63	46.58	4.03	
	Siadak	59	40.02	8.25	
	Urban health station	54	49.67	6.60	
	Ghergheri	58	46.29	7.30	
	Rahman	59	44.56	7.45	
	Shendel	46	41.56	7.65	
	Pupak	47	41.32	9.79	
Employment status	Unemployed	98	41.45	7.75	(0.000).
	Housewife	264	47.87	7.99	
	Employee	39	46.10	8.76	
	Student	26	45.27	7.63	
	Farmer	75	43.00	6.51	
	Animal keeper	2	42.50	0.71	
	Driver	17	39.71	8.37	
	Worker	36	43.78	6.51	
	Retired	3	46.33	3.51	
	Freelance	54	41.80	6.37	
Death of relatives	Yes	66	46.61	9.91	0.09
	No	547	44.82	7.79	
Relatives suffering from cancer	Yes	53	44.98	8.36	0.982
	No	561	45.01	8.03	

** T-TEST ** ANOV*

Table 4: Relationship between knowledge and adoption of preventive behaviors against cancer among the subjects

Variables	Number	Pearson's correlation coefficient	p-value
Level of knowledge	614	0.257	<0.001
Level of prevention			

Tables 1 and 2 illustrate the level of awareness about demographic data. The results concerning the level of women and men's awareness about the warning signs of cancer in Hirmand indicated that 21 patients (3.4%) had good knowledge, 176 (28.7%) had average knowledge and 417 patients (67.9%) had poor knowledge of cancer. Table 3 displays the level of adopting preventive behavior against cancer together with demographic information. The results revealed that 40 patients (6.5%) were at a high level, 565 patients (92%) were on average, and 9 patients (1.5%) were on poor level of adopting preventive behavior against cancer.

DISCUSSION AND CONCLUSION

Cancer is a major problem in Iran and around the world [10]. Everyone will ultimately face cancer either as a patient or having a family member or a friend suffering from the disease [11]. Therefore, a careful planning can be an effective step taken toward primary prevention of this fatal disease [12)]. The findings of this study showed that knowledge and awareness of the subjects about the warning signs of cancer was poor while their adoption of preventive behavior was at an average level.

The current study was consistent with that of Nasser in Saudi Arabia in terms of higher levels of education leading to increased awareness [13]. Moreover, this study indicated that there is a significant correlation between age and knowledge, so that individuals in the age group of 25-40 had more information than other age groups, This finding was consistent with that of Zolphaghari et al. [9]. Moreover, the results showed the greatest level of knowledge (67.9%) was poor, while the highest mean for adoption of preventive behavior against cancer (92%) was at an average level. Zolphaghari et al. reported that the majority of citizens in Tehran had little awareness which is consistent with the finding of the current study [9]. The results of study by Nouri et al. suggested that training programs could increase women's awareness in Kerman as an essential measure [14].

The results of this study showed that the mean level of knowledge of the subjects whose relatives died of cancer tended to be higher. This was consistent with the findings of Nourizadeh quoted by Banaiean. The most important factors contributing to knowledge and performance in behaviors concerning breast cancer screening are personal history and family history of cancer [15]. On the other hand, it was not consistent with the findings of Zolphaghari [9]. The results of a study based in Malaysia suggested that a great number of participants had little knowledge

about diet and nutrition and how it was correlated with cancer prevention. Hence, they required regular medical check-ups so as to raise awareness of cancer history in family members as well as any consumption of tobacco.

The results of a study in Greece showed that despite the satisfactory level of public knowledge about cancer, social and economic factors played an important role concerning the more specialized knowledge [17].

The results of a study by Jafari indicated that educated young women's awareness of cancer was fairly poor. It was argued that devising intervention programs was crucial so as to improve the knowledge and performance of female patients [18]. The results of a study by Baghiani et al. supported the effectiveness of intervention based on protection motivation theory in order to change attitudes and behaviors related to risk of skin cancer [19]. The results of another study by Tomaj et al. revealed that early diagnosis of breast cancer greatly increases the chances of successful treatment and more extensive training through BSE can bring about higher chance of healthy life [20]. The results of this study suggested that the greatest source of information for awareness about the warning signs of cancer and adoption of preventive behaviors were the Iranian radio and television by 22.1%, followed by health care staff by18.6%. Accordingly, it is recommended that authorities in the health system devise certain plans according to the needs of society and broadcast a variety of informative programs through the national media. Moreover, it is recommended that health centers, health stations and health centers in urban and rural areas carry out educational activities tailored to the educational level of the target group, so as to strengthen the training program on top of their responsibilities.

It is suggested to nurses that play their preventive role for educating community and families. Nurses may educate society to have good health, good diet, exercise, routine medical examination, and if they see unusual sign they have to refer physician. Nurses participate in quality management programs because in this programs the main goals are prevention of problems and health care promotion [21]. When a person feels happy and does not suffer from any kind of illness, has more energy to take care her/his self. When someone take care of his/her self well, he/she becomes healthier and will has a high quality life [22]. The nurses can share information with public and community to teach them about cancer prevention, cancer referrals center through social networks, then proper application of networks toward learning and teaching suggested[23].The public should feel responsible for the cancers can be prevented. If that many cancers are preventable follow a healthy lifestyle and avoid non-healthy behaviors. Healthy behaviors such as vegetable and fruit consumption daily, exercise and physical activity, routine medical checkup and screening tests for men and women are advised. No-healthy behaviors such as consumption of smoking and hookah, extra sunlight radiations especially children and youth, overweight and obesity has forbidden [24].

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