J. Cardiovasc Disease Res., 2020; 11(4): 91 – 97
A Multifaceted Peer Reviewed Journal in the field of Cardiology
www.jcdronline.org | www.journalonweb.com/jcdr
P – ISSN: 0975 – 3583 Online: 0976 – 2833

Investigating the Lifestyle Related to Cancer Risk Factors among People of Gonbad City in 2019

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ABSTRACT

Background and Aim: Most cancers can be prevented by modifying lifestyle. This study was conducted to evaluate the lifestyle associated with cancer risk factors in the people of Gonbad city.

Methodology: This study was a cross-sectional type of descriptive-analytical study. A total of 769 people of Gonbad city were selected using stratified sampling with a proportional allocation method among all health centers and bases. Data collection tool included questionnaire consisting of 2 main sections of individual characteristics and cancer risk factors. The data were collected by interviewing and referring to participants' houses and classified and analyzed through SPSS version 26 software.

Results: The mean of general lifestyle score was 118.19, which is moderate based on the scale provided. There was a significant relationship between lifestyle and the variables of age, marital status, employment status and living place (P< 0.05), but no significant relationship was found between lifestyle and gender, ethnicity, education level, body mass index and family size (P >0.05).

Conclusion: In general, the lifestyle of people in the prevention of cancer is relatively desirable. Thus, it is necessary to conduct educational interventions to improve the lifestyle of the residents of Gonbad city to prevent cancer.

Keywords: lifestyle, risk factors, cancer.

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Submitted: 30-09-2020
Revision: 22-10-2020
Accepted Date: 11-11-2020

DOI: 10.31838/jcdr.2020.11.04.16

INTRODUCTION

Cancer is the second leading cause of death around the world, accounting for 9.6 million deaths in 2018 (one out of six deaths) (1). According to the World Health Organization (WHO), the annual cancer mortality rate is increasing and will reach about 130000000 by 2030 (2). Iran has almost the highest cancer growth rate in the world, and cancer is the second leading cause of death in Iran after cardiovascular diseases (3,4). It is predicted that due to the trend of demographic changes and increasing life expectancy in Iran, the incidence of cancer will increase from 84800 in 2012 to 129700 in 2025. In fact, we will hthe incidence of cancer will increase by 35% (5). Ten-year results of the cancer registration program in Golestan province show that the incidence of cancer in Gonbad in men was 17.16 per 100000 and in women and 137 per 100000 (6). In addition to threatening life, cancer causes anxiety and depression in more than a third of patients and has a devastating effect on the economic and family situation of families. Also, clinical cancer care accounts for a large portion of the health budget (7). Only 5 to 10 percent of cancers can be attributed to genetic defects, while the remaining 90-95 percent are rooted in the environment and lifestyle.

Although hereditary factors cannot be modified, environmental and lifestyle factors can potentially be modified. Important lifestyle factors that affect the prevalence and mortality of cancer include tobacco, alcohol, diet, obesity, infectious agents, environmental pollutants, and radiation (8). Studies have shown there is a direct correlation between the lifestyle of individuals and incidence of cancer so that the lifestyle is more highlighted in the incidence of cancers such as breast, prostate and colon (9). The World Health Organization estimates that lifestyle changes can prevent one-third of all cancers (10). Cancer prevention includes primary prevention (prevention of disease) and secondary prevention (early detection of disease) (11). A healthy lifestyle is known to be an important factor in the primary prevention of the disease, as several factors may cause malignant tumors. Thus, it is rational to assess the factors that may affect the risk of cancer for proper prevention because the causes of many deaths and cancer can be controlled in the early stages (12). Due to the increase in life expectancy and an increase in the percentage of elderly people in Iran, it is expected that the incidence of cancer will increase significantly in the next decades. Thus, the present study was conducted in 2019 to assess the study of lifestyle related to cancer risk factors among Gonbad city people.

METHODOLOGY

The present study was a cross-sectional type of descriptive-analytical study. The research population included all residents of Gonbad city. Among them, people who met the inclusion criteria (age over 18 years, lack of cancer at time of study, having Iranian nationality, permanent residence in Gonbad and willingness to complete the questionnaire were selected to participate in the study. To determine the sample, considering 95% confidence level and the estimated accuracy of 1 and the standard deviation value of 14 (13) and considering that the study population is unlimited, Cochran's sample size formula $n = (\frac{Z\alpha_{/2} \times \sigma}{d})^2$ was used to determine the number of populations and to use the mean

and standard deviation of lifestyle. Thus, the sample size was estimated to be approximately 753 people, which increased to 769 people considering the probability of dropout in samples. A total of 769 samples were randomly selected from all health centers and bases in Gonbad city in proportion to the volume. In the present study, the data were collected by a questionnaire. For this purpose, the Cancer Lifestyle Questionnaire, which was designed in a studyconducted by Momayezi et al in 2014 to design a comprehensive tool for examining all aspects of the cancer-related lifestyle was used with their permission (12). The internal consistency of the questionnaire was reported by Cronbach's alpha method that was reported at 0.87. The questionnaire consisted of two sections.

The first section is personal information and the second section is lifestyle questions related to cancer prevention, the second section includes 57 questions in 7 dimensions: 1- Physical health (9 questions), 2- Exercise and health (6 questions), 3- Mental health (10 questions), 4: Avoidance of drugs and narcotics (8 questions), 5- Balanced consumption of food (8 questions), 6- Environmental pollutants (10 questions) and 7- Weight control and nutrition (6 questions). The questionnaire is scored on a Likert scale ranging from always (3), usually (2), sometimes (1) and never (0). The desirability of score in each area was determined in such a way that if the mean score of each area is in the range of the first 25% (zero to 25% of the upper bound), the score is considered low and if it is in the range of 25% to 75%, the score is considered moderate, and if a score is above 75% of the upper bound, the score is considered good. Given what was stated above, the score of each area was divided into weak (undesirable), moderate (relatively desirable), and good (desirable) scores. The questions of the questionnaire were asked by interviewing after stating the objectives of the research and obtaining informed consent of the participants. Pearson correlation test was used to examine the relationship between the two quantitative variables and to compare the mean of two groups, independent t test was used and to compare the mean of more than two groups, one-way analysis of variance was used. The data were analyzed in SPSS version 26 software.

RESULTS

The results of the present study revealed that out of 769 samples studied, 79.5% were female and the other samples were male. The mean age and standard deviation of the samples were estimated to be 33.95 and 9.34, respectively, and in terms of marital status, 86.7% of the samples were married, 10.4% were single and about 3% of their wives were dead or divorced. In terms of ethnic composition, 442 people (57.5%) were Turkman, 150 were Fars, 78 were Turk, 73 Sistani and 26 belonged to other ethnic groups. About 69 percent of the samples were living in personal houses, 20.8 percent were living in rented houses, and 10.5 percent were living with their spouse's family. In terms of education level, 40.2% had academic level of education and other samples had diploma and below diploma level of education. The mean and standard deviation of body mass index were calculated to be 25.94 and 4.84, respectively, which 3.8% of the samples were underweight, 41.7% had normal weight, 35.4% were overweight, 14.8% were obese and 4.3% were very obese.

(Table 1) illustrates the mean and standard deviation of the cancer-related lifestyle scores. For example, for a physical health field with a score range of 0-27, the mean was 15.85, which is about in the moderate range. Thus, it can be stated that the mean score of physical health is moderate. However, in the area of drug avoidance, the mean score was estimated to be 22.67, which is close to the upper bound of the score 0-24. Thus, it can be concluded that the area of drug avoidance has high mean score. Such a conclusion can be made for other areas and for whole questionnaire, which is in the range of 0-171, the mean score was 118.19, which is higher than the average score (the average score is about 85).

Table 1: Mean and standard deviation of cancer-related lifestyle areas and the total score of the questionnaire in the study subjects

area	mean	SD	score range
physical health	15.85	4.65	27-0
Exercise and health	10.03	3.56	18-0
mental health	20.13	3.36	30-0
drug avoidance	22.67	2.13	0-24
balanced food intake	19.20	3.60	0-24
Environmental pollutants	19.98	3.56	30-0
Weight control and nutrition	19.98	3.56	30-0
The total score of the questionnaire	118.19	14.50	171-0

The relationship between the variables of gender and education and general lifestyle score was assessed using comparison of the means of the two groups through independent t-test. The results in (Table 2) show that although the lifestyle score is higher for women than for men and higher for those with academic level of education than for non-academic level of education, this difference was not statistically significant (P-value> 0.05). One way analysis of variance was used to investigate the relationship between the variables of marital status, ethnicity, body mass index, family size, employment status and housing status and lifestyle score (Table 2). The relationship between marital status, employment status, housing status and lifestyle status was significant (P-value <0.05). However, body mass index,

family size, and ethnicity were not significantly associated with lifestyle at the level of 0.05 (P-value-0.05). The value of the correlation coefficient between age and cancer-related lifestyle was estimated at 0.12, which is positive and significant at the level of 0.05.

Table 2: Investigating the relationship between demographic variables and total cancer-related lifestyle score

variable	class	n (%)	mean lifestyle score	SD	test result
gender	male	158 (20.5)	116.27	1.33	*P-value=0.095
	female	611 (79.5)	118.69	0.56	
education level	academic	309 (40.2)	119.02	0.84	*P-value=0.196
	non-academic	460 (59.8)	117.64	0.66	
marital status	single	80 (10)	113.32	1.92	**P-value=0.001
	married	667 (87)	118.97	0.54	
	spouse deceased or died	22 (3)	112.32	2.44	
athnicity	Fars	150 (19.5)	118.07	1.20	**P-value=0.213
	Turk	78 (10.1)	120.41	1.84	
	Turkman	442 (57.5)	118.46	0.67	
	Sistani	73 (9.5)	115.76	1.56	
	other ethnicities	26 (3.4)	114.38	3.38	
BMI	18.5BMI<	29 (3.8)	116.45	14.29	**P-value=0.348
	24.9BMI<18.51 <	321 (41.7)	118.22	14.64	
	29.9BMI<24.91 <	272 (35.4)	118.55	14.31	
	34.9BMI<29.91 <	114 (14.8)	119.04	15.01	
	34.91BMI>	33 (4.3)	113.48	12.98	
housing status	perssonal house	528	118.96	0.64	**P-value=0.035
	tenant	160	117.43	1.13	
	living with spouse	81	114.68	1.52	
employment status	unemployed	17 (2.2)	104.41	2.80	**P-value=0.001
	housewife	458 (59.6)	119.25	0.63	
	employed	122 (15.9)	120.26	1.33	
	retired	13 (1.7)	127.23	3.49	
	student	42 (5.4)	114.21	2.76	
	self-employed	117 (15.2)	114.29	1.39	
family size	1 or 2	100 (13)	117.94	1.56	**P-value=0.393
	3	201 (26.1)	116.76	1.04	
	4	206 (33.8)	118.86	0.91	
	5 and more	208 (27)	118.86	0.93	
age		769 (100)	r=0.12		P-value=0.001

*T-test
**ANOVA

DISCUSSION AND CONCLUSION

In the present study, there was a significant relationship between age variable and lifestyle score, so that with increasing age, lifestyle score increases and vice versa, which is consistent with similar studies. The results of a study conducted by Zolfaghari et al to examine the risk factors of Tehran people lifestyle concerning cancer prevention showed that the highest percentage of people aged over 45 years (72.2%) had relatively desirable lifestyle in the prevention of cancer and with increasing, lifestyle improved (14). The results of a study by Rashidkhani et al showed that with increasing age, unhealthy food patterns shifted toward healthy eating patterns (15). Hearty et al reported that women at high age, women with higher social class, and academic level of education had a healthier lifestyle (16). The results of the present study are also consistent with those of (17,18,19) studies. It seems that with increasing, their knowledge about the factors that affect their health and their efforts to have a healthy life increases. One of the outcomes of an unhealthy lifestyle is weight gain and obesity, which the World Health Organization has introduced it as the world's largest public health problem (17).

Based on a study, 54.5% of the subjects were overweight or obese. About 481000 or 3.6% of all newly diagnosed cancers in adults aged over 30 years worldwide are due to

overweight and obesity (20). Researchers estimate that 42% of all cancers in the United States in 2014 could be attributed to potential risk factors. Among all the cancers, 19% were due to smoking, 7.8% were due to overweight, 5.6% were due to alcohol consumption, and the remaining percentage were due to other factors (21). In various studies, high BMI has been identified as a risk factor for a variety of cancers including breast, colon, esophagus, kidney, endometrium, gallbladder, ovary and pancreas cancers (22). The results of statistical analysis showed that there is a significant relationship between marital status and lifestyle. It means that married people had a better lifestyle than single people. This result is consistent with that of some studies.

Results of a study conducted by Yim et al on marital status and health behaviors in Korean adults revealed that married men were more concerned with periodic health examinations than single men, and single women were more likely to smoke and drink alcohol than married women. The researcher stated that married people had healthier behaviors compared to single people (23). Jee et al stated that married men had the lowest prevalence of smoking and higher mental health status (24). Ha et al reported that single educated young men had a more undesirable lifestyle than others (25). Keyhanian et al investigated the lifestyle of people with breast cancer and stated that most people with desirable lifestyle were married (26). However, these results are inconsistent with those of (27, 28, 29) studies, which the reason for this difference might be statistical population of different studies. The results showed that the most desirable area of lifestyle was related to the avoidance of drugs and narcotics and the most undesirable of them was related to the area of exercise and health. This result has been confirmed in similar studies. Meshki et al reported that the most desirable lifestyle component among the studied samples were related to non-smoking and using drugs and the most undesirable components were related to physical activity and health, followed by stress control (30). Momayezi et al stated that in the studied samples, the lowest lifestyle score was related to exercise and health and the highest score was related to physical health (31). Other studies have reported a lower score for exercise and health compared to other lifestyle components (32, 33, 34, 35), but epidemiological evidence suggests that people who are more physically active are at lower risk for cancer. Evidence also suggests that physical activity may reduce the risk of breast cancer during menopause, and colon and prostate cancers (22). It is estimated that physical inactivity is the leading cause of about 21-25% of breast and colon cancers, 27% of diabetes, and about 30% of ischemic heart disease (36). The American Cancer Society recommends that people exercise for at least 30 minutes (preferably 45 to 60 minutes) and at least 5 days per week to prevent cancer (37).

In the present study, the results of comparing the relationship between housing status and total lifestyle score show that mean score of personal house group and living with spouse's family is statistically significant, that is, people living in personal house had a better cancer prevention lifestyle, compared to those who were living with their spouse families. It is consistent with results of similar studies. In a study conducted by Momayezi et al, results showed that people with a personal house had better status in terms of mental health behaviors and those who were living at a family house had the worst status. Also, people with a personal house had better status in terms of physical health behaviors and those who were living in a family house had the worst status in this regard (31). A study conducted by Rashidkhani et al revealed an inverse relationship between having a personal house and an unhealthy eating pattern and a positive relationship between having a personal house and a healthy eating pattern (15). In a study conducted by Moshfeghi et al, the results showed that the type of living house had a significant relationship with colorectal cancer, so that the disease was higher in people who were living in rented houses than that in others (38). People who were living with their spouse family seem to be less independent in their lifestyle choices, and their lifestyle depends on the house in which they are living and their economic status is lower than the group living in a personal house. For this reason, their lifestyle is more undesirable than that of a group living in a personal house. Tobacco use is the leading cause of cancer-caused death around the world (3) and accounts for 1.8 million cancer deaths per year (22). The results of present study showed that the subjects were at the desirable level of avoidance of drugs and narcotics, but the results of a study conducted by Zolfaghari et al showed that the majority of Tehran citizens (90.5%) were at an undesirable level in dimension of habit of smoking and alcohol consumption (14). Cigarette smoking causes more than 16 types of cancer, and one-fifth of total cancer deaths are associated with smoking. Smoking significantly increases the risk of various cancers, including lung, esophageal, oral, pharyngeal and laryngeal cancers. Non-smokers who are exposed to secondhand smoke are also at risk for lung cancer and possibly other cancers (3). Studies have also reported a significant association between smoking and lung (39,40), breast (44, 43, 41,42), bladder (45,46), stomach (47), esophagus (48,49,50), prostate (51), colorectal (52,53), cervix (54) and kidney (55) cancers.

The results showed a significant relationship between employment status and lifestyle. This result is consistent with that of similar studies. Baghiani Moghaddam et al reported that there was a significant relationship between the employee and worker group and the lifestyle score, and the employee group had more desirable lifestyle than the worker group (56). The results of a study conducted by Poortinga in English adults showed that single men who had low social status and were economically inactive had an unhealthier lifestyle (57). The results of a study conducted by Momayezi et al showed that retired people had the best status in terms of behavior in mental health dimension and housewives had the worst status. Also, students had the best status in terms of exercise and health and housewives had the worst status in this regard (31). Cowdery et al stated that poor social and economic status and the lifestyle factors as a direct contributor to cancer risk were associated with increased smoking, alcohol consumption, physical inactivity, and poor diet (58). In the present study, the lifestyle of Gonbad people in cancer prevention is at

relatively desirable level, but as majority of the studied subjects were overweight and obese, it is one of the risk factors for some types of cancer. Thus, it is recommended that educational and promotion programs for weight loss be performed by health care providers and it is expected that different organizations to contribute to this issue by obtaining the participation and responsibility of people by emphasizing on proper nutrition and physical activity. One of the limitations of the present study was that men completed fewer questionnaires than women, so we could not make a correct comparison between gender and lifestyle variables. Also, lack of clarity in answering questions on avoidance of drugs and narcotics, although the researcher ensured people that their information would remain confidential.

ETHICAL CONSIDERATIONS

This research project was approved by the Research Ethics Committee of Iran University of Medical Sciences under the code of ethics of IR.IUMS.REC.1397.502.

ACKNOWLEDGMENTS

This article was derived from a research project approved by the Research Ethics Committee of Iran University of Medical Sciences under the code of ethics of No. 97-75-2-12441 of Iran University of Medical Sciences. The authors of this article thereby appreciate the assistance and cooperation of Golestan University of Medical Sciences and Gonbad Kavous Health Network.

CONFLICT OF INTEREST

None

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Cite this article: Nasibeh Zerangian. Investigating the Lifestyle Related to Cancer Risk Factors among People of Gonbad City in 2019. J. Cardiovascular Disease Res., 2020; 11 (4): 91 – 97