
PUBLIC HEALTH RESEARCH

Health-Promoting Lifestyle Among Children of Parents Deceased Versus Healed from Cancer in Shiraz, Iran

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ABSTRACT

Introduction	The impact of cancer is not limited to the patient but also affects the life of the patient's spouse, children, family members, and friends. The present study aimed to compare the health-promoting lifestyle in children of parents deceased from cancer and children of parents healed from cancer.
Methods	The sample consisted of 115 people (58 children of parents healed from cancer and 57 children of parents deceased from cancer) in Shiraz, Iran. The Health-Promoting Lifestyle Profile II (HPLP II) was used to measure different types of health-promoting lifestyles (health responsibility, physical activity, nutrition, spiritual growth, interpersonal relations, and stress management). The collected data were analysed using a multivariate analysis of variance.
Results	The results showed that the children of parents healed from cancer significantly achieved higher scores in spiritual growth, responsibility in health, stress management, physical activity, and nutrition than children of parents deceased from cancer. Moreover, the results showed no significant difference between the two groups in interpersonal relations.
Conclusions	This study highlighted the importance of a health-promoting lifestyle in families with a cancer parent.
Keywords	Health-promoting lifestyle; Children; Parents; Cancer

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INTRODUCTION

Cancer is one of the most common diseases causing death worldwide.¹ Cancer is the second leading cause of death after cardiovascular disease in developed countries. Epidemiological evidence also indicated the emergence of this trend in less developed countries.² Cancer affects many aspects of a patient's life, i.e. physically, mentally, financially and spiritually.³ Awareness of having a malignant disease that threatens human life, changes people's perception of life⁴, and suffering from this type of disease causes the loss of hopes and aspirations for the life.⁵ Due to the chronic nature of cancer, the patient has to accept a long-term chemotherapy treatment which may take weeks or months. In addition, chemotherapy has its own side effects like nausea, hair loss, fatigue, muscle aches, skin burns and mental health problems.⁶ The impact of cancer is not limited to the patient but also affects the life of the patient's spouse, children, family members and friends and has a profound effect on the economic status and daily functioning of the patient's family.⁷ Hoke⁸ believes that the children of cancer patients are a group at risk, at the same time, a hidden group for psychological problems that should be copied.

Kirsch, Brandt, and Lewis⁹ reasoned that the human reactions to such stress are affected by the duration of stress and its severity. In addition, they argued that physical problems, depression, anxiety, fear, behavioral and communication problems, decreased self-esteem, and social interaction problems are usually associated with human reactions to stress. Sharrer, and Ryan¹⁰ believed that one of the most important causes of cancer in parents is a psychological and social stress factor that leads to problems in family members, especially children.

Heiney et al¹¹ also showed that the children of parents with cancer were anxious compared to their peers and expressed their anxiety in the form of physical problems such as pain, headache, nausea and vomiting. One specific point of how children of cancer patients react to the cancer of their parents that has not been studied extensively is the adoption of a health-promoting lifestyle.

Health-promoting behaviours include any activity that aims to increase or maintain the level of health and self-fulfillment of an individual or group, including health responsibility, spiritual growth, physical activity, nutrition, interpersonal relations and stress management.¹² Health-promoting lifestyle is important for caregivers and loved ones of chronic diseases. For example, Grimmer, Bridgewater, Steptoe, and Wardle¹³ in a study of survivors of colorectal cancer found that most subjects were overweight, tired, had chronic pain and nocturnal insomnia. Kellen et al¹⁴ found that a positive lifestyle in patients with breast cancer increased the effectiveness of the treatment for patients.

From what has been said, cancer patients find themselves closer to death which may adversely impact their psychological health. In addition, the side effects of chemotherapy and economic issues associated with the treatment of cancer are additional burdens that affect mental health among patients who struggle with cancer, caregivers and their families.

Most cancer research focuses on patients. Few studies have been done on children of parents with cancer. Children of cancer patients are a group of people who are affected by parental cancer. However, no research has been conducted about health-promoting lifestyles on children of parents with cancer. It is important to have knowledge to plan and provide care programs that will help the children of these families. Therefore, the present study was conducted, aiming to compare health-promoting lifestyles in children of parents deceased from cancer and children of parents healed from cancer in order to fill the research gap, find a scientific response to the hypothesis that children of parents healed from cancer have better health-promoting lifestyles than children of parents deceased from cancer, and take the necessary measures to promote the health-promoting lifestyles of children of parents with cancer. The present study was conducted to answer the following question:

Is there a significant difference between children of parents deceased from cancer and children of parents healed from cancer in health-promoting lifestyles?

METHODS

The present study is a causal-comparative design and the statistical population included all children of parents deceased from cancer and children of parents healed from cancer. The sample consisted of 115 people (58 children of parents healed from cancer, 57 children of parents deceased from cancer) in Shiraz, Iran. Subjects were selected by convenience sampling method. The data were collected in the city of Shiraz during the year 2020. In order to select the children of parents healed from cancer, we referred to "Atieh Sazan Hafez Insurance Center" (an insurance center dedicated to cancer patients which provides services to cancer patients as long as they are under treatment) and from the Atieh Sazan Hafez Insurance Center archives, the files of people healed from cancer were selected and their children were contacted and asked to participate in the research if they wished. In this way, 58 children of parents healed from cancer completed the Health-promoting Lifestyle Profile II (HPLP II). To select the children of parents who deceased from cancer, we referred to Amir Hospital (a hospital dedicated to cancer patients under very serious conditions and many of them die in this hospital) and from the hospital archives, the files of people who had died due to cancer were selected and

their children were contacted and asked to participate in the research if they wished. In this way, 57 children of parents deceased from cancer completed the HPLP II. The inclusion criteria for entering the research were having a parent healed from cancer or having a parent deceased from cancer, aged above 20 and the parent had no additional diseases other than cancer, and they signed the consent form for participation in the research.

Instrument

Health-promoting lifestyle Profile II (HPLP II)

The HPLP II developed by Walker, Sechrist, and Pender¹⁵ was used to measure a health-promoting lifestyle. This HPLP II has 52 items and 6 subscales including health responsibility (nine items), physical activity (eight items), nutrition (nine items), spiritual growth (nine items), interpersonal relations (nine items), and stress management (eight items). The scoring method of the scale is based on the four-point Likert scale from never (1), sometimes (2), often (3) and routinely (4).¹⁶ A higher score indicated a better health-promoting lifestyle. Walker et al¹⁵ reported the total reliability coefficient of this questionnaire as 0.94 with the six subscales coefficient ranging from 0.79 to 0.87. Chung, Chao, Chou, and Lee¹⁷ reported the total reliability coefficient of this questionnaire as 0.88 with the six subscales coefficient ranging from 0.72 to 0.86. The validity and reliability of this scale had been confirmed in various studies.^{18,19} It should be noted

that the participants were asked to complete the paper and pencil version of HPLP II individually at Atieh Sazan Hafez Insurance Center and Amir Hospital, and it took them about 20 minutes to complete it. The original English version of the HPLP II was translated to Persian and then back-translated to English by an expert Iranian English professor. The back-translation was edited by a native English speaker and then retranslated to Persian.

Ethical Considerations

Children of parents deceased from cancer and children of parents healed from cancer gave consent for their participation in this study. The participants were aware of the purpose of the study and they had the right to leave the study at any time if they wished so. The participants were also assured that all their information would remain confidential. The ethical review board of Shiraz University approved the study. The reference number was 14003/10/2182.

RESULTS

The sample characteristics of the children of parents deceased from cancer and children of parents healed from cancer were presented in Table 1. There were no significant differences between groups in terms of the mean age, gender, birth order, family size, educational level, working status, divorced/separated status, death of a spouse, life satisfaction and family income (see Table 1).

Table 1 Sample characteristics for children of parents deceased from cancer and children of parents healed from cancer

	Children of parents deceased from cancer (n = 57)	Children of parents healed from cancer (n = 58)	Sig.
Mean age, years (SD)	29.75 (10.33)	29.86 (10.83)	$P \geq .05$ *
Range, years	20-65	20-62	$P \geq .05$
Male (female)	23 (34)	18 (40)	$P \geq .05$
Birth order, SD	2.82 (1.72)	2.93 (1.67)	$P \geq .05$
Family size, SD	6.68 (2.11)	6.09 (1.65)	$P \geq .05$
educational level, %: < 12 years (> 12 years)	40.35 (59.65)	36.21 (63.79)	$P \geq .05$
Working status, %: working (nonworking)	35.1 (64.9)	37.9 (62.1)	$P \geq .05$
Divorced/separated (%)	1.75	3.4	$P \geq .05$
Death of spouse (%)	1.75	3.4	$P \geq .05$
Satisfaction of life, %: satisfying (no satisfying)	98.1 (1.9)	98.3 (1.7)	$P \geq .05$
Family income, %: (≤30,000,000 IRR, 30,000,001–60,000,000 IRR, ≥60,000,001 IRR)	(0, 49.1, 50.9)	(1.7, 41.4, 56.9)	$P \geq .05$

Table 2 Mean and standard deviation of health-promoting lifestyle' subscales in two groups

Groups	Children of parents deceased from cancer (n = 57)		Children of parents healed from cancer (n = 58)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Dependent Variable				
Health Responsibility	32.79	6.91	39.97	3.60
Physical Activity	16.72	5.59	23.41	3.51
Nutrition	18.89	3.74	20.97	2.73
Spiritual Growth	31.91	5.04	36.00	3.09
Interpersonal Relations	22.23	3.68	21.89	3.98
Stress Management	12.45	2.40	15.91	1.79

Table 3 The results of MANOVA for health-promoting lifestyle' subscales in two groups

Dependent Variable	Sum of Squares	Df	Mean Square	F	Sig.
Health Responsibility	1504.858	1	1504.858	49.79	0.001
Physical Activity	1306.142	1	1306.142	60.13	0.001
Nutrition	125.269	1	125.269	11.69	0.001
Spiritual Growth	488.354	1	488.354	28.07	0.001
Interpersonal Relations	3.105	1	3.105	0.21	0.646
Stress Management	351.557	1	351.557	78.51	0.001

Table 2 presented the scores of health-promoting lifestyle subscales in children of parents deceased from cancer and children of parents healed from cancer.

As shown in Table 2, there was a difference between the mean scores of health-promoting lifestyle subscales of the two groups. To examine this difference, a multivariate analysis of variance (MANOVA) was used. Before performing the MANOVA, the Levin test was first used to determine the homogeneity of variances, but this test was not significant for any of the variables ($P \geq 0.05$). As a result, the use of MANOVA was possible. Moreover, the homogeneity of variance and covariance matrices was examined by Box's M Test. Results showed that the Box's M value was not significant ($P \geq 0.05$), and consequently, the homogeneity between covariates was established. It is worth noting that the results of the Kolmogorov-Smirnov test showed that the distribution of data in all variables was normal ($P > 0.05$). The results of MANOVA were presented in Table 3.

In table 3, the effect of the group on the dependent variable of health responsibility, physical activity, nutrition, spiritual growth and stress management were significant [$P < 0.001$]. This meant that the health responsibility, physical activity, nutrition, spiritual growth and stress management in children of parents healed from cancer significantly more than in children of parents deceased from cancer ($P < 0.001$). Moreover, as can be seen in Table 3, the effect of the group on interpersonal relations was not significant [$P > 0.05$]. This meant that there was no significant difference between the two groups in terms of interpersonal relations ($P > 0.05$).

DISCUSSION

The aim of the present study was to compare the health-promoting lifestyle in children of parents deceased from cancer and children of parents healed from cancer. The findings showed significant differences between the two groups in the subscales of health-promoting lifestyle (responsibility for health, physical activity, nutrition, spiritual growth and stress management). Even though the present research was almost new in its own purposes of research, our findings can be compared with the research of Kirsch, Brandt, and Lewis,⁹ Berger,¹⁰ and Heiney et al.¹¹ The findings of the above studies showed that cancer affects the lifestyle of patients with cancer, however, cancer adversely influences the psychological wellbeing of children and caregivers of people with patients on the other hand.

The results of the present study showed that children of parents healed from cancer in the subscale of health responsibility were significantly better than children of parents deceased from cancer. To account for this finding, we reason that the children of parents deceased from cancer are unaware of their health and cannot predict the long-term negative consequences of their unhealthy behaviors. Thus, they do not have enough motivation to adopt behaviors that are in line with their health promotion. On the other hand, children of parents healed from cancer are more likely to engage in health-promoting behaviors.

The results also showed that children of parents deceased from cancer had a lower status in the physical activity subscale compared to children of parents healed from cancer. Explaining this finding, we can argue that cancer is a stressful experience that leads to a lack of satisfaction with the person and those around them, followed by

suffering and unhappiness, reduced quality of life, dysfunction of daily life, and disruption of the life situations.²⁰ Cancer's catastrophic beliefs are also causing a person to pay excessive attention to physical symptoms and thus avoid daily activities, which is associated with subsequent pain consequences such as disability and physical and emotional dysfunction.²¹

In addition, there was a significant difference between the two groups of children in the nutrition subscale. This means that the condition of children of parents deceased from cancer in the nutrition was significantly worse than that of children of parents healed from cancer. Explanation to this finding, it can be argued that when a person suffers from stressful events and problems in life, he usually unconsciously and automatically looks for tricks to get rid of this stress; the first thing that often happens to these people is eating. When appetite increases due to the dominance of stress on the mind and a person's food multiply, over time, weight increases, and excess body fat increases.²²

The findings of this study also showed that children of parents healed from cancer were significantly better in spiritual growth than children of parents deceased from cancer. To account for this finding, we speculate that people who are more spiritual and have achieved a higher degree of self-fulfillment are less likely to experience life stress and are more adaptable to their circumstances, actively take control of their lives, and are less frustrated.²³

The results also showed that children of parents healed from cancer were significantly better at stress management than children of parents deceased from cancer. In explaining the above, the term general adaptation syndrome (GAS) can be used. In a study conducted by Selye on the stress of cancer and how stress plays an effective role in its onset and recurrence, it was concluded that the human body is equipped with an adaptive system, which means that it tries to adapt to stimuli and stress.²⁴ Therefore, it seems that children of parents healed from cancer compared to children of parents deceased from cancer, have coped well with the stress levels and psychological pressures caused by cancer due to being equipped with the adaptive system.

It is noteworthy that the findings of this study showed that there was no significant difference between children of parents healed from cancer and children of parents deceased from cancer in the subscales of interpersonal relations. Explaining this finding, it can be inferred that children may try to fill their time with physical activity or entertainment to stay away from the patient in order to have less contact with the patient. Moreover, fear of being infected may cause children to increase their physical activity and sports with peers and others and to be more in touch with others

for this purpose. Probably for this reason, there is no significant difference between the two groups in terms of interpersonal relations.

CONCLUSION

The results of the present study showed that children of parents healed from cancer in the subscale of health responsibility, physical activity, nutrition, spiritual growth and stress management were significantly better than children of parents deceased from cancer. Regarding to the findings of this study, it can be argued that lifestyle improvement of health-promoting lifestyle in children of parents with cancer is considered as a way of preventing cancer diseases and reducing healthcare costs. Moreover, it can be concluded that health responsibility, physical activity, appropriated nutrition, spiritual growth and stress management can be used as affordable and convenient ways to increase health-promoting lifestyle in children of parents with cancer. In fact, we can prevent cancer diseases by expanding opportunities for participation in health responsibility, physical activity, appropriated nutrition, spiritual growth and stress management. In addition, health organisations are recommended to include comprehensive health-promoting lifestyle programs to prevent cancer diseases.

Among the limitations of the present study, the following can be mentioned: The only tool used in this study was a questionnaire, which may have caused the response bias. Furthermore, the convenience sampling method was used in this study so that generalising the findings of this research sample to other people should be done with caution. Moreover, the duration of parents' death and the duration of children's care of parents with cancer were not considered in this research. It is suggested to be considered in future researches.

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