

THE RELATIONSHIP BETWEEN HEALTH ANXIETY LEVELS AND HEALTHY LIFESTYLE BEHAVIORS OF FAMILY CAREGIVERS OF CANCER PATIENTS RECEIVING OUTPATIENT CHEMOTHERAPY

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ABSTRACT

Introduction: This study was conducted to determine the relationship between health anxiety levels and healthy lifestyle behaviors of family caregivers of cancer patients receiving outpatient chemotherapy.

Material and Methods: The study is descriptive. The study sample consisted of 107 family caregivers of patients who applied to a university hospital for chemotherapy. Data were collected using the Personal Information Form, the Health Anxiety Inventory (HAI) and the Healthy Lifestyle Behaviors Scale (HLSBS).

Results: In the study, the median of the total score on the Health Anxiety Inventory of caregivers was found 18, and the total score median of the Healthy Lifestyle Behaviors Scale was 116. It was determined that there was a statistically significant and weak positive correlation between hypersensitivity to somatic symptoms and the anxiety levels, and health responsibility ($r=0.230$, $p=0.017$). A statistically significant and weak negative relationship was found between the dimension related to the negative consequences of the illness and self-realization ($r= - 0.234$, $p=0.015$).

Conclusion: It has been found that caregivers move away from healthy lifestyle behaviors as their health anxiety increases. On that note, it is recommended to organize group meetings by nurses where caregivers can share their experiences regarding physical, emotional and psychological problems that may increase their health anxiety and training that will positively affect health behaviors..

Key Words: Health anxiety, healthy lifestyle behaviors, caregivers, chemotherapy, nursing

INTRODUCTION

Increased cancer cases associated with tobacco and tobacco product use, malnutrition, decreased physical movement, and extended life expectancy impose a serious burden across the world (1).

Statistically, in 2020, 19.3 million new cases were added to cancer cases in the world. It has also been

reported that approximately 10 million deaths due to cancer have been recorded (1,2). Cancer is a crucial illness that has serious effects on both patients and family caregivers. Cancer affects especially primary family caregivers due to its effects such as requiring long-term care and increasing dependence of the patient on family caregivers (3-5). Family caregivers

of cancer patients may encounter many serious problems during the treatment and care stages, starting from the diagnosis process. Increasing responsibilities, limited time, adaptation to changing roles and the illness process are the main problems to be dealt with. Depending on the problems, family caregivers may neglect their own health, their health anxiety level may increase, and they may withdraw from healthy lifestyle behaviors (6-8). Health anxiety is a psychological condition that occurs when people fear that they will get any illness and think that their health is progressing in a negative direction. According to the cognitive-behavioral model, it stems from false and negative beliefs about health. Healthy lifestyle behaviors are a set of health-promoting practices, such as healthy eating, reaching the ideal body weight, stress management and preventing the use of harmful substances, which aim to improve individuals' own health and increase their control over their health (9-10). It has been reported that family caregivers withdraw from healthy lifestyle behaviors because of spend long hours with patients and experience physical and psychological problems such as insomnia, fatigue, loss of appetite, anxiety, depression, fear, burnout depending on the care process (3,7,11-13).

Although the importance of supporting family caregivers during maintenance is mentioned in the literature, this can also be neglected in practice (14,15). Caregiver burden is defined as a process that has physical, emotional, psychological, and economic negative consequences for caregivers (3,4). In a study conducted by Irwin et al, it was emphasized that the treatment and care process bring with it physical, emotional, social, and economic burdens for family caregivers. In this process, it has been reported that oncology nurses create a care plan that supports family members who care together with the patient and include family caregivers in this process, reducing the burden on family caregivers and positively affecting the treatment process. In this way, it was determined that the family caregiver's anxiety decreased, and they spent more time on their health (16). In this context, it is noted that it is extremely critical nurses from health professionals inform family caregivers and prepare them for process management related to the management of symptoms that may occur after outpatient chemotherapy applications (16,17). In addition, it is thought that the nurse's support of family caregivers with her counselor, trainer, and other roles in a period

that brings along multifaceted burdens such as the care process will be effective in reducing the anxiety of family caregivers about their health levels and fulfilling healthy lifestyle behaviors at the desired level.

A limited number of studies examining the relationship between health anxiety and healthy lifestyle behaviors were found in the literature review (9, 18-20). In this sense, it is aimed to make important contributions to the literature in relation to the presence of a sensitive group such as family caregivers in our study and the absence of a similar study on this subject. This study was conducted to determine the relationship between health anxiety levels and healthy lifestyle behaviors of family caregivers of cancer patients receiving outpatient chemotherapy.

METHODS

Participants

This study is descriptive. The population of the study consisted of 324 family members who gave primary care to individuals who applied to Mersin University Hospital Outpatient Chemotherapy Unit for chemotherapy within a year. In this study, the data collection period was taken as three months on average and the probability of 20% of the participants not participating in the research was considered. In this context the sample size was determined as 90 using power analysis, taking the margin of Type-I error 0.05 and the power of the test 90%.

Inclusion criteria in the study are primary caregiver being a family member, being over 18 years of age, volunteering to participate in the study, the patient being diagnosed at least three months ago and has been receiving chemotherapy for at least a second time, and lastly giving care to the patient at least three months, having the competence to answer the forms to be used for data collection, and understanding and speaking Turkish. In our study, among the family caregivers of patients who applied to the outpatient chemotherapy unit for treatment within the said date, 107 patient relatives who met the inclusion criteria were included in the study. Data were collected by face-to-face interview method in the waiting room next to the outpatient chemotherapy unit. Collecting the data took an average of 10-15 minutes. Those who did not meet the inclusion criteria and did not agree to participate in the study were not included in the study.

Data Collection Tools

The Personal Information Form

It was created as a result of the literature review on the subject in this form, there are a total of 20 questions including 11 questions related to sociodemographic characteristics (age, gender, educational status of the caregivers, employment status, where they live, etc.) and 9 questions related to health-illness (smoking-alcohol use, sleep time, chronic illness, etc.) (12-14).

The Health Anxiety Inventory (Short Form)

It is a self-report scale developed by Salkovskis et al. and it includes 18 items. The validity and reliability study of the test in Turkish was conducted by Aydemir et al. The first 14 items with four options constitute the hypersensitivity to somatic symptoms and anxiety dimension that question people's feelings and thoughts about their health, and the remaining four items constitute the dimension related to the negative consequences of the illness, that assessing how people will feel when they assume they have a serious illness. Scoring is between 0 and 3 for each item. The score that can be obtained from the scale varies between 0 and 54. A high score indicates a high level of health anxiety. According to the reliability study of the scale, the Cronbach's alpha coefficient was determined as 0.92. (21,22). In our study, the Cronbach's alpha value was found to be 0.92.

The Healthy Lifestyle Behaviors Scale

It was developed by Walker, Kerr, Sechirst, and Pender and the validity and reliability study of the scale in Turkish was conducted by Esin. The scale consists of a total of 48 items and there are 6 subgroups in the scale: self-realization, health responsibility, exercise, nutrition, interpersonal support, and stress management. All items of the scale are positive, and scoring is done on a four-point Likert-type scale. "Never" response is given 1 point, "Sometimes" answer is given 2 points, "Often" response is given 3 points, and "Regularly" response is given 4 points. The total score of the scale ranges between 48 and 192. As increase in the score obtained from the scale indicates that healthy lifestyle behaviors are performed better. According to the reliability study of the scale, the Cronbach's alpha coefficient was determined as 0.91 (23,24). In our study, the Cronbach's alpha value was found to be 0.93.

Ethical Consideration and Procedures

Before the data collection process for the study was started, ethics committee approval was received, and official permission was obtained from the head physician of the institution where the study was conducted (Ethics no:2017/220). Verbal consent was obtained from the participants by informing them about the research.

Statistical Evaluation

The analysis of the data was made with STATISTICA 13.3 program. Number and percentages from descriptive statistics were used for classified variables, and the minimum, maximum and median values were used for continuous variables and scale scores. Normal Distribution control was done by Shapiro Wilk test. The median values of the scale scores in the groups with two categories such as gender and family type were compared using the Mann Whitney U test which is one of the nonparametric methods. In groups with more than two categories such as age and marital status, the median values of scale scores were compared using the Kruskal Wallis Test. Dunn's Test from multiple comparison tests was used to determine the group or groups that differed from this comparison. Spearman Correlation Coefficient was used for correlation analysis between scale scores. The statistical significance level was taken as $p < 0.05$ for all comparisons.

RESULTS

It was determined that 51.4% of the caregivers are between the ages of 41-60, 72% of them are women, 62.6% are married, 37.4% are middle school-high school graduates, 68.2% have nuclear family type. It was found that 59.8% of them had less income than their expenses, 49.5% had a chronic illness and 82.2% of them doesn't exercise regularly (Table 1).

The distribution of the median scores of the caregivers in HAI and its sub-dimensions and HLBS and its subscales are given in Table 2. The caregivers' total median score in HAI was 18, and their total median score in HBLS was 116. While self-realization median score in HLBS subscales was found to be the highest, the median score of exercise subscale was found to be the lowest (Table 2).

Among the caregivers, it was determined that the median score of HAI was higher in those who are 19-40 years old, women, middle school-high school graduate, living with multigenerational family and with

Table 1. Characteristics of Caregivers

| Variables | n | % |
|----------------------------------|----|------|
| Age | | |
| 19-40 | 38 | 35.5 |
| 41-60 | 55 | 51.4 |
| 61 and above | 14 | 13.1 |
| Gender | | |
| Women | 77 | 72 |
| Men | 30 | 28 |
| Marital Status | | |
| Married | 67 | 62.6 |
| Single | 22 | 20.6 |
| Divorced | 11 | 10.3 |
| Widow | 7 | 6.5 |
| Educational Background | | |
| Illiterate | 11 | 10.3 |
| Literate | 8 | 7.5 |
| Elementary School | 25 | 23.4 |
| Middle School- High School | 40 | 37.4 |
| Undergraduate- Graduate | 23 | 21.5 |
| Family Type | | |
| Conjugal (Nuclear) Family | 73 | 68.2 |
| Multigenerational family | 34 | 31.8 |
| Income Status | | |
| Income less than expenses | 64 | 59.8 |
| Income equal to expenses | 33 | 30.8 |
| Income more than expenses | 10 | 9.3 |
| Chronic Illness Status | | |
| Yes | 53 | 49.5 |
| No | 54 | 50.5 |

chronic illness. HLBS score medians were found to be higher in individuals who are single, have undergraduate or graduate degrees, live in nuclear families, whose income was higher than their expenses, regularly exercised (Table 3).

It was determined that there was a positive, weak, and statistically significant relationship between hypersensitivity to somatic symptoms and anxiety dimension and health responsibility sub scale scores ($r = 0.230$, $p = 0.017$). It was found that there was a negative, weak, and statistically significant relationship between Dimension related to the negative consequences of the illness and the self-

realization sub scale score ($r = -0.234$, $p = 0.015$) (Table 4).

DISCUSSION

Caregivers is a group at high risk of anxiety due to effects of the care process such as physical, emotional, economic, and psychological effects, lack of readiness for the care process, insomnia, and fatigue. The fact that family members are in constant communication with patients and healthcare professionals during the care process and thus witnessing all stages of the illness process increases their concerns and anxiety about their own health (25-27).

Table 2. Distribution of Median Scores of Caregivers' HAI and its subdimensions, and HLBS and its Subscales

| HAI and its subdimension median scores | median±SD | minimum | maximum |
|---|-----------|---------|---------|
| Hypersensitivity to somatic symptoms and anxiety levels | 15±8.54 | 2 | 39 |
| Dimension related to the negative consequences of the illness | 3±3.13 | 0 | 12 |
| HAI total score | 18±10.71 | 3 | 47 |
| HLBS and its subscale median scores | | | |
| Self-realization | 36±6.50 | 16 | 49 |
| Health responsibility | 19±7.22 | 10 | 39 |
| Exercise | 8±4.31 | 5 | 20 |
| Nutrition | 16±4.34 | 6 | 24 |
| Interpersonal support | 19±4.12 | 7 | 28 |
| Stress management | 16±4.48 | 8 | 27 |
| HLBS total score | 116±26.08 | 53 | 181 |
| *SD: Standart Deviation | | | |

In our study, the median of HAI total score was determined as 18. In studies conducted with caregivers of cancer patients, unlike our findings, health anxiety scores of caregivers were found to be higher than the normal population (28,29). In our study it can be said that the health anxiety of family caregivers is below the middle level. It is thought that the sociodemographic characteristics of caregivers and their experiences with cancer may affect the severity of health anxiety. In a study on the subject, it was reported that negative perceptions and experiences about cancer increase the severity of health anxiety (30).

In our study, age was determined as an independent variable that had a significant effect on health anxiety. It was determined that the health anxiety of the caregivers between the ages of 19-40 was higher than the other groups and that the health anxiety of the caregivers decreased as the age of the caregivers increased. In a study conducted by Rha et al. with family caregivers for cancer patients, in accordance with our findings, it was determined that individuals between the ages of 36 and 45 years had higher health anxiety (12). Similarly, Majeed et al. reported that young individuals caring for cancer patients experience high levels of anxiety and depression (31). In our study, it is thought that with the advancement of age and the increase in experience,

the caregiving process and the concepts of death have become more acceptable, and accordingly health anxiety is found lower in the elderly.

In the study, health anxiety was found to be higher in family caregiver groups in those who are women, middle school-high school graduate, living with multigenerational family and with chronic illness. Esen et al. reported that health anxiety was higher in women, primary school graduates, and those with chronic diseases. Kırac and Öztürk reported that those with low educational level have high health anxiety. The results of the studies on the subject are similar to our findings (32,33). In this context, it is thought that health anxiety of family caregivers increases due to the negative effects of these factors on the care process.

HLBS median score of the family caregivers included in the study was determined as 116. In this context, it can be said that the scores of the caregivers from the scale of healthy lifestyle behaviors are moderate. In the literature review, studies with the HLBS mean scores were found to be moderate, similar to our findings (9,34). In another study conducted with caregivers, it was reported that the care process affects healthy lifestyle behaviors and quality of life (35). When we examine the HLBS subscale scores in our study, it was determined that the highest score was obtained from the self-realization subscale, and

Table 3. Comparison of the Median Scores of HAI and HLBS Total Score for the Introductory Characteristics of Caregivers

| Health Anxiety Inventory | | | | Healthy Lifestyle Behaviors Scale | | |
|--|--------|---------|---------------|-----------------------------------|---------|-------------------|
| | Median | Min-max | p | Median | Min-max | p |
| Age | | | | | | |
| 19-40 | 20 | 5-43 | *0.045 | 117.5 | 69-181 | 0.750 |
| 41-60 | 17 | 3-47 | | 118 | 53-177 | |
| 61 and above | 14 | 5-31 | | 115 | 93-143 | |
| Gender | | | | | | |
| Women | 20 | 3-47 | *0.021 | 118 | 53-181 | 0.819 |
| Men | 16 | 4-40 | | 114.5 | 75-177 | |
| Marital Status | | | | | | |
| Married | 16 | 3-47 | 0.050 | 114 | 71-173 | *0.012 |
| Single | 18 | 11-39 | | 131 | 76-181 | |
| Divorced | 27 | 13-43 | | 107 | 53-156 | |
| Widow | 21 | 5-42 | | 99 | 80-157 | |
| Educational Status | | | | | | |
| Illiterate | 11 | 4-33 | *0.048 | 116 | 98-156 | *0.003 |
| Literate | 23.5 | 3-43 | | 103.5 | 76-123 | |
| Elementary School | 16 | 5-47 | | 111 | 53-142 | |
| Middle School- High School | 21 | 4-43 | | 113.5 | 71-175 | |
| Undergraduate- Graduate | 16 | 11-40 | | 135 | 83-181 | |
| Family Type | | | | | | |
| Conjugal (Nuclear) Family | 16 | 4-47 | *0.020 | 120 | 71-181 | *0.007 |
| Multigenerational family | 22.5 | 3-43 | | 104.5 | 53-164 | |
| Income Status | | | | | | |
| Income less than expenses | 17.5 | 3-47 | 0.816 | 108 | 53-175 | *<0.001 |
| Income equal to expenses | 19 | 5-42 | | 127 | 75-177 | |
| Income more than expenses | 17.5 | 11-36 | | 146 | 114-181 | |
| Chronic Illness Status | | | | | | |
| No | 16 | 4-47 | 0.212 | 119.5 | 53-177 | 0.253 |
| Yes | 19 | 3-43 | | 115 | 69-181 | |
| **Mann Whitney U Test was used for two-category comparisons, and Kruskal Wallis Test for more than two-category comparisons. | | | | | | |

the lowest score was obtained from the exercise subscale. It is a surprising result that the self-realization has the highest score as self-realization occurs because of realizing and revealing the

potentials that exist in one's own after all physiological needs are met. Especially in the presence of an illness such as cancer, whose care process is long and exhausting, it is expected to find another

Table 4. Correlation Between HAI and HLBS Scores of Caregiver Family Members

| Scales and its subscales | | Self-realization | Health Responsibility | Exercise | Nutrition | Interpersonal Support | Stress Management | HLBS total score |
|---|---|------------------|-----------------------|----------|-----------|-----------------------|-------------------|------------------|
| Hypersensitivity to somatic symptoms and anxiety levels | r | -.015 | .230* | .089 | .155 | -.005 | ,109 | ,123 |
| | p | .881 | .017 | .359 | .112 | ,963 | ,264 | ,206 |
| Dimension related to the negative consequences of the illness | r | -.234* | -.038 | -.002 | -.047 | -,200* | -,109 | -,118 |
| | p | .015 | .695 | .985 | .628 | ,039 | ,263 | ,226 |
| HAI total score | r | -.076 | .167 | .073 | .105 | -,061 | ,049 | ,062 |
| | p | .439 | .086 | .453 | .282 | ,533 | ,618 | ,523 |

* Spearman Correlation Coefficient: r, Statistical Significance: p <0.05

subgroup in the first place that aims to provide more physiological needs. According to our findings, It is expected that the exercise subscale is in the last place. Due to the long time spent with the patient because of the care process, for reasons related to social life and work life, family caregivers are unlikely to participate in physical activities by devoting enough time to themselves.

In our study, it was determined that the median of HLBS scores were higher in the groups who are single, has undergraduate-graduate degrees, are living with nuclear families, and those whose income was higher than their expenses. In parallel to our findings, in the studies of Khaghanyrad and Karaman Ozlu it has been reported that those who are single, undergraduate, live with their families and whose income is more than their expenses are better performing healthy lifestyle behaviors (34). In our study, it is thought that there is a close relationship between family caregivers fulfilling healthy lifestyle behaviors and care burden and increasing responsibilities. To explain in more detail, it is thought that healthy lifestyle behaviors cannot be fulfilled at the desired level in family caregivers who live in more extended families in marital status categories other than single caregivers due to the burden of care, housework, childcare, economic problems, and the protection of family integrity. In studies on the subject, it has been reported that caregivers try to cope with physical, psychological, and emotional burdens depending on the care process and therefore cannot fulfill healthy lifestyle behaviors (36,37).

Individuals with a high level of education are thought to have higher HLBS scores associated with their high level of understanding, comprehension, and behavioral skills obtained from health institutions due to their high level of health literacy and from sources such as books, magazines, brochures, internet, etc. In the studies conducted on the subject, the increase in healthy lifestyle behaviors as the education level increases supports our findings (9,38-40). Income level is also an important variable affecting healthy lifestyle behaviors, and in our study, it is thought that the median of HLBS scores are higher due to the fact that family caregivers with high income have financial means to allow them to regulate their diet with all food groups (protein, carbohydrate and fat), and to go to sports centers for regular physical activity, exercise, etc.

A limited number of studies examining the relationship between health anxiety and healthy lifestyle behaviors were found in the literature review (9,18-20). In our study, it was determined that as the anxiety levels of family caregivers about their health increased, their health responsibility levels has also increased. In a few studies on the subject, it has been reported that health anxiety affects health lifestyle behaviors negatively (18-20). On the other hand Şimşekoğlu and Mayda reported that there was no relationship between HAI and its subgroups, and HLBS and its subscales (9). The level of experienced health anxiety can directly affect health behavior. It is thought that, due to the physical, emotional, economic, and psychological effects experienced in

the care process, the family caregivers cannot take care of their own health adequately and therefore their anxiety levels towards their health increase. In this context, it is thought that with increasing health anxiety, the health responsibility of family caregivers also increases, and they fulfill healthy lifestyle behaviors accordingly. In addition, it is observed that family caregivers are distanced from realizing themselves with the thought of having a serious illness and the increase in negative feelings related to this. This situation can be described as an expected result in our research. Because self-realization represents the situation in which the psychological well-being of the individual is at the highest level (41). Considering the problems experienced by family caregivers in the presence of an illness such as cancer with a difficult treatment and care process, it does not seem possible to provide full psychological well-being.

Limitations

The research was carried out with family caregivers for patients who applied to an outpatient chemotherapy unit of a university hospital between 01.09.2017 and 31.12.2017. Therefore, the results are sample specific and cannot be generalized to the entire population.

CONCLUSION

In our study, it was determined that as the health anxiety of the caregivers increased, their health responsibilities increased, and they distanced themselves from self-actualization. In this context regarding the difficulties that family caregivers experience in the care process, it is recommended to organize group meetings by health professionals where family caregivers can share their experiences and to organize training that will positively affect health anxiety and healthy lifestyle behaviors.

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