Original Article
DOI: 10.5455/amaj.2021.01.002

Assessment of Anxiety, Depression and Hopelessness of the Mothers of Children with Cancer: A Pilot Study of Comparing Evaluation Scales

Müberra Tanrıverdi, PhD[1], Malik Kısmet, MD[2], Fatma Betül Çakır, MD[3].

[1] Assistant Professor at Physiotherapy and Rehabilitation Department, Bezmialem Vakıf University, Istanbul, Turkey

[2] Faculty of Medicine, Bezmialem Vakıf University, Istanbul, Turkey

[3] Professor at Department of Pediatrics, Bezmialem Vakıf University, Istanbul, Turkey

Correspondence:
Müberra Tanrıverdi, PhD

Assistant Professor at Physiotherapy and Rehabilitation Department, Bezmialem Vakıf University

email: mtanriverdi@bezmialem.edu.tr

Objective: The impact of cancer on patients' psychology and their relatives is very significant during the whole treatment process. The aim of this study is to evaluate the anxiety, depression, hopelessness situations of the mothers of the children with cancer.

Material & methods: We have included the families of the children who diagnosed with cancer at the age of 0-18 years. The files that include clinical informations of the patients were scanned. The Parental Stress Scale (PSS) was used to evaluate the stress conditions of the mothers. The Beck Depression Scale (BDS) was used to assess the level of depression of the mothers. The Beck Hopelessness Scale (BHS) was used to assess the hopelessness of the mothers.

Results: A total of 24 (16 male and 8 female) children with a mean age of 9.18±6.32 years were enrolled in the study. When we look at the educational status of mothers; 8 mothers (33.3%) were did not go to school, 8 mothers (33.3%) were primary school graduates, 4 mothers (16.7%) were middle school graduates, 2 mothers (8.3%) were high school graduates and 2 (8.3%) were university graduates. The results of PSS score was 40.41±8.6; BDS score was 14.83±6.32, and BHS score was 29.58±1.67. Statistically significant correlation between PSS and BHS levels ($r=-0.615$; $p<0.05$) were found.

Conclusion: The parental stress is associated with mothers' hopelessness. Psychiatric counseling is highly recommended for the mothers.

Keywords: Stress, family, children, depression, hopelessness

Introduction

Cancer, which is one of the most challenging diseases of today, is a disease that raises multiple treatments and cause fear in the patients, relatives and society. The psychology of cancer patients and their relatives has an important role in the whole treatment process [1]. When we think of cancer as a life crisis, it affects individuals' daily living activities, roles and relationships directly. The development of negative feelings and thoughts is almost inevitable in patients with cancer or with possibility of having cancer [2].

Research on psychiatric disorders in cancer patients reveals that nearly half of these patients have a level of psychiatric disorder that requires diagnosis and treatment. From a psychiatric point of view, these diseases are; adjustment disorder, major depression, organic brain syndrome, personality disorders and anxiety disorder. Depressive spectrum diseases are the most common. Psycho-oncology (cancer psychology) has become increasingly important with advances in cancer treatment, and today it is spreading and developing as a part of the treatment [3]. Psycho-oncology is a discipline that investigates the psychological effects of cancer on the patient, family and treatment team, and provides psychological services to cancer patients [4]. Cancer causes a crisis in the patient's family as well as in the patient. Difficulties arise in the relationship between patient and family. These are necessary for the best and most healty relationship between the patient and her/his family:

free expression of emotions, have little conflicts and have more cooperation, patient compliance. In addition to cancer patients, families also often need psychological support and treatment. In summary, psychological treatment and support during and after the whole illness process will utilize this challenging process and increase the quality of life and treatment efficacy [5].

Our study aims to reveal the anxiety, depression and hopelessness of the mothers with cancer patients, to keep the motivation of family members and instinct to cope with the disease at high level, to obtain information theoretically, and if families need support, direct them to the necessary health institution.

Methods

Demographic informations of children and families who voluntarily agreed to participate in the study by scanning the our university hospital files containing personal and clinical informations.

Participants

Age, gender, diagnosis, age of diagnosis, treatment (type, frequency, duration, outcome), educational status, academic success, family history, symptom assessments, fatigue, pain, nausea, vomiting, sleep disorder, hair loss, infection, sleep disorder, cough, sputum, shortness of breath, neurological symptoms, accompanying and physical/clinical findings (weight, height, BMI) were comprised.

Inclusion criterias:

1. Have children with cancer diagnosis
2. Participating in the study voluntarily
3. Not having any neurological and / or musculoskeletal problems due to different reasons

Exclusion Criterias:

1. Have another neurologic and/or orthopedic disorder
2. Communication problems

Outcomes

1. Parental Stress Scale (PSS) was used to evaluate the stress status of the mothers. It was developed to evaluate the parental stress. PSS is an 18-item self-report scale that shows the positive aspects (emotional benefits, self-enrichment, personal development) and negative aspects (demands on resources, opportunity costs, and restrictions) of being a parent. The mothers who were attend the study is asked to answer whether they agree or disagree with the items that describe their typical relationship with their children. The answers for each item are given on a 5-point scale: 1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 = strongly agree. The score ranged between 18-90, and 8 positive items were scored by the contrary. Higher scores indicate more stress [6].

2. Beck Depression Scale (BDS) was used to assess mothers' depression. BDS was formed by combining the symptoms of depression and depressive attitudes and behaviors of patients from the clinical field. The mothers were asked to select the statement which has best describe how they felt in the last week. This scale has 21 questions with multiple-choices and each answer has a value of 0 to 3 points. According to the distribution of points in the diagnosis of depression, 11-17 points indicate mild depression, 18-29 points indicate moderate depression, and 30-63 points indicate severe depression [7].

3. Beck Hopelessness Scale (BHS) was used to assess hopelessness of mothers. BHS measures the extent of the respondent's negative attitudes, or pessimism about the future. It is a 20-item scale with a true–false response format (nine items are keyed false, 11 true); each response is summed to give a severity rating from 0 to 20, with high scores indicating the presence of hopelessness [8].

Statistical Analysis

In the data analysis of the study, Package Statistical Package for Social Sciences (SPSS) Version 22.0 (SPSS inc. Chicago Province USA) statistics program was used. Demographic and clinical characteristics of the patients was analyzed by descriptive statistics, minimum, maximum values, mean and standard deviations were calculated. In all analyzes, $p < 0.05$ (bidirectional) values were considered statistically significant. "One sample Kolmogorov-Smirnov "test was used to determine whether the distribution of the data groups was normal in order to select the appropriate advanced statistical analyzes in the data analysis of the study. The relationship between the demographic characteristics of children and mothers (gender, age, etc.), and depression, anxiety and stress assessment results of mothers was examined with the Spearman Correlation Analysis.

Results

A total of 24 children (8 (33.3%) girls and 16 (66.7%) boys) and their mothers participated in the study. Eighteen of the children (75%) did not have any other disease associated with cancer. In terms of medical treatment; 18 (75%) children received chemotherapy only, 4 (16.7%) children received radiotherapy and chemotherapy, 2 (8.3%) children received chemotherapy and surgical treatment. Sixteen children (66.7%) received outpatient treatment; 8 (33.3%) received inpatient treatment. Children's demographic information (age, height, weight, BMI, etc.), clinical information (disease diagnosis, tumor / disease stage, diagnostic age, etc.) and information about their parents (age, educational status, etc.) were given in Table 1. It was learned that 6 (25%) of the mothers received professional psychological support during the treatment. The average results of the scales used to measure the psychological status of mothers are given in Table 2. There was a statistically significant relationship between the duration of treatment and psychological support of the children ($r = 0.759$; $p = 0.004$).

The correlations between the evaluation results of the children and their mothers are given in Table 3. There was a statistically significant relationship between BDS scores and nausea ($r = 0.606$; $p = 0.037$), vomiting ($r = 0.590$; $p = 0.043$), sleep disorders ($r = 0.660$; $p = 0.020$), infection ($r = 0.655$; $p = 0.021$), sputum ($r = 0.683$; $p = 0.014$) and neurological symptoms ($r = 0.595$; $p = 0.041$).

Table 1. Demographical and Clinical Characteritics of Children and Mothers.

	N	%
Tumor Term		
1.Term	6	25
3.Term	6	25
4.Term	12	50
Diagnosis		
Leukemia	2	8.3
Lymphoma	6	25
Brain Tumor	4	16.7
Kidney	2	8.3
Neuroblastoma	6	25
Sarcoma	4	16.7
Mothers' education		
Uneducated	8	33.3
Primary school	8	33.3
Secondary school	4	16.7
High school	2	8.3
College/University	2	8.3
Fathers' education		
Uneducated	2	8.3
Primary school	10	41.7
Secondary school	4	16.7
High school	4	16.7
College/University	4	16.7

N=Number; SD=Standart Deviation

	Mean	SD	Minimum	Maximum
Age (years)	9.18	6.32	3	18
Height (centimeter)	126.13	39.01	82	170
Weight (kilogram)	21.98	11.75	11	41
Body mass index (kg/m^2)	15.48	1.63	14	18
Diagnosis age (years)	5.25	5.37	1	15
Duration of medical treatment (months)	11.67	12.09	1	36
Symptoms (Visual Analog Scale)				
Fatigue	4.33	2.49	0	9
Nausea	3.67	3.23	0	10
Vomiting	2.83	3.43	0	10
Sleeping disorder	4.08	3.73	0	10
Hair loss	4.50	4.58	0	10
Pain	4.25	3.69	0	10
Infection	2.58	4.12	0	10
Malnutrition	5.08	3.85	0	10
Cough	2.92	3.97	0	10
Sputum	4	4.24	0	10
Dyspnea	3.08	3.94	0	9
Neurological problems	2.17	3.64	0	10
Mothers' age (years)	32.38	5.29	26	40
Fathers' age (years)	35.25	7.56	30	50

Table 2. The results of psychological states scales of children mothers'

	Mean	SD	Minimum	Maximum
Beck Depression Scale	14.83	6.32	5	24
Beck Hopelessness Scale	29.58	1.68	27	32
Parental Stress Scale	40.42	8.63	28	53

SD=Standart Deviation

Table 3. The relationships between results of scales

	Parental Stress Scale	
	z	p
Beck Depression Scale	0.351	0.263
Beck Hopelessness Scale	0.615	0.033*

** p < 0.05, statistically significant differences*

Discussion

The aim of this study was to evaluate the stress, depression and hopelessness of mothers who had children with cancer. Stress, depression and hopelessness were evaluated by scales, although they did not have any mental complaints. The scores of PSS used to measure stress status were found to be 40.42 ± 8.63. Although this result cannot be categorically classified, it shows that it has a proportional effect of 30%. According to the results of BDS (14.83 ± 6.32), which was used to determine the state of depression, mothers were found to have mild depression. According to the results of BHS, it was found that mothers were closer to hopelessness.

In the literature, depression and anxiety are highly prevalent not only in mothers and families but also in children with cancer. According to the results of our study, it is essential to evaluate both the child with cancer and his mother in detail. Others of children with cancer experience significant distress associated with their children's diagnosis and treatment [9].

Many studies have shown that children and adolescents with chronic illness, including cancer, have more mental problems. In addition, not only the conditions accompanying the disease, but the disorders that develop after the treatment are listed as high anxiety level, depression and anger attacks [10]. In our study, we

evaluated the hopelessness conditions associated with stress, depression and anxiety of mothers, not children. In future studies, there is a need for multidimensional research involving both the children with cancer and their mothers'.

It has been reported that as the duration of exacerbation of the diseases in children becomes more frequent and prolonged, children's fear and anxiety about death is increases. After the diagnosis of cancer, the life span of the children is prolonged with the developing treatments. The time for diagnosis of children is also prolonged. Children with cancer have higher anxiety levels than children without cancer. Depression levels in mothers of children with cancer are also different in mothers of children with and without chronic disease. However, with the progressive time, the difficulties and side effects of the treatment increase in children with cancer, death and future anxiety are experienced more and consequently, the increase in anxiety levels can be determined [11].

They emphasized that especially children with cancer, as well as their parents, were diagnosed with depression and anxiety disorder more frequently than mothers and fathers without chronic diseases. They reported that 1/3 of the mothers with children with leukemia had a mental disorder. Depression and anxiety levels in mothers are higher than those of fathers [12]. In addition, depression and anxiety levels differ from each other according to parental comparisons with / without chronic disease. These results support our social cultural characteristics. In mothers, especially when dealing with a child with chronic illness, burnout sufficiency is more common and therefore depression and anxiety levels may be higher. In the researches, it was emphasized that marital adjustment is good, socioeconomic level, having family support, parental education level, parental age, severity of the disease in the child, and whether it is fatal or not are effective in the anxiety and depression levels of the parents. Depression levels in mothers of children with cancer are higher than the parents of children with and without chronic disease [13].

Social stigmatization of cancer differs from other chronic diseases. Research shows that pessimism and helplessness are common among cancer attitudes and that cancer is perceived as a destruction. Today, although some types of cancer such as ALL, Wilms tumor can be treated, the idea that cancer is equivalent to death continues. In some other chronic diseases, which can be as lethal as life-threatening and can be fatal, such negative stigmatization is not observed. The negative attitudes of the society may be contributing to the higher levels of depression among children and mothers in the cancer group than those with other chronic diseases [14].

The low education level of families, lack of knowledge about the disease, wrong attitudes and problem solving capacity play a role in the anxiety and depression levels of sick children and their parents. Various methods are applied to reduce stress levels in children with cancer and their parents. It is reported that the general condition of children with cancer should be discussed separately from the patient. It is emphasized that only 25% of children with cancer can result in death and therefore there should be no definitive interpretation of the course of illness [15]. Two years after the diagnosis of 52 children and parents of children with cancer, psychosocial examination of the children and parents did not experience significant psychosocial problems, and during the treatment of adequate and compatible patient-doctor-parent relationship may play a protective role in the family and children's mental problems they emphasized. In addition, group therapies for mothers-fathers and siblings and children with cancer have been reported to be particularly useful in sharing emotions and finding the ability to cope with the situation [16].

Limitations of the Study

The limitations of our study were the small sample size and the evaluation of mothers only. In the evaluation, scales with separate child-parent modules and easy to use clinically are needed. Although the number of children in the sample group in our study was not sufficient to make a definitive comment on the mental problems experienced in children with chronic illnesses and their families, we think that children with chronic illnesses and their families are more stressed.

Further studies with larger sample groups and evaluation of more detailed sociodemographic data will shed more light on this issue.

Conclusion

As a result, adequate communication and support should be provided between the departments in the hospital so that children with fatal illnesses such as cancer and their families can cope more easily with stress better adapt to the disease, and be least affected mentally. The entire family should be given the necessary psychiatric support.

References

1. Patterson JM, Holm KE, Gurney JG. The impact of childhood cancer on the family: A qualitative analysis of strains, resources, and coping behaviors. Psycho-Oncology. 2004; 13(6): 390-407.
2. Baile WF, Buckman R, Lenzi R, Glober G, Beale EA, Kudelka AP. SPIKES—a six-step protocol for delivering bad news: application to the patient with cancer. The Oncologist. 2000; 5(4): 302-11.
3. Mehnert A, Koch U. Prevalence of acute and post-traumatic stress disorder and comorbid mental disorders in breast cancer patients during primary cancer care: a prospective study. Psycho-Oncology. 2007; 16(3): 181-8.
4. Greer S. Psycho-oncology: Its aims, achievements and future tasks. Psycho-Oncology. 1994; 3(2): 87-101.
5. Blanchard CG. The crisis of cancer: psychological impact on family caregivers. Oncology. 1997; 11(2).
6. Berry JO, Jones WH. The parental stress scale: Initial psychometric evidence. Journal of Social and Personal Relationships. 1995; 12(3): 463-72.
7. Geisser ME, Roth RS, Robinson ME. Assessing depression among persons with chronic pain using the Center for Epidemiological Studies-Depression Scale and the Beck Depression Inventory: a comparative analysis. The Clinical Journal of Pain. 1997; 13(2): 163-70.
8. Young MA, Halper IS, Clark DC, Scheftner W, Fawcett J. An item-response theory evaluation of the Beck Hopelessness Scale. Cognitive Therapy and Research. 1992; 16(5): 579-87.
9. Sahler OJZ, Fairclough DL, Phipps S, Mulhern RK, Dolgin MJ, Noll RB, et al. Using problem-solving skills training to reduce negative affectivity in mothers of children with newly diagnosed cancer: report of a multisite randomized trial. Journal of Consulting and Clinical Psychology. 2005; 73(2): 272.
10. Benight CC, Bandura A. Social cognitive theory of posttraumatic recovery: The role of perceived self-efficacy. Behaviour Research and Therapy. 2004; 42(10): 1129-48.

11. Ari AB, Peri T, Margalit D, Galili-Weisstub E, Udassin R, Benarroch F. Surgical procedures and pediatric medical traumatic stress (PMTS) syndrome: Assessment and future directions. Journal of Pediatric Surgery. 2018; 53(8): 1526-31.
12. Brown RT, Kaslow NJ, Hazzard AP, Madan-Swain A, Sexson SB, Lambert R, et al. Psychiatric and family functioning in children with leukemia and their parents. Journal of the American Academy of Child & Adolescent Psychiatry. 1992; 31(3): 495-502.
13. McCubbin M, Balling K, Possin P, Frierdich S, Bryne B. Family resiliency in childhood cancer. Family Relations. 2002; 51(2): 103-11.
14. Ablon J. Stigmatized health conditions. Social Science & Medicine. 1981; 15(1): 5-9.
15. Last BF, Stam H, Onland-van Nieuwenhuizen AM, Grootenhuis MA. Positive effects of a psycho-educational group intervention for children with a chronic disease: first results. Patient Education and Counseling. 2007; 65(1): 101-12.
16. Visser A, Huizinga GA, van der Graaf WT, Hoekstra HJ, Hoekstra-Weebers JE. The impact of parental cancer on children and the family: a review of the literature. Cancer Treatment Reviews. 2004; 30(8): 683-94.