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Depression and Anxiety among Parents of Children with Blood Disease in Ahvaz, South West of Iran

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Abstract

Background

Existence the children with blood diseases in family could cause lots of stress and anxiety for parents, this stress among parents would negative effects on children's disease process and his response to treatment.

Materials and Methods

This is a descriptive-analytical study which carried out on 480 parents with children affected to blood disease referring to Shafa hospital of Ahvaz, Iran. The parents' level of anxiety was evaluated using the Hospital Scale for Anxiety and Depression. In this study Sample size by using statistical formulas was selected 480 persons by available sampling. Data were analyzed using SPSS-16 software.

Results

Results showed that in 20.4% (98 cases) of parents level of anxiety was intense, in 50.7% (243 cases) level of anxiety was middle, in 15.6% (75 cases) level of anxiety was low and 13.3% (64 cases) of parents were lack of anxiety. Additionally the results of level depression study showed that 8.6% (41cases) of parents had severe depression, 35.7% (171 cases) moderate depression, 15.7% (76 cases) low depression and 40% (192 cases) no depression. According to the results of this study, there was a significant difference between level of anxiety and depression of parents and the duration of child's hospitalization ($P<0.05$).

Conclusion

According to the results, high prevalence of anxiety and depression was among parents; so with treatment and management of anxiety and stress in parents of children; it can be achieved to better treatment in children with blood disease.

Key Words: Anxiety, Children, Depression, Blood diseases, Parents.

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1- INTRODUCTION

About 35 percent of children experience hospitalization at least once during their childhood. About 5 percent of them have been hospitalized for several times (1). In the United States about 5 million children annually are hospitalized to diagnosis or treatment (2). Illness and hospitalization is the first crisis faced by child. Children are sensitive to the crisis caused by the disease and hospitalization especially in early years of life, because of their limited adaptive mechanism (3). Many children experience hospitalization and anxiety caused by that. Anxiety in children appears in different ways such as nocturia, nutrition and sleep disorders. Detection of risk factors of anxiety before invasive medical procedures or surgery is very important. It has been said many times that children are more vulnerable than adults. Meanwhile, children aged 0-1 years old are most likely to have anxiety (1). Children's ability in adaptation with the stress caused by hospitalization depends on various factors such as age and level of understanding and recognition, previous experience of illness or hospitalization, relationship with parents, duration and type of the disease, quality of care, parental anxiety level, preparation and ability to consistent (4). Persistent anxiety of children follows persistent anxiety of parents. Therefore, since that anxiety is an important factor in slowing down child recovery and reducer of physical and mental ability to get rid of the disease. One of the most important interventions of nursing is reducing the anxiety caused by hospitalization of children and then reducing the anxiety of parents and, consequently their satisfaction improvement as well as improvement of health level of children and their families (5). Hospitalization of a child is a stressful experience for parents. Parents experience changes in their parental role, when their child is cared for by health care professionals in an unknown environment. In addition, they often need to provide support to other family members, such as siblings and grandparents (6). The hospitalization of one family member, especially children has a considerable psychological impact on the family (7).

Cancer is considerable at any age, but death caused by cancer is more common at age 3 to 14. Pediatric cancer is including a group of malignancies that each one has their special epidemiology-pathology and mortality rates. This disease, which has more variety compared to adult disease, is the most common reason for mortality at the age 1 to 16 in western countries (8). Hypotheses that generally have been raised about mechanism of relationship of mental disorders in parent with physical illness in children include the following: factors related to pregnancy period, factors related to parent behavior in upbringing and education of young and relationships of parent and children, family life events, cigarette and drugs or medicine consumption and genetics. Meanwhile some studies have a more specific attention to relationship of parent mental disorders with special types of physical disorders in children (4). However, if the stress and anxiety be excessive it can lead to disease. The crisis caused by disease and children hospitalization would impact on all family members (9).

During hospitalization parents have a conflict between staying in hospital and daily work, they may also be in doubt about children treatment in future (10). Parents' affection to anxiety and depression can be associated with reduction of sense of responsibility towards the care, training and nutrition of their children (10-11). Some studies show that children of parents with depression compared with healthy parents, experience more hospitalizations as well as death rate is higher among them (12).

Also, some studies have shown higher rate of psychiatric disorders including depression among parent, especially mothers of children with chronic diseases, such as asthma and diabetes. In this regard mutual and reciprocal relationships are discussed. The results indicate that although some parent deal with problems well, but in general, parent of children with disabilities compared to other parent, have physical disorders, depression, anxiety, stress and more neural pressure and less confidence. They also, feel lonely and have problems in relationship with people around (8).

Study results of Soltanifar and et al. which have examined anxiety and depression in children with anxiety disorders; showed that the prevalence of depression was much higher among the mothers of patients than the control group (13). An a study by Lieb et al. (2002), which examined the impact of parental depression on children suffering from depression and other mental disorders, it has been observed that this factor would increase the overall risk of children affection to depression and other psychiatric disease at younger ages (14).
Despite the efforts of parents, their anxiety is transmitted to their children since parents are the most important person in the child protection system (6), therefore, children with parents suffering from psychiatric problems would have more behavioral disorders, have a higher risk for anxiety and depression (15); so the family and family life are a very essential part of individual health (8, 16).

Evaluation of parents anxiety and depression is important, because children could receive anxiety and depression from their parents based on their degree of development. Therefore, according to secrecy of anxiety and depression symptoms in parents of children with blood diseases and lack of reference for treatment as well as effect of parents stress on children, according to raised mutual influences between occurrence, course and prognosis of these chronic diseases with parent depression and existence of insufficient and inconsistent information in this area and lack of enough information about parents' condition of these children in our society, in this study, and due to the secrecy of the symptoms of anxiety and depression in parents of children with blood diseases and refusal from referring for treatment and influence of parents stress on children; this study has been conducted with the aim of examining the rate of depression and anxiety in parents of children with blood diseases referred to Shafa hospital in Ahwaz- Iran, in 2016. This study can be the basis for preliminary planning and correct prioritization of mental health intervention in children's diseases.

2- MATERIALS AND METHODS

2-1. Study design and population

This is a descriptive-analytic study and type of cross-sectional study, which was conducted from March 2016 to May 2016. The study population consisted of parents of children with different types of blood diseases referred to Shafa hospital of Ahvaz, South West of Iran. Sample size using statistical formulas was selected 480 persons by available sampling.

$$N=z_{1-\alpha/2} * p * (1-p)/d^2$$

d=0.03 p=0.35
1-p=0.65 α =0.05

where, **n**= the number or volume sample, **α** = the amount of error, **z**= standard statistic, **p**= possibility have a special feature, **1-p**= impossibility, **d**= test accuracy.

Inclusion criteria included all parents who had children with different types of blood diseases who were hospitalized and as caregivers were present at the hospital beside patient, and lacking a historical of mental illness and willing to cooperate.

Exclusion criteria included lack of willingness to cooperate and incomplete filling in the questionnaire. Due to fathers had less presence of beside their sick children, the number of father's participant was lower than mothers.

2-2. Measuring tool

The data collection tool was Hospital Anxiety and Depression scale (HADS). Validity and reliability of the questionnaire in various studies have been reported at an acceptable level (17-19). The HADS sum scale performed better in all analyses compared to the GHQ-12, specifically in detecting depressive and anxiety disorders, best results are achieved for depressive disorders with an area under the curve (AUC) of 0.79, a sensitivity of 78% and a specificity of 71% (cut off point= 16). The positive predictive value (PPV) is best for the detection of any mental disorder with a cut-off point of 16 (46%) (17).

The HADS instrument remains widely used in research; in 1998, it had been used in over 2000 empirical studies (20). Intended tool has been psychometric for Iranians (20-21). This tool has seven statements for measuring anxiety and seven statements for measuring depression. Each statement of test was scored on a scale from zero to three. So, following scores range from 0 to 21 in anxiety and depression scale of HADS questionnaire. Both subscales of scores has been considered at the range of 0 to 7 normal, 8 to 10 mild, 11 to 14 moderate, and 15 to 21 is considered severe. In this study, scientific validity of instrument was determined by convergent validity method using Beck Depression tool. The correlation test between two tools was significant ($r=0.71$ and $P< 0.001$). Internal correlation method and re-test were used to determine the reliability of the tool (alpha Cranach = 0.89). So that 20 persons of parents completed the questionnaire twice with an interval of 2 weeks. Correlation coefficient between the two tests was obtained 0.84. Data collection method was as follow that the questionnaire was provided for parents of children with blood disease and they were asked to complete it. If parents were not literate, questionnaire was completed via interviewing by researcher.

2-3. Ethical considerations

The Ethics Committee of Ahvaz Jundishapur University of Medical Sciences approved the study (ID number: GP93028) and all of the children parents provided written informed consent. Participation in the study was voluntary and the questionnaires had no name. Data were extracted from all the questionnaires in general.

2-4. Data analysis

Data analysis was performed using SPSS-16 software with use of the Descriptive results using percent, mean, standard deviation (SD) and the chi-square test was applied to survey relationship between level of anxiety and depression of parents and history of children hospitalization, gender of the parents, gender of the children, parent’s residence, parent’s age and the duration of child's hospitalization. P-value less than 0.05 were considered.

3. RESULTS

The results of data showed that 3% (15 cases) of Parents of children were men and 97% (465 cases) were women. The average age for male parents was 43 ± 4.15 years old and for female parents it was 38 ± 5.16 years old. About 99.5% (477cases) of the parents were married; 65% (168 cases) of parents had more than 3 children and the remaining 35% (168 cases) had less than 3 children. Most of mothers (91%, 436 cases) were housewives and most of fathers (75%, 11 cases) were self-employed. Most of the parent of children 89.3% (428 cases) had no history of hospitalization of their other child (**Table-1**). The average age of children

was 9± 4.18 years. Also, 49.20% (236 cases) of sample children were boys and 50.8% (244 cases) were girls. Average length of hospitalization among boys was 125± 9.6 days and in girls was 98± 6.54 days. Common illnesses among children included 75% (360 cases) different types of cancer, 15% (72cases) anemia, 7.5% (36 cases) thalassemia, 2.5% (12 cases) hemophilia. 78.9% (378 cases) of children had a history of hospitalization; also 35% (168 cases) of children were from Ahvaz city and the remaining 65% (312 cases) were referred suburban city of Ahvaz for treatment. 42.3% (203) of children had social security insurance, 15.7% (75) had healthcare services insurance and 40% (202) had the remains of other types of insurance (**Table-2**).

About the level of parent's anxiety; the results showed that 20.4% (98 people) had sever anxiety level, 50.7% (243 people) had moderate anxiety level, 15.6% (75 people) had low anxiety level and 13.3% (64 people) hadn't any anxiety. (**Table-3)** and **(Figure-1**). Also, the obtained results from examination of level of depression showed that 8.6% (41.28 people) had severe depression, 35.7% (171 people) had moderate depression, 15.7% (76 people) had low depression and 40% (192 people) hadn't any depression. (**Table-4**) and (**Figure-2**). According to chi-square test; there was a significant difference between anxiety and depression level of male and female parents. So that the average anxiety and depression level of female parent were more than the male parent (P= 0.001). Also, the parents with having a boy baby, have more anxiety than parents with having a hospitalized girl baby (P= 0.005); but the difference was not significant about the depression (P= 0.021) .

According to the parent's residence; the anxiety and depression scores were higher in suburb residence of Ahvaz city than Ahvaz city (P=0.001).There was a significant and inverse relationship between parent's age and the level of their anxiety and depression (P=0.002), so that the level of anxiety and depression of parents will be reduced with increasing the age. Child's age and the duration of his illness had not statistical significant relation with the level of anxiety and depression among parent. There was a statistical significant relation between level of anxiety and depression and the duration of hospitalization of child, so that the parent's depression and anxiety were higher with increasing hospitalization of child (P=0.002). Also There was a statistically significant difference between level of anxiety and depression of parents and history of children hospitalization (P= 0.001), so that level of anxiety and depression was higher among parents who had history of children hospitalization.

Table-1: The frequency and percentages of demographic information of parent

Demographic variables		Number	Percentage
Gender	Female	465	97
	Male	15	3
Marital status	Married	477	99.5
	Single	3	0.5
Number of parent 's children	More than 3 children	312	65
	Less than 3 children	168	35
Mother's job	House wife	436	91
	Employed	44	9
Father's job	Self-employed	360	75
	Staff	120	25
History of parent's another child hospitalization	Yes	52	10.7
	No	428	89.3

Table- 2: The frequency and percentages of demographic information of children

Demographic variables		Number	Percentage
Gender	Male	236	49.2
	Female	244	50.8
Children's disease	Types of cancer	360	75
	Anemia	72	15
	Thalassemia	26	7.5
	Hemophilia	12	2.5
History of Children 's hospitalization	Yes	378	78.9
	No	102	11.1
Residence of status	Ahvaz	168	35
	Suburb	312	65
Type of health insurance	Social security	203	42.3
	Healthcare services	75	15.7
	Other types of insurance	202	40

Table- 3: Parent's level of anxiety, differentiated by gender

Parent's level of anxiety	Without anxiety		Low anxiety		Moderate anxiety		Severe anxiety	
	Number	Percentage	Number	Percentage	Number	Percentage	Percentage	Percentage
Man	31	20.31	1	1.3	1	0.4	-	-
Woman	51	79.68	74	98.6	242	99.5	98	20.4
Total	64	13.3	75	15.6	243	50.7	98	20.4

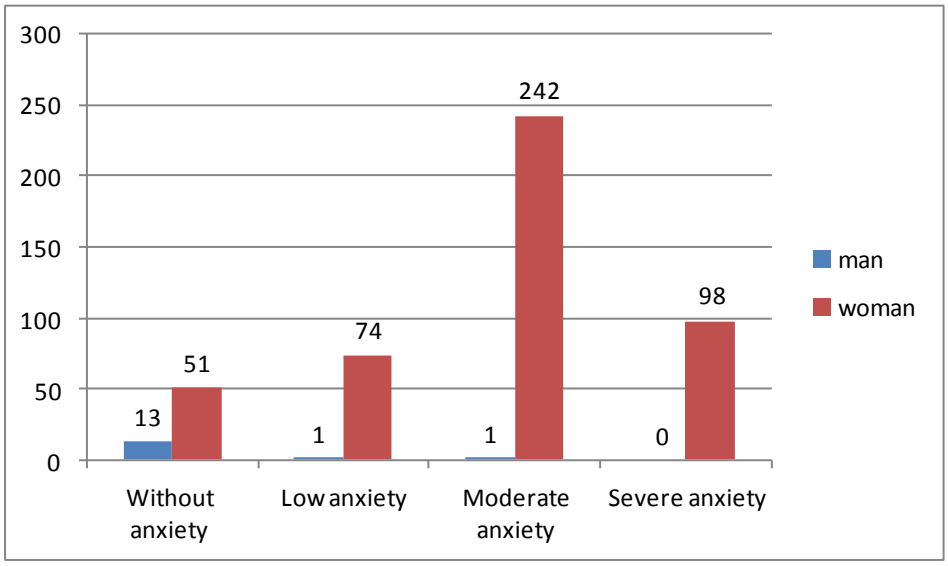

Fig.1: The frequency of Anxiety among Parents of Children with Blood disease

Table-4: Parent's level of depression, differentiated by gender

Parent's level of Depression	Without depression		Low depression		Moderate depression		Severe depression	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Man	2	1.04	5	6.57	6	3.50	2	4.87
Woman	190	98.95	71	93.42	165	96.49	39	95.12
Total	192	40	76	15.7	171	35.7	41	8.6

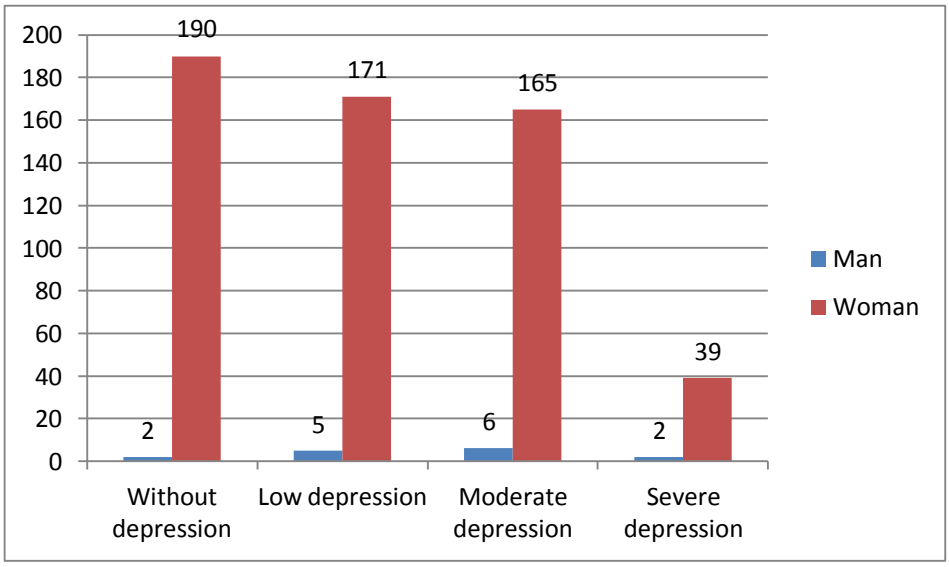

Fig.2: The frequency of depression among Parents of Children with Blood disease

4- DISCUSSION

The present study showed that in total 71.1% of child's parents with blood diseases had sever to moderate anxiety and 15.6% of them had low anxiety and only 13.3% of parents, had normal anxiety. The findings about measurement of depression indicated that 44.3% of people had moderate to severe depression, 15.7% of them had low depression and only 40% of them had not any depression.

In the study by Jafarimanesh et al. results showed that 49.1% of parents had moderate to severe anxiety, 25.5% had low anxiety and only 26.4% of people had normal anxiety, and about the depression, 31.8% of parents had moderate to severe depression and 27.3% had low depression and 40.9% hadn't any depression (22).

Also, in a study by Bagheri Gale et al., the results showed that 40.7% of mothers had low anxiety, 34.5% of them had moderate anxiety and 24.8% of them had severe anxiety, which is somewhat similar to the our current study. These results indicate that most of the parents of having sick children are suffering from moderate to severe anxiety. Also, results the studies which has been done in Turkey and China; showed that the anxiety of mothers, who have children with epilepsy were more than the mothers who have, two normal children (23-24). In the present study, it was indicated that there is a statistical significant difference between anxiety and depression of parents of having a child with blood disease, so that this disorders in mothers was more than fathers. In a study which has been done by Streisand et al; also similar results were obtained is probably leading to greater vulnerability of the mothers than fathers due to the more involvement of mothers in the care of child and their feelings; which it would need more emotional and psychological support from mothers (25). Also, in a study by McCormick et al. in 1995 about the depression of parents; the depression prevalence in mothers of having a child with attention disorders has been reported that 17.9% of mothers had severe depression, 20.5% had low depression which has somewhat similar to the present study (26) .

In a study which has been done by Shafaat and Tirgiri in 2012; the results showed that 40% of mothers of having a child with hyperactivity, suffered from depression; which this study is also, similar to our

present study (27). In the study by Kheir Abadi et al. the prevalence of depression in mothers of having children with asthma was 27% and for diabetes it was 30%, which is different with the present study (18). According to the results of this study, there was a statistically significant difference between level of anxiety and depression of parents and history of children hospitalization. So that level of anxiety and depression was higher among parents who had history of children hospitalization. This finding is in consistent to the study of Sahin et al. who survey depression and anxiety in parents of children who are candidates for liver transplantation (6). So, we can say that the hospitalization of one family member, especially children has a considerable psychological impact on the parents. Moreover studies show that children of parents with depression compared with healthy parents, experience more hospitalizations as well as death rate is higher among them (12).

In the present study which the samples were from parents of hospitalized children with blood diseases such as children with different types of cancer, anemia, thalassemia and hemophilia; the level of depression were increased. This indicates that the disease condition is problematic for parents especially for mothers of these children. Although, it can be assumed that they had accustomed to their children's condition; the researches showed the high level of depression and anxiety and using more from healthcare services (28). One of the factors involved in mental disorders, can be disappointing about the future and the dreams that the parents have for their children (29).

Another reason can be comparing their children with normal children, who continue their life and growth without any specific problem and achieve to the new abilities (30). In a study which has been done by Soltanifar et al. the results showed that 80% of mothers of having children with anxiety disorders were affected with anxiety or mood disorders (31). The results of other studies indicate that the level of depression and anxiety disorders in parents are different depending on the type of child's disease; the more severe is the illness, may cause the level of anxiety and depression go higher. As numerous studies, have linked the mental disorders of mothers with child mortality, increased hospitalization, and child's loss weight, physical and mental disease, getting worse of these diseases and associating these disorders with socio-psychological consequences (10-13, 31, 32).

Therefore, it is necessary to treat children's treat in addition to make some centers in hospitals to deliberate parent's screening (especially mothers) and treatment of anxiety and depression.

4-1. Limitations of the study

The limitation of this study was less presence of fathers beside their sick children, considering that mothers play a more active role in the care of their sick children.

5. CONCLUSION

Due to the high prevalence of anxiety and depression in parent of children in this study it will be recommended that the depression screening takes place in hospitals and clinics for parents of having children with the blood diseases, because with treatment and management of anxiety and stress in parents; it can be achieved to better treatment among children with blood disease. Because children of parents with depression compared with healthy parents experience more hospitalizations as well as death rate is higher among them. In the meantime, the nurse's role as patient supporters and role of clinicians in the diagnosis, treatment and support of parents are important.

6- CONFLICT OF INTEREST: None.

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