

A Study on the Depression Levels of Mothers of Leukemic Children

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Abstract: This study aims to examine the depression levels of mothers during the diagnosis and treatment of their 3-12 year old children with leukemia. The study has been conducted on 65 mothers living in Ankara city center, who had a child within the process of diagnosis or treatment of leukemia. Data was collected through Child Demographics Information Form, Mother Demographics Information Form and Beck Depression Scale (BDS). The results showed that the majority of mothers with 3-12 year old children with leukemia was experiencing moderate to major depression and that the depression levels did not vary with age, education level, number of children, employment status and income level.

Key words: Leukemia, chronic diseases, mother depression, children, treatment

INTRODUCTION

Studies conducted with chronically ill children and those with leukemia have shown that illness affects families in different ways (Kubler-Ross, 1969; Turgay, 1992; Hersh and Wiener, 1993) and that living with chronically ill children causes different reactions at different levels of intensity. Such differences are caused by parents' differing personality traits and their relative circumstances.

The birth of a child changes family life (Miller and Myers-Walls, 1983). The developmental stages of a family are thought to be parallel to the developmental stages of children (Akkök, 1997). Every family lives through periods of change, which may cause different levels of stress. To illustrate, having a child start school or enter puberty, unemployment or death of a family member, or the birth of a new child may cause stress for families. Such crises are reported to be experienced by many parents from different backgrounds (Miller and Myers-Walls, 1983).

As a more difficult change, the diagnosis of a child with cancer marks the beginning of a tough time for families. Parents psychology is affected negatively in every stage of the illness and they experience intense anxiety, depression and a combination of hope and desperation. Aldrich coined the term premature mourning to define these feelings.

Studies conducted on families, who have children with leukemia report that childhood cancer causes profound stress for families. Such serious diseases may devastate families both psychologically and economically. More precisely, having a child with cancer affects familial

relationships, roles, expectations, spouse relationships and the shared aims of the family. It ruins the economic, psychological and social balance established by the family until that time. This study shows that the post-diagnosis period brings anxiety, restlessness, a continuous need to cry and pessimism to many families (Hersh and Wiener, 1993). It has also been argued that the feelings of inadequacy and the obstacles faced cause further depression (Turgay, 1992).

An investigation of the roles given to women within families shows that these roles make women more prone to becoming stressed. Women generally report that their responsibilities for looking after their house and children far outnumber those of their husbands (Baruch *et al.*, 1987). A feeling of failure in meeting these responsibilities has negative effects on women's self-perception and forces them to choose between meeting their own needs against meeting others (Ralmund and Moore, 2000).

Research results seem to suggest, that parents depression and anxiety levels vary with respect to their sex. Although, the differences observed in this study were not statistically significant, it was seen that mothers experienced more depression than fathers did and they also had higher anxiety mean points (Noh and Speechley, 1992). When mothers cannot break their childcare routine for weeks and they therefore, cannot function fully at home, they start to experience depression. A depressed mother has difficulties dealing with not just their ill child but their healthy children too (Wolf, 1986; Wasserman, 1990). The increased responsibility for childcare is generally shouldered by one parent. After the initial crisis, this is usually undertaken by mothers. In the later stages

when the ill child needs to be hospitalized, mothers generally overnight in the hospital, while fathers take care of housework and other children. Mothers continue taking care of the ill child during the outpatient treatment as well. Due to these reasons, most studies have centered on mothers.

As mothers are more involved in the treatment of their children, it is easier to observe their routines and difficulties. Unfortunately, fathers have been found to be less supportive, less able to share their feelings, less involved in the daily care of their ill children and experiencing more guilt (Kübler-Ross, 1969).

The present study aims to examine the depression levels of mothers during the diagnosis and treatment of their 3-12 year-old children with leukemia. Additionally, the study aims to determine the effects of mother's age, education, employment, income and the number of children on their depression levels.

MATERIALS AND METHODS

Sample: The study sample included 65 mothers with 3-12 year-old children being diagnosed or treated for leukemia at the Oncology and Hematology services of Ankara children's hospitals. Among these mothers, 18.50% were between 20-24 years of age, 20% were between 25-29, 18.50% were between 30-34, 27.70% were between 35-39 and 15.30% were 40 or older. When mothers education levels were examined, it was seen that 20% of the mothers were illiterate, 67.70% were primary school graduates and 12.30% were high school graduates. Of these mothers, 27.70% were working and the remaining 72.30% were not. The distribution of families according to their monthly income levels was as follows: 69.20% had an average monthly income of <300 YTL, 20% had the average monthly income of 301-600 YTL and 10.80% had the monthly income of 601 YTL or more. An analysis of the numbers of children in these families showed that 44.60% had 1-2 children, 33.80% had 3-4 children and 21.60% had 5 or more. All families were entitled to health benefits. Only one of the participating mothers (1.50%) had received psychological help before her child was diagnosed with leukemia. A 78.50% of the participating mothers accompanied their children in hospital for a duration of 0-6 months, 15.40% for 7-13 months and 6.10% for 14 months or longer.

Of the children being treated for leukemia, 30.77% were girls and the remaining 69.23% were boys. The majority of the children (64.60%) were between 3-6 years of age and 75.40% were diagnosed 6-12 months ago. The majority of the children (90.80%) had been hospitalized 20 times after the diagnosis. Many (79.80%) spent 20 days on average in hospital.

Data collection tools: Child demographics information form: This form contained 9 questions about the child's age, sex, number of siblings, date of diagnosis and the number and duration of hospitalization.

Mother demographics information form: This form contained 13 questions about the mother's age, education level, profession, employment, number of children, income level and receipt of psychological help prior to the diagnosis of their children. Both forms were designed by the researchers.

Beck Depression Scale (BDS): BDS is a self-evaluation scale consisting of 21 depressive symptom categories, each of which is scored between 0-3 with the aim of identifying depression levels and other psychopathological conditions. The total possible points on the scale vary between 0 and 63. Higher points indicate an increase in depressive symptoms. The aim of the scale is not to differentiate between various types of depression or psychiatric diagnoses, but to objectively quantify the level of depression. Total points obtained on the scale are classified as follows:

- 0-13 points = no depression
- 14-24 points = moderate depression
- 25 points and higher = major depression

This scale was developed by Beck and adapted to Turkish by Tegin in 1980. The reliability coefficient of the scale was 0.65 and the inner validity coefficient was 0.78 for university students and 0.61 for depressed patients. When the scale was subjected to simultaneous validity tests, parallelism was found between the BDS points and the psychological assessment of patients diagnosed with depression (Öner, 1997).

Data analysis: The data obtained was evaluated using SPSS 10.0 (Statistical Package for Social Sciences). Chi-square (χ^2) Test was used to determine whether the dependent variable of mother depression levels varied respect to the independent variables of mother's age, education, employment, income and number of children (Sümbüloglu and Sümbüloglu, 2002).

Implementation: One-to-one meetings were held with mothers in the staffrooms of hospitals and the Child Demographics Information Form, Mother Demographics Information Form and Beck Depression Scale was administered at the same time. Mothers were given detailed instructions about the information forms and the scale. Answers of illiterate mothers were recorded by the researchers. Each interview took approximately 45 min.

RESULTS

As a first step, the distribution of mother's BDS points in relation to the depression level was examined. As seen in Table 1, 10.80% of the mothers scored between 0 and 13 points, 27.70% scored between 14 and 24 and 61.50% scored 25 or higher on BDS. According to this, a great majority of the mothers seemed to be experiencing mild to major depression.

In the second stage of the study, the effects of independent variables on mothers depression levels were examined. Table 2 presents chi-square (χ^2) test results pertaining to the relationship between mothers age and depression levels. As seen in the Table 2, an analysis of the distribution of depression levels according to age shows that among the mothers aged 20-24, 16.70% displayed no signs of depression, 33.40% displayed signs of mild depression and 50% displayed signs of major depression. Among the mothers aged 25-29, 15.40% displayed no signs of depression, 15.40% displayed signs of mild depression and 69.20% displayed signs of major depression. The figures for mothers aged between 30 and 34 were 8.30, 16.70 and 75%, respectively. Among the mothers aged 35-39, the figures were 11.10, 33.30 and 55.60%, respectively. Among mothers aged 40 or above, all were found to display signs of depression. More precisely, 40% had mild depression whereas the remaining 60% had major depression. In other words, 7 mothers aged 20-40 (10.80%) did not display any signs of depression. On the other hand, 18 mothers (27.70%) had mild depression and 40 mothers (61.50%) had major depression. It can thus be argued, that the majority of mothers in the study experienced mild to major depression. As shown in Table 2, chi square (χ^2) test results showed that the difference between the groups was insignificant ($\chi^2 = 4.766$; $p = 0.782$; $p > 0.05$).

Table 3 presents the distribution of mother depression levels according to education level and the results of the chi square (χ^2) test performed to identify the relationship between education and depression levels. An analysis of the Table 3 shows that 38.50% of illiterate mothers had mild depression and 61.50% had major depression. Among literate and primary school graduate mothers, 13.70% displayed no signs of depression, 22.70% displayed mild depression and 63.60% displayed major depression. Among secondary school graduates and more educated mothers, 12.50% had no depression, 37.50% had mild depression and 50% had major depression. As can be seen, according to the variable of education, most mothers had mild to serious depression.

Table 1: Distribution of mothers' BDS scores with respect to depression levels

BDS score distribution	Frequency	(%)
0-13 points	7	10.80
14-24 points	18	27.70
25+ points	40	61.50
Total	65	100.00

As seen in the Table 3, the chi square (χ^2) test showed that the difference among the groups was insignificant ($\chi^2 = 3.177$; $p = 0.529$; $p > 0.05$).

Table 4 shows the distribution of mother depression levels according to employment and the results of the chi-square (χ^2) test performed to identify the relationship between employment and depression levels. As seen in the Table 4, 11.10% of working mothers did not have any signs of depression, 38.90% had signs of mild depression and 50% had signs of major depression. Among non-working mothers, 10.60% did not have any signs of depression, 23.40% had signs of mild depression and 66% had signs of major depression. Accordingly, it can be argued that most working and non-working mothers in the study experienced mild to major depression. As a result of the chi-square (χ^2) test, no meaningful difference was observed between the groups ($\chi^2 = 1.668$; $p = 0.434$; $p > 0.05$).

Table 5 shows the distribution of mother depression levels according to the income level of the family and the results of the chi-square (χ^2) test performed to identify the relationship between income and depression levels. As seen in the Table 5, among mothers with 0-300 YTL monthly income, 8.90% did not display any signs of depression, 22.20% displayed mild depression and 68.90% displayed serious depression. Among those with 301-600 YTL monthly income, 23.10% did not display any signs of depression, 53.80% displayed mild depression and 23.10% displayed major depression. In the group with 601 YTL and more income, 14.28% displayed mild depression and 85.72% displayed major depression. These findings indicated that according to the variable of family income level, most mothers were mildly to seriously depressed. As can be seen from the chi-square (χ^2) test results in the Table 5, no statistically meaningful difference was found between the groups ($\chi^2 = 11.628$; $p = 0.071$; $p > 0.05$).

Table 6 presents the distribution of mother depression levels according to the number of children they have and the results of the chi-square (χ^2) test performed to identify the relationship between the number of children and depression levels. A reading of the table shows that 20.70% of mothers with 1-2 children did not experience any depression, 24.10% experienced mild

Table 2: Distribution of mothers' depression levels by age groups and Chi-square (χ^2) test results conducted to identify the relationship between age groups and depression levels

Age groups	No depression		Mild depression		Major depression		Total	
	Frequency	(%)	Frequency	(%)	Frequency	(%)	Frequency	(%)
20-24	2	16.70	4	33.40	6	50.00	12	100.00
25-29	2	15.40	2	15.40	9	69.20	13	100.00
30-34	1	8.30	2	16.70	9	75.00	12	100.00
35-39	2	11.10	6	33.30	10	55.60	18	100.00
40+	0	0.00	4	40.00	6	60.00	10	100.00
Total	7	10.80	18	27.70	40	61.50	65	100.00

Chi-square (χ^2) = 4.766; $p > 0.782$

Table 3: Distribution of mothers' depression levels by education level and Chi-square (χ^2) test results conducted to identify the relationship between education level and depression levels

Education levels	No depression		Mild depression		Major depression		Total	
	Frequency	(%)	Frequency	(%)	Frequency	(%)	Frequency	(%)
Illiterate	0	0.00	5	38.50	8	61.50	13	100.00
Literate and primary school graduate	6	13.70	10	22.70	28	63.60	44	100.00
High school and more	1	12.50	3	37.50	4	50.00	8	100.00
Total	7	10.80	18	27.70	40	61.50	65	100.00

Chi-square (χ^2) = 3.177; $p > 0.529$; $p > 0.05$ insignificant

Table 4: Distribution of mothers' depression levels by employment and Chi-square (χ^2) test results conducted to identify the relationship between employment and depression levels

Employment	No depression		Mild depression		Major depression		Total	
	Frequency	(%)	Frequency	(%)	Frequency	(%)	Frequency	(%)
Working	2	11.10	7	38.90	9	50.00	18	100.00
Non-working	5	10.60	11	23.40	31	66.00	47	100.00
Total	7	10.80	18	27.70	40	61.50	65	100.00

Chi-square (χ^2) = 1.668; $p > 0.434$; $p > 0.05$ insignificant

Table 5: Distribution of mothers' depression levels by family income level and Chi-square (χ^2) test results conducted to identify the relationship between income level and depression levels

Monthly income (YTL)	No depression		Mild depression		Major depression		Total	
	Frequency	(%)	Frequency	(%)	Frequency	(%)	Frequency	(%)
0-300	4	8.90	10	22.20	31	68.90	45	100.00
301-600	3	23.10	7	53.80	3	23.10	13	100.00
601+	0	0.00	1	14.28	6	85.72	7	100.00
Total	7	10.80	18	27.70	40	61.50	65	100.00

Chi-square (χ^2) = 11.628; $p > 0.071$; $p > 0.05$ insignificant

Table 6: Distribution of mothers' depression levels by number of children and chi-square (χ^2) test results conducted to identify the relationship between number of children and depression levels

No. children	No depression		Mild depression		Major depression		Total	
	Frequency	(%)	Frequency	(%)	Frequency	(%)	Frequency	(%)
1-2	6	20.70	7	24.10	16	55.20	29	100.00
3-4	1	4.60	7	31.80	14	63.60	22	100.00
5+	0	0.00	4	28.57	10	71.43	14	100.00
Total	7	10.80	18	27.70	40	61.50	65	100.00

Chi-square (χ^2) = 5.949; $p > 0.429$; $p > 0.05$ insignificant

depression and 55.20% experienced major depression. Among mothers with 3-4 children, 4.60% were not depressed, 31.80% were mildly depressed and 63.60% were seriously depressed. Among mothers with 5 or more children, 28.57% were mildly depressed and 71.43% seriously depressed. These findings suggest, that according to the number of children, most mothers were mildly to seriously depressed. As can be understood from the Table 6, the chi-square (χ^2) test results suggest no statistically meaningful difference between the groups ($\chi^2 = 5.949$; $p = 0.429$; $p > 0.05$).

DISCUSSION

The study analyzed the depression levels of mothers with 3-12 year-old children being diagnosed or treated for leukemia at the Oncology and Hematology services of children's hospitals in Ankara. The majority of mothers were observed to be mildly or seriously depressed.

When the findings were examined to determine whether the depression levels of mothers of children with leukemia varied with respect to mother's age, no statistically meaningful difference was found between

depression levels and age groups. In other words, mother's age was not found to be a significant factor over depression levels. In a study about the psychological state of parents, whose children had just been diagnosed with cancer, Dahlquist and Czyewski (1993) found that parent age was not a significant factor in depression levels.

When the findings were examined to determine whether the depression levels of mothers varied with respect to their education, no statistically meaningful difference was found between depression and education levels. This is in line with findings obtained from previous studies, which showed that education level was not related to psychological conditions such as stress, coping or life satisfaction (Adamakas *et al.*, 1986; Dunst *et al.*, 1988; Olson *et al.*, 1994).

When the findings were examined to determine whether the depression levels of mothers varied with respect to their employment, no statistically meaningful difference was found between depression levels and mothers' employment. While this finding is parallel to the results of some research studies (Olson *et al.*, 1994; Dunst *et al.*, 1988), it contradicts those of others (Pearson and Chan, 1993; Kupst, 1993; Dökmen, 1997). Therefore, research results remain inconclusive.

The reason why the present study found no relationship between mothers depression levels and employment may have been that most mothers were unemployed and uneducated and thus, there was not a balanced distribution in the group with respect to mothers' employment.

When the findings were examined to determine whether the depression levels of mothers varied with respect to the income level of the family, no statistically meaningful difference was found. There are other studies in the literature that corroborate these findings. These studies (Adamakas *et al.*, 1986) showed that income had no relation to individuals psychological health, burning out, family functions or stress levels. For another example, Dunst *et al.* (1988) found no meaningful relationship between people's income and perception of financial resources. In yet another study, Pittman and Loyd (1988) showed that life satisfaction depended more on the adequacy of one's financial resources and whether they were able to meet their needs than merely on their income level.

When the present findings were examined to determine whether depression levels varied with respect to the number of children in the family, no statistically meaningful difference was found. In this study, it was seen that mothers in the sample group did not have many children, which may have brought this result.

CONCLUSION

The results of the present study show the importance of incorporating mothers into the treatment process during the diagnosis and treatment of their children. Future studies may benefit from having a bigger sample and focusing in more detail on children and parents emotional, cognitive and behavioral characteristics.

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