

Frequency and Severity of Depression among Mothers of Children with Cancer at King Fahad Specialist Hospital-Dammam, Saudi Arabia

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Abstract: When a child is diagnosed with cancer, various types of stress and disturbances will affect the whole family. And since the mother is the main caregiver for this sick child, she will be more at risk to depression. The study was done to identify the frequency and severity of depression among mothers of children with cancer. Methods: A cross sectional study was conducted at the Pediatric Oncology Clinic of King Fahad Specialist Hospital in Dammam, Kingdom of Saudi Arabia, over the period between July 2016 and February 2017. For eight (8) months, seventy (70) mothers were selected and surveyed based on inclusion and exclusion criteria after filling in a pre-coded validated questionnaire with the mother's demographic data and the child's time of diagnosis with the Beck Inventory Depression Scale 2. Then data analysis was done using SPSS version 19. Results: Twenty-five-point seven percent (25.7%) of the mothers had mild mood disturbance; while seventeen points one (17.1 %) had borderline clinical depression; and only four point three (4.3 %) had severe depression. Fifteen point seven (15.7%) are mothers who had moderate depression. Comparing the rest of the results, there was a good normal percentage of thirty-seven point one (37.1%) (n=26). Conclusion: Nearly seventy five percent (75%) of the sample were depressed. So a recommendation for early assessment and referrals should be done for mothers of children with cancer, in order for them to cope with their problem and having a solving skill to help them overcome the depression.

[AL-Qurneh H, Abbas Z, Osman I, Chiu A. **Frequency and Severity of Depression among Mothers of Children with Cancer at King Fahad Specialist Hospital-Dammam, Saudi Arabia.** *J Am Sci* 2018;14(2):84-89]. ISSN 1545-1003 (print); ISSN 2375-7264 (online). <http://www.jofamericanscience.org>. 11. doi:[10.7537/marsjas140218.11](https://doi.org/10.7537/marsjas140218.11).

Keywords: Mothers, Cancer, Caregiver, Depression

1. Introduction:

As mentioned in the report of the World Federation of Mental Health during the World Mental Health Day held in October 10th 2012, that depression is significant to the global burden affecting the people from different communities across the world which estimated to affect 350 million. (1) And also there are around 80% of people with depression that exhibit functional disabilities and at the same time there is a 27% that exhibits intense difficulty at work and daily activities. (2) In cross sectional epidemiological study of the prevalence of mental illness, morbidity in a randomly selected sample of 609 Saudi adult patients, conducted in Saudi Arabia, in November 2000, the researcher mentioned in the conclusion that their study showed that one third of the primary health care patients have mental illness. (3) globally also, in another cross-national epidemiology of DSM-IV major depressives episode study, conducted in 2011, the results showed that India has the highest rate of depression around 36% among low income countries with women being affected twice more than men. (4) According to the American Cancer Society, about

10,380 children in the United States under the age of 15 will be diagnosed with cancer in 2016. In another direction Childhood cancer rates have been rising slightly for the past few decades. After accidents, cancer is the second leading cause of death in children ages 1 to 14. About 1,250 children younger than 15 years old are expected to die from cancer in 2016. (5) According to the cancer incidence report in 2014 released from Saudi Cancer Registry that childhood cancers accounted for 6.4% of all cancer among Saudis as 41.7 % of the Saudi population is less than 15 years of age. (6) And when we are talking about the survival rate, this will be in general, good with 90.7% of children with cancer, according to a study conducted in Europe for patients diagnosed in 1993-2008 who were alive for one year after the diagnosis, while five year 79.3% of patient still alive, ten year survival is estimated to be 76.5% and 20 year survival to be 74.7%. (7) However, having the diagnosis of cancer for one's child marks the beginning of social and psychological devastation for the whole family, especially the mother. (8) And making the course of treatment in childhood cancer impacts the social and

professional routine activities of parents negatively, and even often requiring them to leave their jobs and give priority to treatment. (9) And since the mother is the primary caregiver, this will increase her responsibility substantially starting a vicious cycle of anxiety and socio-economic uncertainty, eventually leading her to depression much more than the father. (10) In the available reviews, mothers with children diagnosed with cancer demonstrated a pattern of mildly elevated negative affectivity and predominately stressful emotional distress which can lead to depression in the period following the child's diagnosis and initiation of treatment. (11) Mothers like that will have difficulties while taking care of sick children, themselves, and home responsibilities. Many parents will suffer from clinical levels of distress even 5 years after the treatment of their child. (12) In multiple studies, there is evidence that chronic depression and distress may affect the function of the immune system which may increase the risk for infections in healthy ones. (13) (14) (15) As mothers are spending time with their children more than fathers, so they are the most affected by their children's disease. In Saudi Arabia, there is limited evidence regarding depression among mothers of children with cancer. The previous studies were conducted on other trajectories like those visiting Family Medicine, or dermatology clinics, or social workers, so the evidence of studying depression is in general. In our study, we are trying to explore the frequency and severity of depression in mothers having children with cancer, in a selected population in the Kingdom of Saudi Arabia.

2. Methods:

A cross sectional survey was conducted at the Pediatric Oncology Clinic of King Fahad Specialist Hospital in Dammam, Kingdom of Saudi Arabia, for eight months over the period between July 2016 and February 2017. Mothers of children with cancer were enrolled in the study, consecutively base on inclusion and exclusion criteria.

Inclusion criteria including, Mothers of children less than 16 years of age with any type of cancer, the child should be diagnosed at least two months back by an oncologist to rule out bias for normal grief period (16). Mothers bringing their sick child for the first time to King Fahad Specialist Hospital in Dammam or as a follow up or for day care oncology procedures were included in the study.

Among those who were excluded were mothers who had existing psychiatric illnesses and/or already diagnosed as having depression by a doctor and/or taking medications for it; any recent deaths in family within six months on the time of filling in the questionnaire; or having other co-morbidities like

malignancy, myocardial infarction from the previous year, neuromuscular disease limiting ambulation, or blindness. (8)

A pre-coded validated and structured Arabic version of the questionnaire of BDI-II was used for data collection. The questionnaire takes 30 minutes to be completed and consisted of two sections. (16)

The first section included the mother's demographic details and the second section is the Beck Depression Inventory Scale. BDI-II is the best known, most frequently cited, and most widely accepted instrument for the assessment of depressive symptoms in both clinical and research settings. (20) The BDI has excellent construct validity, and has become the paradigm of other scales: since the inventor of the scale has made significant contribution to the theory of depression. This inventory is easy to administer, brief, and broadly accessible in different forms for diverse populations. (19)

The BDI-II contains 21 questions, each answer being scored on a scale value of 0 to 3. Higher scores indicate more severe depressive symptoms: 0 – 13 indicate minimal depression; 14 – 19 indicate mild depression; 20 – 28 moderate depression; 29 – 63 severe depression (18). Data was entered and analyzed in SPSS version 19. The outcome variable was dichotomized as no depression and depression cut off score 13.

Analysis was performed by calculating frequencies of categorical variables (i.e., age, social economic status, educational level, occupation, co-morbidities, treatment for co-morbidities, child age, time since the diagnosis of the child).

The Institutional Ethical Review Committee Board of King Fahad Specialist Hospital approved the study. Confidentiality of participants was maintained, and the board waived our research from the informed consent since there is less than minimal risk to the subjects of the study.

Sample size was calculated accordingly after reviewing a study similar to this study and which was 60 subjects, (21) so after adding 5% to 10% for non-responders, the total required sample size was 70 study participants. Mean and standard deviation was reported for current age of the child.

3. Results:

One hundred and twelve were approached to participate in the study but out of which, seventy responded to fill in the whole questionnaire yielding a response rate of 62.5% (70/112). For the mothers, the most common age group was 31 to 40 years old by 47.1% and for ages 18 to 30 was 37.1%. For the mother's level of education, 34.3% have higher education (education after class 12) and 57.1% are mothers who had medium education which is

education less than class 12. Almost all of the mothers had middle economic status, 90% and only 5.7% high income and 4.3% low income. For the occupation, almost all of the mothers 82.8% were housewives and 17.1% were working with different careers. (Table 1):

Table 1: Demographic characteristics of mothers (N=70):

Variables:	N	%
Age of the mother:		
18 – 30 years	26	37.1
31 – 40 years	33	47.1
41 – 50 years	7	10.0
51 – 61 years	4	5.7
Economic status:		
Low income:	3	4.3
Middle income:	63	90.0
High income:	4	5.7
Educational level:		
Low	6	8.6
Medium	40	57.1
High	24	34.3
Occupation:		
Housewife	58	82.8
Others	12	17.1

The demographic characteristics of the child are detailed in Table 2.

92.9%, age of children with cancer from 1 to 15 years old, while 7.1%, age of children more than 15 years old. The time since the diagnosis of the child's cancer: less than one year, 24.3%; between 1 and 5 years, 14.3 %; and more than 5 years, which is the majority, 61.4%.

Table 2: Demographic characteristics of children with cancer (N=70):

Variables:	N	%
Child age:		
1 – 15 years	65	92.9
≥ 15 years	5	7.1%
Time since the diagnosis of child's cancer:		
Less than 1 year:	17	24.3
1 – 5 years:	10	14.3
≥ 5 years:	43	61.4

25.7% of the mothers had mild mood disturbances; 17.1% of mothers had borderline clinical depression; and 4.3% of mothers had severe depression. For mothers with moderate depression, there is 15.7% and in comparing with the rest of the results, there was a good normal percentage of 37.1% (n=26), (Table 3):

Table 3: Frequency and levels of severity of depression in mothers:

Variables:	N	%
Normal:		
Mild mood disturbance	18	25.7
Borderline clinical depression	12	17.1
Moderate depression	11	15.7
Severe depression	3	4.3

So when we are describing the presence of depression among the mothers, we will say that 62.9 % of the total mothers (n=70) are having depression and of different severity, (Table 4):

Table 4: The frequency of overall depression in mothers:

Frequency of depression (n=70):	N	%
Depression present	44	62.9
Depression absent	26	37.1

Clearly there is a high prevalence of depression in such mothers which has not been reported before in the eastern province area in the Kingdom of Saudi Arabia. The results of this study were very near to the results of a study conducted in the Baghaie-pour Clinic (Yazad City, Turkey) which has the result of 70.6% of participants having depression. In that study, they concluded that, depression is common among mothers of children with leukemia (22). However, our results are consistent with another study conducted in Karachi, Pakistan, in one of the teaching hospitals, in which the results showed that 78% of the mothers were depressed; while 69 (n=54) had mild depression; nearly 25% (n=19) had moderate depression; 5% (n=4) had severe depression; and 1% (n=1) had very severe depression. Another study conducted in multi-center pediatric hospitals in Boston, Seattle, and Philadelphia, wherein 89% were reported that their child's health contributed a lot or great deal to their distress⁽²³⁾. Another study conducted in Florida in 2008, suggests that an increased symptoms of depression in mothers is related to significantly lower ratings on the quality of life of their children⁽²⁴⁾. The available information supports that mothers of children with cancer can be shown as a group prone to increased levels of emotional distress during the time of their child's diagnosis and during the course of treatment which may be particularly stressful and traumatic⁽²⁵⁾. Nearly half 47% of the incidence affected families⁽²⁶⁾.

The high percentage of depression among the Saudi mothers is very alarming with the possibility of multifactorial reasons. Some reasons could be referred from a study conducted in Riyadh, Kingdom of Saudi Arabia, on the postpartum depression which included

family history of depression, absenteeism of any consultation in that regards for the mothers, non-supportive husband, stressful life events in which having a child diagnosed with cancer, age of the mother, family problems, availability of social support since the presence of supportive husband had a significant role in the prevention of depression and they mentioned that 45% of the maternal mothers having supportive relative and being in a trend towards the nuclear family (is a family group consisting of two parents and their children) (27) will put the mothers in a more stressful responsibility to carry out her daily activities, living and providing care to the sick child, psychosocial or socio-economic reasons such as availability of a male driver due to the cultural ~~faet~~ norm that females cannot drive. They found out that 17.8% of the women had maternal depression ⁽²⁸⁾, and if you compare it with our study you will find that depression increased to 62.9%. Now on a greater perspective, we must also check around the instability of the neighboring countries, worrying about the world's economic status which may affect the area as fuel prices changes. Another study conducted in the Kingdom of Saudi Arabia, tried to identify the prevalence of maternal depression and the results revealed that there is a relationship between the age and level of education. Possibly a strong reason for this high rate of depression, as a matter of fact, those most educated mothers visiting the hospital have access to the internet. Through the internet, they could search and find information about the disease which it may be good for them or bad and that could make them more anxious. Also, the husband's level of education, monthly income of the family, mother's age less than 27 years, illiteracy, and mothers suffering from marital problems ^{(29) (8)}.

4. Strengths and Limitations:

The study attempted to look for depression in mothers who have children with cancer which were not studied before for a population in Dammam, Kingdom of Saudi Arabia. The study tries to reflect an idea or at least a representation on the status of depression in the eastern province of the kingdom. Establishing an inclusion and exclusion criteria made the percentage of bias toward other psychological problems at the low level and while using a well-structured questionnaire which was a modified Beck Depression Inventory Scale 2 which can detect all aspects and track depression, such as self-dislike; past failure; loss of pleasure; sadness; quality feeling; self-criticalness; Suicidal thoughts or wishes; Crying; agitation; Loss of interest; Indecisiveness; Worthlessness; loss of energy; change in sleeping pattern; Irritability; changes in appetite; concentration difficulty; Tiredness or fatigue; Loss of interest in sex.

The study was conducted in a tertiary hospital with 70 mothers, screened and approved for the study. If this study was conducted in more than one hospital covering all the areas in the region, it will give bigger sample size which will reflect stronger evidence in the generality of the results.

4. Conclusion:

Study concludes that nearly seventy five percent (75%) of our sample were depressed at different levels.

The concept of these mothers to have depression was expected and identified. By presenting results like this, to the concerned people around who are caring for the sick children especially to mothers, it will give a space of opportunity for them in the matter of treating, supporting, consulting and guiding, through effective different ways.

5. Recommendation:

More research is recommended to confirm the results. Conducting this study in more hospitals in the region and even at the national level to overcome the limitations raised will have a closer look to this serious problem. This can lead to suitable, protective, and therapeutic strategies and policies, for the other psychological problems that also needed to be investigated so that they can be tracked and managed. Also, the availability of stress coping techniques and facilities, for mothers of children with cancer, are needed to be studied, modified or developed, and realized.

According to our results, the need for the concerned team whose working with families of children with cancer to involve the mothers into the treatment process and covering the mothers' needs for psychological, social, and spiritual interventions, not only after the diagnosis of their children, but also during the course of treatment. It should be recognized as a service, for mother who is visiting the pediatric oncology clinic with their sick children, beside continuous assessment and evaluation for these families and concerning their psychological and social aspects which can lead to an arrangement for family counseling. Also, a suitable referral should take a place to a family physician clinic, social worker support, and psychology services as well.

Since the mother is an essential part of the family, the core of a family, and the primary caregiver for a sick child, we need to enhance her coping mechanism and problem-solving skills in overcoming the stress from her child's diagnosis, to reduce the incidence of depression. ⁽³⁰⁾ Therefore, all the services providing care to children with cancer should have a family support system.

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2/21/2018