

Reported Depression and Anxiety Symptoms among Caregivers of Children Diagnosed with Cancer in Maternity and Children Hospital in Buraydah, Qassim: A Cross-Sectional Study

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Abstract

Background: Caregivers of pediatric cancer patients experience increased level of anxiety and distress. This study aimed to assess the prevalence of depression and anxiety symptoms among caregivers of children diagnosed with cancer in Prince Faisal Bin Bandar Center for Pediatric Oncology Department (FBCPOD) in Maternity and Children Hospital in Buraydah, Qassim.

Methodology: A cross-sectional survey conducted on 67 caregivers of pediatric oncology patients in Prince Faisal Bin Bandar Center for Pediatric Oncology Department (FBCPOD) in Maternity and Children Hospital in Buraydah, between January 2023 and June 2023. The survey tools included The Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7) questionnaire to assess depression and anxiety symptoms, respectively.

Results: A total of 67 caregivers were included in the study, with the majority falling within the age range of 31-40 years (58.2%) and being female (97.0%). The results of the PHQ-9 questionnaire indicated that a significant proportion of caregivers experienced mild to moderate depressive symptoms. Regarding the GAD-7 questionnaire, a significant proportion of caregivers experienced mild to moderate levels of anxiety. Many caregivers reported feeling nervous, anxious, or on edge (64.2%) and excessive worrying (61.2%). The analysis revealed that none of the sociodemographic factors, demonstrated a significant association with the caregivers' depressive or anxiety symptoms.

Conclusion: The study highlights the prevalence of mild to moderate depressive and anxiety symptoms among caregivers of children with cancer. However, no significant associations were found between these mental health outcomes and the sociodemographic characteristics of caregivers and children. These findings emphasize the need for targeted mental health support for caregivers, regardless of their demographic backgrounds, to ensure their well-being while caring for children with cancer.

Keywords: Anxiety • Depression • Caregivers • Pediatric cancer • Psychological burden • Prevalence • Mental health

Introduction

According to Saudi Arabia national cancer registry in 2018, pediatric cancer for children less than 14 years accounted for 4.9% of all cancers among Saudis, with leukemia being the most prevalent type globally and nationally [1,2]. Recently, advances in diagnosis and treatment of pediatric cancer improve the survival rates, with 5-year survival rate reaching up to 90% for some cancer types and shifting of the primary care to be at home increasing the burden on the family caregivers both physically and psychologically throughout their child cancer treatment [3,4]. Caring of pediatric cancer patient is challenging and multidimensional concept as it affects many aspects in their life including work, hospital visits and caring for other family members so caregivers often have difficulties to find balance in their life [5,6].

Research shown that caregivers spend up to 40 hours per week for nursing, therefore these caregivers and family members experience

increased level of distress and anxiety [1,6,7]. Moreover, the initial shock of cancer diagnosis itself and unpredictability regarding the prognosis, its treatment, and mortality lead to emotional distress and hopelessness for the child and the caregivers [8]. Therefore, the parents of recently diagnosed children or those receiving treatment reported more anxiety and depression symptoms than parents of Childhood Cancer Survivors (CCS) [9]. Additionally, caregivers report being worried not only about their child's health but also about their academic performance and social life [6]. This stress and worry typically decrease gradually to normal after treatment ends. However, some parents continue to worry about the long term health consequences after the treatment like late effects, recurrence and second malignancies [10].

All of that causes a major challenge to the child and the family [11]. Many researches found that anxiety and depression are higher among parents of children with cancer than those of healthy children especially mothers since they have a more active role in providing care to the sick

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child and other siblings [12-14]. A study has shown that 51% of mothers and 40% of fathers in the first 2 weeks of their child diagnoses develop acute stress according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) [15]. Therefore it is important to identify and assess the psychological impact on parents in order to provide appropriate and comprehensive psychosocial care.

To our knowledge, there have been no related studies conducted in Qassim with a focus on caregivers of pediatric cancer patients admitted to a pediatric oncology center in the maternity and children hospital in Buraydah. Therefore, this study aimed to assess the prevalence of depressive and anxiety symptoms in caregivers of this population of pediatric cancer patients and understand their association with the patient's sociodemographic factors.

Materials and Methods

Study design, area and setting

This is a cross-sectional survey conducted between January 2023 and June 2023 at Prince Faisal Bin Bandar Center for Pediatric Oncology Department (FBCPOD) in Maternity and Children Hospital in Buraydah.

Study participants

67 Caregivers for a child with cancer in Prince Faisal Bin Bandar Center for Pediatric Oncology Department (FBCPOD) in Maternity and Children Hospital in Buraydah, were recruited to complete the questionnaire. Inclusion criteria were: (1) The ability to speak, read, and write in Arabic, (2) Participants aged between 18 and 60 years old. Exclusion criteria were: (1) Participants who were aged under 18 or over 60.

Sampling

The sample size (n=67) was calculated based on the total number of children in FBCPOD during the study period. 67 caregivers of children with cancer provided data for this study. This sample represents 83.75% of 80 caregivers who were eligible for participation. The sample size was calculated assuming a precision degree of 0.05 at the 95% confidence interval.

Data collection process

The participants how met the inclusion criteria were directly contacted either in person or through text messages to fill a Self-admitted questionnaire, before starting to complete the questionnaire, the participants had to read a fact sheet including information about the study and its aims. They were only able to continue to the questionnaire after giving consent by ticking a box accompanying the statement "I agree to participate in the study."

Data analysis

The statistical analysis was conducted to examine the relationships and differences between variables in the study, as well as to determine

the significance of the findings. The analysis involved both descriptive and inferential statistical tests, namely the Mann-Whitney U/Kruskal-Wallis test. Descriptive statistics were used to summarize and describe the characteristics of the study participants and their responses. Frequencies and percentages were calculated for categorical variables. For continuous variables, means, standard deviations, medians and Inter-Quartile Ranges (IQRs) were calculated and tabulated. Regarding the PHQ-9 and GAD-7 Questionnaire, the scoring was done based on established guidelines for these questionnaires. The scores were assigned as "Not at all"=0, "Several days"=1, "More than half the days"=2 and "Nearly every day"=3. The scores were summed for each participant for the 9 and 7 questions for PHQ and GAD questionnaires respectively.

Additionally, the Mann-Whitney U test/Kruskal-Wallis test was conducted to compare PHQ-9 and GAD-7 scores among different groups, including age, gender, marital status, occupation etc. This non-parametric test was chosen owing to the relatively non-normal distribution of the scores (Kolmogorov Smirnov Test, $p < 0.05$). The median scores and IQRs were calculated for each group, and the p-values from the Mann-Whitney U/Kruskal-Wallis test determined whether there were statistically significant differences in scores among the groups. The significance level for all statistical tests was set at $p < 0.05$, indicating a 95% Confidence Interval. All statistical calculations were performed using IBM SPSS version 27.0.1.

Results

Sociodemographic

A total of 67 caregivers were included, with the majority falling within the age range of 31-40 years (58.2%), followed by 18-30 years (17.9%) and 41-50 years (22.4%). The majority of caregivers were female (97.0%), while only a small percentage were male (3.0%). Most of the caregivers were married (88.1%), with a smaller proportion being divorced (6.0%), single (4.5%), or widowed (1.5%).

Regarding occupation, a significant number of caregivers were unemployed (56.7%), followed by those employed in the government sector (29.9%). Only a few were employed in other sectors or were students or retired individuals. The majority of caregivers did not report having any chronic diseases (92.5%) or previously diagnosed psychiatric conditions (98.5%), except for one caregiver who had a history of depression (1.5%). The children under their care were predominantly in the age range of 0-6 years (47.8%) and 7-12 years (40.3%), with a smaller percentage falling into the age group of 13-18 years (11.9%). The time of child cancer diagnosis varied, with a considerable number diagnosed within the past 1-3 years (37.3%), and a significant proportion diagnosed more than 3 years ago (29.9%). In terms of the relationship between caregivers and children, most were mothers (92.5%), while a few were fathers (3.0%) or sisters (4.5%). The primary treatment modality for the children's cancer was chemotherapy, with all 67 children (100.0%) receiving this form of treatment as shown in Table 1.

Table 1. Sociodemographic characteristics of the caregivers and children.

Category	N	%
Total	67	100.00%
Age	18-30 years	17.90%
	31-40 years	58.20%
	41-50 years	22.40%

	51-60 years	1	1.50%
Gender	Female	65	97.00%
	Male	2	3.00%
Marital status	Divorced	4	6.00%
	Married	59	88.10%
	Single	3	4.50%
	Widowed	1	1.50%
Occupation	Employed (government sector)	20	29.90%
	Employed (others)	2	3.00%
	Employed (private sector)	2	3.00%
	Retired	3	4.50%
	Student	2	3.00%
	Unemployed	38	56.70%
Chronic diseases	No	62	92.50%
	Yes	5	7.50%
Previously diagnosed with psychiatric disease	No	66	98.50%
	Yes	1	1.50%
If Yes, What psychiatric disease?	Depression	1	1.50%
Child's age	0-6 years	32	47.80%
	7-12 years	27	40.30%
	13-18 years	8	11.90%
Time of child cancer diagnosis Relationship of caregiver	Less Than 3 months	4	6.00%
	3-6 months	4	6.00%
	6-9 months	5	7.50%
	9-12 months	9	13.40%
	1-3 years	25	37.30%
	More than 3 years	20	29.90%
	Father	2	3.00%
	Mother	62	92.50%
	Sister	3	4.50%
	Treatment modality	Chemotherapy	67

PHQ-9 questionnaire response

Table 2 presents a summary of caregivers' responses to the PHQ-9 questionnaire, indicating the percentage of caregivers who experienced symptoms to some degree (i.e., other than "not at all"). The findings reveal that a significant proportion of caregivers experienced mild to moderate depressive symptoms during the assessed two-week period. Specifically, 43.3% of caregivers reported little interest or pleasure in doing things, while 58.2% felt down, depressed, or hopeless. Additionally, 50.7% experienced trouble falling or staying asleep, and 68.7% felt tired or lacked energy. Moreover, 62.7% reported poor appetite or overeating. Feelings of being a failure or having let oneself or family down were experienced to some extent by 26.9% of caregivers. Furthermore, 43.3% had trouble concentrating, and 32.8% experienced restlessness or slowed movement. Notably, 7.5% of caregivers reported thoughts of self-harm to some degree. These

findings underscore the importance of providing appropriate support and interventions to address caregivers' mental well-being.

GAD-7 questionnaire

Table 3 presents caregivers' responses to the GAD-7 questionnaire, indicating the percentage of caregivers who experienced symptoms of anxiety to some extent (i.e., 100% minus "Not at all %") over the past two weeks. The findings reveal that a significant proportion of caregivers experienced mild to moderate levels of anxiety during this period. Specifically, 64.2% of caregivers reported feeling nervous, anxious, or on edge to some degree, while 44.8% experienced difficulty in stopping or controlling worrying. Moreover, 61.2% worried excessively about various things, and 56.7% had trouble relaxing. Additionally, 29.9% felt so restless that it was hard to sit still. Furthermore, 64.2% became easily annoyed or irritable, and 46.3% felt afraid as if something awful might happen.

Table 2. Responses of the caregivers to each question of the PHQ-9 questionnaire.

Over the last 2 weeks, how often have you been bothered by any of the following problems?	Not at all		Several days		More than half day		Nearly every day	
	N	%	N	%	N	%	N	%
1. Little interest or pleasure in doing things	38	56.70%	1900.00%	28.40%	7	10.40%	3	4.50%
2. Feeling down, depressed or hopeless	28	41.80%	2800.00%	41.80%	5	7.50%	6	9.00%
3. Trouble falling or staying asleep or sleeping too much	33	49.30%	1600.00%	23.90%	8	11.90%	10	14.90%
4. Feeling tired or having little energy	21	31.30%	2800.00%	41.80%	9	13.40%	9	13.40%
5. Poor appetite or over-eating	25	37.30%	2300.00%	34.30%	10	14.90%	9	13.40%
6. Feeling bad about yourself or that you are a failure or have let yourself or your family down	49	73.10%	1200.00%	17.90%	4	6.00%	2	3.00%
7. Trouble concentrating on things such as reading newspaper or watching television	38	56.70%	1400.00%	20.90%	6	9.00%	9	13.40%
8. Moving or speaking so slowly that other people have noticed? Or the opposite, being so fidgety or restless that you have been moving around a lot more than usual	45	67.20%	1400.00%	20.90%	5	7.50%	3	4.50%
9. Thoughts that you would be better off dead or hurting yourself in some way	62	92.50%	400.00%	6.00%	0	0.00%	1	1.50%

Table 3. Responses of the caregivers to each question of the GAD-7 questionnaire.

Over the last 2 weeks, how often have you been bothered by any of the following problems?	Not at all		Several days		More than half the days		Nearly every day	
	N	%	N	%	N	%	N	%
1. Feeling nervous, anxious, or on edge	24	35.80%	2500.00%	37.30%	12	17.90%	6	9.00%
2. Not being able to stop or control worrying	37	55.20%	1200.00%	17.90%	11	16.40%	7	10.40%
3. Worrying too much about different things	26	38.80%	2100.00%	31.30%	10	14.90%	10	14.90%
4. Trouble relaxing	29	43.30%	2600.00%	38.80%	10	14.90%	2	3.00%
5. Being so restless that it is hard to sit still	47	70.10%	1500.00%	22.40%	3	4.50%	2	3.00%
6. Becoming easily annoyed or irritable	24	35.80%	2200.00%	32.80%	14	20.90%	7	10.40%
7. Feeling afraid as if something awful might happen	36	53.70%	1700.00%	25.40%	9	13.40%	5	7.50%

Association of PHQ-9 score with sociodemographic

The median PHQ-9 score for all caregivers was 5.00 (IQR: 1.00-10.00). The analysis revealed that age groups ($p=0.482$), gender ($p=0.841$), marital status ($p=0.816$), occupation ($p=0.497$), presence of chronic diseases ($p=0.298$), and previous psychiatric diagnosis in caregivers ($p=0.478$) showed no significant association with the PHQ-9 scores, as all p -values were greater than 0.05. Similarly, the child's age ($p=0.580$), time of child

cancer diagnosis ($p=0.383$), and relationship of the caregiver with the child ($p=0.846$) also did not demonstrate a significant association with the PHQ-9 scores, with p -values greater than 0.05. The Kruskal-Wallis and Mann-Whitney U tests were used for these statistical comparisons. Overall, the findings suggest that the sociodemographic characteristics of caregivers and children did not have a substantial impact on the caregivers' level of depressive symptoms, as measured by the PHQ-9 scores as shown in Table 4.

Table 4. Association of PHQ-9 score with sociodemographic characteristics of caregivers and children.

Category		PHQ-9 Score				P-value K,U
		Mean	Standard deviation	Median	IQR	
Age	18-30 years	792.00%	759.00%	700.00%	1.00-13.00	48.20%
	31-40 years	508.00%	510.00%	300.00%	1.00-9.00	
	41-50 years	813.00%	702.00%	800.00%	1.00-13.00	
	51-60 years	700.00%	.	700.00%	7.00-7.00	
Gender	Female	632.00%	611.00%	500.00%	2.00-10.00	84.10%
	Male	550.00%	778.00%	550.00%	0.00-11.00	
Marital status	Divorced	450.00%	614.00%	250.00%	0.00-9.00	81.60%
	Married	649.00%	629.00%	500.00%	1.00-10.00	
	Single	433.00%	252.00%	400.00%	2.00-7.00	
	Widowed	8	-	8	8.00-8.00	
Occupation	Employed (government sector)	6.9	706.00%	5.5	1.50-10.00	0.497
	Employed (others)	14.5	1344.00%	14.5	5.00-24.00	
	Employed (private sector)	1.5	212.00%	1.5	0.00-3.00	
	Retired	2.67	379.00%	1	0.00-7.00	
	Student	7.5	778.00%	7.5	2.00-13.00	
	Unemployed	6.03	519.00%	6	2.00-10.00	
Chronic diseases	No	6.16	616.00%	5	1.00-9.00	0.298
	Yes	8	543.00%	10	3.00-10.00	
Previously diagnosed with psychiatric disease	No	6.24	612.00%	5	1.00-10.00	0.478
	Yes	10	-	10	10.00-10.00	
Child's age	0-6 years	7.16	683.00%	6.5	1.00-11.50	0.58
	7-12 years	5.96	575.00%	4	2.00-10.00	
	13-18 years	4	321.00%	4	1.00-7.00	
Time of child cancer diagnosis	Less than 3 months	4.25	403.00%	3	1.50-7.00	0.383
	3-6 months	9.25	519.00%	11	5.50-13.00	
	6-9 months	9.2	630.00%	10	7.00-12.00	
	9-12 months	5.33	725.00%	3	0.00-7.00	
	1-3 years	5.16	600.00%	3	1.00-7.00	
	More than 3 years	7.25	617.00%	7.5	1.00-10.00	
Relationship of caregiver	Father	5.5	778.00%	5.5	0.00-11.00	0.846
	Mother	6.27	617.00%	5	1.00-10.00	
	Sister	7.33	551.00%	7	2.00-13.00	
Total		6.3	609.00%	5	1.00-10.00	-

Note: K: Independent samples kruskal-wallis Test; U: Independent Samples Mann-Whitney U Test

Anxiety and depression severity

Table 5 presents the distribution of participants' severity levels of depression and anxiety based on scores from the PHQ9 and GAD7 questionnaires. For depression, the results indicate that 47.8% of participants exhibited no signs of depression (scores 0-4), while 25.4% showed mild depression (scores 5-9). Moreover, 16.4% experienced moderate depression (scores 10-14), and smaller percentages reported moderately severe (6.0%) and severe (4.5%) depression (scores 15-19 and 20-27, respectively). Regarding anxiety, 49.3% of participants had no signs of anxiety (scores 0-4), and 22.4% displayed mild anxiety (scores 5-9). Furthermore, 20.9% indicated moderate anxiety (scores 10-14), and 7.5% exhibited severe anxiety (scores 15 and above). This data collectively provides an overview of the prevalence of depression and anxiety severity among the participants based on the assessment of their scores using these standardized questionnaires.

Table 5. Severity of depression and anxiety based on PHQ9 and GAD7 questionnaire.

	Category	N	%
Depression	No (0-4)	32	47.80%
	Mild (5-9)	1700.00%	25.40%
	Moderate (10-14)	1100.00%	16.40%
	Moderately Severe (15-19)	400.00%	6.00%
	Severe (20-27)	300.00%	4.50%
Anxiety	No (0-4)	3300.00%	49.30%
	Mild (5-9)	1500.00%	22.40%
	Moderate (10-14)	1400.00%	20.90%
	Severe (15+)	500.00%	7.50%

Association of GAD-7 score with sociodemographic

The median GAD-7 score for all caregivers was 5.00 (IQR: 1.00-10.00). The analysis revealed that age groups ($p=0.486$), gender ($p=0.955$), marital status ($p=0.579$), occupation ($p=0.851$), presence of chronic diseases ($p=0.321$), and previous psychiatric diagnosis in caregivers ($p=0.716$) showed no significant association with the GAD-7 scores, as all p -values were greater than 0.05. Similarly, the child's age ($p=0.420$) and time of child cancer diagnosis ($p=0.198$) also did not demonstrate a significant association with the GAD-7 scores, with p -values greater than 0.05. The relationship of the caregiver with the child also showed no significant association with the GAD-7 scores ($p=0.967$). The Kruskal-Wallis and Mann-Whitney U tests were used for these statistical comparisons. Overall, the findings suggest that the sociodemographic characteristics of caregivers and children did not have a substantial impact on the caregivers' level of anxiety symptoms, as measured by the GAD-7 scores as shown in Table 6.

Table 6. Association of GAD-7 score with sociodemographic characteristics of caregivers and children.

Category		GAD-7 Score				P-value K,U
		Mean	Standard deviation	Median	IQR	
Age	18-30 years	792.00%	686.00%	800.00%	1.00-12.00	48.60%
	31-40 years	515.00%	554.00%	400.00%	0.00-9.00	
	41-50 years	587.00%	437.00%	600.00%	2.00-10.00	
	51-60 years	900.00%	-	900.00%	9.00-9.00	
Gender	Female	583.00%	549.00%	500.00%	1.00-10.00	95.50%
	Male	700.00%	990.00%	700.00%	0.00-14.00	
Marital Status	Divorced	375.00%	568.00%	150.00%	0.00-7.50	57.90%
	Married	602.00%	567.00%	500.00%	1.00-10.00	
	Single	400.00%	265.00%	500.00%	1.00-6.00	
	Widowed	11	-	11	11.00-11.00	
Occupation	Employed (government sector)	5.85	514.00%	4	2.50-8.50	0.851
	employed (others)	11.5	1344.00%	11.5	2.00-21.00	
	Employed (private sector)	2.5	354.00%	2.5	0.00-5.00	
	Retired	3.67	473.00%	2	0.00-9.00	
	Student	6.5	778.00%	6.5	1.00-12.00	
	Unemployed	5.89	553.00%	5.5	0.00-11.00	
Chronic diseases	No	5.74	568.00%	4	0.00-10.00	0.321
	Yes	7.4	365.00%	6	5.00-9.00	
Previously diagnosed with psychiatric disease	No	5.85	559.00%	4.5	1.00-10.00	0.716
	Yes	7	-	7	7.00-7.00	

Child's age	0-6 years	7.28	665.00%	6	0.00-13.00	0.42
	7-12 years	4.59	415.00%	4	1.00-7.00	
	13-18 years	4.5	359.00%	4.5	1.50-7.00	
Time of child cancer diagnosis	Less than 3 months	4.75	457.00%	4.5	1.00-8.50	0.198
	3-6 months	9.75	608.00%	11.5	6.00-13.50	
	6-9 months	11	632.00%	13	12.00-14.00	
	9-12 months	6	698.00%	4	1.00-9.00	
	1-3 years	4.56	560.00%	3	0.00-6.00	
	More than 3 years	5.6	407.00%	6	1.50-9.50	
Relationship of caregiver	Father	7	990.00%	7	0.00-14.00	0.967
	Mother	5.82	554.00%	4.5	1.00-10.00	
	Sister	6	557.00%	5	1.00-12.00	
Total		5.87	555.00%	5	1.00-10.00	-

Note: K: Independent samples Kruskal-Wallis test; U: Independent samples Mann-Whitney U test.

Discussion

Our study aims to assess the prevalence of depressive and anxiety symptoms among caregivers of pediatric oncology patients and understand their association with patients' sociodemographic factors. A total of 67 caregivers were included with the majority of them falling within the age range of 31-40 years and females comprising the predominant proportion. Our study assessed the mental well-being of caregivers using the Patient Health Questionnaire-9 (PHQ-9) questionnaire and the prevalence of anxiety symptoms among caregivers using the GAD-7 questionnaire. In our study, we found that 32 (47.8%) of participants exhibited no signs of depression (scores 0-4), while 17 (25.4%) showed mild depression. Moreover, 11 (16.4%) experienced moderate depression, and smaller percentages reported moderately severe 4 (6.0%) and severe 3 (4.5%) depression. A similar study conducted in Saudi Arabia to assess the prevalence of depression among pediatric cancer patients found that 14 (20.30%) participants had minimal symptoms of depression, 33 (47.80%) had mild, 14 (20.30%) had moderate, four (5.8%) had moderately severe, and four (5.8%) had severe levels of depression. Only eight (10.95%) participants, all of whom were female, were diagnosed with major depressive disorder [7]. Furthermore, a national cross-sectional study was conducted at three large primary care centres in Riyadh, Saudi Arabia aiming at estimating point prevalence of depression among primary care adult patients, using the same PHQ-9 scale we used in our current study, they found that of 477 patients included in the survey analysis depressive symptoms were 49.9%, of which 31% were mild, 13.4% moderate, 4.4% moderate-severe and 1.0% severe cases [16].

Interestingly, the study did not find any statistically significant associations between the PHQ-9 scores and the sociodemographic characteristics of caregivers. It suggests that factors such as age, gender, and marital status may not be strong predictors of depressive symptoms among caregivers of children with cancer in this study. One possible explanation for the lack of significant associations could be the homogeneity of the caregiver population in this study. In contrast, a similar study was done in Iraq where they found depression levels were significantly more common (77.2% versus 57.1%) and more severe (60.7% versus 41.1%) among mothers compared to fathers [17]. According to Norberg and Boman, (2007), among family members, mothers appear to be closer than fathers to their children, and they assume more responsibility for the care of the chronically ill child. Thus, they experience more depression and hopelessness. In this study, 49.3% of participants had no signs of anxiety, and 22.4% displayed mild anxiety, 20.9% indicated moderate anxiety, and 7.5% exhibited severe anxiety according to the GAD-7 questionnaire. A similar study was conducted in Iran to evaluate the prevalence of anxiety

and depression among caregivers of children with cancer using the Hospital Anxiety and Depression Scale (HADS). Approximately 32.4% and 41.2% of caregivers had clinical symptoms of depression and anxiety, respectively [12]. This suggests that caregiving can be a source of chronic stress and worry, leading to anxiety symptoms in a considerable portion of the caregiver population [18]. Furthermore, there were no statistically significant associations between the GAD-7 scores and patients' sociodemographic factors in our study which was consistent with the results of the previous study that also demonstrated no statistically significant difference between the mean of fathers' and mothers' anxiety scores [12]. Kazak et al. assessed 146 mothers and 103 fathers of childhood cancer survivors for post-traumatic stress disorder and post-traumatic stress symptoms and revealed nearly equal rates of levels of PTSS and current PTSD between mothers and fathers [19]. The experience of caring for a child with cancer seems to be a significant factor contributing to their anxiety levels and the emotional burden experienced by caregivers may be relatively consistent across different groups, regardless of age, gender, marital status, occupation, or other demographic factors.

A cross-sectional study conducted in Saudi Arabia screened 338 participants of the general population for generalized anxiety disorder using the GAD-7 questionnaire. 15.7% of the study participants had moderate anxiety, in contrast to our study which showed that 20.9% of the caregivers indicated moderate anxiety symptoms. In that study, the prevalence and levels of anxiety were higher in participants with chronic diseases and in depressed individuals [20]. Our study findings emphasize the need for continuous psychological support to help caregivers cope with stress regardless of their sociodemographic characteristics. The limitations of the study include a small and homogenous sample size of caregivers, reliance on self-report measures for mental health assessment, the absence of clinical interviews or objective assessments, and the use of a cross-sectional design that restricts the establishment of causal relationships and long-term dynamics. These limitations may impact the generalizability and accuracy of the findings and suggest the need for larger, more diverse samples and longitudinal research designs in future studies.

Conclusion

The study highlights the prevalence of mild to moderate depressive and anxiety symptoms among caregivers of children with cancer. However, no significant associations were found between these mental health outcomes and the sociodemographic characteristics of caregivers and children. These findings emphasize the need for targeted mental health support for caregivers, regardless of their demographic backgrounds, to ensure their well-being while caring for children with cancer.

Ethical Approval

Approval has been obtained from the Committee of Research Ethics, Deanship of Scientific Research, Qassim University, Saudi Arabia. The number of ethical approvals is 607-44-2622. To protect patient confidentiality, Data was not disclosed. The research ethics committee has reviewed and authorized the use of these confidential data in this study. A password-protected cloud was used to keep the obtained data secure. The study prioritizes the rights and well-being of the participants, with informed consent obtained from all individuals involved and confidentiality ensured.

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