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Assessment of Depression and Death Anxiety among Adolescents and Husbands of Palestinian Women with Cancer

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Abstract:

Assessment of Depression and Death Anxiety among Adolescents and Husbands of Palestinian Women with Cancer This study aimed to assess the prevalence of death anxiety and depression among adolescent children and husbands of women with cancer in Palestine. The study involved 285 participants, including 200 adolescents aged 12 to 20 years and 85 husbands of women with cancer who were treated at two major cancer centers in Palestine. The participants completed a self-reported questionnaire to assess death anxiety using the Templer Death Anxiety Scale (DAS) and depression using the Beck Depression Inventory (BDI). The results showed that depression and death anxiety were prevalent among family members of women with cancer, with a significantly higher mean depression score in adolescents than in husbands. The worst depression and highest anxiety mean scores were observed in daughters. In total, up to 20% of the sample had scores indicating clinical depression. The anxiety analysis revealed that 39.9% of all participants had concerns or serious concerns about death, with daughters having the highest percentage. The study found that coping and work were significant predictors of depression among sons of women with cancer while coping, mothers' education, residence, and monthly income of the family significantly predicted sons' death anxiety. Age, coping, type and duration of treatment, and care provider were significant predictors of depression among daughters, while age, care provider, monthly income, and mothers' stage of cancer significantly predicted daughters' death anxiety. Coping was also a significant predictor for depression and death anxiety in husbands, in addition to work. The study highlights the need for national policy initiation and counseling programs implementation for families with cancer patients, especially for adolescent daughters, and to assess mental disorders, such as depression and death anxiety, among those families.

Keywords: *Depression; Death Anxiety; Adolescents; Women with Cancer; Palestine.*

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تقييم الاكتئاب وقلق الموت لدى المراهقين وأزواج النساء الفلسطينيات المصابات بالسرطان

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ملخص:

هدفت هذه الدراسة إلى تقييم انتشار قلق الموت والاكتئاب بين الأطفال المراهقين وأزواج النساء المصابات بالسرطان في فلسطين. شملت الدراسة (285) مشاركًا، بما في ذلك (200) مراهقًا في الفترة العمرية بين (12) و(20) عامًا، و(85) زوجًا لنساء مصابات بالسرطان تم علاجهنّ في مركزين رئيسين للسرطان في فلسطين. أجاب المشاركون على استبيان لتقييم قلق الموت باستخدام مقياس تمبلر لقلق الموت (DAS) والاكتئاب باستخدام مؤشر الاكتئاب بيك (BDI). أظهرت النتائج انتشار الاكتئاب وقلق الموت بين أفراد أسر النساء المصابات بالسرطان، مع وجود متوسط مقياس الاكتئاب أعلى بشكلٍ كبيرٍ لدى المراهقين من الأزواج. وقد لُوحظ أسوأ درجات للاكتئاب وأعلى متوسط قياس للقلق لدى البنات. في المحصلة، (20٪) من العينة كانت درجاتهم تشير إلى وجود الاكتئاب السريري لديهم. كشف تحليل القلق أن (39.9٪) من جميع المشاركين لديهم مخاوف أو قلق عالٍ من الموت، وكانت البنات لديهنّ أعلى نسبة. توصلت الدراسة إلى أن التكيف والعمل عاملان متنبئان مهمان للاكتئاب بين أبناء النساء المصابات بالسرطان، في حين كان التكيف وتعليم الأمهات والإقامة والدخل الشهري للعائلة متنبئات قلق الموت بين الأبناء. وكان العمر والتكيف ونوع ومدة العلاج، ومزود الرعاية متنبئات مهمة للاكتئاب بين البنات، في حين كان العمر ومزود الرعاية والدخل الشهري ومرحلة سرطان الأم متنبئات قلق الموت لدى البنات. وكان التكيف أيضًا متنبئًا مهمًا للاكتئاب وقلق الموت بين الأزواج، بالإضافة إلى العمل. تسلط الدراسة الضوء على ضرورة بدء سياسات وبرامج الإرشاد الوطنية للعائلات التي لديها مرضى سرطان، وخاصة للبنات المراهقات فيها، وتقييم الاضطرابات النفسية، مثل: الاكتئاب والقلق من الموت لدى تلك الأسر.

الكلمات المفتاحية: *الاكتئاب، قلق الموت، المراهقين، النساء المصابات بالسرطان، فلسطين.*

1. Introduction:

Cancer is a significant cause of mortality in Palestine, where it ranks as the third leading cause of death, with cancer-related deaths accounting for 12% of all deaths in the country. In 2021, there were 3,368 new reported cases of cancer in the West Bank, with an incidence rate of 119.6 per 100,000 population, and 52.6% of these cases were females. Of these new cases, 876 were breast cancer cases, which represented 18.2% of all cases and had an incidence rate of 36.2 per 100,000 female population (MOH, 2022).

Cancer diagnoses carry a significant burden not only for patients but also for their families, particularly in critical stages of adolescents and spouses supporting their children. Adults with cancer often experience the dual burden of dealing with their diagnosis and treatment while supporting their children through the experience. A woman's cancer diagnosis can create significant psychological and social pressure for spouses and adolescents who are most dependent on her. Such pressure can significantly impact their emotional well-being and functioning (Al-Zaben et al., 2014; Visser et al., 2004).

Family caregivers, including husbands and adolescents of women with cancer, are vulnerable to various psychological and social stressors, which may cause or trigger death anxiety and depressive symptoms. Adolescents between 12 and 18 years old are more cognitively and emotionally mature than younger children and have a greater ability to empathize. Adolescence is also a time of developing independence and autonomy and forming relationships outside of the family. These developmental pressures may make adolescents more vulnerable to impaired psychosocial adjustment, negatively impacting their sense of individuality and identity (Visser, 2007; Dakin, 2016). Adolescents between 12 and 18 years old are most susceptible to negative psychosocial outcomes when faced with a parent's illness, with greater anxiety, depression, and emotional distress than school-age children and the general population (Rainville et al., 2012; Huizinga et al., 2011; Visser, 2007). Furthermore, daughters of mothers with breast cancer exhibit more symptoms of depression than sons (Brown et al., 2007). Husbands of women with cancer are also prone to death anxiety and depression and experience reduced satisfaction when their wives have higher levels of depression and anxiety (Alacacioglu et al., 2014).

In Palestine, 63% of diagnosed cancer patients are between the ages of 15 and 64 years (MOH, 2022). This is the key period for women's childbearing and rearing, and many of these patients have children and husbands. However, current treatment plans in Palestine often fail to recognize the impact of cancer on the psychosocial wellbeing of adolescents and spouses, particularly death anxiety and depression (Dakin, 2016). There is a lack of research on the effects of cancer on the psychosocial wellbeing of daughters, sons, and husbands of women with cancer in Palestine. This study aims to determine the prevalence of death anxiety and depression among daughters, sons, and husbands living with women diagnosed with cancer.

2. Methodology:

In this research study, a cross-sectional study design was utilized to investigate the prevalence of depression and death anxiety among husbands and adolescents of women with cancer in two cancer treatment settings in Palestine; Beit-Jala Governmental Hospital in Bethlehem and Augusta Victoria hospital in Jerusalem. The sample size of (285) participants, which included (101) boys and (99) girls classified as adolescents and 85 husbands, was recruited using convenience sampling over an eight-

month period from October 2017 to June 2018. Participants were eligible if they were living with women with cancer and aware of their diagnosis, while those with severe mental disorders were excluded. The study tool included three self-reported questionnaires, which were translated into Arabic and tested for reliability and validity. The sociodemographic sheet was to be filled out by the women with cancer, adolescents, and husbands. The Beck Depression Inventory (BDI) was used to assess depression levels, while Templer's Death Anxiety Scale (DAS) was used to assess death anxiety. The BDI is a cost-effective questionnaire that has been found to be a reliable tool for measuring the severity of depression, while DAS is a frequently used scale to measure death anxiety (Wang & Gorenstein, 2013; Abdel-Khalek, 2005). The overall Cronbach's Alpha reliability test was found to be 0.79 and 0.89 for DAS and BDI, respectively. The questionnaires were validated by a committee of four experts, and ethical procedures were met.

3. Results:

In terms of demographics, the majority of the sample (70.5%, n=201) were adolescents, and the remaining 29.5% (n=84) were husbands. Most of the families lived in cities (63.6%, n=84), and the rest (36.4%, n=48) were from villages. Nearly all of the women were married (95.5%, n=126), with a majority having less than 12 years of education (52.3%, n=69). The families' income level was predominantly under 2000NIS (45.4%), and most of the women were not employed (79.5%, n=105). Most of the women had breast cancer (72.7%), and the majority were in early stages (76%, n=84), with the rest in late stages (24%, n=27). The treatments included chemotherapy (47.7%), radiation therapy (27.3%), biological (11.4%), and palliative care (4.5%).

In terms of the participants, 45.8% of the adolescents were aged between 18 and 20, while 32.2% were aged between 12 and 15. Most had secondary education (40.7%), followed by primary education (29.9%), and university education (29.4%). Nearly all of the adolescents did not work (86.9%, n=195). For the husbands, 55.6% had up to 12 years of education, while the rest had above 12 years. Most of them were employed (87.5%).

The mean score of depression for all participants was 8.7 scale points, with significantly higher scores of depression in adolescents than in husbands (mean=9.5 and 6.8, respectively; p=0.03), and the worst depression mean scores (mean=11.4) were found in daughters among the adolescents. The mean score of death anxiety was 5.4 points, with a significant difference between adolescents and husbands ($p<0.05$), and the highest anxiety mean scores were found in daughters among the adolescents (mean= 6.2).

Regarding depression severity levels, most participants had no or minimal depression (75.7%), 13.7% had mild depression symptoms, and 10.6% had moderate to severe depression. In comparison, moderate and severe depression were more prevalent in adolescents than in husbands (12% and 7.1%, respectively), as in Table (1) following.

Table (1): Beck Depression Inventory scores among sample sub-groups.

	Son			Daughter			Husband		
	N	%	Mean (SD)	N	%	Mean (SD)	N	%	Mean (SD)
Total / overall scale	102	100	7.62 (9.2)	99	100	11.36* (11.0)	84	100	6.79 (8.5)
1. Minimal Depression	81	79.4		63	63.6		72	85.8	
2. Mild Depression	15	14.7		18	18.2		6	7.1	
3. Moderate Depression	0	0		9	9.1		0	0	
4. Severe Depression	6	5.9		9	9.1		6	7.1	

*Significant difference between daughter and both son & husband; ANOVA post-hoc analysis p-value =0.01

In addition, approximately 20% of the entire group (n=57) exhibited clinical symptoms of depression, as determined by the cut-off point of 16 scale points. There was no significant difference ($\chi 2$ p-value =0.16) between adolescents and husbands in terms of clinical depression. However, when comparing the three sub-groups (son, daughter and husband), there was a highly significant ($p<0.01$) difference in the prevalence of clinical depression, with 33.3% of daughters exhibiting significant clinical depressive symptoms (table: 2).

Table (2): Clinical Depression prevalence among sons, daughters and husbands.

Cutoff point	Son			Daughter			Husband		
	N	%	Mean (SD)	N	%	Mean (SD)	N	%	Mean (SD)
No Clinical Depression (<16 points)	90	88.2	1.12 (0.32)	66	66.7	1.33 (0.47)	72	85.7	1.14 (0.35)
Clinical Depression (≥16 points)	12	11.8		33	33.3*		12	14.3	
Total	102	100		99	100		84	100	

*Significant difference between daughter and both son & husband; χ^2 p-value <0.01

In addition, the study found that high depression scores were observed in certain subgroups. Sons aged >15-18 years, with monthly incomes of >4000 NIS, and who were not employed nor their mothers, were found to have higher depression mean scores. Similarly, daughters aged >15 years, with monthly incomes of 2000-4000 NIS, who were employed, living in a village, had less education, had a widow mother, or had a mother who was not employed, had higher depression mean scores. However, there were no statistically significant relationships found between BDI scores and demographic variables in husbands. The study also found that sons of mothers with late-stage cancer, daughters of mothers undergoing palliative or other treatments for 3-6 months, and husbands whose wives had undergone radiotherapy had higher depression scores.

The study also explored death anxiety among the participants and found that the overall mean score was 5.4, indicating that the level of concern about death was below average. Adolescents had a statistically significant higher mean score than husbands (5.7 vs. 4.6). When analyzing the data by subgroups, 40% of all participants had some level of concern or high concern about death. Daughters had the highest percentage of concern or high concern (48.4%), while sons and husbands had lower percentages (32.3% and 32.2%, respectively).

Furthermore, significant differences were found when comparing the three sub-groups (son, daughter, and husband) in terms of mean score of death anxiety (ANOVA p=0.01). Post-hoc analysis of the ANOVA test showed a significant difference ($p<0.05$) between daughters (mean=6.2) and the other two groups (sons mean=5.3 and husbands mean=4.6). The analysis of death anxiety categories

among the sub-groups revealed that daughters had the highest percentage of high concern (24.2%), while sons and husbands had lower percentages (17.6% and 17.9%, respectively).

Table (3): Templer Death Anxiety Scale categories, average and SD among sons, daughters and husbands.

DAS categories	Son			Daughter			Husband		
	N	%	Mean (SD)	N	%	Mean (SD)	N	%	Mean (SD)
Death Anxiety overall score (T1-T15)	102	100	5.29 (3.3)	99	100	6.18* (3.4)	84	100	4.6 (3.7)
1. Absence of death anxiety (T1-T6)	69	67.7		51	51.6		57	67.8	
2. Concerns of death (T7-T8)	15	14.7		24	24.2		12	14.3	
3. High concern to death (T9-T15)	18	17.6		24	24.2		15	17.9	

*Significant difference between daughter and husband; ANOVA p-value=0.01 and Tukey post-hoc analysis p-value=0.01

Furthermore, the study found that high mean scores of death anxiety were observed in sons who lived in villages, had an income group >4000 NIS, were unemployed, and had less educated mothers. On the other hand, higher mean scores of death anxiety were seen in daughters in the age group 12-15 years and in the income group 2000-3000 NIS. Additionally, husbands who lived in villages, had an income group >4000 NIS, were unemployed, and had working wives showed higher significant death anxiety scores. The study also found that sons of mothers who underwent radiotherapy treatment for 3-6 months had higher death anxiety scores. Similarly, daughters of mothers in the early stage of cancer showed higher death anxiety scores. However, there were no significant relationships between DAS scores and other health variables in husbands.

Moreover, a Pearson correlation test indicated a strong positive and highly statistically significant relationship ($r=0.4$; $p<0.001$) between depression and death anxiety. A highly significant positive correlation was found in sons and husbands ($r=0.7$ and 0.5, $p<0.001$; respectively), but there was no correlation between the two scores in daughters ($r=0.05$; $p=0.63$); as a startling result.

Furthermore, the multivariate linear regression analysis revealed that coping and work were significant predictors of depression among sons of women with cancer, while coping, mother's education, residence, and monthly income significantly predicted sons' death anxiety. Among daughters, age, coping, type and duration of treatment, and care provider were significant predictors of depression, while age, care provider, monthly income, and mother's stage of cancer significantly predicted daughters' death anxiety. Coping and work were the significant predictors of depression and death anxiety in husbands (Table 4).

Table (4): Multiple Linear Regression Analysis of the determinants of Death Anxiety and Depression scores in the three subgroups

Predictors	BDI scores in Sons		DAS scores in Sons		BDI scores in Daughters		DAS scores in Daughters		BDI scores in Husbands		DAS scores in Husbands	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Coping	0.69	<0.01	0.36	<0.01	0.33	0.01			0.32	<0.01	0.40	<0.01
Work	-0.46	<0.01							-0.28	0.03		
Monthly income of family	--	-	0.34	0.01			0.21	0.05				
Age					0.29	<0.01	-0.39	<0.01				
Care provider					0.50	<0.01	0.50	<0.01				
Education of woman	--	--	-0.40	<0.01								
Residence	--	--	0.24	0.02								
treatment type					-0.49	<0.01						
treatment duration					0.46	0.02						
Stage of Cancer							-0.34	<0.01				
	Model p-value <0.001 adj. R^2 =0.48		Model p-value <0.001 adj. R^2 =0.33		Model p-value <0.001 adj. R^2 =0.40		Model p-value <0.001 adj. R^2 =0.47		Model p-value =0.004 adj. R^2 =0.11		Model p-value =0.004 adj. R^2 =0.25	

4. Discussion:

The results of this study showed a significant presence of depression among the participants, with daughters having the highest mean depression score (11.4; p= 0.01) compared to sons and husbands of cancer women. Daughters also reported more severe depression symptoms, with 18.2% showing high levels of depression severity. Furthermore, there was a highly significant difference ($p<0.01$) in the prevalence of clinical depression in daughters (33.3%). These findings are consistent with Grunfeld et al. (2004) study, which reported 11% of caregivers experiencing depression, although other studies have found higher rates (Sharma et al., 2014; Gorji et al., 2012; Katende & Nakimera, 2017).

The high level of depression among adolescents of women with cancer may be due to the stressful experience of parental cancer, which can be a potential threat to their physical and mental health and normative development. Adolescents may struggle with anxiety, confusion, sadness, anger, and feelings of uncertainty regarding the outcome of the illness. Caring for cancer patients can also arouse fears and thoughts about personal mortality, and may result in anticipatory grief and communication problems with the parent, which can intensify distress. Moreover, the distress experienced by caregivers and patients is often interdependent, particularly among those with insecure relationship attachment (Semple & McCance, 2010; Given et al., 2012). Our study found a high level of death anxiety, which may be related to the stressful experience of parental cancer. However, there was a discrepancy between how the participants rated their death anxiety and the statistical analysis of the Templer Death Anxiety Scale.

The current study found that nearly 40% of participants had a high level of concern about death, which is considered high and requires psychological intervention in clinical settings, particularly hospitals. However, compared to other studies, the level of death anxiety was lower among adolescents and husbands, potentially due to coping mechanisms and social support systems. Religiosity is a common coping strategy in Palestinian culture and has been found to predict lower death anxiety and positive life adjustment in previous studies (Soleimani et al., 2017; Clemmens, 2009).

The analysis also revealed a statistically significant difference ($p=0.02$) between the death anxiety scores of adolescents and husbands (5.7 and 4.6 points, respectively), indicating that adolescents experience more death anxiety. Among the three sub-groups, daughters had significantly higher death anxiety scores (mean=6.2) compared to sons and husbands (mean=5.3 and 4.6, respectively), with 48.4% of daughters reporting concern or high concern of death. These findings are consistent with previous literature, which shows that women generally have higher levels of death anxiety than men (Harding et al., 2005; Abdel-Khalek, 1998; Rasmussen & Johnson, 1994).

It is suggested that the higher levels of death anxiety among adolescent girls may be due to a lack of communication with parents about cancer diagnosis, as parents may try to avoid discussing death-related topics. Parents diagnosed with cancer should be supported as a family unit, as all members are affected by cancer and its treatment (Barnes et al., 2000). Additionally, the study found a strong positive correlation between depression and death anxiety scores ($r=0.4$; $p<0.001$), with sons and husbands showing a highly significant positive correlation ($r=0.7$ and 0.5, $p<0.001$, respectively), but unexpectedly, no correlation was found in daughters ($r=0.05$; $p=0.63$). Previous studies have also confirmed the presence of death anxiety in depressive disorders (Ongider & Eyuboglu, 2013; Miller et al., 2013; Saggino & Ronco, 1997). One reviewer added that the reason for such high levels of death anxiety and depression among females is somehow related to the Palestinian context, in which

females are more vulnerable in the society, more prone to familial and household duties, and more emotionally connected and close with their mothers than of the male children. All of this adds to the burden on those girls and may led to such significant differences found in this study.

Regarding the relationship between death anxiety and depression, the study found a strong positive correlation between the two, especially in sons and husbands. However, surprisingly, there was no correlation between the two scores in daughters. The study also identified several sociodemographic factors that were significantly related to depression in adolescents, including age, income, and working status. Many studies showed that adolescents grieve more emotional problems, are utmost vulnerable to negative psychosocial consequences when confronted with parent illnesses, and have larger anxiety, depression, and emotional distress than younger children and general population (Rainville et al., 2012; Kuhne, 2012).

The reason why adolescents and husbands who lived in villages had higher prevalence of death anxiety than those who lived in cities in the current study is uncertain. However, it has been found that women who live in cities used more coping mechanisms than those who live in villages in a previous Palestinian study (Shehadah & Ahmead, 2016). Additionally, higher death anxiety scores were observed in sons of mothers who received radiotherapy (M=7.36) and in daughters of mothers who were in the early stage of cancer (M=7.21). However, there were no significant associations between DAS scores and all other health variables in husbands. Other studies have also found that caregivers of patients who were not receiving radiation therapy or who were receiving radiation therapy had higher levels of death anxiety than caregivers of patients receiving surgery or chemotherapy (Soleimani et al., 2016; Gazendam-Donofrio et al., 2011).

5. Conclusion:

In conclusion, the present study highlighted the significant levels of death anxiety and depression in family members of women with cancer, particularly among adolescent daughters. The findings suggest the need for the development of national policies and counseling programs that cater to families of cancer patients at both community and hospital levels. Additionally, it is crucial to evaluate the presence of mental health disorders, including depression and death anxiety, among family members of cancer patients.

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