

PSYCHOLOGICAL DISTRESS IN PARENTS AND GUARDIANS OF MOROCCAN CHILDREN WITH CANCER: A CROSS-SECTIONAL STUDY

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Abstract

Caring for a child with cancer can be an extremely stressful and burdensome experience for parents. This study consists to assess the prevalence and factors associated with psychological distress among parents or guardians of children with cancer. Data collection occurred between June and December 2023 among parents or guardians of children with cancer admitted to the Hematology and Oncology department of the Children's Hospital Rabat. Employing a self-administered questionnaire comprising the Arabic version of the 12-item General Health Questionnaire (GHQ12) to evaluate the prevalence of psychological distress. Chi-square tests and multiple regression analyses were performed to evaluate the relationship between the psychological distress and the socio-demographic and clinic parameters. 232 parents or guardians of children participated in the study. The average GHQ12 score (0-36) was 22 ± 6.83 . Distress was reported in 83.6% ($n = 196$) using the Likert score method (0-1-2-3). a score >15 was considered evidence of psychological distress. Distress was found to be significantly associated with professional activity ($P = 0.047$), social security ($p = 0.036$) and family history of cancer ($P = 0.001$). In multivariate analysis, family history of cancer with (OR: 4.18; 95% CI: 1.77; 9.87; $P = 0.001$) and social security (OR: 4.25; 95% CI 1.1; 3; $P = 0.035$) were predictive factors for distress. The prevalence of psychological distress among the parents of children with cancer was high. Consequently, this study may help to advance the development of appropriate clinical practices and intervention mechanisms for these parents of children with cancer to prevent the development of emotional manifestations that disrupt the healing process.

Keywords: Pediatric Cancer, Psychological Distress, General Health Questionnaire-12, Morocco.

1. INTRODUCTION

The incidence of pediatric cancers varies between 100 and 150 cases per million children per year [1]. Every year, the development of cancer can affect around 429,000 children and adolescents aged between 0 and 19. While five-year survival rates exceed 80% for the 45,000 children diagnosed with cancer in high-income countries, they are less than 30% for more than 384,000 children in lower-middle-income countries [2]. Despite significant progress in increasing survival rates in pediatric oncology, childhood cancer is often associated with notions of mortality, incurability, loss and pain [3].

Childhood cancer, although rare is a potentially fatal health problem facing families around the world. The diagnosis of childhood cancer not only affects the child, but also has a significant impact on the entire family system, particularly the parents. Throughout the treatment phase and even beyond, parents are confronted with various multidimensional sources of psychological distress, such as worry for their child, as well as anxiety [4], Depression [5] and reduced quality of life [6,7].

The concept of psychological distress is a useful heuristic because it is a global perception resulting from a disparity between a difficult situation and the person's ability to manage it. It is an assessment variable that is now taken into account in the operational definitions of the various mental disorders in the Diagnostic and Statistical Manual of Mental Disorders, published by the American Psychological Association.

The most common disorders are mood and anxiety disorders [8,9]. These reactions may continue worsen and rebalance over the long term due to the chronic stress that cancer treatment represents for the child.

The parents' life situation involves an accumulation of stressors, all of which differ in terms of duration, predictability and impact [10]. The threat of death [11]. The treatment period after diagnosis [11-13]. painful medical procedures [12]. intensive treatment regimens with possible health side effects [14] and family financial problems [15] all interfere with the demands and changes in parents' daily lives. leading to increased emotional distress [16-18].

Although the emotional impact of the disease on parents is undeniable [19-21], few studies have directly addressed this subject in our Moroccan context. Further studies during cancer treatment are needed to guide the development of interventions and improve clinical practice, in order to meet the needs of patients and their families throughout their treatment.

The present study aims to explore the prevalence of psychological distress in newly diagnosed PCC at the Children's Hospital in Rabat. Morocco and to identify associated risk factors. with the aim of recommending effective support strategies.

2. MATERIALS AND METHODS

2.1 Participants

This study utilized a cross-sectional design involving PCWC undergoing cancer treatment at the Pediatric Hematology Oncology Department of the Center Children Hospital of Rabat. This hospital serves as one of the primary referral centers for childhood cancer treatment across Morocco.

Inclusion criteria included PCWC under 16 years of age with a confirmed diagnosis of cancer made at least three months previously during the data collection period. Parents with children in very poor general condition or those who refused to answer the questionnaire were excluded from the study.

The ethical dimensions of confidentiality, anonymity and free consent were respected for consecutive parents who met the inclusion criteria. The sample size was calculated using the formula developed by Schwartz [3] with a prevalence rate of 50%. an accuracy of 0.05 at 95% confidence interval. Data collection occurred between June and September 2023. employing a self-administered questionnaire comprising two parts: the first part covered socio-demographic factors. clinical history of participants. and characteristics of the children diagnosed with cancer were also elicited. while the second part consisted of the 12-item General Health Questionnaire GHQ-12.

2.2 Instruments

The General Health Questionnaire GHQ12: Developed by Goldberg in 1970 and used to measure psychological distress [22]. this is a widely used tool in primary care for screening for psychological distress and psychiatric morbidity. Its use as a screening instrument has been well established and has been validated in Arabic [23]. The sensitivity and specificity of this scale are 0.88% and 0.84% respectively. Each item is scored on a four-point scale and gives a total score of 12 or 36 depending on the scoring method chosen. The notation style used for this study is the Likert scale. The cut-off point for the GHQ-12 was set at 15. as the mean and median value obtained is statistically 15. Scores ≤ 15 are considered normal, while scores > 15 are considered evidence of psychological distress.

2.3 Statistical Analysis and ethics

A description of the sociodemographic and clinical characteristics was carried out. Quantitative variables have been analyzed by dispersion measures while qualitative variables are presented by frequencies and percentages.

Pearson's chi-square test of independence or Fisher's exact tests examined associations between distress and participant characteristics. A logistic regression analysis was performed to determine the predictive factors of psychological distress with distress categorized as either not distressed ≤ 15 and distressed > 15 [4].

Variables with $p < 0.20$ were included in a multivariate model. A value of $p < 0.05$ was considered statistically significant. Data were analyzed using the Statistical Package for the Social Sciences (SPSS). Version 20 (IBM Corp. Chicago. Illinois. USA).

The Ethics Committee for Biomedical Research at Mohammed V University. Rabat 01/23 approved the study protocol. All participants gave written informed consent. Data collected from participants were treated confidentially.

3. RESULTS

232 parents or guardians of a child with cancer participated in the study with an acceptance rate of 100 %. The average age was 36.25 ± 8.98 years and 7.43 ± 4.45 years for the children. Participants were predominantly female 88.8%. married 88.6% and with irregular occupation 86.1%. On admission, hematological tumors 67.2% were the most common cancers in children. Children were cared for under Health Insurance Coverage for the Economically Indigent RAMEL in 67.2% of cases.

Distress was reported by (83.2%) of participants, having given a score of 15 or more. The proportion of psychological distress was 175 (90.2%) and 19(9.8%) among female and male caregivers, respectively (Table I). No significant correlation was detected between psychological distress and the gender of the parents or the child. the age. the parents' level of education and occupation, and socio-economic status.

However, the professional activity ($p=0.047$). social security($p=0.036$) and Family history of cancer ($p=0.001$) were significantly associated with distress. the logistic regression model allows to analyze the statistically significant elements (Table II). The results showed that the predictive factors of psychological distress in parent with cancer child were the social security (OR: 4.18; 95% CI: 1.77;9.87; $P = 0.001$) and the family history of cancer (OR: 4.25; 95% CI 1.1;16;3; $P =0.035$).

Table 1: Associations between parental and child characteristics and levels of psychological distress among parents of children with cancer (n=232)

Variables		N(%)	Not distressed (%) ≤15 n=38	Distressed (%) >15 n=194	P
Age (years)	20-29	67(28.9)	15(39.5)	52(26.8)	0.38
	30-39	96(41.4)	12(31.6)	84(43.3)	
	40-50	54(23.3)	8(21.1)	46(23.7)	
	>50	15(6.5)	3(7.9)	12(6.2)	
Gender	Female	206(88.8)	31(81.6)	175(90.2)	0.12
	Male	26(11.2)	7(18.4)	19(9.8)	
Relationship with the child	Mother	186(80.2)	29(76.3)	157(80.9)	0.55
	Father	20(8.6)	5(13.2)	15(7.7)	
	Guardians	26(11.2)	4(10.5)	22(11.3)	
Marital status	Married	206(88.6)	35(92.1)	171(88.1)	0.47
	Divorced/ Widowed	26(11.2)	3(7.9)	23(11.9)	
Area of residence	Urban	124(53.4)	22(57.9)	102(52.6)	0.54
	Rural	108(46.6)	16(42.1)	23(11.9)	
Level of education	Illiterate	68(29.3)	10(26.3)	68(29.9)	0.33
	Primary	75(32.3)	9(23.7)	66(34)	
	Secondary	61 (26.2)	14(36.8)	47(24.2)	
	Higher	28(12.1)	5(13.2)	23(11.9)	
Professional activity	Regular	46(19.8)	12(31.6)	34(17.5)	0.047*
	Irregular	186(80.2)	26(68.4)	160(82.5)	
Socio-economic status	Low	198(85.3)	34(89.5)	164(84.5)	
	Medium	26(11.2)	3(7.9)	23(11.9)	
	High	8(3.4)	1(2.6)	7(3.6)	
Social security coverage	RAMED	156(67.2)	25(65.8)	131(67.5)	0.036*
	AMO	55(23.7)	6(15.8)	49(25.3)	
	Others	21(9.1)	7(18.4)	14(7.2)	
Number of children	One child	37(15.9)	7(18.4)	30(15.5)	
	2 children	76(32.8)	12(31.6)	64(33)	
	3 or more	119(51.3)	19(50)	100(51.5)	
History of somatic illness	Yes	49(21.1)	7(18.4)	42(21.6)	0.65
	No	183(78.9)	31(81.6)	152(78.4)	
Toxic habit	Yes	15(6.5)	34(89.5)	183(94.3)	0.26
	No	217(93.5)	4(10.5)	11(5.7)	
Traumatic event	Yes	36(15.5)	4(10.5)	32(16.5)	0.35
	No	196(84.5)	3(89.5)	162(83.5)	
Family history of cancer	Yes	108(46.6)	8(21.1)	100(51.1)	0.001*
	No	124(53.4)	30(78.9)	94(48.5)	
Child's age (Years)	<5	116(50)	22(57.9)	94(48.5)	0.54
	5-10	62(26.7)	8(21.1)	54(27.8)	
	11-15	54(23.3)	8(21.1)	46(23.7)	
Child's gender	Female	101(43.5)	12(31.6)	89(45.9)	0.1
	Male	131(56.5)	26(68.4)	105(54.1)	
Child's diagnosis	Hematological tumor	156(67.2)	27(71.1)	129(66.5)	0.58
	Solid tumor	76(32.8)	11(28.9)	65(33.5)	
Time since diagnosis (days)	0-15	80(34.5)	17(44.7)	63(32.5)	0.34
	16-30	49(21.1)	7(18.4)	42(21.6)	
	31-60	52(22.4)	5(13.2)	47(24.2)	
	61-90	51(22)	9(23.7)	42(21.6)	

Table 2: Association Between Characteristics and Psychological Distress

Indépendants Variables	Univariate Analysis			Multivariate Analysis		
	OR	95%CI	P	OR	95%CI	P
Age (years)	1,004	0,96;1,04	0,84			
Gender						
Female	2,08	0,8;5,36	0,13*	1,54	0,48;4,89	0,45
Male	1					
Relationship with child						
Mother	0,54	0,12;2,37	0,41			
Father	0,98	0,31;3,06	0,97			
Guardians	1					
Marital status						
Married	0,63	0,18;2,24	0,48			
Divorced/ Widowed	1					
Area of residence						
Urban	0,8	0,39;1,62	0,54			
Rural	1					
Level of education						
Illiterate	1,26	0,38;4,09	0,7			
Primary	1,59	0,48;5,25	0,44			
Secondary	0,36	0,06;2,03	0,24			
Higher	1					
Professional activity						
Regular	0,45	0,21;1,02	0,05*	0,54	0,2;1,47	0,23
Irregular	1					
Socio-economic status						
Low	0,68	0,08;5,78	0,73			
Medium	1,09	0,09;12,26	0,94			
High	1					
Social security coverage						
RAMED	2,62	0,96;7,14	0,06*	2,36	0,76;7,33	0,13
AMO	4,08	1,18;14,1	0,026*	4,25	1,1;16,3	0,035**
Others	1					
Number of children						
One child	0,81	0,31;2,12	0,67			
2 children	1,01	0,46;2,22	0,97			
3 or more	1					
History of somatic illness						
Yes	1,22	0,5;2,97	0,65			
No	1					
Toxic habit						
Yes	1,95	0,58;6,5	0,27			
No	1					
Traumatic event						
Yes	1,67	0,55;5,06	0,35			
No	1					
Family history of cancer						
Yes	3,98	1,74;9,14	0,001*	4,18	1,77;9,87	0,001**
No	1					
Child's age (Years)	1,03	0,94;1,12	0,5			
Child's gender						
Female	1,83	0,87;3,84	0,1*	1,64	0,74;3,6	0,21
Male	1					
Child's diagnosis						
Hematological tumor	0,8	0,37;1,73	0,58			
Solid tumor	1					
Time since diagnosis (days)						
0-15	0,79	0,32;1,94	0,6			
16-30	1,28	0,43;3,77	0,64			
31-60	2,01	0,62;6,4	0,24			
61-90	1					

4. DISCUSSION

Caring for a child with cancer is an extremely difficult experience for PCC, regardless of cultural background. This study showed that psychological distress was reported in 83% of participants (80.9% of mothers, 7.7% of fathers and 11.3% of guardians). This result is in the upper range of results reported by other studies which have shown between 60% and 90% psychological morbidity in parents or guardians of children with cancer, notably that of Feki et al in Tunisia which revealed an estimated prevalence of depression of 86% and anxiety of 92% [4], and Isabel Tan et al in China [24], which found that the prevalence of psychological distress among parents of children with cancer was around 67.9%, and the study by Al-Maliki et al in Iraq [5], which identified that almost 70.5% of parents suffered from significant depression. This prevalence was lower in the Lakkis study in Lebanon [15], which found significant distress scores in around 56% of parent. This difference may be due to differences in the measurement tools used and the socio-cultural and economic context, which can influence distress levels.

The prevalence of psychological distress is increased by the multiple challenges parents face when accompanying their child through the rigorous and painful procedures of cancer treatment. Although the levels of distress reported in our study are alarming, this study showed that psychological distress according to sex, age and the other characteristics such as marital status, relationship with the child, education level, Child's age, Child's diagnosis, Socio-economic status, Child's diagnosis were not statistically significant. This result is also similar to other studies on predictors of psychological distress in PCC [25]. However, other previous studies have shown the association of psychological distress; Sex [26], Age [27], Level of education [26], Number of children [28], financial problems and duration of illness [15].

Numerous studies have shown that socio-economic characteristics can affect parents' psychological distress. For example, Lakkis showed in their study that parents are likely to experience psychological distress when they consider their financial situation to be unsatisfactory. The results of the univariate analysis show that parents with a regular job are less likely to experience psychological distress than those with an irregular job (OR=0.45, 95% CI: 0.21-1.02, p=0.05).

However, this association did not remain significant in the multivariate analysis (OR=0.54, 95% CI: 0.2-1.47, p=0.23). Although underemployment was not a significant predictor of distress in the multivariate analysis, it remains an important indicator of the vulnerability of parents of children with cancer. The financial instability and lack of support associated with underemployment may contribute to increased psychological distress [29,30]. Social security plays a crucial role in helping families cope with healthcare costs, particularly when a child has cancer [13, 31].

The coverage offered by different social security schemes can vary considerably, affecting parents' ability to meet medical costs, access appropriate care and manage financial stress. Results from Tremolada et al. showed that parents with no insurance or limited medical cover experienced higher levels of stress and anxiety due to financial worries and uncertainties about their children's care [18]. The current study corroborates these findings, where cover such as AMO, although compulsory, may be insufficient to reduce distress compared with other forms of cover.

The present study shows that parents with a family history of cancer have an odds ratio (OR) of 3.98 (95% CI: 1.74-9.14. $p=0.001$). indicating that they are almost four times more likely to suffer psychological distress than those without a family history. This result is in line with other research [32,18] which has shown that past experience of the disease increases the emotional burden and concerns about the child's prognosis and treatment. On the other hand, a number of studies have shown no significant association between a family history of cancer and the child's prognosis and treatment. in the other hand. several studies have shown no significant association between a family history of cancer and distress.

Limitations

The over-representation of mothers in our sample may introduce a potential bias in the results, given that the role of primary caregiver is generally attributed to mothers. This may influence parents' perceptions and coping strategies. Moreover, the type of study that is based on description and correlation, does not allow to conclude cause and effect relationships between variables. For this, complementary longitudinal studies are favorable to understand the multiple dimensions of parental adaptation, considering the complex interactions between individual, contextual and situational factors. This could lead to the development of more targeted and effective interventions to support parents faced with their child's illness.

5. CONCLUSION

The study showed a high prevalence of PD among parents of children with cancer in Morocco. The significant association between psychological distress in parents of children with cancer and factors such as family history of cancer and social security underlines the importance of a holistic and proactive approach to family support. By specifically targeting these predictive areas, interventions can be better tailored to reduce distress and improve the well-being of parents, which in turn could have positive effects on the health and recovery of their children.

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