

# Resilience and its Predictors among the Parents of Children with Cancer: A Descriptive-Correlational Study

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## Abstract

**Context:** As a common debilitating illness, cancer is among the leading causes of child mortality in developed and developing countries. Cancer diagnosis for children is considerably stressful for their parents. Resilience is a key factor behind effective coping with cancer-related problems. This study evaluated resilience and its predictors among the parents of children with cancer. **Aim:** This study evaluated resilience and its predictors among the parents of children with cancer. **Settings and Design:** This cross-sectional descriptive-analytical study was conducted in 2017 on 400 parents of children with cancer in Tabriz Children's Hospital, Iran. **Methods:** A demographic questionnaire and the Connor-Davidson Resilience Scale were used to collect the data. Parents were conveniently recruited from Tabriz Children's Hospital. **Statistical Analysis:** Data were analyzed using the SPSS for Windows program (v. 16) via descriptive and inferential statistical methods. **Results:** The mean score of parents' resilience was  $66.83 \pm 14.28$ . Fathers obtained significantly higher resilience scores than mothers ( $P < 0.001$ ). The predictors of parents' resilience were financial status, parents' gender, fathers' employment status, and children's gender. **Conclusion:** The parents of cancer-afflicted children, particularly their mothers, have low resilience and therefore may be at risk for different physical and mental health problems. Health-care providers need to identify at-risk parents and provide them with greater psychological and educational support.

**Keywords:** Cancer, child, parents, resilience

## INTRODUCTION

Cancer is a common debilitating illness and a leading cause of child mortality in developed and developing countries.<sup>[1]</sup> The global incidence rate of childhood cancer is 140.6 cases per 1000,000 children. The cumulative incidence rate of cancer in 2010–2013 in the northwest of Iran was 95.4 cases per 1000,000 children.<sup>[2]</sup>

Parents' primary reaction to the diagnosis of cancer for their children is often associated with trauma and massive shock.<sup>[1]</sup> Psychological and clinical assessments show rising rates of depression and anxiety among the parents of children with chronic conditions such as cancer.<sup>[3,4]</sup> The parents suffer from different psychosocial problems, marital conflicts, financial strains, social isolation, occupational and familial role conflicts, and lack of time for their other children and recreational activities.<sup>[5]</sup> Moreover, psychosocial dysfunction among these parents can negatively affect the well-being and the welfare of the whole family.<sup>[6]</sup>

A key factor behind effective coping with cancer-related problems is resilience. In other words, parents need resilience and adaptive skills to effectively cope with their children's cancer and its associated problems.<sup>[3]</sup> As a personal characteristic, resilience relieves parents' discomfort,<sup>[7]</sup> improves quality of life,<sup>[8]</sup> promotes positive adaptation, moderates the negative effects of stress, and empowers individuals to protect their health.<sup>[9]</sup> Resilience is also a significant predictor of effective coping among the siblings of children with disability.<sup>[10]</sup> Resilience promotion among the family members of ill children can improve their psychosocial well-being and life satisfaction (14–16) and reduce disease

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burden.<sup>[11]</sup> Contrarily, lack of resilience increases the risk of different physical and mental health problems.<sup>[6]</sup> Therefore, resilience is considered as a protective factor against different health problems and risks.<sup>[11]</sup>

Given the role of resilience in personal and familial health, determining its level and contributing factors can help improve individuals' and families' resistance to different health problems.<sup>[12]</sup> However, most studies on resilience in Iran and other countries have been conducted on patients with psychiatric disorders,<sup>[13-18]</sup> and thus, there is limited information about resilience among the parents of cancer-afflicted children. To bridge this gap, this study was conducted with the aim of assessing resilience and its predictors among the parents of children with cancer.

## METHODS

This was a cross-sectional descriptive-analytical study. The study population comprised all parents of children with cancer in Tabriz, Iran. Cochran's sample size formula showed that at least 385 parents were needed. The sample size was increased to 400 due to probable withdrawals. Eligibility criteria had a child with cancer, ability to communicate verbally, agreement for participation, no affliction with physical or mental disorders, no history of cancer among the other family members, and no affliction of the child with other cancers or comorbid chronic illnesses. For sampling, we referred to the outpatient and inpatient wards of Tabriz Children's Hospital, Tabriz, Iran, conveniently recruited eligible parents, and asked them to answer study instruments. Sampling and data collection were undertaken in March–November 2017.

### Instruments

A demographic questionnaire and the Connor-Davidson Resilience Scale were used to collect the data. The demographic questionnaire included items on cancer-afflicted children's age, gender, birth rank, type of malignancy, and duration of affliction as well as parents' age, gender, educational level, employment status, financial status, and place of residence. The Connor-Davidson Resilience Scale is a standard 25-item measure for resilience. It was developed by Connor and Davidson in the United States in 2003. The total score of the scale can range from 0 to 100, with higher scores standing for greater resilience. Connor and Davidson confirmed its validity and reliability with a Cronbach's alpha of 0.89 and a test–retest correlation coefficient of 0.87.<sup>[19]</sup> Moreover, its psychometric properties were assessed and confirmed in China,<sup>[20]</sup> India,<sup>[21]</sup> Turkey,<sup>[22]</sup> Africa,<sup>[23]</sup> and Korea.<sup>[24]</sup> Mohammadi *et al.* also translated the scale into Persian and reported acceptable construct validity and internal consistency for it with a Cronbach's alpha of 0.89.<sup>[25]</sup>

### Data analysis

The SPSS for Windows program v. 16 (SPSS Ins., Chicago, USA). was employed for data analysis. The data were presented via the descriptive statistical measures such as absolute and relative frequencies, mean, standard deviation, and median. Moreover, the independent-samples *t*-test, the one-way

analysis of variance, and the linear regression analysis were used to analyze the data at a significance level of <0.05.

## RESULTS

In total, 400 parents of 326 cancer-afflicted children were studied. Participants were 263 mothers and 137 fathers. The reason behind the greater number of mothers in the present study was that the companions of children in the study setting were mainly their mothers. Parents ranged in age from 16 to 68. Moreover, 47.4% of fathers and 5.2% of mothers were employed. Around 32.5% of children were the only child of their families. Leukemia was the most common malignancy among children (39.1%). The length of cancer affliction was  $17.033 \pm 16.48$  months, on average. Table 1 summarizes children's and parents' demographic characteristics.

The mean score of parents' resilience was  $66.83 \pm 14.28$ . The independent-samples *t*-test showed that the mean score of resilience among fathers was significantly greater than mothers [ $P = 0.001$ ; Table 1]. Resilience had significant relationships with children's gender ( $P = 0.023$ ), duration of affliction with cancer ( $P = 0.003$ ), parents' gender ( $P = 0.001$ ), financial status ( $P < 0.001$ ), mothers' educational level ( $P = 0.006$ ), mothers' employment status ( $P = 0.003$ ), and fathers' employment status ( $P = 0.001$ ). However, it had no significant relationships with the type of malignancy ( $P = 0.50$ ), place of residence ( $P = 0.389$ ), fathers' educational level ( $P = 0.093$ ), number of children ( $P = 0.99$ ), and afflicted children's age [ $P = 0.181$ ; Tables 1 and 2].

All variables which had significant relationships with resilience were entered into the multiple linear regression analysis. Results revealed that the most significant predictors of resilience were financial status ( $\beta = -0.234$ ;  $t = -4.731$ ;  $P < 0.001$ ), parents' gender ( $\beta = -0.139$ ;  $t = -2.925$ ;  $P = 0.004$ ), fathers' employment status ( $\beta = -0.126$ ;  $t = -2.533$ ;  $P = 0.012$ ), and children's gender ( $\beta = -0.118$ ;  $t = -2.478$ ;  $P = 0.014$ ). These predictors accounted for 23%, 14%, 13%, and 12%, respectively, of the variance of resilience.

## DISCUSSION

### Parents' resilience

The total mean score of parents' resilience was  $66.83 \pm 14.28$ . Moreover, the mean scores of fathers' and mothers' resilience were  $70.40 \pm 12.86$  and  $64.87 \pm 14.61$ , respectively. A study on the parents of children with autism also showed that the total mean score of parents' resilience was  $55.71 \pm 11.82$ .<sup>[26]</sup> Moreover, a study on resilience among the mothers of children with cancer reported a resilience mean score of  $61.51 \pm 13.70$ .<sup>[27]</sup> These findings show that the parents of children with cancer have low-to-moderate resilience. However, their resilience is still greater than people who work in stressful environments such as nurses,<sup>[28]</sup> prehospital technicians,<sup>[14]</sup> and librarians.<sup>[29]</sup> These findings demonstrate that experiencing manageable problems related to children's cancer helps promote parents' resilience over time.<sup>[30]</sup>

**Table 1: The relationship of resilience with parent's and children's demographic characteristics**

Characteristics	n (%)	Resilience	P
<b>Parents</b>			
Parent's gender			
Father	137 (3.34)	70.40±12.86	<0.001
Mother	263 (8.65)	64.78±14.61	
Place of residence			
Urban areas	249 (76.4)	67.19±14.53	0.389
Rural areas	77 (23.6)	65.78±13.54	
Mother's employment status			
Housewives	309 (94.8)	64.35±14.54	0.003
Employed	17 (5.2)	76.81±10.82	
Father's employment status			
White-collar worker	65 (47.4)	73.6±9.40	<0.001
Self-employed	55 (40.14)	70.34±11.81	
Farmer	17 (12.4)	58.35±21.38	
Mother's educational level			
Primary	53 (20.1)	64.79±12.50	0.006
Guidance school	54 (20.53)	65.18±15.05	
High school	29 (11.02)	59.41±13.61	
Diploma	84 (31.93)	63.17±14.97	
University	43 (16.34)	71.58±14.59	
Father's educational level			
Primary	33 (24.08)	67.75±13.92	0.156
Guidance school	23 (16.78)	69.73±13.90	
High school	12 (8.75)	75.41±10.43	
Diploma	43 (31.38)	69.34±13.51	
University	26 (18.97)	74.84±9.16	
Financial status			
Good	30 (9.2)	74.36±9.80	<0.001
Moderate	190 (58.3)	68.41±13.24	
Poor	106 (32.52)	61.51±15.57	
<b>Children</b>			
Children's gender			
Male	190 (58.3)	65.44±14.68	0.023
Female	136 (41.7)	68.71±13.51	
Number of children			
1	106 (32.5)	66.82±14.09	0.990
>1	220 (67.5)	66.84±14.40	
Type of malignancy			
Leukemia	128 (39.1)	66.66±14.9	0.50
Lymphoma	27 (8.3)	66.53±14.01	
Brain tumor	63 (19.3)	66.68±15.7	
Abdominal tumor	66 (20.2)	65.63±14.82	
Musculoskeletal tumor	24 (7.3)	68.21±11.61	
Ocular tumor	5 (1.5)	63.45±10.14	
Others	13 (4.3)	70.1±12.61	
Guidance school	23 (16.78)	69.73±13.90	
High school	12 (8.75)	75.41±10.43	
Diploma	43 (31.38)	69.34±13.51	
University	26 (18.97)	74.84±9.16	
Children's age (months)	64.97 (43.90)		
Duration of affliction with cancer (months)	17.03 (16.48)		

Findings also indicated that the mean score of fathers' resilience was significantly greater than mothers. Similarly, studies on the parents of children with cancer and autism reported that children's fathers were significantly more resilient than their mothers.<sup>[26,31]</sup> Another study reported that compared with the fathers of children with cancer, their mothers suffered from severer posttraumatic stress disorder.<sup>[32]</sup> The significant difference between the levels of fathers' and mothers' resilience may be due to the fact that women are more sensitive to the effects of stressful life events and perceive higher levels of stress than men in a given situation.<sup>[33]</sup> A study showed that more than 50% of individual differences respecting resilience are due to genetic factors. Therefore, although males and females are similar to each other respecting the inheritance of resilience, they differ from each other respecting the genes that affect resilience. These differences may contribute to the process of socialization and explain the significantly greater resilience among males than females.<sup>[34]</sup> However, a study on the parents of deaf and blind children demonstrated no significant difference between fathers and mothers respecting their resilience.<sup>[35]</sup> Another study on high-school male and female students also reported the same finding. It seems that resilience is more affected by androgenicity than gender, so that both males and females who are androgen have greater resilience and adaptation compared to their nonandrogen counterparts.<sup>[36]</sup>

#### Predictors of parents' resilience

The significant predictors of parents' resilience were financial status, parents' gender, fathers' employment status, and children's gender. Similarly, a study showed that resilience was significantly correlated with parents' educational level and income.<sup>[37]</sup> Another study also reported that parents' gender, educational level, and income level significantly predicted around 11% of the variance of resilience.<sup>[38]</sup> Good financial status is expected to alleviate stress among the parents of ill children because financial needs usually cause stress.<sup>[39]</sup> Of course, good financial status is not necessarily associated with greater resilience; rather, parents' stress and lack of resilience are mainly caused by their inability to effectively use the available resources for their ill children.<sup>[40]</sup>

Findings also showed fathers' employment status as a significant predictor of parents' resilience, so that white-collar fathers had greater resilience than others. Employment status is mainly determined by educational level, and both determine social and financial status, which was identified to be a significant predictor of parents' resilience in the present and previous studies.<sup>[37,41]</sup> Moreover, financial status, educational level, and job satisfaction protect parents against the negative effects of their children's cancer because, for example, parents can receive professional support from their workplace.<sup>[42]</sup> On the other hand, cancer diagnosis for a child may require one of the parents or both to quit their job in order to have more time to care for their ill child.<sup>[43]</sup> Similarly, a study showed that although 35% of mothers had been employed, most of them quitted their job after cancer diagnosis for their children.<sup>[44]</sup>

**Table 2: The relationship of parent's resilience with their children's gender**

Children's gender	Mean±SD	
	Mother's resilience	Father's resilience
Male	63.8±14.69	69.47±13.83
Female	67.06±14.26	72.46±10.98
Statistical test results (df, t, P)	261, 2.21, 0.028	117.05, 0.657, 0.493

SD: Standard deviation

Such unemployment can negatively affect parents' financial status and thereby undermine their resilience. However, a study showed that resilience had no significant relationships with social, financial, employment, and educational status among the parents of children with autism.<sup>[26]</sup> This contradiction can be attributed to the fact that children in that study were afflicted by autism, while children in our study suffered from cancer.

Findings also indicated that children's gender was another predictor of parents' resilience, so that the parents whose cancer-afflicted children were female were more resilient than male children's parents. An earlier study showed that cancer-afflicted children's gender affected mothers' anxiety and the relationship of mothers' emotional ambivalence with her emotional control.<sup>[45]</sup> Parents in Asian countries spend most of their time with their male children.<sup>[46]</sup> Moreover, parents have greater knowledge about their male children's illnesses and provide them with greater care and support.<sup>[47]</sup> These factors may contribute to greater stress and lower resilience among the parents whose cancer-afflicted children were male.

Our findings showed no significant relationship between the place of residence and parents' resilience. This is in line with the findings of an earlier study which showed no significant difference between the resilience of elderly people who lived in urban and rural areas.

The limitations of the present study included participant selection through convenience sampling, data collection through self-report questionnaires, and greater number of mothers in the study sample.

## CONCLUSION

This study indicates that the parents of children with cancer have low resilience and therefore may be at risk for different physical and mental health problems. Moreover, parents' gender, financial status, father's employment status, and children's gender have significant effects on parents' resilience. Based on the findings of the present study, health-care providers need to identify at-risk parents and provide them with greater psychological and educational support in order to improve their health and the health of their family members.

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## Conflicts of interest

There are no conflicts of interest.

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