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Araştırma makalesi

Research article

Psychosocial Predictors of Resilience in Turkish Parents of Children with Cancer: A Cross-sectional Study

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ABSTRACT

Aim: This cross-sectional study was conducted to identify the predictive effect of hope, uncertainty, and perceived social support on resilience in Turkish parents of children with cancer.

Material and Methods: The sample of the study consisted of parents of children who were followed up with a diagnosis of cancer. The study was performed between May 2023 and Jan 2024. Spearman's correlation analysis, univariate, and multiple linear regression analysis were used to evaluate the data.

Results: The mean age of the parents was 37.19 ± 6.35 years, and 67.7% of participants were mothers. The mean age of the children was 8.73 ± 4.79 years, and the diagnosis of most of them was acute lymphoblastic leukemia (38.7%). Psychological resilience in parents was moderately and positively associated with hope (r = .523 p = <.001). A weak negative correlation was found between resilience and uncertainty (r = .288 p = .023). Hope had a significant positive effect on resilience (β = .463 p = .001). No statistically significant correlation was found between resilience and perceived social support.

Conclusions: This study revealed that psychological resilience was positively associated with hope and negatively associated with uncertainty in parents. Health care Professionals should develop psychosocial interventions to enhance resilience and integrate into the care of parents of children with cancer.

Keywords: Children, cancer, nursing, parents, resilience.

ÖZ

Kanser Tanısıyla İzlenen Çocukların Ebeveynlerinde Dayanıklılığı Etkileyen Psikososyal Faktörlerin İncelenmesi: Kesitsel bir Araştırma

Amaç: Bu kesitsel çalışma kanserli çocuğu olan ebeveynlerde belirsizlik, umut ve algılanan sosyal desteğin dayanıklılık üzerine yordayıcı etkisinin belirlenmesi amacıyla yürütülmüştür.

Gereç ve Yöntem: Araştırmanın örneklemini kanser tanısıyla izlenen çocukların ebeveynleri oluşturmuştur (n = 62). Araştırma Mayıs 2023-Ocak 2024 tarihleri arasında yürütülmüştür. Verilerin değerlendirilmesinde Spearman korelasyon analizi, tek değişkenli ve çoklu doğrusal regresyon analizi kullanılmıştır.

Bulgular: Ebeveynlerin yaş ortalaması 37.19 ± 6.35 olup, katılımcıların %67.7'si annedir. Çocukların ortalama yaşı 8.73 ± 4.79 yıl olup, çoğunluğunun tanısı akut lenfoblastik lösemi (%38.7)'dir. Ebeveynlerdeki psikolojik dayanıklılık umutla orta düzeyde pozitif yönde (r = 0.523 p = < 0.001). Belirsizlikle zayıf negatif (r = 0.288 p = 0.023) yönde ilişkilidir. Umudun dayanıklılık üzerinde anlamlı ve olumlu bir etkisi olduğu saptanmıştır (p < 0.05). Dayanıklılık ile algılanan sosyal destek arasında istatistiksel olarak anlamlı bir ilişki bulunmamıştır.

Sonuç: Bu çalışmanın bulguları, psikolojik dayanıklılığın ebeveynlerdeki umutla pozitif, belirsizlikle ise negatif ilişkili olduğunu göstermektedir. Sağlık profesyonelleri dayanıklılığı artırmak için psikososyal müdahaleler geliştirmeli ve kanserli çocukların ebeveynlerine sunulacak bakıma entegre etmelidir.

Anahtar kelimeler: Çocuklar, ebeveynler, dayanıklılık, hemşirelik, kanser.

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INTRODUCTION

Children diagnosed with cancer may experience psychosocial problems and symptoms due to the long treatment process and treatment-related side effects (Al-Saadi et al., 2022; Kamkhoad et al., 2023; Şengül, 2022). Psychosocial problems that may be seen in children include anxiety (Mahakwe et al., 2021; Martins et al., 2018; Lazor et al., 2019;), depression (van Warmerdam et al., 2019; Yardeni et al., 2021), post-traumatic stress disorder (PTSD) (van Warmerdam et al., 2019), uncertainty (Kearney et al., 2015), difficulty in coping, and social isolation (Pahl et al., 2021). Hyslop et al. (2021) reported that 45% of children receiving treatment reported feeling uncomfortable due to anxiety and fear (Hyslop et al., 2021). In relation to the general well-being of children, the psychosocial health of parents is also affected. Parents of children experience anxiety and depression symptoms[12]. High anxiety in parents is affected by the symptoms experienced by children related to treatment (Al Qadire et al., 2018). Parents deal with uncertainty throughout the treatment process due to the life-threatening nature of the disease (Snaman et al., 2019). Parents experience constant uncertainty due to situations such as the thought of losing their children, anxiety and fear about the treatment not going well or reoccurring, problems encountered during the treatment process, whether the treatment will work or not, and what will happen after the treatment is completed (Anderson et al., 2018; Jones, 2006; Snaman et al., 2019).

Characteristics of the parents may play a role in the psychological reactions (Ye et al., 2017), as well as the traumatic process of the child's diagnosis (Borrescio-Higa & Valdés, 2022). Parents' characteristics, coping preferences, and other environmental protective factors can reduce their exposure to negative experiences of the process (Toledano-Toledano et al, 2021). It is emphasized that parents who care for children with cancer should develop the ability to adapt and cope most appropriately in order to manage the process (Gu, 2019; Mensah et al., 2023). One of the protective factors that will help them develop this skill is resilience (Ye et al., 2017). Resilience is described as the ability to withstand negative reactions when faced with a traumatic situation (Haglund et al., 2007) and can protect individuals from adversities based on a self-regulating psychological mechanism (Ye et al., 2015). It has been reported that a high level of resilience in caregivers is associated with a positive quality of life and psychosocial well-being (Toledano-Toledano et al, 2021). In a study conducted in China, it was reported that resilience was negatively related to disease-related uncertainty and depressive symptoms and was positively related to perceived social support in parents (Ye et al., 2015).

The relationship between resilience in parents and psychosocial factors such as quality of life, perception of social support, emotional distress, care burden, and coping skills have been examined (Luo et al., 2022; Toledano-Toledano et al, 2021; Ye et al., 2017; Ye et al., 2015). Interventions to enhance resilience in parents have been developed in some developed and developing countries (Luo et al., 2021; Park et al., 2023). It has been reported that these interventions carried out by a multidisciplinary team provide improvements in various psychosocial parameters in parents. Identifying resilience and its associated potentially protective and negative factors will guide the planning of interventions to protect and enhance parents' psychosocial health.

Resilience is defined as the capacity of individuals to adapt successfully to significant challenges that threaten their viability (Masten 2018). According to Luthar et al. (2000), it encompasses dynamic processes that promote positive adaptation in the face of these significant challenges (Luthar et al., 2000; Masten & Cicchetti, 2016). It is suggested that it is influenced by protective (positive thinking, social support, etc.) and risk factors (anxiety, depression, uncertainty in illness, caregiver burden) (Masten & Cicchetti, 2016; Ye et al., 2017; Ye at al., 2015). This study investigated the relationship between resilience and protective factors (hope and social support) and psychosocial risk factors (uncertainty). There is a wide range of different factors that determine resilience in different cultures and populations (Mezgebu et al., 2020). In our country, studies examining the factors affecting resilience in Turkish parents of children with cancer are limited (Atay & Işıl, 2024; Koyu et al., 2024). In this respect, the results of the study will be important.

The research questions were as follows;

Study Questions

1) Is there a relationship between psychological resilience and psychosocial factors of parents?
2) What are the factors that predict the psychological resilience of parents?

Aim

This study aimed to identify the psychosocial factors that predict psychological resilience in Turkish parents of children with cancer.

MATERIAL and METHODS

Study Design

This is a cross-sectional and relational study.

Study Sample

The targeted population of the study consisted of parents of all patients followed up in the pediatric hematology-oncology outpatient clinics in Çukurova University Hospital. Parents of children aged 0-18 who are being treated with cancer in the pediatric hematology-oncology outpatient clinics of this hospital were recruited using purposive sampling. The fathers or mothers accompanying children in clinics were invited to the study from May 2023 to Jan 2024.

The sample size was calculated using the G*Power 3.1.9.7 program (Franz Faul, Universität Kiel, Germany). We have included 62 parents. The post hoc analysis for multidimensional linear regression analysis showed that the statistical power was 97.2% with a medium effect size (f2=0.15) and a significance level of 0.05. A total of 82 parents were assessed for eligibility. However,

parents who were not Turkish (n=15) and did not want to participate (n=5) were excluded from the study. Therefore, the sample consisted of 62 parents.

Inclusion and Exclusion Criteria

Participants were included if they were (1) parents of children diagnosed with cancer for at least one month and receiving treatment, (2) parents fluent in spoken Turkish. Participants were excluded if they were (1) parents who cannot speak and understand Turkish, (2) parents who have mental illnesses or cognitive and learning problems, (3) parents of children who were at the end of life, and (4) parents who did not want to participate.

Data Collection Tools

The descriptive characteristics form: This form consisted of 15 items eliciting information on the socio-demographic characteristics (age, gender, educational status, etc.) of children and their parents and the disease and treatment characteristics of the children (diagnosis, age at diagnosis, etc.).

The Connor-Davidson Resilience Scale Short Form (CD-RISC): The scale was developed as a 10-item short form of the 25-item Connor-Davidson Psychological Resilience Scale. The CD-RISC is a 5-point Likert-type response scale that determines the psychological resilience of individuals (Campbell-Sills et al., 2007; Connor & Davidson, 2003). The internal consistency coefficient of the scale was 0.85 (Campbell-Sills et al., 2007). High scores are considered an indicator of high psychological resilience. The Cronbach α value of the Turkish scale was 0.81 (Kaya & Odacı, 2021). The Cronbach α value of the scale in this study was 0.87.

Herth Hope Index (HHI): The four-point Likert-type scale consists of 12 items and three sub-dimensions (“Future,” “Positive readiness and expectation,” and “The bonds between himself and those around him”) (Aslan et al., 2007; Herth, 1992). Negative items (3 and 6) are reverse coded. The lowest score is 12, and the highest score is 48. An increase in the score indicates a higher level of hope. The Cronbach α value was 0.75 on the Turkish scale (Aslan et al., 2007). The Cronbach α value of the scale in this study was 0.60.

The Multidimensional Scale of Perceived Social Support (MSPSS): The scale consists of 12 items and three subscales (family support, friends support, significant other support). The lowest score is 12, and the highest score is 84. An increase in the score indicates a higher level of perceived social support (Zimet et al., 1988). The Cronbach α value of the Turkish MSPSS was 0.89 (Eker et al., 2001). The Cronbach α value of the scale in this study was 0.90.

Mishel’s Uncertainty in Illness Scale-Parent Form: The 5-point Likert scale was developed to measure the uncertainty perception of the parents regarding their children’s disease and hospitalization, and it was adapted from the Uncertainty Scale developed by Mishel, 1983 (Mishel & Epstein, 1997). The scale consists of 31 items and four sub-dimensions (Ambiguity, Lack of Clarity, Insufficient Information, and Unpredictability). Negative items are reverse coded, and the scale evaluation is the sum of all items. A high score indicates that perceived uncertainty is high. Cronbach’s α value was 0.86 for the total scale and between 0.60 and 0.80 for the Turkish version of the scale sub-scales (Özkan ve Aslan, 2018). The Cronbach α value of the scale in this study was 0.81.

Data Collection

Data collection tools were applied to parents whose written consent was obtained by the first researcher. In order to protect the privacy of the participants, their personal information was not collected, and the forms were coded according to a code deemed appropriate by the parents. An interview room was allocated so that parents could feel comfortable using the service during data collection. Data collection took approximately 20 minutes.

Data Analysis

The data were evaluated using the IBM SPSS 28.0 program. Descriptive statistics (Frequency, percentage, mean, standard deviation, etc.) were used to present sociodemographic characteristics. For normality, skewness and kurtosis values were examined. If these values are between ±2, the scores show normal distribution (George & Mallery, 2010). The relationship between resilience and other psychosocial outcomes was evaluated using Pearson’s correlation analysis because all scale scores were normally distributed. For correlation coefficient classification, the following reference was used: 0.00-0.10 Negligible correlation, 0.10-0.39 Weak correlation, 0.40-0.69 Moderate correlation, 0.70-0.89 Strong correlation, 0.90-1.00 Very strong correlation (Hayran & Hayran, 2011). The predictive effect of hope and uncertainty was analyzed via multiple linear regression analysis using the enter method. For multiple regression analysis, there should be no multicollinearity problem between independent variables (Pallant, 2007). A very high level of correlation ($r > 0.90$) between independent variables indicates this problem. If the Variance Inflation Factors (VIF) value is less than 10 and the tolerance value is greater than 0.10, there is no multicollinearity (Tabachnick & Fidell, 2013). In this study, the tolerance values for uncertainty and hope scores are greater than 0.10 (0.793), and the VIF values are 1.261, which is less than 10. Therefore, there is no multicollinearity. Another important criterion is that the errors are independent of each other. The Durbin-Watson statistic has a value ranging between 0 and 4, and being close to 2 indicates that no autocorrelation was detected in the sample. In this study, the DW value was 1.463. The alpha level was set as $p<0.05$.

Ethical Considerations or Ethical Approval

The study was approved by the Ethics Commission of a University in Türkiye (Ref no. 24.01.2023/8). Parents were included in the study after informed consent had been obtained. All parents were informed that they had the option to decline to participate at any stage of the study.

Limitations

There are some limitations in this study. First, the participants in this study consisted of parents who volunteered. Therefore, we do not know whether other parents did not participate in the study because of the variables examined. Second, we enrolled only one parent of children and did not evaluate resilience and related factors separately for both parents. Future studies should consider evaluating this in both caregivers. Third, since the purposive sampling method was used, it isn't easy to generalize the results. Fourth, we investigate the resilience and the other variables at one point during the treatments. Therefore, it is impossible to know whether resilience level and correlation to the psychosocial factors change over treatment. Further research to investigate the changes in these factors at the few time points of the treatment process is recommended.

RESULTS

The demographic characteristics of children and parents are presented in Table 1. The mean age of children was 7.35 ± 4.73 at diagnosis and 8.73 ± 4.79 at the study. The diagnosis of most of the children was leukemia (61.3%) and solid or soft tissue tumors (30.6%), and most of them only received chemotherapy (CT). The average age of parents was 37.19 ± 6.35 years (range between 24-51). The educational level of most of the mothers was in elementary school (46.8%), and the fathers' educational level was mostly secondary and high school (45.2%) (Table 1).

Table 1. Socio-demographic Characteristics Children and Their Parents (n=62)

Characteristics	X ± SD	Min. - Max.
Age at study, years	8.73 ± 4.79	2 - 18
Age at diagnosis, years	7.35 ± 4.73	1 - 16
	n	%
Gender		
Female	29	46.8
Male	33	53.2
Diagnosis		
ALL	24	38.7
AML	14	22.6
Neuroblastoma	9	14.5
Osteosarcomas and Ewing sarcomas	6	9.7
Lymphoma	3	4.8
Other solid or soft tissue tumors	6	9.7
Parents		
Mothers	42	67.7
Fathers	20	32.3
Fathers' Age (M ± SD years), range	40.21 ± 6.51 (26 - 62)	
Mothers' Age (M ± SD years), range	35.77 ± 6.16 (24 - 50)	
Mothers' educational level		
Illiterate	5	8.1
Elementary school	29	46.8
Secondary and High school	21	33.9
University	7	11.3
Fathers' educational level		
Elementary school	23	37.1
Secondary and High school	28	45.2
University	9	14.5
Number of children in the family		
≤3	33	53.2
Between 4-6	26	41.9
> 6	3	4.8

ALL= Acute lymphoblastic leukemia, AML= Acute myeloblastic leukemia
X= Mean, M= Mean, Min= Minimum, Max= Maximum, SD= Standard Deviation

The correlations between resilience and other psychosocial factors are presented in Table 2. The results indicate that resilience was moderately and positively correlated with hope ($r = 0.501$ $p = <0.001$) and had a significant correlation with two sub-dimensions of hope ($p < 0.05$). A weak negative correlation was found between resilience and uncertainty ($r = 0.294$ $p = 0.021$), and resilience correlated with three sub-dimensions of uncertainty ($p < 0.05$). However, no statistically significant correlation was found between resilience and perceived social support ($r = 0.023$ $p = 0.890$).

Table 2. Correlation Between Resilience, Hope, Uncertainty and Perceived Social Support of Parents (n = 62)

Psychosocial factors	Resilience
Hope	r = 0.501* P < 0.001
Temporality and future	r = 0.323** p = 0.011
Positive readiness and expectancy	r = 0.536* P < 0.001
Interconnectedness	r = 0.206 p = 0.108
Uncertainty	r = -0.294** p = 0.021
Ambiguity	r = 0.012 p = 0.925
Lack of clarity	r = -0.415** p = 0.001
Lack of information	r = -0.315** p = 0.013
Unpredictability	r = -0.327** p = 0.009
Perceived social support	r = 0.023 p = 0.860

*Moderate correlation, ** Weak correlation

Psychosocial factors that had significant associations with resilience are presented in Table 3. According to the results of univariate analysis, hope, and uncertainty were found as predictors of resilience. The independent psychosocial outcomes that were significant in the univariate analysis (hope and uncertainty) were included in the multiple linear regression model. The multivariate analyses predicted 23.1% of the total variation in resilience (Adjusted R2 = 0.231, F = 10.160, p = 0.001). Hope significantly positively affected resilience (F = 10.160, df1 =2, df2 = 59) (β = 0.463, p = 0.001), and a one-unit standard deviation change in the hope level provides an SD change of 0.463 in resilience (Table 3).

Table 3. Predictors of the Resilience of the Parents (n = 62)

Predictors		Simple Model					Multiple models				
	R^2	B	(95 % CI for B) Lower	Upper	β	p	B	(95 % CI for B) Lower	Upper	β	p
Hope	0.251	-0.928	0.51	1.34	0.501	P<0.001	0.858	-0.153	0.077	0.463	0.001
Uncertainty	0.086	-0.134	-0.24	-0.02	-0.294	0.021	-0.038	0.514	1.34	-0.083	0.513

R^2: B: Unstandardized coefficient, β: Standardized coefficient, CI: Confidence Interval. Adjusted R^2 = 0.231
F = 10.160, p = 0.001.

DISCUSSION

In this study, the predictive effect of uncertainty, hope, and perceived social support on the resilience of parents of children with cancer was examined. The results revealed that resilience was negatively correlated with uncertainty, which means that greater uncertainty may lead to low resilience in parents. Uncertainty also had a significant predicting role in the resilience of parents. The complexity of cancer treatments, uncertainty about medical procedures, anxiety about the effects of treatment on the child, the effects of cancer on the child's long-term life, and difficulty communicating with health professionals are factors that contribute to uncertainty in parents (Park et al., 2021). Parents experience uncertainty because of worries about whether their children will survive and what the future holds for their children (Rosenberg et al., 2014; Ye et al., 2017). Ye et al. (2015) reported that as parents' uncertainty about illness increases, resilience decreases (Ye et al., 2015). Although uncertainty in parents is higher at the beginning of treatment, it can continue during and after treatment (Park et al., 2021). Being accessible to health professionals and maintaining effective communication may positively affect resilience by reducing uncertainty in parents. Therefore, it is possible that healthcare professionals can enhance parents' resilience by allocating sufficient time to parents and providing information they are curious about their children's treatment process, which can increase parents' resilience. Offering simple, brief, and regular education supported with written and digital materials (e.g., mobile apps) to the parents could be useful.

Resilience represents a dynamic process involving effective adaptation in adverse conditions and encompasses the dimensions of recovery, resistance, and reconstruction (Duman, 2019). Resilience was confirmed as a protective factor for parents (Luo et al., 2024), and it was positively associated with the quality of life and psychological well-being of parents (Toledano-Toledano et al., 2021). Some positive psychosocial factors like hope, social support, and functional coping that parents experience predict resilience (Koyu et al., 2024; Mezgebu et al., 2020; Ye et al., 2017). Hope is an important variable for parents over the course of their child's treatment and expressed faith/belief, knowing/optimism, and wish/desire regarding their children's health (Conway et al., 2017). Providing physical and psychosocial care with attention, providing information, and communicating sincerely with children and families are reported as approaches that support hope in parents (Conway et al., 2017; Mezgebu et al., 2020). Therefore, it will be helpful to maintain effective therapeutic communication with parents and provide simple and regular information about the child's current care plan.

Our results suggest that resilience was moderately and positively correlated with hope and hope significantly predicted parents' resilience. Koyu et al. (2024) reported a positive relationship between the psychological resilience of Turkish parents and their level of hope (Koyu et al., 2024). Conway et al. (2017) reported that hope seems to be a controllable positive mental resource

for some parents (Conway et al., 2017). Some factors promote hope, such as the focus on positives, faith/religion, and social support (Maravilha et al., 2021) and hope may be associated with post-traumatic growth (PTG) (Meral & Bulut, 2022). Findings suggest that experiencing hope during the cancer experience of their children may facilitate PTG in parents. Similarly, resilience can promote positive changes such as post-traumatic growth by encompassing the dimensions of healing and reconstruction (Duman, 2019). In this respect, care approaches - including interventions to support hope, eliminate uncertainty, and meet the need for social support - aimed at improving resilience in parents must be offered early at diagnosis and continue after treatment is completed. Rosenberg et al. (2019) reported that on-to-one interventions, including stress management, goal setting, cognitive reframing, and meaning-making, were significantly associated with the improvement compared with usual care in parent-reported outcomes for resilience (Rosenberg et al., 2019). The results of meta-analyses also suggest that the psychological interventions, including resilience-enhancement strategies, enhanced parents' resilience (Luo et al., 2022). Park et al. (2023) reported that internet-based family resilience-promoting programs significantly changed the level of family resilience (Park et al., 2023). Therefore, healthcare professionals can enhance care with evidence-based psychological interventions that also include factors related to resilience (e.g., hope) to enhance resilience in parents.

Our study found no statistically significant correlation between parents' psychosocial resilience and perceived social support. However, a moderate positive correlation between resilience and perceived social support in the Chinese parents of children with cancer was reported (Chung et al., 2022). Similarly, Ye et al. (2015) reported that as perceived social support increases, resilience increases (Ye et al., 2015). In another study, receiving support from friends was one of the factors associated with resilience (Mezgebu et al., 2020). Therefore, it is recommended that improving social support has an important role in promoting parents' resilience (Ye et al., 2015). In a study conducted in Türkiye, it was determined that social support positively affected psychological resilience in parents of children diagnosed with cancer (Atay & Işıl, 2024). In another study conducted in China, although no direct relationship was found between social support and resilience, it was shown to be negatively related to emotional distress and uncertainty, which are risk factors for resilience. It was also stated that social support can reduce some symptoms (stress, depression, etc.) by acting as a buffer between stressful life events and psychological symptoms (Ye et al., 2017). Therefore, even if social support does not have a direct effect on resilience, it may have a role in resilience by effecting other psychosocial factors. It would be useful to examine the mediating role of social support on resilience and other psychosocial factors (coping, emotional distress, uncertainty, etc.). We also recommend that future studies evaluate components of social support such as family functioning, family support, and social support networks of Turkish parents in the large sample to determine the relationship between families' social support status and resilience.

CONCLUSION

In summary, psychological resilience was significantly positively associated with hope and negatively associated with uncertainty in Turkish parents of children with cancer. Hope positively affects parents' psychological resilience. More research is required to learn factors that predict the resilience of parents of children with cancer in Türkiye. Nurses should be aware of the psychosocial factors that affect the resilience of parents, assess parents' uncertainty and hope at all stages of treatment, and include supportive interventions. Resilience-based interventions, including protective factors like hope, should be integrated into the care based on family-centered care.

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Author contributions

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Data collection: MK
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