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ORIGINAL RESEARCH

Parental Resilience Determinants in Children with Cancer in Indonesia: A Path Analysis

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Abstract

Background: Determining parental resilience in children with cancer is essential to ensuring parents' involvement in caring for children in hospitals. Existing quantitative research evaluates factors influencing resilience in mothers but has not fully explored the determinants of resilience in parents of children with cancer. Studying parents more broadly is essential, as contemporary caregiving roles increasingly involve both mothers and fathers, offering a more comprehensive understanding of family dynamics.
Purpose: This study aimed to analyze the determinants of parental resilience in children with cancer.
Methods: Correlational research with a cross-sectional design was conducted in the pediatric ward of a tertiary hospital in Indonesia. A total of 102 parents of children with cancer were recruited using consecutive sampling. Data were collected using a demographic questionnaire, the 10-item Connor Davidson Resilience Scale (10-item CDRC), the Hert Hope Index (HHI), the International Personality Item Pool – Big Five Factor Markers 50 (IPIP-BFM-50), Parenting Stress Index (PSI), and the Survey of Family Environment (SFE). Quantitative data were analyzed using path analysis.
Results: The results showed that the mean (SD) of the resilience score was 27.20 (5.79), personality 102.44 (19.11), hope 24.80 (6.04), parenting stress 39.22 (10.15), coping 39.84 (9.81), and family environment 84.57 (21.87). Resilience was directly influenced by hope (p=0.000), family environment (p=0.001), and coping (p=0.051). Personality indirectly influenced resilience (p=0.004). Path analysis revealed a Chi-square value of 0.000, a Root Mean Squared Estimate of Approximation (RMSEA) of 0.286, and values for the Normed Fit Index (NFI), Comparative Fit Index (CFI), Incremental Fit Index (IFI), and Goodness-of-Fit Index (GFI) were nearly close to 1, indicating the model had a nearly good fit.
Conclusion: Parental resilience was determined by hope, family environment, and coping. Strengthening these factors can enhance resilience and support better outcomes for families and children with cancer.

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1. Introduction

The incidence of cancer in children continues to increase yearly worldwide and in Indonesia. Although advances in chemotherapy treatment have increased children's life expectancy, this condition has not been able to overcome and improve the quality of life of children and their families during cancer treatment and care. Parents feel a heavy burden and experience disturbances during cancer treatment, including emotional, behavioral, economic, physical, and psychological changes (Luo et al., 2022; Schwartz-Attias et al., 2024). Around 36.7% of parents in Indonesia experience high parenting stress in caring for children with cancer (Novrianda et al., 2016). Meanwhile, in Malaysia, approximately 27.9% of parents had a high parenting stress index (Zarina et al., 2012). A Brazilian study of parents caring for children with cancer revealed feelings of frustration, threat, and loss of control related to the diagnosis and prognosis of cancer and the risk of recurrence, which increased the fear of losing their children and hindered the process of associating meaning with their existence (Arruda-Colli et al., 2015).

Parents need resilience in dealing with difficulties and disorders due to cancer in children, namely overcoming stress or problems or relative resistance to environmental risks (Bowes & Jaffee, 2015). Several studies related to resilience in parents with children with cancer and high-risk infants who are cared for in intensive care have been carried out in Western countries (Ferrand et al., 2018., Foster et al., 2019), but few are found in the eastern states (Ye et al., 2017). A qualitative study by Foster et al. (2019) identified that parental resilience was achieved through inner strengths, positive and supportive relationships, and being in a safe place with appropriate support. Another study reported that less resilient parents projected more pain and more financial and emotional impact on their families and were ten times more likely to predict that their newborns would remain chronically ill (Ferrand et al., 2018).

A parental resilience model in mainland China found that decreasing levels of parental depression, anxiety, and illness uncertainty, increasing social support, and encouraging parents to use more courageous coping strategies are essential in promoting parental resilience (Ye et al., 2017). A study highlights the importance of evaluating the well-being of caregivers and families when a close relative experiences cancer in order to support families during the cancer period and develop interventions that prevent the onset of psychological difficulties and physical symptoms that may develop into psychosomatic illness (Faccio et al., 2018). A qualitative study identified certain factors, namely positive attitudes, as the most important factors influencing resilience and recommended the development of a resilience training program for parents of children with cancer (Luo et al., 2022). Research also recommends studying other psychosocial variables such as hope, beliefs, defensive coping strategies, family environment, and personality, and using shorter instruments such as the 10-item Connor-Davidson Resilience Scale (10-item CDRS) (Borrescio-Higa & Valdés, 2022; Toledano-Toledano et al., 2021).

Previous research has found that a cancer diagnosis affects not only the resilience of children but also individuals within the family, including parents, so it is important to understand the factors that determine parental resilience (Schoors et al., 2019). However, in Indonesia, the model of parental resilience among those who have children with cancer has not yet been identified. Parents have a significant role and responsibility in the care of children, including those with chronic conditions, to help them navigate the disease conditions, the treatment and maintenance processes, and terminal or end-of-life stages. Despite growing interest in parental resilience in childhood cancer, there is a notable gap in research specifically focusing on the determinants within the Indonesian context, particularly using path analysis to elucidate the intricate relationships between various factors affecting resilience. Therefore, this study examined the determinant factors of resilience in parents of children with cancer, including psychosocial criteria (hope, parental personality, coping strategies, parenting stress, and family environment).

2. Methods

2.1. Research design

The present research was a correlational study with a cross-sectional design aimed at determining the influence of independent variables (psychosocial factors such as hope, parenting stress, coping strategies, personality, and family environment) on the dependent variable (resilience), measured simultaneously at one point in time.

2.2. Setting and samples

This study was conducted at a tertiary public hospital in West Sumatera Province, Indonesia. The population comprised 298 parents of children diagnosed with cancer undergoing treatment during the study period. Based on Slovin's formula with a 5% margin of error, the minimum required sample size was calculated to be 169 respondents. However, due to limited participant availability and the sensitive nature of the condition, only 102 respondents were recruited using consecutive sampling. Inclusion criteria included cooperative parents with adequate language literacy skills. Parents with cognitive decline and mental disorders were excluded from this study.

2.3. Measurement and data collection

This study employed a series of validated instruments to collect data on demographic characteristics and psychosocial variables, including resilience, hope, personality type, parental stress, coping strategies, and family environment. Each variable was measured using a specific tool, as described in the following sections.

2.3.1 Demographic data

The demographic data in this study included respondents' initials, gender, age, educational status, marital status, children's medical diagnosis, duration of diagnosis, and medical therapy. A demographic questionnaire was used to collect these data.

2.3.2 The 10-item Connor Davidson Resilience Scale (10 items CD-RISC)

To measure resilience, the researcher used the 10-item Connor Davidson Resilience Scale (10-item CD-RISC), which consists of 10 questions. The answer choices include: (1) a score of 0 for "strongly disagree," (2) a score of 1 for "disagree," (3) a score of 2 for "somewhat agree," (4) a score of 3 for "agree," and (5) a score of 4 for "strongly agree." The total score ranges from 0 to 40, with higher scores indicating a greater level of resilience. The CD-RISC has been translated into Indonesian and shown to be valid and reliable, with r values between 0.711 and 0.906, and a Cronbach's alpha of 0.940 in samples of pregnant women (Perwitasari & Wulandari, 2024). While that study did not focus exclusively on parents of children with cancer, it provides evidence that the Indonesian version of the CD-RISC-10 is a reliable and valid measure of resilience in a population facing significant stress.

2.3.3 Hert Hope Index (HHI)

This instrument is used to measure expectations (Herth, 1992). The HHI is based on the definition of hope by Dufault and Martocchio (1985) and consists of 12 items related to cognitive and affective factors and the relationship between self and others. Scores for each item range from 1 (strongly disagree) to 4 (strongly agree) (Herth, 1992). Both single-item scores (1-4) and total scores (12-48) of the HHI reflect an individual's level of hope, with higher scores indicating stronger hope. Although the HHI was originally validated for patients with end-stage renal disease, it has demonstrated strong validity and reliability in an Indonesian sample (r= 0.84-0.92; Cronbach's alpha = 0.91) (Astuti et al., 2019). Hope is a universal coping mechanism for individuals facing critical health-related stress, including parents of children with cancer, making the HHI an appropriate tool to assess hope in this population (Herth, 1992; Rustøen et al., 2010).

2.3.4 International Personality Item Pool – Big Five Factor Markers 50 (IPIP-BFM-50)

The International Personality Item Pool – Big Five Factor Markers 50 (IPIP-BFM-50), developed by Goldberg (1992), is an instrument designed to measure a person's personality across five dimensions, namely openness to experience, conscientiousness, extroversion, agreeableness, and neuroticism. This instrument comprises 10 statement items for each dimension, with responses provided on a Likert scale ranging from 1 (very inappropriate) to 5 (very appropriate) for favorable statements and a reverse scale applied for unfavorable statements. This questionnaire has been adapted and validated in Indonesian using Aiken's V method with index values ranging from 0.71 to 0.98 and a reliability coefficient above 0.762, indicating that each dimension has good consistency (Akhtar & Azwar, 2019).

2.3.5 Parental Stress Scale (PSS)

The Parental Stress Scale (PSS) measures the level of stress experienced by parents and considers both the positive and negative aspects of parenting. The PSS was developed by Berry and Jones (1995) as an alternative to the 101-item Parenting Stress Index. It consists of an 18-item self-report scale representing positive themes (e.g., emotional benefits, personal development) and negative themes (resource requirements, limitations). Respondents indicate agreement or disagreement about their typical relationship with their child or children. The scale uses a 5-point Likert scoring: strongly disagree = 1, disagree = 2, undecided = 3, agree = 4, and strongly agree = 5. To calculate the parental stress score, items 1, 2, 5, 6, 7, 8, 17, and 18 should be reverse-scored as follows: 1 = 5, 2 = 4, 3 = 3, 4 = 2, 5 = 1. The item scores are then summed. A low score indicates a low stress level, and a high score indicates a high stress level. The overall score ranges from 18 to 90. Higher scores indicate higher parental stress. This PSS was translated into Indonesian and tested for reliability with Cronbach's alpha value of 0.828 and convergent and discriminant validity values of 0.98 and 0.89, respectively (Kumalasari et al., 2022).

2.3.6 Ways of Coping Checklist-Revised (WCC-R)

The Ways of Coping Checklist-Revised (WCC-R) is a coping strategy measurement tool developed by Lazarus and Folkman (1984). This instrument contains 67 statements, including two coping strategies: problem-focused and emotion-focused. Answers use a Likert scale, namely: never = 0, sometimes = 1, quite often = 2, and often = 3. The scoring distinguishes Problem-Focused Coping (PFC) if the PFC score is ≥ EFC score, and Emotion-Focused Coping (EFC) if the EFC score is ≥ PFC score. This instrument has been translated into Indonesian and is considered valid and reliable, with validity coefficients ranging from 0.52 to 0.72, and a Cronbach's alpha of 0.92 (Sawang et al., 2010).

2.3.7 The Survey of Family Environment (SFE)

The Survey of Family Environment is a 30-item self-administered instrument to assess five domains: supra system, macrosystem, microsystem, family internal environment system, and chronosystem (Hohashi & Honda, 2012). This instrument uses a 5-point Likert scale based on family satisfaction with each item. Response options are 1 = dissatisfied, 2 = somewhat dissatisfied, 3 = neither satisfied nor dissatisfied, 4 = somewhat satisfied, and 5 = satisfied. Higher scores indicate higher levels of family functioning. The SFE has been tested for reliability, with a Cronbach's alpha of 0.865 and validity with intercorrelations ranging from 0.59 to 0.78 (Ekawarna et al., 2022).

The data were collected over 1.5 months (July to August 2019) in the Pediatric-Obstetric Inpatient Room and Pediatric Polyclinic in a public hospital in Padang, Indonesia. Researchers identified potential parent respondents by reviewing patient medical records to obtain parents' sociodemographic data. Then, the researchers contacted them individually to ask about their willingness to participate in the study. Before data collection, respondents were given information about the study and an informed consent form. If respondents agreed to participate, they signed the consent form. Afterward, respondents were asked to fill out the questionnaire independently. If the respondent did not understand a question or statement about the instrument, the researcher explained it without directing the respondents' answer. The respondents submitted the completed questionnaire, and the researcher then re-checked the completeness of the responses, and if any parts were incomplete, the respondents were asked to complete them. Data entry and processing were conducted only for respondents who completed all questionnaires.

2.4. Data analysis

Data were analyzed using path analysis with Stata 13 to determine the direct and indirect effects of psychosocial variables on parental resilience of children with cancer. The steps of path analysis in this study included model specification, model identification, model fit, parameter estimation, and model respecification. To determine model fit, we used the Root Mean Square Estimate of Approximation (RMSEA) (Steiger, 1998 cited in Hooper et al., 2008). Besides measures of model fit, goodness-of-fit-measures were used, such as the Goodness-of-Fit Index (GFI) (Joresky & Sorbon, 1996), the Normed Fit Index (NFI) (Bentler & Bonett, 1980), the Non-NFI (Tucker & Lewis, 1973), and the Comparative Fit Index (CFI) (Bentler, 1990 cited in Hooper et al., 2008).

2.5. Ethical considerations

All respondents received an explanation about the research, its benefits, and compensation. This research obtained ethical approval from the Health Research Ethics Commission at M. Djamil Hospital Padang (approval number 199/KEPK/2019). The researcher provided brief information to respondents regarding the study's implementation, confidentiality of information, and the participants' rights to withdraw at any time. All participants in this study were parents of children with cancer undergoing treatment, and no children under 16 years old were involved. All parents or guardians signed an informed consent form for audio recording and for the use of excerpts in publications and reports.

3. Results

3.1. Characteristics of the respondents and children's clinical profiles

Table 1 outlines the demographic characteristics of the respondents in this study, including age, gender, education level, occupation, ethnicity, child's age, cancer type, and year of diagnosis. As shown in Table 1, the parents' average age was 37.8 years (range: 22-78). Most had a high school education (54.9%), a small portion were civil servants (7.8%), all were Muslim (100%), and the majority were of Minang ethnicity (83.3%). The children's average age was 4.97 years (range: 1-17), with toddlers comprising the largest group (44.7%), followed by school-age children (18.6%), preschoolers (15.7%), and adolescents (5.9%). Over half were diagnosed with acute lymphoblastic leukemia (63.7%), followed by retinoblastoma (13.7%), and acute myeloblastic leukemia (2.9%). Nearly half of the cases were diagnosed in 2019 (47.1%).

Table 1. Sociodemographic characteristics of parents and clinical profiles of children with cancer (n=102)

Characteristics	Frequency (f)	Percentage (%)	Mean(SD)	Min-Max	95% CI
Parents' age (year)			37.80(8.719)	22-78	35.93–39.67
Parents' gender					
Male	35	34.3			
Female	67	65.7			
Education					
Elementary school	10	9.8			
Junior school	14	13.7			
Senior high school	56	54.9			
Academy	10	9.8			
Bachelor	12	11.8			
Occupation					
Civil servant	8	7.8			
Non-civil servant	46	45.1			
House keeping	48	47.1			
Ethnicity					
Minang	85	83.3			
Malay	10	9.8			
Sundanese	1	1.0			
Javanese	6	5.9			
Child's age			4.97(4.013)	1-17	4.10–5.83
Toddler	45	44.1			
Preschool	16	15.7			
School-age	19	18.6			
Teenage	6	5.9			
Type of cancer					
ALL	65	63.7			
AML	3	2.9			
Retinoblastoma	14	13.7			
Wilms' tumor	1	1.0			
Osteosarcoma	1	1.0			
Mediastinal tumor	1	1.0			
Year diagnosed					
2012	1	1.0			
2013	0	0.0			
2014	0	0.0			
2015	2	2.0			
2016	4	3.9			
2017	12	11.8			
2018	19	18.6			
2019	48	47.1			

3.2. Analysis of resilience, personality, hope, parenting stress, coping, and family environment

The results of the descriptive analysis of resilience, personality, hope, parenting stress, coping, and family environment are displayed in Table 2 in terms of mean (M) and standard deviation (SD). The respondents' average resilience score was 27.20 (SD=5.79; range: 10-39), indicating it had not reached the maximum value of 40. The average personality score was 102.44 (SD=19.11). Furthermore, the average hope score was 24.80 (SD=6.04), parenting stress was 39.22 (SD=10.15), while coping and family environment scores were 39.84 (SD=9.82) and 84.57 (SD=21.87), respectively.

Table 2. Mean scores and standard deviation of resilience, personality, hope, parenting stress, coping, and family environment

Variable	Mean(SD)	Min-Max	95% CI
Resilience	27.20(5.719)	10-39	25.97–28.43
Personality	102.44(19.106)	45-133	98.35–106.54
Hope	24.80(6.039)	12-39	23.51–26.10
Parenting stress	39.22(10.153)	14-58	37.04–41.40
Coping	39.84(9.815)	22-69	37.73–41.94
Family environment	84.57(21.871)	16-119	79.88–89.26

3.3. Path analysis of factors that affect resilience in parents with children with cancer

Table 3 summarizes the results of the path analysis examining the factors that affect resilience in parents of children with cancer. It presents the estimated path coefficients, quantifying the strength and direction of relationships between various factors and parental resilience.

Table 3. Results of path analysis of factors affecting resilience in parents of children with cancer

Dependent variable		Independent variable	b	CI 95%		*p*
				Lower	Upper	
Direct effect						
Resilience	←	Coping	0.099	-0.000	0.199	0.051*
Resilience	←	Hopes	0.354	0.193	0.515	0.000*
Resilience	←	Parenting stress	0.043	-0.085	0.171	0.506
Resilience	←	Personality	0.035	-0.116	0.081	0.141
Resilience	←	Family environment	0.086	0.037	0.135	0.001*
Indirect effect						
Coping	←	Personality	0.150	0.047	0.253	0.004*
Hope	←	Personality	0.038	-0.029	-0.105	0.268
Parenting stress	←	Coping	0.217	0.018	0.414	0.032*
Parenting stress	←	Personality	0.114	0.023	0.204	0.014*
Parenting stress	←	Family environment	0.141	0.039	0.243	0.006*

Further analysis revealed the direct and indirect relationship between personality, hope, parenting stress, coping, and family environment with resilience (Figure 1). As shown in Table 3, resilience is directly influenced by hope, family environment, and coping. These results were significant at the *p*=0.000, 0.001; and 0.051. The most interesting aspect of this table is resilience increases with high hope, a good family environment, and adaptive coping.

4. Discussion

This study described the resilience of parents of children diagnosed with cancer who were undergoing hospital treatment. It found that the average resilience score among these parents did not reach the maximum level, indicating a moderate capacity to adapt to their child's condition. This result may be explained by the fact that childhood cancer is a life event that affects the entire family. The score was 2.8 points lower than that reported in previous studies (Rosenberg et al., 2014). Childhood cancer is a profoundly stressful event for parents, often leading to psychological distress, anxiety, and diminished coping abilities. Recent studies have shown that parents frequently experience ongoing psychological strain throughout the cancer trajectory, which can

compromise resilience, especially when facing uncertainties related to treatment and prognosis. For instance, Chung et al. (2023) found that lower resilience in parents was associated with higher levels of psychological distress and reduced quality of life.

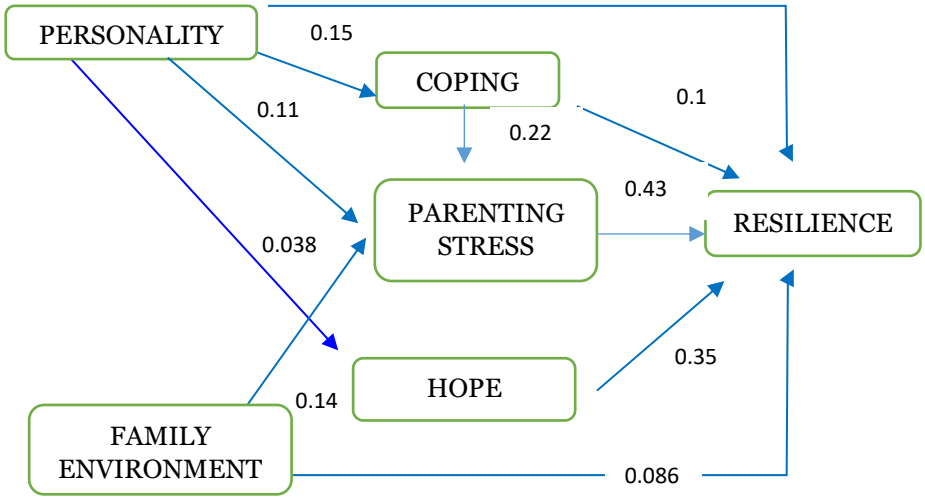

Figure 1. Path analysis of resilience determinants in parents of children with cancer

Furthermore, the finding in this study also aligns with Andriastuti et al. (2024), who found that connected family relationships were associated with better pediatric quality of life as reported by children, whereas negative parental emotions significantly correlated with lower quality of life outcomes. Research by Rosenberg et al. (2014) also reported that parents of children with cancer who had limited resilience resources were at greater risk of experiencing psychological distress. Resilience can be seen as an individual's ability to maintain or restore relatively stable psychological and physical functioning when faced with stressful and challenging life events (Seiler & Jenewein, 2019).

The results of this study indicate that the average coping score remains low, reflecting a limited ability to adapt to stressors related to the diagnosis of cancer in children and its treatment. Our finding aligns with previous qualitative studies (Hildenbrand et al., 2014; Plaza et al., 2017) that identified various parental coping strategies for dealing with physical and psychosocial stress during cancer treatment. Furthermore, the present study demonstrated that coping mechanisms play a crucial role in reducing parenting stress among parents of children with cancer. This aligns with previous research suggesting that early intervention programs can strengthen adaptive coping, thereby alleviating stress (Plaza et al., 2017). Similarly, Cheng and Lai (2023) identified coping strategies and social support as key protective factors for parents of children with special educational needs, including cancer. Nurhidayah et al. (2022) further emphasized that parents adopt both problem-focused and emotion-focused coping strategies, with their effectiveness shaped by individual conditions and available support. These findings underscore the need to incorporate coping skills training into early intervention services to enhance parental resilience.

The current study found that the average hope score among parents had not yet reached the maximum value, which aligns with previous research. A longitudinal study conducted among parents of children diagnosed with cancer reported that while 55% of parents expressed extremely high levels of hope at the time of diagnosis, their hope remained relatively stable over time, regardless of the child's prognosis (Sisk et al., 2018). Additionally, qualitative evidence highlighted that parental hope is inherently dynamic and tends to fluctuate based on the child's health status and disease progression (Granek et al., 2013). Kamihara et al. (2015) further identified that parents often maintain diverse forms of hope, including expectations for a cure, prolonged survival, and responsiveness to treatment, even in cases where the child's condition is deemed incurable or terminal.

Another important finding is that the family environment was generally positive, with a mean score of 84.57 (range: 30–150). This finding supports evidence from a qualitative study exploring factors that contribute to parental resilience and how parents respond and cope with childhood cancer. That study identified four themes, one of which was perceived social support (Luo et al., 2022). External support from partners was an essential component reported by parents in the high-resilience group, namely in caregiving responsibilities, reducing stress through discussion, and providing comfort when needed.

Furthermore, this study reported a significant direct relationship between resilience and hope, coping, and family environment. This can be explained by theories suggesting that the development of individual conditions, coping skills, spirituality, and hope, combined with social support, family cohesion, partner communication, and changes in socioeconomic status, are all related to caregiver (parental) resilience, as they influence the medical experience (e.g., the caregiver's perceptions and associated stress). Parents with better insight into their children's prognosis are better able to set realistic goals or prepare for their child's death; similarly, this ability can lead to more positive psychosocial outcomes (Rosenberg et al., 2014). Previous research has also identified psychosocial factors, psychological well-being, and sociodemographic variables as positive predictors of resilience, while depression and caregiver burden were negative predictors (Toledano-Toledano et al., 2021).

However, this study found no direct influence of parenting stress or personality on resilience, aligning with Simanjuntak et al. (2023), who suggest that factors such as social support and time since diagnosis may play a more significant role. This highlights the need to consider contextual and cultural influences in resilience research, especially among parents of children with cancer. Contrary to expectations, high parenting stress and certain personality traits did not show a direct relationship with resilience. A previous study found that optimism, a problem-focused approach, competence in caregiving, and strong social support contributed to high resilience among parents (Luo et al., 2022). Another study revealed the mediating effect of resilience on the relationship between stress and depressive symptoms, as well as between stress and anxiety (Luo et al., 2023). Future studies may investigate other mediating variables or explore different methodologies to better understand these relationships.

5. Implication and limitation

Resilience is essential for parents of children with cancer because it can protect against the harmful effects of stress by reducing or absorbing the shock of cancer diagnosis, the impact of aversive events, and associated life changes, thereby improving mental health and treatment outcomes. The findings of this study highlight crucial factors that contribute to parental resilience: coping, hope, and family environment. Healthcare providers, especially nurses, can design targeted interventions to strengthen these determinants, such as enhancing family support and improving access to psychosocial support and resources for parents. Training programs for nurses can be developed to better understand and address parents' specific needs in high-stress situations, improving overall family-centered care. Policymakers can use the study's insights to develop supportive policies and programs to reduce the burden on parents. These may include financial support, counseling services, and community-based initiatives. Further investigation is needed to understand the need for caregiver support and to develop strategies to improve coping and resilience in this population.

Some limitations of the present study deserve acknowledgment. First, the final sample size (102 respondents) did not meet the minimum number calculated through Slovin's formula, which may affect the statistical power and generalizability of the findings. Additionally, the results are based on a specific sample from a single geographical location, limiting their applicability to broader populations. The identified determinants may also be influenced by cultural factors unique to Indonesia and as such, might not be directly transferable to other cultural contexts without adaptation. Future studies with larger and more diverse samples are recommended to improve the robustness of the model and provide more comprehensive insights. Furthermore, longitudinal research could offer a deeper understanding of how resilience develops and changes over time.

6. Conclusion

This study showed that parental resilience was determined by hope, family environment, and coping. It provides valuable insights into the determinants of parental resilience in the context of childhood cancer in Indonesia. Identifying key factors that influence resilience offers a foundation for developing targeted interventions and support systems. These findings suggest that parental resilience can be promoted by enhancing personality traits, strengthening the family environment, fostering positive expectations, encouraging the use of adaptive coping, and reducing parenting stress. However, to improve the applicability and robustness of these findings, future research should address the stated limitations, including expanding sample size, employing longitudinal approaches, and accounting for cultural nuances. Overall, the study underscores the importance of supporting parents in building resilience, ultimately contributing to better outcomes for both families and children with cancer.

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Author contribution

D.N: conceptualization, investigation, writing – original drafts, funding acquisition. M.J: formal analysis. R.S.R: writing – review & editing.

Conflict of interest

The author(s) declare there is no conflict of interest.

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