

# Resilience of Parents who Have Children with Cancer

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## ABSTRACT

Cancer is one of the diseases that causes death in children in the world. The incidence of cancer globally every year is as many as 300 thousand children. Cancer that occurs in children causes major reactions in parents that are often associated with trauma and shock. Parents suffer from psychosocial problems, financial tensions, social isolation and conflicts of work and family roles and reduced time for other children and recreational activities. The main key in overcoming the problem of children with cancer is resilience. Research on the resilience of parents who have children with cancer is still limited. The absence of a literature study in the form of a scoping review of the resilience of parents who have children with cancer has made researchers interested in conducting literature studies. A systematic review is needed to disseminate the relevant literature on the resilience of parents who have children with cancer.

**Keywords:** cancer stages, children, parents, resilience

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## BACKGROUND

Cancer is one of the diseases that causes death in children in developed and developing countries. The incidence of cancer exists globally which occurs every year as many as 300 thousand children (Children's Cancer Institute, 2021). Cancer that occurs in children causes major reactions in parents that are often associated with trauma and shock (Eiser, 2004). Parents are worried about the conditions they have to face and are afraid of losing their children (O'Conner-Von, 2009). The results of psychological and clinical assessments showed increased levels of depression and anxiety in parents who had children with cancer. Parents suffer from psychosocial problems, financial tensions, social isolation and conflicts of labor and family roles and reduced time for other children and recreational activities (Rosenberg et al., 2013). Impaired psychosocial functioning will have an impact on the well-being of the whole family (Rosenberg et al., 2014). Resilience is a good adaptation process in the face of difficulties, trauma and stress, especially health problems such as cancer in children (American Psychological Association, 2020). Resilient parents are able to recover faster from adversity, have lower levels of stress, depression, and anxiety, and can take more positive and more optimistic strategies in the face of difficult events that are being faced (Ye et al., 2015). Lack of resilience increases physical and mental health problems for parents (Hunter, 2001). Complex cancer treatment requires parents to be able to change roles and responsibilities, communicate effectively, manage emotions to fulfill all treatments. The role of parents is needed in the process of treating children with cancer (Long & Marsland, 2011).

Research on the resilience of parents who have children with cancer is still limited. There are no literature studies on the resilience of parents who have children with cancer where parents have problems and ways of dealing with problems in children with cancer. Scoping reviews are needed to disseminate relevant literature on the resilience of parents who have children with cancer. The purpose of this scoping review is to collect literature that represents the resilience of parents who have children with cancer.

## METHODS

### Research Design

The scoping review aims to synthesize and map the literature on the resilience of parents who have children with cancer. This method of scoping review was carried out using six stages developed by O'Malley in the methodological scoping review. Scoping reviews tend to ask more general questions and do not assess critical reviews of the literature reviewed. Scoping reviews can be conducted to test the range and breadth of research on a topic, summarize and disseminate findings, identify gaps in the literature (Arksey & O'Malley, 2005).

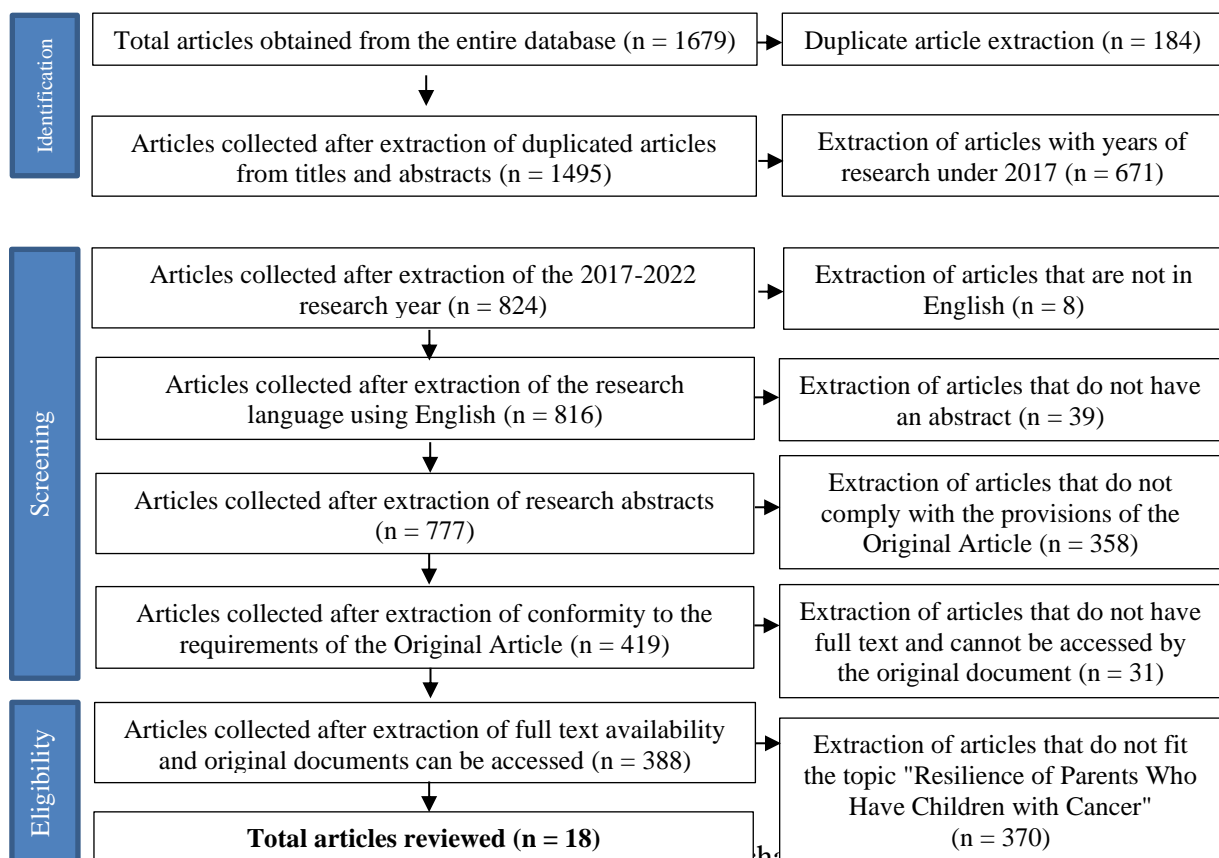
The Joanna Briggs Institute recommends using the PCC framework for scoping reviews. This framework serves to formulate clear and explicit statements about the overall objectives and questions in the research topic in the scoping review. The framework will also help for the development of a literature search strategy (Tricco et al., 2018). The PCC framework contains population, concepts and contexts. Population is a characteristic of participants including age and other qualification criteria. Concepts are the ideas of the main questions for determining the concept. The concept should be clear to guide the scope and breadth of the literature search including the sections to be focused on such as phenomena, interventions or results. Context, namely cultural factors such as geographical location, race or gender (Peters et al., 2015). The authors developed questions in the study using the PCC framework. The PCC framework is the population i.e., the parents, the concept i.e., resilience and the context of the whole country. This literature review uses PRISMA-ScR to identify a wide variety of topics related to the resilience of parents who have children with cancer.

## Search Methods

The first step is to search for scientific articles through 4 databases, namely Science Direct, Scopus, PubMed and Ebsco. The keywords used in English are "resilience OR resilience psychological" AND "parents OR father OR mother OR caregiver" AND "pediatric OR child OR children" AND "cancer OR malignancy OR oncology OR neoplasms". The research question is: What is the overview of resilience in parents who have children with cancer?

## Inclusion and Exclusion Criteria

This literature review uses PRISM-ScR so that it can identify a wide variety of topics that discuss the resilience of parents who have children with cancer (Figure 1). Reviewed articles are selected based on inclusion and exclusion criteria. The inclusion criteria in this study such as the year of publication of the article is not more than 5 years (2017-2022), the research article is an original research article, full text, has an abstract, and is in English.



## Data Extraction

After all the articles have been read by the researcher, the researcher compiles a summary and analysis of the results which will later be entered into the extraction table. The article is then extracted manually using a table that includes the author, year of research, research objectives, country, research design, sample, and research results.

## Article Quality Assessment

Articles are analyzed for quality using the Joanna Briggs Institute (JBI) Critical Assessment method with article qualification standards well above 75% based on the relevance of research criteria and topics. This method is an important tool in assessing the quality, trustworthiness, and relevance of an article that has been published. The scoring criteria consist of "yes", "no", "unclear", and "not applicable" scores and each criterion with a score of "yes" is scored with 1 point, while the other answers are scored with 0 points. Each of those score points is then summed up to determine the notability value of the article. A good article notability standard is to have a score above 75% based on relevance to research criteria and topics.

## Data Analysis

All full text articles that have been collected are then read in full by the researcher. Researchers use descriptive analysis methods. After reading all the articles in full text, the researcher conducted an in-depth analysis, and presented them into the form of a manual table. The researcher writes a description of the results of the scoping review study for later preparation of the discussion.

## RESULTS

The results of the article search obtained 1679 articles consisting of several databases, namely Science Direct as many as 1229 articles, Scopus as many as 50 articles, PubMed as many as 191 articles and Ebsco as many as 209 articles. The articles obtained are then assessed so that they get 18 qualified articles. Articles were analyzed using the JBI Critical Appraisal Tool with standard values above 75% based on relevance criteria and topics (Table 1). The results of the study are then analyzed by the researcher and manually extracted into a table form to make it easier to analyze the results for scoping review. The results of the analysis of the article are poured into the table as follows (Table 2).

**Table 1.** JBI Critical Appraisal

Authors	Publication Year	JBI Critical Appraisal Tool	Research Design
Luo YH, Li WH, Cheung AT, et al.	2022	87,5% (7/8)	Cross-sectional
Mohammadsalehi, Narges & Asgarian, et al.	2020	87,5% (7/8)	Cross-sectional
Mezgebu E, Berhan E, Deribe L	2020	87,5% (7/8)	Cross-sectional
Habibpour, Zeinab & Mahmoudi, Hosein & sirati nir, et al.	2019	87,5% (7/8)	Cross-sectional
Bajjani-Gebara, Jouhayna & Hinds, Pamela & Insel, et al.	2018	87,5% (7/8)	Cross-sectional
Toledano-Toledano, Filiberto & Luna, David & Moral de la Rubia et al.	2021	87,5% (7/8)	Cross-sectional
Luo, Yuanhui & Li, Ho & Wei, Xia & Cheung, Ankie & Ho, Long Kwan & Chung, Joyce	2022	80% (8/10)	Qualitative Phenomenological
Chung JO, LI WH, Cheung AT, Ho LL, Chan GC	2022	87,5% (7/8)	Cross-sectional
Baran G, Arda Sürücü H, Hülya Üzel V	2020	87,5% (7/8)	Cross-sectional
Mustafa AM, El-Ashry NM, Mahmoud S.	2019	87,5% (7/8)	Cross-sectional
Silva JS, Moraes OF, Sabin LD, Almeida FO, Magnago TS	2021	87,5% (7/8)	Cross-sectional
Luo Y, Wang A, Zeng Y, Zhang J.	2022	87,5% (7/8)	Cross-sectional
Park M, Choi EK, Lyu CJ, Han JW, Hahn SM	2022	87,5% (7/8)	Cross-sectional
Stegenga K, Liu Q, Haase J.	2020	81,8% (9/11)	Literature review
Ye ZJ, Qiu HZ, Li PF, Liang MZ, Wang SN, Quan XM	2017	87,5% (7/8)	Cross-sectional
Hoseinzadeh F, Radfar M, Moghaddamtabrizi F, Khalkhali H	2019	76,9% (10/13)	RCT
Rosenberg AR, Bradford MC, C JC, and Taylor M, Zhou C, Sherr N, et al	2019	84,6% (11/13)	RCT
Luo Y, Xia W, Cheung AT, Ho LLKLK, Zhang J, Xie J, et al	2021	76,9% (10/13)	RCT

**Table 2.** Data Extraction

Author, Publication Year	Country	Methods	Sample	Result
Luo YH, Li WH, et al. (2022)	China	Cross-sectional	146 parents who have children with cancer in 2 Chinese hospitals	The results show that a greater level of parental resilience is associated with a better quality of life. It is very important to develop interventions that can improve resilience for parents of children with cancer, so as to improve the quality of life
Mohammadsalehi, Narges & Asgarian, Azadeh & Ghasemi, et al. (2020)	Iran	Cross-sectional	107 parents who have cancer children in the Oncology Department of Qom Hospital, Iran	There is a significant relationship between resilience and social support. Social support is one of the important factors influencing the level of resilience of parents with children with cancer. Self-efficacy is related to the level of parental resilience. The high level of parental resilience will be followed by high social support received, self-efficacy and a much better level of health. Intervention programs with the aim of increasing resilience and reducing stress levels by increasing social support and self-efficacy in parents with children with cancer are very important to do.
Mezgebu E, Berhan E, Deribe L (2020)	Ethiopia	Cross-sectional	126 elderly people at Jimma Medical Center, Ethiopia	Factors that affect the resilience of parents who have cancer children include receiving support from peers, attending recreational activities, and receiving medical information from health workers. Some of these factors are positively related to resilience. In addition, factors such as the level of depression, and stress in parents negatively affect the level of resilience in parents.
Habibpour, Zeinab & Mahmoudi, Hosein & sirati nir, et al. (2019)	Iran	Cross-sectional	400 parents who have had childhood cancer at Tabriz Children's Hospital, Iran	Fathers have slightly higher resilience scores when compared to mothers. Predictors of parental resilience such as financial status, parental gender, parental employment status, and child gender.
Bajjani-Gebara, Jouhayna & Hinds, Pamela & Insel, Kathleen & Reed, Pamela & Moore, Ki & Badger, Terry (2018)	USA	Cross-sectional	80 parents who have a child diagnosed with cancer for at least 2 months of treatment	Positive and negative well-being exists in parents of children suffering from cancer. Resilience and transcendence are positively related to parental well-being, and negatively related to parents' levels of depression and anxiety. Satisfaction with financial status is positively related to parental well-being and negatively related to parents' depression levels. The self-transcendence of parents serves as a mediator or link between resilience and parental well-being.

Toledano-Toledano, Filiberto & Luna, David & Moral de la Rubia, Jose & Martinez, Silvia & Morón, Carlos & Marcela, Salazar & José, Mario & Vasquez Pauca, Mario (2021)	Mexico	Cross-sectional	330 parents whose children were admitted to the Infantil de Mexico Federico Gomez Hospital, Mexico	Parental resilience is positively related to psychological well-being and length of time, while it is negatively related to levels of depression, anxiety, and parenting burdens. Some variables that can predict the level of resilience include quality of life, psychological well-being, level of depression and the number of children owned. Parents who marry and adhere to Catholicism show high resilience scores. It can be concluded that parents caring for a child with cancer are closely related to the anxiety and stressful events that can occur. This problem can certainly be lived and passed by parents through improving family strength, well-being, quality of life, and a process of positive adaptation.
Luo, Yuanhui & Li, Ho & Wei, Xia & Cheung, Ankie & Ho, Long Kwan & Chung, Joyce (2022)	China	Qualitative Phenomenological	23 parents who have children diagnosed with cancer in Chinese hospitals	There were 4 themes found, namely the positive and negative experiences of cancer suffered by children, through difficulties, competence and perceived social support. The most striking resilience factor is the existence of a positive attitude in responding to cancer suffered by children, while the low level of self-reliance of parents is the main obstacle in building resilience.
Chung JO, LI WH, Cheung AT, Ho LL, Chan GC (2022)	Hong Kong	Cross-sectional	119 parents who have had a child with cancer at Hong Kong Children's Hospital	Single parents have significantly lower levels of resilience, experience depressive symptoms, and have a low quality of life when compared to fully married parents. Parents who use problem-solving-based coping strategies have significantly higher levels of resilience, low depressive symptoms, and a much better quality of life when compared to parents who use emotion-based coping strategies. Based on regression analysis, it was found that the quality of life of parents was positively related to the level of resilience.
Baran G, Arda Sürücü H, Hülya Üzel V (2020)	Turkey	Cross-sectional	51 parents who had children diagnosed with ALL and 53 parents who had healthy children and were registered	When comparing between parents who have children diagnosed with ALL and parents who have healthy children, it was found that parents whose children were diagnosed with ALL had a high level of life satisfaction, resilience and a fairly high level of parenting burden.

Mustafa AM, El-Ashry NM, Mahmoud S. (2019)	Egypt	Cross-sectional	with the family health center at the Turkish Hematology Pediatric Clinic	93 parents who had children diagnosed with leukemia and admitted to Egypt's 57357 Hospital on the 5th floor	Most parents whose children are diagnosed with leukemia have a moderate level of resilience and psychological well-being. There is a positive relationship between resilience and psychological well-being in parents who have children diagnosed with leukemia.
Silva JS, Moraes OF, Sabin LD, Almeida FO, Magnago TS (2021)	Brazil	Cross-sectional		62 parents with children diagnosed with cancer at Rio Grande do Sul University Hospital, Brazil	There is a moderate positive relationship between resilience and quality of life, and a negative relationship with stress levels and psychological disorders in parents who have children with cancer
Luo Y, Wang A, Zeng Y, Zhang J. (2022)	China	Cross-sectional		258 elderly people in 3 Chinese Hospitals	There are 4 classes in the division of types of parental resilience including parents with good adaptation and optimism, parents who are strong but lack self-control, parents with moderate / moderate resilience, and parents who are maladaptive and less persistent. Parents, especially mothers who have more than one child, have a tendency to be able to enter the class of maladaptive and less persistent parents. Different levels of depressive symptoms were felt from the four resilience classes.
Park M, Choi EK, Lyu CJ, Han JW, Hahn SM (2022)	South Korea	Cross-sectional		111 parents who have children diagnosed with cancer and are undergoing cancer treatment at South Korea University Hospital	Among the resilience factors that influence the level of adaptation of parents who have children with cancer, it was found that the level of parental depression is a risk factor and the communication ability of parents is a protective factor.
Stegenga K, Liu Q, Haase J. (2020)	Worldwide	Literature review		Children aged 3-5 years, adolescents aged 12-17 years, adolescent adults aged 12-23 years	There are very few resilience models that can provide a framework for understanding the resilience of parents who have children with cancer. The only model that specifically addresses the resilience of parents who have children with cancer is only RMP-CC. The model identifies there are two protective

Ye ZJ, Qiu HZ, Li PF, Liang MZ, Wang SN, Quan XM (2017)	China	Cross-sectional	229 parents who have children diagnosed with cancer	factors such as social support, coping fortitude mechanisms, and three risk factors such as emotional distress, parenting burden, and uncertainty in disease. RMP-CC is a very effective model in knowing the resilience of parents who have children with cancer and can be useful as a basis for developing further interventions for parents. This model can help to more easily understand the experience of parents during cancer treatment in a child.
Hoseinzadeh F, Radfar M, Moghaddamtabrizi F, Khalkhali H (2019)	Iran	RCT	48 mothers with children diagnosed with cancer at Shahid Motahhari Urmia Hospital, Iran	Resilience-based group therapy interventions are an effective strategy for parents who have children with cancer in overcoming cancer suffered by children. The implementation of resilience-based group therapy interventions will improve the mental health of parents, increase resilience and ability to overcome problems posed by cancer.
Rosenberg AR, Bradford MC, C JC, and Taylor M, Zhou C, Sherr N, et al. (2019)	Seattle	RCT	94 parents who have children diagnosed with cancer at Seattle Children's Hospital	PRISM-P interventions show a positive effect on parental resilience levels and provide much better benefits when administered individually to parents who have children with cancer. This PRISM-P can help parents feel more resilient, which can later facilitate their ability to care for their child
Luo Y, Xia W, Cheung AT, Ho LLK, Zhang J, Xie J, et al. (2021)	China	RCT	103 parents who had children diagnosed with cancer and treated in pediatric oncology units at 3 Chinese Hospitals	The smartphone-based application-based resilience training program, developed according to the Kumpfer resilience framework, contains 8 tasks that parents must follow to practice skills that can later encourage the resilience factor of parents who have children with cancer. Parents who participate in the program have higher levels of resilience and fewer depressive symptoms than parents who do not participate in the program.



## DISCUSSION

### Overview of Resilience of Parents Who Have Children with Cancer

Parents who have children diagnosed with solid tumors or who have received multiple cancer treatments significantly have a low level of resilience when compared to parents of children diagnosed with blood cancer (Oi Kwan Chung et al., 2022). Parents who run emotionally based coping strategies significantly have low levels of resilience and are followed by depression, anxiety, lack of social support, and a low quality of life when compared to parents who use problem-solving-based coping strategies (Oi Kwan Chung et al., 2022). Single parents of children with cancer have significantly low levels of resilience and are followed by the presence of depressive symptoms, lack of social support, and a worse quality of life than parents living with their partners (Oi Kwan Chung et al., 2022). Single parents who have children diagnosed with cancer will face much greater challenges, such as financial burden, social isolation, and lack of social support (Oi Kwan Chung et al., 2022).

The level of resilience of fathers and mothers has significant differences, where fathers have a higher level of resilience when compared to mothers (Habibpour et al., 2019). Mothers are more likely to suffer from post-traumatic stress disorder (PTSD) than fathers (Habibpour et al., 2019). This difference in the level of resilience between father and mother is due to the fact that mothers tend to be more sensitive to the effects of stressful difficult events and have the ability to feel much higher levels of stress when compared to fathers (Habibpour et al., 2019).

Mothers who have children diagnosed with cancer, especially acute leukemia, have lower levels of resilience, life satisfaction and a higher burden of care when compared to mothers who have healthy children undiagnosed with cancer (Baran et al., 2020). Children diagnosed with acute leukaemia will undergo a treatment process that requires hospitalization and lasts for a long period of time, this can reduce the level of maternal resilience (Baran et al., 2020). Another thing that can affect the low level of maternal resilience is that mothers must be willing to undergo the cancer treatment process outside the city far from where they live and some decide to move temporarily in the city where the cancer treatment process is carried out (Baran et al., 2020).

### Resilience Model of Parents Who Have Children with Cancer

There are very few resilience models that provide a framework for understanding resilience in parents. The only model that specifically addresses the resilience of parents who have children with cancer is only RMP-CC (Stegenga et al., 2020; Ye et al., 2017). This model identifies there are two protective factors such as social support, coping fortitude mechanisms (Y. Luo, Li, et al., 2022; Stegenga et al., 2020; Ye et al., 2017) and three risk factors such as emotional distress, care/care burden (Stegenga et al., 2020; Toledano-Toledano et al., 2021; Ye et al., 2017), and uncertainty in disease (Stegenga et al., 2020; Ye et al., 2017).

### Factors Affecting the Resilience of Parents Who Have Children with Cancer

Protective factors are aspects that can minimize the impact of risk factors. The role of protective factors is to modify negative effects into positive effects. The protective factor is:

1. Communication

Lack of effective communication between parents and children also negatively affects parental resilience (Y. Luo, Li, et al., 2022). Communication is the main factor that affects the level of adaptation of parents to cancer suffered by children (Park et al., 2022). Parents who have difficulty communicating with children are due to the parents' lack of experience, information, and ability to cope with the child's emotions, while the child has limitations in understanding cancer, death at an early age, and the stigma that will be given related to cancer (Park et al., 2022).

There is a positive relationship between receiving good health information from a team of health workers and the level of resilience of parents (Mezgebu et al., 2020). Receipt of information related to cancer treatment from health workers leads to an increase in resilience (Mezgebu et al., 2020). Providing information at the right time can help to avoid unnecessary stress, so that parents can have better resilience (Mezgebu et al., 2020).

Lack of information related to the diagnosis and prognosis of cancer is a major barrier to parents' communication with children (Park et al., 2022). It is very important to provide accurate information regarding cancer treatment in children to parents, in order to strengthen the family and parents to overcome the child's emotions and be able to explain about cancer to the child during the developmental stage (Park et al., 2022). The level of social competence of parents such as easy to interact, make many friends, and being able to communicate well with other people who both have children diagnosed with cancer can be one of the causes of parents having a high level of resilience (Mustafa et al., 2019; Toledano-Toledano et al., 2021).

The stigma of the surrounding community is also a barrier to parents' communication with children (Park et al., 2022). This stigma can bring psychosocial pressure to parents and arises due to the incomprehension of people who do not have a background experience about cancer and the assumption that cancer is a very difficult disease to cure (Park et al., 2022).

## 2. Adaptation & Optimism

Resilient parents will have good adaptability and optimistic attitude (Y. Luo, Wang, et al., 2022). Usually characterized by the presence of self-confidence and persistence, being able to effectively overcome problems in times of difficulty and adapt well to the diagnosis of cancer in children (Y. Luo, Wang, et al., 2022; Y. H. Luo et al., 2022; Toledano-Toledano et al., 2021). An optimistic attitude is the most prominent among these characteristics (Y. Luo, Wang, et al., 2022). Interventions based on the processing of self-optimism can be carried out to increase resilience in parents (Y. Luo, Wang, et al., 2022). In contrast, parents whose resilience level is low are characterized by the presence of a poor level of self-adaptation (maladaptation) and persistence (Y. Luo, Wang, et al., 2022). In this category, parents usually have difficulty controlling the negative impacts that arise due to the diagnosis of cancer on children (Y. Luo, Wang, et al., 2022).

The most prominent factor in influencing the level of resilience of parents who have children with cancer is due to a positive and optimistic attitude towards the cure of cancer suffered by children (Y. Luo, Li, et al., 2022). Interventions given with the aim of cultivating cognitive aspects and optimism can also improve resilience in the elderly (Y. Luo, Li, et al., 2022). Parents who have low resilience will usually experience self-distrust in the face of cancer suffered by the child, and this is the biggest obstacle in increasing resilience (Y. Luo, Li, et al., 2022).

The care team and all health workers directly influence the psychological factors of parents in reducing the pressure / stress of child care so that parents can better adapt to the difficult situation faced (Mezgebu et al., 2020). On the other hand, the lack of information from the team of health workers related to cancer and how the treatment process can cause parents' distrust of the health worker team which will later cause parents to feel worried and frustrated, so that in the end it will worsen the level of resilience of parents (Mezgebu et al., 2020).

Following recreation is also one of the positive predictors of resilience. This is because this activity can help parents in developing better positive adaptations (Mezgebu et al., 2020). In this activity, parents will have more fun time and can produce a bond of happiness, learning, antics, and exchanging experiences between them (Mezgebu et al., 2020).

## 3. Spirituality, Religiosity, Faith, and Self-Transcendence

Spirituality relates to well-being, understanding the human soul, and the best plan to be carried out (Silva et al., 2021). Religiosity, spirituality, and faith can help the process of developing resilience (Silva et al., 2021). These three things are the main mechanisms and

sources of support that can be used by parents who have children diagnosed with cancer in the face of the difficult reality of life due to cancer (Silva et al., 2021).

Resilience is important for parents who have children with cancer, because resilience can train parents to emphasize more humanity, can help in maintaining health, and train parents to find new meanings of the difficult conditions that are being experienced caused by cancer experienced by children (Silva et al., 2021). Resilience is shown by how parents can keep moving forward, living better after a cancer diagnosis in a child by being optimistic and effective (Silva et al., 2021). Religious teachings, prayer and faith in God play an important role in increasing parental resilience (Mustafa et al., 2019).

The high level of resilience and transcendence of parents who have children with cancer has a significant relationship with high levels of well-being and low levels of depression and anxiety felt by parents due to cancer treatment in children (Bajjani-Gebara et al., 2019). Self-transcendence can be a link in building a positive relationship between resilience and well-being in parents who have children with cancer (Bajjani-Gebara et al., 2019).

#### 4. Competency

Regarding personal competence in resilience, some parents have low personal competence (Mustafa et al., 2019). This may be due to different factors, parents are not able to deal with treatment complications; They have a lack of information about treatment methods (Mustafa et al., 2019). In addition, parents do not have the skills to handle urgent circumstances in care (Mustafa et al., 2019). Without knowledge, skills and training, parents feel that they cannot provide adequate and proper upbringing to their child (Mustafa et al., 2019). Parents with a high level of resilience tend to have a high level of competence in caring for and caring for children diagnosed with cancer (Y. Luo, Li, et al., 2022).

There is a positive relationship between psychological well-being and the resilience of parents who have children diagnosed with cancer related to the self-competence of parents (Mustafa et al., 2019). Self-competence can improve parents' ability to take care of their children properly, efficiently, and carry out treatment to a higher level (Mustafa et al., 2019). Self-competence also increases the knowledge of parents so that it can be easier to carry out care functions properly and can handle stressful situations that arise more effectively (Mustafa et al., 2019). Therefore, personal competence leads to an increase in the level of psychological well-being of parents (Mustafa et al., 2019).

#### 5. Coping

Coping or an approach that focuses on the process of solving problems in dealing with cancer suffered by children will have a good effect on increasing resilience in parents (Y. Luo, Li, et al., 2022; Stegenga et al., 2020; Ye et al., 2017). This approach or coping will directly lead to the pressure that arises and will later produce a solution to the problem related to cancer suffered by the child (Y. Luo, Li, et al., 2022).

#### 6. Social support

Social support (Y. Luo, Li, et al., 2022; Mezgebu et al., 2020; Mohammadsalehi et al., 2020; Stegenga et al., 2020; Ye et al., 2017) and the finances received and perceived by parents have a great influence on increasing resilience in parents (Y. Luo, Li, et al., 2022). Social support from local friends, vacation/recreation, and getting good health information from a team of health workers have a positive relationship with the level of resilience (Mezgebu et al., 2020). The way parents view social support differs depending on the culture embraced by the surrounding community (Mezgebu et al., 2020). In countries in the Middle East and Asia, parents are mostly afraid to receive social support because they tend to accept the ugly stigma of cancer suffered by children (Mezgebu et al., 2020).

Good social support in parents with a high level of resilience has a positive impact on self-efficacy and health levels (Mohammadsalehi et al., 2020). The psychological status of parents who have children diagnosed with cancer is a significant factor in the increase in

resilience itself (Mohammadsalehi et al., 2020). Social support also plays a good role in increasing resilience and serves as a buffer in managing the stress / pressure that is being faced, and will improve the mental health of parents (Mohammadsalehi et al., 2020).

Risk factors are factors that can increase negative developmental outcomes in individuals in the future. Risk factors are:

1. Depression

Resilience negatively relates to depressive symptoms, stress, and anxiety levels that parents feel (Mezgebu et al., 2020; Mohammadsalehi et al., 2020; Oi Kwan Chung et al., 2022; Toledano-Toledano et al., 2021). Parenting depression as a risk factor for parental resilience will also affect the adaptation process (Park et al., 2022). The high rate of depression in parental care is due to the characteristics of cancer that is rapidly spreading and unexpected (Park et al., 2022). Cancer usually affects children during the child's developmental stage in the absence of a history of certain diseases (Park et al., 2022). Unexpected diagnoses in cancer usually require repeated inpatient treatment and require follow-up care at home (Park et al., 2022). Parents who have children with cancer will tend to have problems both physical and mental and can be categorized as dangerous circumstances because they will have difficulties in the process of recovering from the traumatic situation experienced (Mezgebu et al., 2020). This is because psychological disorders experienced by parents contribute greatly to reducing the level of parental resilience (Mezgebu et al., 2020). Parents who do not experience depression in the process of treating a child with cancer will tend to have a better level of resilience (Mezgebu et al., 2020).

2. Stress and care burden

Treatment burden negatively related to resilience (Mohammadsalehi et al., 2020; Stegenga et al., 2020; Toledano-Toledano et al., 2021; Ye et al., 2017). The low level of parental resilience is more due to parents experiencing treatment stress and are less able to use all the resources they have effectively in the treatment of children diagnosed with cancer (Habibpour et al., 2019). Low resilience in parents who have children with cancer is usually associated with high levels of pressure, low social support and family functioning, and is followed by high levels of sleep disorders experienced by parents and low levels of health (Mohammadsalehi et al., 2020). The ability of parents and families to manage time, plan activities, and have standard rules that must be carried out in times of difficulty can cause parents to have a high level of resilience (Toledano-Toledano et al., 2021).

### **The Impact of Resilience on Satisfaction/Quality of Life and Psychological Well-Being of Parents with Children with Cancer**

Parents who have children with cancer have a much lower level of quality of life compared to parents who have children undiagnosed with cancer (Y. H. Luo et al., 2022). Parents who have a high level of income and education have a better quality of life when compared to parents who have a low income and have a low level of education (Y. H. Luo et al., 2022). This will usually be followed by a lower level of care burden experienced by parents and a much better level of self-esteem, while parents with low levels of education and income will tend to face the burden of financial problems and difficulties related to the care of their child affected by cancer (Y. H. Luo et al., 2022).

Resilience is the only factor attributed to quality of life in parents of children with cancer (Oi Kwan Chung et al., 2022). There is a very significant positive relationship between resilience and psychological well-being in parents with children with cancer (Mustafa et al., 2019). This is because parents have received a cancer diagnosis in their child and all its complications using certain coping strategies, have faced many urgent conditions during cancer treatment, increasing the sense of tolerance and responsibility in parents, and strong faith in God as the main helper for parents, so that finally parents can feel satisfied with what has happened to their child (Mustafa et al., 2019). Parents with a higher level of resilience have

greater strength and ability to cope with stress and difficulties during the child's cancer diagnosis period, which will later better empower and maintain the psychological well-being and quality of life of the parents (Oi Kwan Chung et al., 2022). Resilience has a very positive impact on parents, including parents will feel satisfied with life and improve their psychological well-being (Y. H. Luo et al., 2022; Mohammadsalehi et al., 2020; Mustafa et al., 2019).

### **Interventions to Improve the Resilience of Parents with Children with Cancer**

Resilience-based group therapy interventions are an effective strategy for parents with children with cancer in overcoming cancer suffered by children (Hoseinzadeh et al., 2019). The implementation of resilience-based group therapy interventions will improve the mental health of parents, increase resilience and ability to overcome problems posed by cancer (Hoseinzadeh et al., 2019).

PRISM-P interventions show a positive effect on the level of parental resilience and provide much better benefits when administered individually to parents who have children with cancer (Rosenberg et al., 2019). This PRISM-P can help parents feel more resilient, which can later facilitate their ability to care for their child (Rosenberg et al., 2019).

The smartphone-based application-based resilience training program, developed according to the Kumpfer resilience framework, contains 8 tasks that parents must follow to practice skills that can later encourage the resilience factor of parents who have children with cancer (Y. Luo et al., 2021). Parents who participate in the program have higher levels of resilience and fewer depressive symptoms than parents who do not participate in the program (Y. Luo et al., 2021).

### **CONCLUSION**

The only model that specifically addresses the resilience of parents who have children with cancer is only RMP-CC (Stegenga et al., 2020; Ye et al., 2017). This model identifies there are two protective factors such as social support, coping fortitude mechanisms (Y. Luo, Li, et al., 2022; Stegenga et al., 2020; Ye et al., 2017), communication, adaptation & optimism, spirituality, religiosity, faith, and self-transcendence, competence, and three risk factors such as depression, emotional distress, care burdens (Stegenga et al., 2020; Toledano-Toledano et al., 2021; Ye et al., 2017), and uncertainty in disease.(Stegenga et al., 2020; Ye et al., 2017).

Resilience is the only factor attributed to quality of life in parents of children with cancer (Oi Kwan Chung et al., 2022). There is a very significant positive relationship between resilience and psychological well-being in parents with children with cancer (Mustafa et al., 2019). Parents with a higher level of resilience have greater strength and ability to cope with stress and difficulties during the child's cancer diagnosis period, which will later better empower and maintain the psychological well-being and quality of life of the parents (Oi Kwan Chung et al., 2022). Resilience has a very positive impact on parents, including parents will feel satisfied with life and improve their psychological well-being (Y. H. Luo et al., 2022; Mohammadsalehi et al., 2020; Mustafa et al., 2019).

Some interventions that can be done to improve the resilience of parents who have children with cancer such as resilience-based group therapy interventions (Hoseinzadeh et al., 2019), PRISM-P intervention (Rosenberg et al., 2019), and an application-based training program on smartphones developed according to Kumpfer's resilience framework (Y. Luo et al., 2021).

### **REFERENCES**

- American Psychological Association. (2020). *Building your resilience*.  
<https://www.apa.org/topics/resilience>.

- Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. *International Journal of Social Research Methodology*, 8(1), 19–32. <https://doi.org/10.1080/1364557032000119616>.
- Bajjani-Gebara, J., Hinds, P., Insel, K., Reed, P., Moore, K., & Badger, T. (2019). Well-being, Self-transcendence, and Resilience of Parental Caregivers of Children in Active Cancer Treatment: Where Do We Go from Here? *Cancer Nursing*, 42(5), E41–E52. <https://doi.org/10.1097/NCC.0000000000000662>.
- Baran, G., Arda Sürücü, H., & Hülya Üzel, V. (2020). Resilience, life satisfaction, care burden and social support of mothers with a child with acute lymphoblastic leukaemia: a comparative study. *Scandinavian Journal of Caring Sciences*, 34(2), 340–347. <https://doi.org/10.1111/scs.12734>.
- Children's Cancer Institute. (2021). *Cancer in children – what do the global stats tell us?* <https://www.ccia.org.au/blog/cancer-in-children-stats>.
- Eiser, C. (2004). *Children With Cancer*. Routledge. <https://doi.org/10.4324/9781410609922>.
- Habibpour, Z., Mahmoudi, H., Nir, M. S., & Areshtanab, H. N. (2019). Resilience and its predictors among the parents of children with cancer: A descriptive-correlational study. *Indian Journal of Palliative Care*, 25(1), 79–83. [https://doi.org/10.4103/IJPC.IJPC\\_128\\_18](https://doi.org/10.4103/IJPC.IJPC_128_18).
- Hoseinzadeh, F., Radfar, M., Moghaddamtabrizi, F., & Khalkhali, H. (2019). Effect of Resilience-based Group Therapy Intervention on Coping in Mothers of Children with Cancer: A Randomized Clinical Trial. *Iran J Nurs Midwifery Res*, 24(4), 291–295.
- Hunter, A. J. (2001). A cross-cultural comparison of resilience in adolescents. *Journal of Pediatric Nursing*, 16(3), 172–179. <https://doi.org/10.1053/jpdn.2001.24180>.
- Long, K. A., & Marsland, A. L. (2011). Family Adjustment to Childhood Cancer: A Systematic Review. *Clinical Child and Family Psychology Review*, 14(1), 57–88. <https://doi.org/10.1007/s10567-010-0082-z>.
- Luo, Y. H., Li, W. H. C., Cheung, A. T., Ho, L. L. K., Xia, W., He, X. L., Zhang, J. P., & Chung, J. O. K. (2022). Relationships between resilience and quality of life in parents of children with cancer. *Journal of Health Psychology*, 27(5), 1048–1056. <https://doi.org/10.1177/1359105321990806>.
- Luo, Y., Li, H. C. W., Xia, W., Cheung, A. T., Ho, L. L. K., & Chung, J. O. K. (2022). The Lived Experience of Resilience in Parents of Children With Cancer: A Phenomenological Study. *Frontiers in Pediatrics*, 10. <https://doi.org/10.3389/fped.2022.871435>.
- Luo, Y., Wang, A., Zeng, Y., & Zhang, J. (2022). A latent class analysis of resilience and its relationship with depressive symptoms in the parents of children with cancer. *Supportive Care in Cancer*, 30(5), 4379–4387. <https://doi.org/10.1007/s00520-022-06860-7>.
- Luo, Y., Xia, W., Cheung, A. T., Ho, L. L. K. L. K., Zhang, J., Xie, J., Xiao, P., & Li, H. C. W. (2021). Effectiveness of a Mobile Device-Based Resilience Training Program in Reducing Depressive Symptoms and Enhancing Resilience and Quality of Life in Parents of Children With Cancer: Randomized Controlled Trial. *Journal of Medical Internet Research*, 23(11), 1–N.PAG. <https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,shib&db=lxh&AN=153981442&site=ehost-live&scope=site>.
- Mezgebu, E., Berhan, E., & Deribe, L. (2020). Predictors of resilience among parents of children with cancer: Cross-sectional study. *Cancer Management and Research*, 12, 11611–11621. <https://doi.org/10.2147/CMAR.S276599>.
- Mohammadsalehi, N., Asgarian, A., Ghasemi, M., & Mohammadbeigi, A. (2020). Cancer resilience in parents of children with cancer; the role of general health and self-efficacy

- on resiliency. *Journal of Cancer Research and Therapeutics*, 0(0), 0. [https://doi.org/10.4103/jcrt.jcrt\\_464\\_19](https://doi.org/10.4103/jcrt.jcrt_464_19).
- Mustafa, A. M., Mustafa El-Ashry1, N., & Mahmoud2, S. (2019). Resilience and Psychological Wellbeing among Parents of Leukemic Child at 57357 Hospital. In *Original Article Egyptian Journal of Health Care* (Vol. 10, Issue 1).
- O’Conner-Von, S. (2009). Coping With Cancer: A Web-Based Educational Program for Early and Middle Adolescents. *Journal of Pediatric Oncology Nursing*, 26(4), 230–241. <https://doi.org/10.1177/1043454209334417>.
- Oi Kwan Chung, J., Ho Cheung, W. L., Tan Cheung, A., Long Kwan Ho, L., & Chi Fung Chan, G. (2022). Association of resilience with psychological well-being and quality of life for parents of children with cancer. <https://doi.org/10.21203/rs.3.rs-1688101/v1>.
- Park, M., Choi, E. K., Lyu, C. J., Han, J. W., & Hahn, S. M. (2022). Family resilience factors affecting family adaptation of children with cancer: A cross-sectional study. *European Journal of Oncology Nursing*, 56. <https://doi.org/10.1016/j.ejon.2021.102078>.
- Peters, M. D. J., Godfrey, C., McInerney, P., Soares, C. B., Khalil, H., & Parker, D. (2015). *The Joanna Briggs Institute reviewers’ manual 2015: methodology for JBI scoping reviews*.
- Rosenberg, A. R., Baker, K. S., Syrjala, K. L., Back, A. L., & Wolfe, J. (2013). Promoting Resilience among Parents and Caregivers of Children with Cancer. *Journal of Palliative Medicine*, 16(6), 645–652. <https://doi.org/10.1089/jpm.2012.0494>.
- Rosenberg, A. R., Bradford, M. C., C, J. C., and Taylor, M., Zhou, C., Sherr, N., Kross, E., Curtis, J. R., Yi-Frazier, J. P., Junkins, C. C., Taylor, M., Zhou, C., Sherr, N., Kross, E., Curtis, J. R., & Yi-Frazier, J. P. (2019). Effect of the Promoting Resilience in Stress Management Intervention for Parents of Children With Cancer (PRISM-P): A Randomized Clinical Trial. *JAMA Network Open*, 2(9), e1911578. <https://doi.org/10.1001/jamanetworkopen.2019.11578>.
- Rosenberg, A. R., Wolfe, J., Bradford, M. C., Shaffer, M. L., Yi-Frazier, J. P., Curtis, J. R., Syrjala, K. L., & Baker, K. S. (2014). Resilience and psychosocial outcomes in parents of children with cancer. *Pediatric Blood & Cancer*, 61(3), 552–557. <https://doi.org/10.1002/pbc.24854>.
- Silva, J. S. da, Moraes, O. F., Sabin, L. D., Almeida, F. O., & Magnago, T. S. B. de S. (2021). Resilience of family caregivers of children and adolescents in treatment of neoplasms and associated factors. *Revista Brasileira de Enfermagem*, 74(6), e20190388. <https://doi.org/10.1590/0034-7167-2019-0388>.
- Stegenga, K., Liu, Q., & Haase, J. (2020). Resilience in pediatric oncology. In *Pediatric Oncology* (pp. 63–77). Springer. [https://doi.org/10.1007/978-3-030-25804-7\\_4](https://doi.org/10.1007/978-3-030-25804-7_4).
- Toledano-Toledano, F., Luna, D., Moral De La Rubia, J., Martínez Valverde, S., Bermúdez Morón, C. A., García, M. S., & Vasquez Pauca, M. J. (2021). Psychosocial factors predicting resilience in family caregivers of children with cancer: A cross-sectional study. *International Journal of Environmental Research and Public Health*, 18(2), 1–13. <https://doi.org/10.3390/ijerph18020748>.
- Tricco, A. C., Lillie, E., Zarin, W., O’Brien, K. K., Colquhoun, H., Levac, D., Moher, D., Peters, M. D. J., Horsley, T., Weeks, L., Hempel, S., Akl, E. A., Chang, C., McGowan, J., Stewart, L., Hartling, L., Aldcroft, A., Wilson, M. G., Garritty, C., ... Straus, S. E. (2018). PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Annals of Internal Medicine*, 169(7), 467–473. <https://doi.org/10.7326/M18-0850>.
- Ye, Z. J., Guan, H. J., Wu, L. H., Xiao, M. Y., Luo, D. M., & Quan, X. M. (2015). Resilience and Psychosocial Function Among Mainland Chinese Parents of Children With

- Cancer. *Cancer Nursing*, 38(6), 466–474.  
<https://doi.org/10.1097/NCC.0000000000000220>.
- Ye, Z. J., Qiu, H. Z., Li, P. F., Liang, M. Z., Wang, S. N., & Quan, X. M. (2017). Resilience model for parents of children with cancer in mainland China-An exploratory study. *European Journal of Oncology Nursing*, 27, 9–16.  
<https://doi.org/10.1016/j.ejon.2017.01.002>.