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# Research Progress on the Mental Toughness of Family Caregivers of Children with Malignant Solid Tumors

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**Abstract:** The physical, emotional, and caregiving quality of caregivers for children with malignant solid tumors is significantly influenced by mental toughness. The definition of mental toughness, study methods, primary influencing factors, and intervention strategies for the mental toughness of caregivers of children with malignant solid tumors will be examined in this paper. To improve the mental toughness of caregivers of children with malignant solid tumors, it is recommended that future studies enhance the number of intervention research methods and establish particular evaluation tools.

**Keywords:** Malignant solid tumor; Caregiver; Burden; Quality of life

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## 1. Introduction

For children aged 1 to 14, cancer is the second most prevalent cause of death; for adolescents aged 15–19 years, it ranks fourth in terms of causes of death [1]. According to a Lancet survey conducted in 2022, solid tumor incidence was on the rise and accounted for 60% of tumor incidence in children and adolescents in China [2]. Children require caregivers due to the constraints of their age and cognitive level, and the treatment of malignant solid tumors in children is characterized by hidden onset, protracted treatment duration, easy recurrence, etc. As they care for children for extended periods of time, most caregivers exhibit significant levels of stress and burnout as well as negative psychological states such as anxiety, sadness, and sleep difficulties as well as unhealthy coping mechanisms [3,4]. The ability of a person to adjust well in the face of hardship, trauma, and difficult situations is known as psychological resilience [5]. The choice of coping mechanisms made by caregivers under duress might be influenced by psychological resilience, which in turn can impact the care load. Furthermore, research has shown that enhancing caregivers' mental resilience can successfully lower their stress, anxiety, and depression levels, enhancing their overall health and quality of life [6,7]. This paper reviews the concept, assessment tools, influencing factors, and intervention strategies of the mental toughness of caregivers of children with malignant solid tumors, in order to improve the level of the mental toughness of the caregivers and provide references for promoting their

physical and mental health and the quality of care.

## 2. Concept of mental toughness

In the 1970s, American psychologist Rutter proposed the concept of psychological resilience. Mental toughness is also known as mental resilience, strength, and toughness. In 2002, Clough *et al.* defined mental resilience as the ability to cope with difficulties and achieve self-defined goals [8], that is, mental resilience is a resistance resource that can resist the negative effects of stress in a range of environments. In 2018, the American Psychological Association generally defined resilience as the process of adapting well to adversity, thereby suggesting a relative state of health and the ability to resist the negative effects of stress [9]. For the concept of psychological resilience, countries have not reached a unified consensus. According to many researchers, the definition of psychological resilience can be divided into three types: outcome definition, ability definition, and process definition. However, existing concepts inconsistently emphasize that psychological resilience is the ability to rebound after experiencing difficulties, which can be regarded as a measure of stress-coping ability. It may be an important target for the treatment of anxiety, depression, and stress responses. At present, domestic and foreign studies on mental toughness mainly focus on adult chronic patients and their caregivers, medical workers, sports athletes, soldiers, the elderly, and other special groups, and most of the research content is the role of mental toughness in coping with adversity, difficulties, and trauma. The research on caregivers of children with malignant solid tumors is still in the exploratory stage and requires in-depth exploration by researchers in relevant disciplines.

## 3. Evaluation tools for the mental toughness of caregivers of children with malignant solid tumors

Currently, there is a lack of specific mental toughness measurement tools for caregivers of children with malignant solid tumors. Through literature review, there are three main research tools used to measure the mental toughness of caregivers of children with malignant solid tumors.

### 3.1. Resilience Scale-14 (RS-14)

This scale was refined by Wagnild on the basis of the RS-25 scale in 2009 [10]. It is Chinese-adapted by Chinese scholar Qianyu Ni and has a total of 14 items, Cronbach's α was 0.93 [11]. Each item was scored on a 7-level scale, ranging from "completely disagree" to "fully agree," with the score ranging from 1 to 7 points. The total score fluctuated between 14 and 98 points. The higher the score, the better the level of mental toughness.

### 3.2. 10-item Connor–Davidson Resilience Scale (CD-RISC-10)

The original scale was compiled by American psychologist Connor *et al.* [12], which was modified and verified by Ye *et al.* [13]. There were 10 items on the scale, and each item adopted a 5-level scoring method, ranging from 0 for "not at all" to 4 for "almost always," with a total score ranging from 0 to 40. The higher the score, the better the level of individual mental toughness. Cronbach's α of this scale is 0.873, which is suitable for daily screening of high-risk psychological caregivers in clinical pediatric cancer departments.

### 3.3. Simplified Coping Style Questionnaire (SCSQ)

The scale is a self-rated questionnaire with 20 items including positive coping and negative coping, each item using a 5-level scoring method. The result is the average score of positive coping and the total score of negative coping. The higher the score, the more obvious the tendency of individuals to adopt this coping style. Cronbach's

α coefficient is 0.80 and 0.73, respectively; it has good reliability and validity [14].

## 4. Influencing factors of the mental toughness of caregivers of children with malignant solid tumors

### 4.1. Factors of family caregivers

The influence of family caregivers on their mental toughness is mainly reflected in gender, age, physical and mental state, etc. [4,15]. Studies have shown that the symptoms of anxiety, depression, distress, and poor family function are more prominent in younger caregivers and female caregivers than in male caregivers [16,17], which may be related to the personality characteristics of women, who are generally more sensitive, compassionate, and competent to care for children than men. Another possible explanation is that, due to the influence of traditional culture, men mainly bear the role of providing stability in the family, and are more reluctant to admit discomfort and psychological disorders. It has been found that a lack of support for single caregivers of children with malignant solid tumors may lead to increased anxiety and distress [18]. In addition, the physical and mental state of family caregivers will also have a direct impact on children's adaptation and prosocial skills. Prolonged disease management will make family caregivers face both economic and mental pressure, and produce negative emotions such as distress, burnout, anxiety, and depression. The pressure and negative emotions of caregivers will in turn affect the compliance of children with the disease and the effect of disease control, resulting in a vicious cycle [6,19].

### 4.2. Child factors

The child factors mainly include the age and disease status of the child. The higher the degree of malignancy and the faster the progression of malignant solid tumors, the greater the care pressure of caregivers and the lower the level of psychological resilience [20]. Studies have found that among neuroblastic children, children in the low- and medium-risk group have a better prognosis, with a 5-year survival rate of 75–98%, but children in the high-risk group are more difficult to treat and have a higher rate of progression or recurrence and the 5-year survival rate is about 30% [21]. The younger the child, the heavier the care burden of the family caregiver, and the greater the impact on the mental toughness of the caregiver, which may be related to the separation anxiety and lack of self-care ability of young children as well as the need for more attention from the caregiver [22]. In the process of long-term and repeated hospitalization, more than half of the children have side effects after treatment (nausea, vomiting, pain, bone marrow suppression, etc.), which will also make the caregivers feel different degrees of pain and pressure, produce negative psychology, and reduce the level of psychological resilience and affect the quality of care [23]. At the same time, the time of treatment also has an impact on mental toughness. Studies have shown that the level of mental toughness of caregivers is relatively low at the time of diagnosis and after 6 months of care. The former may be related to guilt, remorse, and pain at the time of diagnosis, while the latter may be related to the physical and mental pressure caused by long-term care, as well as the damage to family and social functions [22]. Therefore, the level of psychological resilience of family caregivers of malignant solid tumors may increase with the treatment of children, and medical personnel and society should pay more attention to this special group.

### 4.3. Economic status

Studies have shown that economic status is an important factor affecting the level of mental toughness of the primary caregivers of children with malignant solid tumors. Some studies have found that family economic conditions have a great impact on the psychological toughness of parents of children with cancer. Due to the need to take care of children for a long time, the caregiver has to reduce social interaction for full-time care of children, resulting in a decrease in family income and mental toughness of caregivers, resulting in a vicious cycle [23,24].

After qualitative interviews with caregivers of children, it was found that the fear of high medical costs affecting the treatment course of solid tumors would lead to the low mental toughness of family caregivers [17], while external economic support could alleviate the family's economic burden, relieve nursing pressure, reduce physical and mental problems of caregivers, improve their quality of care and quality of life, and thus enhance their mental toughness.

### 4.4. Social support

A malignant solid tumor is a significant source of stress for the child's family. The caregiver will experience physical and psychological issues as a result of the intense caregiving demands, which will hamper their ability to function in their social and familial lives and reduce their quality of care. According to some pertinent studies, family caregivers in urban areas have higher levels of mental toughness than those in rural areas. This difference in mental toughness may be explained by the fact that parents of children living in urban areas have access to greater social support from social welfare organizations, governments, and medical facilities. Authorized institutions will alleviate caregivers' psychological distress in addition to offering material support [4,24,25]. Therefore, in future clinical work, medical workers and relevant social institutions should not only pay attention to the situation of children, but also provide financial or emotional support to family caregivers, help caregivers overcome negative emotions, and improve the level of psychological resilience and quality of care.

## 5. Intervention strategies

At present, the main methods to improve the psychological resilience of caregivers of children with malignant solid tumors include self-compassion training [26], peer education [27], mindfulness intervention, and stress management intervention [28]. Most of these studies have foreign interventions, and the most common form of intervention is written. These studies show that caregivers' emotional regulation techniques have somewhat improved. In these trying times, caregivers can adopt a more positive psychological outlook by learning how to quit blaming and criticizing themselves and adopting adaptive coping mechanisms to treat themselves with compassion and warmth. In the future, more research and comparison can be done, but for now, the interventions and evaluation outcomes of these interventions are inconsistent, making it difficult for them to provide better care for their children.

## 6. Summary and prospects

In conclusion, family caregivers of children with malignant solid tumors typically have low to medium levels of mental toughness; therefore, people from all walks of life as well as medical professionals need to be aware of this and work to improve it. The health and quality of life of caregivers for children with malignant solid tumors can be enhanced by appropriate intervention, which can also help them cope with negative emotions. Nevertheless, there are currently few longitudinal investigations, qualitative studies, and associated intervention studies on the mental toughness of caregivers; instead, the majority of papers on the subject are cross-sectional and influencing factor studies. In the future, more research in this area may be done. In order to increase psychological resilience and provide good health education and care, it is necessary to have a deeper understanding of the needs and views of caregivers.

## Disclosure statement

The authors declare no conflict of interest.

## References


[1] Siegel RL, Giaquinto AN, Jemal A, 2024, Cancer Statistics, 2024. Cancer J Clin, 74(1): 12–49.

[2] Ni X, Li Z, Li X, et al., 2022, Socioeconomic Inequalities in Cancer Incidence and Access to Health Services Among Children and Adolescents in China: A Cross-Sectional Study. Lancet, 400(10357): 1020–1032.

[3] Toledano-Toledano F, Luna D, 2020, The Psychosocial Profile of Family Caregivers of Children with Chronic Diseases: A Cross-Sectional Study. Biopsychosoc Med, (14): 29.

[4] Xu P, 2019, The Dilemma and Coping Strategies of Parents of Children with Malignant Solid Tumors from the Perspective of Structured Theory, dissertation, East China University of Science and Technology.

[5] Wagnild GM, Young HM, 1993, Development and Psychometric Evaluation of the Resilience Scale. J Nurs Meas, 1(2): 165–178.

[6] Toledano-Toledano F, Moral J, McCubbin LD, et al., 2020, Brief Version of the Coping Health Inventory for Parents (CHIP) Among Family Caregivers of Children with Chronic Diseases. Health Qual Life Outcomes, (18): 104.

[7] Dionne-Odom JN, Azuero A, Taylor RA, et al., 2021, Resilience, Preparedness, and Distress Among Family Caregivers of Patients with Advanced Cancer. Support Care Cancer, 29(11): 6913–6920.

[8] Clough P, Earle K, Sewell D, 2002, Mental Toughness: The Concept and Its Measurement, in Cockerill I (ed.), Solutions in Sport Psychology, Thomson, London, 32–43.

[9] American Psychological Association, 2018, The Road to Resilience, viewed May 18th, 2024, https://www.apa.org/topics/resilience.

[10] Wagnild G, 2009, A Review of the Resilience Scale. Journal of Nursing Measurement, 17(2): 105–113.

[11] Ni Q, Tian J, 2013, Reliability and Validity Evaluation and Application of Mental Resilience Scale. Chinese Journal of Public Health, 29(10): 1524–1527.

[12] Connor KM, Davidson JR, 2003, Development of a New Resilience Scale: The Connor-Davidson Resilience Scale (CD-RISC). Depress Anxiety, 18(2): 76–82.

[13] Ye ZJ, Liu ML, Luo DM, et al., 2016, Reliability and Validity of 10-Item Simple Mental Resilience Scale in Parents of Children with Cancer. Nursing Research, 30(33): 4118–4122.

[14] Wang D, Zhang J, 2014, Factor Analysis of Simple Coping Style Questionnaire. Journal of Shandong University (Med Edition), 52(03): 96–100.

[15] Che H, Mao X, Guan J, et al., 2023, Meta-Analysis of Influencing Factors on Mental Resilience of Primary Caregivers of Children with Cancer. Chongqing Medical Journal, 52(16): 2507–2511 + 2518.

[16] Bemis H, Yarboi J, Gerhardt CA, et al., 2015, Childhood Cancer in Context: Sociodemographic Factors, Stress, and Psychological Distress Among Mothers and Children. J Pediatr Psychol, 40(8): 733–743.

[17] Li L, Qiang W, Su L, et al., 2019, Qualitative Study on Caregiving Experience of Primary Caregivers of Children with Malignant Solid Tumors. Journal of Advanced Nursing, 34(03): 228–231 + 235.

[18] Arab M, Bernstein C, Haghshenas A, et al., 2020, Factors Associated with Caregiver Burden for Mothers of Children Undergoing Acute Lymphocytic Leukemia (ALL) Treatment. Palliat Support Care, 18(4): 405–412.

[19] Maruyama JM, Pastor-Valero M, Santos IS, et al., 2019, Impact of Maternal Depression Trajectories on Offspring Socioemotional Competences at Age 11: 2004 Pelotas Birth Cohort. Journal of Affective Disorders, (253): 8–17.

[20] Peterson RK, Chung J, Barrera M, 2019, Emotional Symptoms and Family Functioning in Caregivers of Children with Newly Diagnosed Leukemia/Lymphomas and Solid Tumors: Short-Term Changes and Related Demographic Factors. Pediatr Blood Cancer, 67(2): e28059.

[21] Su Y, 2022, Single-Center Retrospective Analysis of Clinical Features and Prognosis of 472 Children with Neuroblastoma, dissertation, Chongqing Medical University.

[22] Thana K, Lehto R, Sikorskii A, et al., 2021, Informal Caregiver Burden for Solid Tumour Cancer Patients: A Review

and Future Directions. Psychol Health, 36(12): 1514-1535.

[23] Chen J, Li H, Yang Y, et al., 2019, Effects of Family Resilience and Caregiver Response on Mental Resilience of Patients with Cancer. China Health Statistics, 39(06): 943–946.

[24] Zhang B, Li L, Wang Y, et al., 2019, Analysis of Psychological Resilience of Parents of Children with Brain Tumor and Its Influencing Factors. Chinese Journal of Nursing Administration, 21(10): 1486–1490.

[25] Guo F, Qiang W, 2019, Study on Parents' Quality of Life and Its Influencing Factors in Children with Malignant Solid Tumor at the Early Stage of Diagnosis. Journal of Nursing Administration, 19(08): 545–549.

[26] Khosrobeigi M, Hafezi F, Naderi F, et al., 2021, Effectiveness of Self-Compassion Training on Hopelessness and Resilience in Parents of Children with Cancer. Explore (NY), 18(3): 357–361.

[27] Jamali A, Ghaljaei F, Keikhaei A, et al., 2019, Effect of Peer Education on the Resilience of Mothers of Children with Leukemia: A Clinical Trial. Medical-Surgical Nursing Journal, 8(2): 1–9.

[28] Che H, Guan J, Xu Y, et al., 2012, A Network Meta-Analysis of the Effects of Five Interventions on the Mental Resilience of Primary Caregivers of Children with Cancer. Medicine and Philosophy, 43(24): 46–50 + 56.