Family resilience processes among guardians caring for children and youths with leukemia

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ABSTRACT

Based on Walsh's concept of family resilience, this study aims to explain the processes and factors related to family resilience of guardians caring for children and youths with leukemia (GCYL) at a university-affiliated hospital in central Thailand. An explanatory case study is conducted. Semi-structured in-depth interviews were conducted with 21 guardians from 15 families caring for children and youths with leukemia (CYL). The interviews were recorded and transcribed for content analysis. The researcher categorized and coded the data to summarize, interpret, and validate the key study results of family resilience.

This study found that families undergo three phases when facing the situation: pre-family resilience, family resilience, and post-family resilience. In each phase, these families face changes in emotions, perspectives, and behaviors related to the factors promoting family resilience. The results of this study will benefit multidisciplinary teams providing care for families with CYL by applying the information about family resilience processes to provide services that cultivate behavioral, physical, psychological, and social growth for the families and enable them to maintain peace in family life.

1. Introduction

Recent social and economic changes in Thailand have influenced families in several ways. The changes affect the family structures, size, status, functions and roles. Generally, the family has become smaller and a nuclear family. In addition, delayed marriages have increased in the Thai population. However, divorce rates are also likely to increase. The situation in which one partner has to parent their children alone because of family separation or the loss of a spouse is on the rise [1]. Moreover, a greater number of family members with chronic diseases, such as diabetes, hypertension, and cancer, have been reported [2]. Acute Lymphoblastic Leukemia (ALL) is a chronic disease that progresses rapidly and aggressively, and requires immediate medical treatment. Several treatment methods are available, such as chemotherapy, radiation therapy, and bone marrow transplantation. Currently, more than 70% of children and youths receiving treatment remain disease-free for longer than five years or are completely cured [3,4]. However, patients must be admitted and treated at a hospital for two to four years, and the length of the hospital stay depends on their physical condition. Patients must adapt to the treatment by balancing diet and fluid intake, as well as planning activities and body movement. Compared with other chronic diseases, treatments for ALL cause more side effects, such as nausea, vomiting, loss of appetite, abnormal liver function, febrile neutropenia, and bleeding from thrombocytopenia [5]. Moreover, physical health problems can affect patients psychologically. These psychological conditions can be observed through physical, emotional, and behavioral reactions. Physical

reactions include rapid heartbeat, heart palpitations, excessive sweating, loss of appetite, and insomnia. Emotional reactions to chronic illnesses include fear of healthcare workers, medical devices, and anxiety about death. These anxious feelings cause several behaviors such as aggression, isolation, and depression [6] and negatively affect the personality development of children and youths, eventually resulting in various behaviors [3–6]– (see Figs. 1–3)

Owing to the change in the Thai family structure, family size has become smaller, and all family members have to work outside the home to earn family income; the situation in which children have cancer affects the work and financial conditions of families (e.g., medical and travel cost). Moreover, guardians who feel guilty about their children's chronic illnesses can be overprotective, making them feel safe and secure. Because the causes of chronic illness in children and treatment duration have not been confirmed, the health of family caregivers could be affected. Insufficient rest and a lack of time for selfcare can weaken physical and mental health. Such circumstances affect the responsibilities of family members, especially caregivers. A lack of family care providers may cause financial problems. In addition, family members taking on the role of caregivers must change their roles and duties, resulting in role conflict. Some may have to take on several roles, such as providing for the family and caring for children, older adults, and patients with chronic illnesses. To care for patients who can barely care for themselves, family members are required to serve the patient's needs all the time and they lack social support in the meantime [7]. Such circumstances place guardians under pressure, provoke anxiety and feelings of irritation, and cause poor emotion regulation [8]. Some families with poor adaptation or a lack of resilience when facing children's illnesses might eventually suffer from stress or depression, resulting in stressful relationships among family members [9]. However, families will understand each other and be able to accept reality better [10] after going through crises together and providing support and encouragement to enable patients to fully live while the illnesses remain [11]. Moreover, the power of the family is significant and helps strengthen relationships among family members. Accordingly, family equilibrium and resilience are essential for every family member, enabling them to deal effectively with existing crises [7,8,9,10,11].

Family resilience is the ability of a family to withstand and recover from stressful difficulties or challenges in life, which eventually strengthens the family and improves its resourcefulness [12]. Family resilience is not only a strength, common resource, or the handling of a crisis but also a dynamic process promoting positive adaptation in the context of great distress [13,14]. Resilience in each family is acquired through support from relatives, close friends, and counselors such as a coach or teacher who provides reinforcement and has faith in one's abilities and encourage one to make the most of one's life [12,13,14,15,16]. The families of children with cancer might be confused about expectations for a cure. In addition, they continually have to adapt to several aspects, such as family beliefs, roles and functions, finances, and relationships, according to treatment plans and stages of the disease [3,5,6,17]. The processes of family resilience have been developed as guidelines for social science studies and clinical practices that aim to understand the important factors that greatly facilitate resilience in individuals and a family [10,11]. These family resilience processes function as a conceptual maps for practitioners to identify and target key family processes that can reduce stress and vulnerability in high-risk situations, foster healing and growth out of a crisis, and empower families to overcome prolonged adversity [7]. In sum, there are three domains of family functioning: 1) family belief system, 2) family organizational patterns, and 3) family communication and problem-solving processes [12].

Based on literature reviews, most of the studies related to family resilience have been conducted quantitatively to explore causes of resilience and correlations between resilience and other factors [18,19,20,21,22]. Some studies have investigated the processes of family resilience; however, these studies have been conducted in participant groups such as guardians caring for children and youths diagnosed with autism spectrum disorders (ASDs) [23], families with chronic illnesses [24], and adult patients with end-stage cancer [25]. Thus far, there is a lack of a clear understanding of the processes and factors related to family resilience of guardians during the crisis of children's cancer. An investigation of the experience of its owner will result in understanding and eventually in making adequate helping plan for the targeted groups. Accordingly, this study aimed to explore the processes of family resilience of GCYL through the perceptions and interpretations of the guardians, as well as explore factors related to family resilience of GCYL. The results have important implications for developing guidelines for the promotion of family resilience in the GCYL.

2. Methods

The researcher performed an explanatory case study, which is a qualitative study that emphasizes the explanation of phenomena based on Walsh's family resilience concept [15] to explore the processes of family resilience of GCYL, starting from reviewing the literature and studies related to family resilience in families dealing with various types of chronic illnesses. This was done to
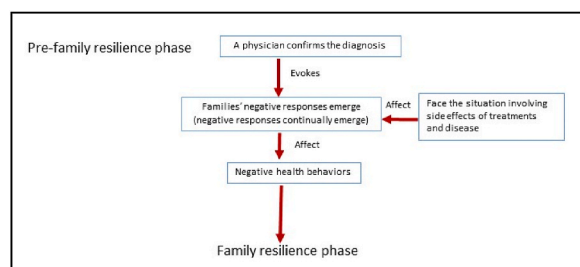

Diagram 1. Model of family resilience processes in families with CYL (pre-family resilience phase).
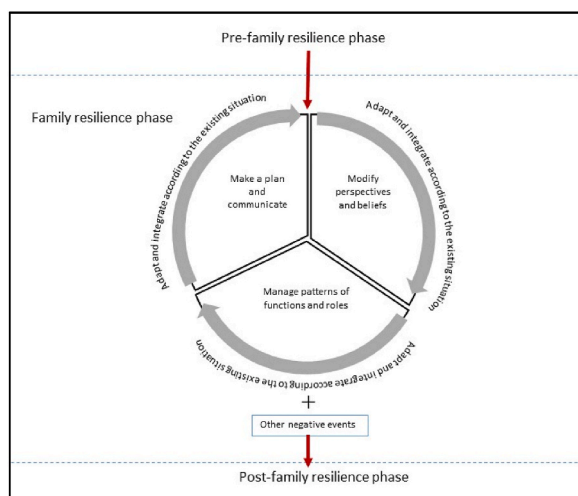
Diagram 2. Model of family resilience processes in families with CYL (family resilience phase).
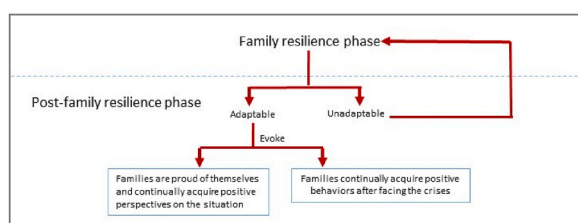

Diagram 3. Model of family resilience processes in families with CYL (post-family resilience phase).

understand the processes and factors related to family resilience and use the information obtained as guidelines for fieldwork. Subsequently, the researcher visited the study field to explore and gain an understanding of the family resilience processes of GCYL. Semi-structured, in-depth interviews were conducted with guardians caring for CYL with ALL. Semi-structured in-depth interviews were conducted with guardians caring for CYL with ALL at the Pediatric Hematology and Oncology Division of a university-affiliated hospital in central Thailand. This fieldwork involves a medical school that provides treatments for patients with complex diseases and serves as a referral hospital for hospitals in Bangkok and other provinces that specifically provide treatments for pediatric hematology/oncology patients.

2.1. Participants

The study participants were selected using purposive sampling. They consisted of the guardians (e.g., fathers, mothers, grandparents, or other family members) who closely provided care for CYL with ALL, whose ages ranged from newborns to 18 years, including both out- and inpatients receiving medical treatments at a university-affiliated hospital in central Thailand from 2020 to 2021. Additionally, guardian participants received services from me. The researcher advertised the study using notice boards and recruited participants from the Pediatric Hematology and Oncology Clinic of this university-affiliated hospital. Recruitment was conducted weekly until 30 participants from 15 families met the inclusion criteria. Ultimately, 21 participants from 15 families were interviewed. The researcher explained the project and its purposes and informed the participants that they had the rights to leave the study at any time. Prior to the start of the study, if the guardians were willing to participate in this study, they were asked to sign informed consent forms for guardians caring for children and youths with illness as well as for the use of pediatric patients' medical records in the study (ages newborn to seven years (legal representatives), seven to 12 years, and 12–18 years).

2.2. Ethical approval

The researcher applied for ethical approval for research involving human participants from the Strategic Wisdom and Research Institute, Srinakharinwirot University (SWUEC-G-002/2564E) and the Faculty of Medicine, Chulalongkorn University (IRB 171/64). Informed consent was obtained. Meanwhile, the researcher clarified the study to ensure that all guardians had a clear understanding. In addition, guardians could withdraw at any time regardless of whether the study had been completed. The researcher assured the guardians that withdrawal would not affect the treatment of their children or have any other effect. In addition, guardians were

informed that the data would be kept confidential. An aggregate of the data was presented, and no individual information was revealed. Additionally, the data were destroyed after completion of the study.

2.3. Data collection

Data were collected through in-depth interviews and observations based on handouts for semi-structured in-depth interviews. Three experts assessed the content validity, structure of the interview questions, and purposes of the study to extract information related to the processes and factors related to family resilience of GCYL at a university-affiliated hospital in central Thailand. Interviews were conducted with all participants from August to September 2021. Each participant was interviewed individually. Interviews of 30–50 min were conducted in Thailand in a hospital's private counseling room.

The interview questions were based on Walsh's concept [10]. However, apart from Walsh's framework, the researcher also allowed other information to emerge in the fieldwork using open-ended questions to inquire about general information regarding the illness, such as "In which year did your child become ill?"; "How did you feel when hearing that your child had cancer?" (i.e., to understand the initial reactions and emotions); "How has your child's cancer affected your family and what has changed?" (i.e., to explore the areas that had been affected); "How has your family adapted to or dealt with your child's illness?" (i.e., exploring the stages of adaptation). The participants narrated their stories. These questions helped them describe the situations. Field notes and audio recordings were obtained with the participants' permission. Information retrieved from the in-depth interviews was transcribed verbatim. After interviewing the fourth participant, data saturation was achieved. However, the researcher decided to explore all participants' processes of family resilience to obtain information for the promotion of family resilience in the next phase of the study; thus, the researcher interviewed all 21 participants.

2.4. Data analysis

The data analysis was performed manually by the authors. A thematic analysis integrating deductive and inductive approaches was performed [26], beginning by validating the verbatim transcription and writing a memo on the interviewees' characteristics and behaviors. Subsequently, the researcher established an analytical framework to develop a codebook based on Walsh's concept of family resilience [15]. Moreover, the information used to clarify minor themes was acquired from the interviews.

The researcher grouped, categorized, and coded the data. Three major themes and 69 codes were used to capture detailed information. The researcher provided a clear definition for each code and continually compared the consistency of the data analysis. The summarizing, interpreting, and validating of the study results were based on this concept. In addition, the information obtained was presented. The results clearly presented major themes of the discovered family resilience processes. The explanations, together with the participants' interview answers, were presented in the minor themes to comprehensively confirm data categorization. In this study, the researcher validated the data using three methods: 1) Triangulation, where the researcher collected data by performing more than one kind of methods to validate the data, including in-depth interviews and observations. The information obtained from the various methods was reviewed by the researcher to ensure the credibility of the results. 2) After completion of the data analysis, the researcher returned the results to the participants to confirm whether the results pooled by the researcher were consistent with what they wanted to express. If any inaccuracy was found, the researcher validated it with the participants to ensure the accuracy and reliability of the results. 3) Two experts conducted peer debriefing. The researcher exchanged and discussed the information with experts to refine data categorizing [26,27].

3. Results

Twenty-one guardians from 15 families provided close care for CYL with ALL aged between newborns and 18 years, including both in-and outpatients receiving treatments at a university-affiliated hospital in central Thailand from 2020 to 2021. The guardians consisted of eight mothers, eight fathers, four maternal grandmothers, one maternal grandfather, one paternal grandmother, and one elder brother.

The guardians were aged between 30 and 67 years, with the majority between 30 and 40 years. Most guardians were Buddhist. Regarding marital status, the majority were married or never married. Most had completed junior high school, were unemployed, and had to leave their jobs to provide care to the patients. Thus, most had no income. The majority of guardians earned 10,001–20,000 baht per month. When their children had cancer, their family income was insufficient and they had to borrow from various sources. These families are typically nuclear families. The number of family members ranged from three to 11; most families had approximately four to six members. Each family had two children. Most guardians performed the primary care roles throughout the course of treatment.

3.1. Processes of family resilience of GCYL

Processes of family resilience refer to the stages the families pass through to withstand and adapt to stressful challenges. These processes are divided based on the phases of resilience in the families, including pre-family, family, and post-family resilience.

Theme 1. Pre-family resilience phase

The pre-family resilience phase referred to the stages of facing difficulties when families heard that patients had leukemia. Four minor themes were identified based on the qualitatively collected data.

Minor theme 1.1: Negative responses emerged when hearing news about children's illnesses. It refers to experiencing uncomfortable emotions or physical reactions such as a fast-beating heart, numbness, and hearing loss for a few seconds when hearing from physicians that a patient has leukemia. Guardians' responses occurred immediately. Emotional and physical responses occurred simultaneously, and the sequence of occurrence was hardly recognized.

"Ah! Speechless, couldn't feel my body … [speak in a drawl]. Like … not cry, but speechless. I was stunned, it couldn't happen to us. I'd heard that things happened to people around us, but never thought it would happen to our child. I was stunned, felt like the body got hot. Wanted to say something, but it wouldn't come out, just look at each other. It was stunned, like … speechless." (Khun Pradoo, father)

Minor theme 1.2: Faced the situation involving side effects of medical treatments and the disease. It referred to facing the situation involving with patients' medical treatments or their side effects, such as lumbar punctures and intravenous injections. These circumstances evoked the guardians' negative responses.

"When she [patient] got a spinal tap, when she was doing this and that, my grandchild was in great pain. We didn't know how she would go through such crisis … We were also in pain, just hearing that she [patient] …" [stop talking, shaky voice] (Khun Lilly, paternal grandmother)

Minor theme 1.3: Negative responses continually emerged. This refers to the stage in which guardians' negative responses continually emerged because of the sight of ongoing treatments. Such responses could not be healed quickly.

"It was around over a month, or a month that I kept thinking. It happened a lot, almost every day, felt like I got stuck in that moment." (Khun Lilly, paternal grandmother)

Minor theme 1.4: Negative health behaviors emerged. It referred to changes in the eating and sleeping behaviors of the guardians resulting from the guardians having anxiety over the patients' conditions, how to provide care, and whether they would lose the patients.

"In the beginning, didn't sleep, like … worried, worried whether he would make it or not. Could it be healed? What would happen? Barely slept. It was like … focused on taking care of him all the time." (Khun Kularb, mother)

Theme 2.   Family resilience phase

The family resilience phase refers to the stages of facing difficulties from the point after the families had been informed about the patient's leukemia until the present. According to the qualitative data collected, three minor themes were discovered: modification of beliefs and perspectives, patterns of functions, and planning and communication. These changes were in accordance with the situation and the sequence of occurrence was not fixed, as discussed below.

Minor theme 2.1: Families modified their beliefs and perspectives. It refers to the stage in which families changed their beliefs and perspectives to align with the situation of their children's illnesses. In addition, they attempted to understand the causes of the disease and identify family resources. They perceived that difficulties resulting from the illness were common and could be found in any family. They willingly provided care to patients and changed themselves. Moreover, the families looked for spiritual anchors to foster the hope that they would successfully experience the illness.

"Believe that it is one season [of life] … When it comes, we have to go through it, and then the new season will come. I think, at some point, we have to change. And people around us get to practice patience, get to understand each other. Another thing, we know that the disease can be cured, and it is under doctor's supervision, we have health insurance, we have the gold card [universal coverage scheme]." (Khun Palm, father)

Minor theme 2.2: Families managed the patterns of their functions and roles. This refers to the stage in which families adjust their duties or general lifestyles to align with the patients' conditions and maintain family relationships. They continued to engage in activities previously performed together with their families. Meanwhile, one person was assigned as the key caregiver with assistance from other family members. Families could identify each family member's characteristics or limitations when performing their functions. Families also sought support such as material goods, financial support, services, information, and encouragement from people around them or agencies to cope with their children' illnesses.

"Roles have changed, from there was only grandma took care of her; now, mom also helps. When she's in the hospital, mom slept in a tiny space and got tired from taking care of her child. Then when getting home, grandma does everything, let her get some rest." (Khun Lilly, paternal grandmother)

"That time, when Nong [patient] got sick, we didn't have money [chuckle]. Mom borrowed money from my sister, borrowed her 10,000 [baht] right away. Borrowed money to cover some expenses. (Khun Kloay, mother)

Minor theme 2.3: Families made a plan and communicated. This refers to the stage at which families set the goals of providing care to align with medical plans. Goal-setting originates from the exchange of information, both verbally and nonverbally, between family members, such as clarifying treatment plans and sharing one's negative and positive emotions. The exchange of information and emotions can be used to make decisions regarding the preparation of providing care to patients. Additionally, families can anticipate future problems and plan to prevent them.

"After we'd arrived home, we wrote down, like … for this medicine, how many pills she has to take? on what day? The room, …dad installed a ventilation fan and got rid of unwanted things in the house, to get more space in the house [laugh]. He prepared it for his child." (Khun Ma-muang, mother)

"We'd rather communicate through actions like giving a hug [laugh]. She cried … in the beginning, there were tears, like … felt discouraged. We told her 'Have to stay strong.'" (Khun Sak, father)

Theme 3. Post-family resilience phase

The post-family resilience phase refers to the stage in which changes occur in families. There were changes in internal emotions, perspectives, and external behaviors. In addition, family relationships were transformed after the families had overcome difficulties. Two minor themes were discovered based on the qualitative data.

___**Minor theme 3.1: Families were proud of themselves and continually acquired positive perspectives on the situation.**___ This refers to continual positive changes in families' perspectives. Additionally, families became proud of themselves after experiencing difficult situations. Guardians typically emphasized how previous situations had caused difficulties and distress. They also emphasized how families had adapted, bringing them closer to their current goals. Such circumstances brought feelings of delight to their guardians.

"Nong [patient]'s illness, or the future, or whatever …, we'd been through them. From a rough time, and then things got better, until nowadays. Now, we're pleased that he'd recovered this much." (Khun Kularb, mother)

___**Minor theme 3.2: Families continually change their behaviors in a positive direction after facing crises**___. It refers to positive changes in families' behaviors and relationships after having experienced difficult times as well as maintaining their behaviors and relationships well. For example, families' awareness and housekeeping behaviors increased. They kept their houses clean and prepared healthy food for their families. Family bonds were strengthened by sharing and caring for each other. In addition, families were more tolerance of factors that triggered negative emotions or thoughts.

"Love each other more, support and care for each other. We also devote ourselves to each other. Whenever possible, we give each other a hand. Everyone became gentle, even a baby grandchild, we ask after him. We all love each other more." (Khun Lilly, paternal grandmother)

4. Discussion

According to the processes of family resilience in the families with CYL, the families underwent three phases of facing the situation with the disease: 1) pre-family resilience, 2) family resilience, and 3) post-family resilience. These phases are consistent with McCubbin et al.'s concept [28,29,30] explaining that family resilience can be divided into two distinct phases: adjustment and adaptation. These two phases, explained by McCubbin et al. [31] are the processes occurring in the family resilience phase (i.e., the period after the families heard the news about the patients' leukemia and then learned to adapt) discovered in this study.

This study also reveals that in each phase, families face changes in their emotions, perspectives, and behaviors linked to factors promoting family resilience. This is consistent with Walsh's concept of family resilience [15,16] explaining that the processes are dynamic, and it is necessary to understand the key factors facilitating individual resilience, which will improve the functions of family systems. For the resilience phases, the researcher discussed three issues according to the family resilience phases.

Phase 1: The pre-family resilience phase is the period in which families hear that patients have leukemia. When hearing that the patient were diagnosed with leukemia, the guardians responded negatively. Patients and their families could experience physical or emotional responses described by Elsabeth Kubler-Ross's five stages of grief [32,33], which are the psychological processes that humans go through when facing utter despair. In some cases, children's illnesses cause the loss of health or their life. Such circumstances may cause distress in the guardians and lead to negative physical responses. These conditions are typically observed among guardians caring for pediatric patients in hospital [34,35,36,37].

Guardians' responses occurred immediately and simultaneously; the sequence of occurrence was hardly recognized, which could have resulted from the uncertain trajectory of their children's illnesses. That is consistent with Mishel's uncertainty in the illness theory, which states that when guardians face their children's illnesses and cannot precisely predict the end result because of insufficient information, they may be so anxious and stressed that they cannot make decisions [38,39,40,41,42]. Moreover, families often have to deal with the side effects resulting from treatments and the disease. This is consistent with Chaisom's [43] and Miles et al.'s [44] studies, which discovered that the sight of their children in pain, having difficulty breathing, losing consciousness, and being attached to medical equipment cause stress and anxiety in guardians. These negative responses occur continually, which influences changes in the guardians' eating and sleeping behaviors. Similarly, previous studies have discovered that stress and anxiety in guardians of children receiving care in hospital cause insomnia, agitation, exhaustion, loss of appetite, and deterioration in health behaviors [45,46,47,48,49].

Phase 2: The family resilience phase is the period commencing from hearing that the patients had leukemia to the families adapting to maintaining the family equilibrium. Families changed three components of resilience, including 1) beliefs and perspectives, 2) patterns of functions and roles, and 3) planning and communication. These components are interconnected according to Walsh's family resilience concept [10,15]. Family resilience refers to a situations in which family members acquire approaches to manage their beliefs and perspectives, patterns of functions and roles, and planning and communication in dealing effectively with the crises and challenges they face to maintain family equilibrium. Similarly, this is consistent with Luthar's study [50], which explains that family

resilience is a changing process, a positive adaptation in the context of family crisis. These changes encompass beliefs, management, and communication within families. Each component involves management approaches and related factors as discussed below.

Component 1: Families modified their beliefs and perspectives by acquiring an understanding of the causes of the disease, accepting things as they were, and looking for spiritual anchors. Factors promoting the modification of beliefs and perspectives in families were such as having hope that one will be healed, faith that families can handle the situation, the viewpoint that illness is a part of life, and faith in a spiritual anchor to empower oneself. That is consistent with Walsh's family resilience concept [10,15,51,52,53,54,55], which explains that a family will give meanings to a stressful event, it is "normal" to feel stressful when a family is facing a crisis. In addition, by trying to understand the characteristics of the problems and seeking spiritual anchors, families can gain confidence in dealing with the situation. Similarly, previous studies have discovered that beliefs, hope, and positive perspectives are important factors that influence individuals to be persistent and take actions towards determined goals [56,57,58,59,60].

Component 2: Families modified the functions or patterns of their family routines. They adjusted their duties and were assigned as key caregivers. In addition, they adjusted their routines to fit the situation of illness while maintaining family relationships through old routines, finding new ways to maintain contact while staying away from each other, paying close attention to other siblings, and finding resources outside the family to help them deal with their children's illnesses. This is consistent with Walsh's concept of family resilience [10,15,51,52,53,54,55], which explains that families will transform relationships, organize their duties, create new patterns of interactions to match new conditions, and find social and financial resources to balance work and family life. This is consistent with studies conducted by Ren et al. [61], Maravilha et al. [62], Westergaard et al. [63], and Israr et al. [64], who discovered that social support involving information, psychological support, material goods, financial support, and services have positive impacts on individuals' stress and anxiety management. Support assists individuals in effectively dealing with situations that they face. Perceived social support functions as a buffer between adaptation and stressful events [65,66,67,68,69,70]. Moreover, Salin et al. [71] discovered that positive family relationships have a positive impact on families' decision-making and problem management.

Component 3: Families modified plans and communication to set goals and share information. They fully complied with the physicians' treatment plans, clarified information to everyone, shared feelings with each other, prepared well for the provision of care, and planned to deal with future problems. This is consistent with Walsh's concept of family resilience [10,15,51,52,53,54,55], which explains that clarifying information about the existing and expected situations with families will help reduce anxiety. Communication revealing both feelings and information helps promote compassion among family members, which eventually contributes to decision-making and practical goal-setting. This is consistent with the studies conducted by Sangkla and Chancharoen [72], Rukumnuaykit et al.,[73] and Thianlai and Hutaphaed,[74] who discovered that communication consisting of the exchange of information and feelings is a process that enhances the understanding of others' thoughts and feelings, which improves the anticipation of and how to deal with future problems, as well as improve communication skills and intimacy.

During the family resilience phase, aside from children' illnesses, families may face other crises, such as the decline of major income sources, illnesses of other family members, and divorced parents. These crises triggered negative responses and forced families to readapt to the three components of family resilience. Adaptation stages of the three components were not in successive order; they may have been combined or returned to the previous components according to the situation currently faced by each family. Adaptation continued until the families felt at ease with their current situation and subsequently moved to the post-family resilience phase. This is consistent with Luthar et al.'s [13] and Walsh's [12,54] family resilience concepts, which explain that family resilience entail dynamic processes, beliefs and perspectives, patterns of functioning, and communication planning. These elements interact reciprocally to support positive adaptation in the context of great difficulty.

Phase 3: Post-family resilience is the period during which families adapt to daily life and overcome difficulties. In this phase, the families were proud of themselves and acquired positive perspectives. They also acquired and maintained positive behaviors and family relationships after overcoming these difficulties. That is because family resilience involves adaptation, enables several families to "return" to their old life prior to traumatic events and enables some families to "move forward" under the changing circumstances. [75] That is consistent with Leitz's study [76] discovering that families find new ways of adaptation and maintain new behaviors when being faced with stressful events. Families benefit from constantly sharing thoughts and feelings. They will be able to laugh together and return to the family belief system to seek greater goals. In addition, they can identify strategies that strengthen themselves over time, as well as provide support for other people when they have enough strength.

To understand the processes of resilience in families with CYL, it is necessary to understand them from the beginning of the family crisis to the point where they overcome the crisis. This will enable families and multidisciplinary teams to plan ways to effectively deal with it or provide adequate support. It is useful for guardians or multidisciplinary teams providing care for families with CYL to acknowledge that family resilience in patients' families is a dynamic process and then find approaches or promote related factors to enable these families to achieve family resilience when dealing with difficult situations.

5. Limitations

This study is a single-center study; it is limited to one unit of families with experiences in providing care for CYL patients receiving treatment from one hospital. Therefore, the information obtained does not reflect the overall picture of family resilience in GCYL. However, 21 guardians voluntarily provided information for this study. Such a sample size is quite large compared to a case study in general, which requires 10 sample size. In addition, it is recommended that a future study should include more study settings to explore the similarities/differences of a pediatric cancer unit in each hospital compared with the hospital in this study. Each context may differ from the current hospital in terms of beliefs systems or adjustment. A comparison between children and youths with different types of cancer should also be conducted. In addition, a quantitative investigation should be conducted in the future to explore additional

factors to be included in the model; the researcher might consider adding more steps to the validation of data, such as involving outsiders in the process or performing investigator triangulation.

6. Conclusion

This study explains the processes of family resilience reflected in the experiences of guardians caring for CYL with ALL and their interpretations, which provides clearer information about the processes of family resilience among families caring for children with ALL. The results provide new integrative knowledge in which Walsh's concept of family resilience is linked with McCubbin et al.'s concept. The results will benefit multidisciplinary teams providing care for families with CYL as they can apply knowledge of the factors promoting family resilience and its processes to perform interventions as follows. First, knowledge can be applied to the provision of services cultivating behavioral, physical, psychological, and social growth for families, enabling them to maintain peace in family life. In addition, a lesson-learning method based on the information gained from this study could be used to develop guidelines for GCYL, aiming to promote families' understanding of the situation affecting them. In addition, learning about guardians' experiences in the guidelines will provide insights into the direction of family adaptation. These interventions can prevent psychological and behavioral problems among family members.

Declarations

Author contribution statement

Surangkana Suparit: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.
Thasuk Junprasert: Conceived and designed the experiments.
Nanchatsan Sakunpong: Conceived and designed the experiments.

Data availability statement

Data included in article/supplementary material/referenced in article.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Surangkana Suparit reports financial support was provided by National Research Council of Thailand (NRCT).

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.heliyon.2023.e17205.

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