Analyzing Factors related to Parents' Self Efficacy with Children's Cancer Treatment

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Abstract

The incidence of childhood cancer in Indonesia increased annually. The successful treatment of childhood cancer remains low. One of the factors that influence cancer care was parent's self-efficacy. Adequate parent's self-efficacy would improve the quality of care in children with cancer, however, limited studies examine factors associated with parent's self-efficacy. The aim of this study was to identify factors associated with parent's self-efficacy in order to undergo cancer treatment. The type of research was descriptive analytic. The population was parents with cancer children. This study was conducted in childhood cancer shelter home community, 40 parents were chosen using the consecutive sampling technique. Self-efficacy was measured using a questionnaire. Data were analyzed with univariate and bivariate analysis. The results showed that 23 (57.5%) of parents have higher self-efficacy. There were significant relationship between enactive mastery experience (p =0.011), vicarious experience (p=0.030), verbal persuasion (p=0.003), the nature of the task faced (p=0.022), external incentives (p=0,009), the status or role of the individual in the environment (p=0.024) and education level (p=0.031) with parent's self-efficacy. While the physiological state (p=0.284), parent's sex (p=0.277), parent's age (p=0.513), and parent's culture (p=0.174) were not significantly associated with parental self-efficacy in the treatment of childhood cancer. Based on these results, it was very clear that parents who have higher self-efficacy are expected to carry out their duties better, so nurses should provide opportunities and support for families to demonstrate the capabilities and competence of the family to meet the care needs for child cancer.

Keywords: Cancer, children, parents, self-efficacy.

Introduction

Currently, cancer is a serious disease that threatens children's health in the world, every year there is an increase in the number of cancer patients. According to the National Cancer Institute or NCI (2009), it is estimated that more than six million new sufferers of cancer each year. From existing cancer cases, NCI (2009) estimates that four percent (4%) of them are cancer in children. It is estimated that there were 10,730 new cases of cancer in children aged 0-14 years in the United States (NCI, 2009). The mortality rate of cancer is quite large, which is around 50% (NCI, 2009).

In Indonesia, child cancer is currently a big problem (Suyudi, 2002). According to Gatot (2008), the prevalence of childhood cancer in Indonesia reaches four (4)%, meaning that from all the live birth rates of Indonesian children, four (4)% of them would experience cancer. Currently, cancer is the top ten major diseases that cause child mortality in Indonesia (Ministry of Health, 2011).

Cancer treatment in children aims to control the amount and spread of cancer cells. According to NCI (2009), cancer treatment in children includes chemotherapy, biological therapy, radiation therapy, cryotherapy, bone marrow transplantation, and peripheral blood stem cell transplantation. Cancer treatment in children is carried out continuously and lasts a long time, the role of parents in supporting the treatment of children with cancer is very important because the parents are the primary caregiver of the child.

Family-centered care emphasizes the importance of synergy between parents and nurses in caring children with cancer. In the application of family-centered care, parents are expected to know information about the condition and care of their children (Moretz and Black, 2007). Setiadi (2008) said that children's lives depend on family support. When children experience cancer, the family is fully involved in the treatment and treatment process, especially when undergoing chemotherapy. Family support is able to reduce children's anxiety levels. Children feel happy, safe, comfortable, so they have the spirit of life to undergo chemotherapy treatment. The most important form of family support is to fully understand their duties and roles in carrying out child care. The role of the family in resolving health problems is very important for every aspect of health care for family members (Friedman, 1998).

The role of the family is influenced by their beliefs in carrying out their duties towards the treatment of the child. In a study conducted by Dunst and Trivette (2009), states that the application of family-centered care is strongly influenced by the belief in parental self-efficacy (self-efficacy beliefs). Self-efficacy is a belief that someone has about competence or effectiveness in a particular area (Woolfolk, 2004). In addition, self-efficacy can also be defined as a person's beliefs about his ability to regulate and decide on certain actions needed to obtain certain results (Bandura, 1995). So that it can be concluded that self-efficacy is the level of a person's confidence in his ability to take action so as to achieve a predetermined goal. Parents who have high self-efficacy are expected to carry out their duties in undergoing chemotherapy treatment for cancer children properly.

Research by Streisand et al. (2005) shows that low self-efficacy also influences the high level of stress experienced by parents who have children with chronic pain. Stress experienced by parents will affect the management of pediatric diseases, so that it may worsen childcare (Streisand et al., 2005). Parents who are caring for children with chronic pain may have experience of stress, insecurity, and depression in caring for children with cancer. Parents would face various stressors that come from the child's environment or parents related to treatment and care for cancer children. According to Harper, Peterson, Uphold, Terrance, Albercht, Taub, et al. (2013) in the initial phase of treatment for cancer children, parents would experience distress in the form of anxiety, negative mood, lack of confidence, and depression. Emotional distress experienced by parents would cause long-term reactions and will slow child treatment and increase the cost of caring for children with cancer (Harper, Peterson, Uphold, Terrance, Albercht, Taub, et al., 2013).

Parents should be able to control themselves as caregivers in children with cancer, by

understanding the responsibilities for the family. Treatment for cancer children must be family-centered (family-centered care). The role of parents in handling children who are suffering from cancer is to understand the condition of their child as it is, both positive and negative, advantages and disadvantages of treatment or any alternatives that are appropriate to children's needs of, intervene at home, conduct periodic evaluations of any process of children health, and being positive and confident in handling child development (Baker et al., 1997; Melander, 2002). Self-efficacy that is owned by parents who have children with leukemia associated with the belief that he has the ability to take the expected action. Efforts to treat cancer in children are influenced by the expectation of results (expectation of outcomes) in the form of recovery of children and different self-expectations of parents.

Parents' belief in self-efficacy according to Bandura (1997) is influenced by the experience of parents facing obstacles (enactive mastery experience) when parents passed obstacles, it would increase individual self-efficacy. Whereas, if the experience ends up failing then it might decrease individual self-efficacy. Success is the most influential source of one's self-efficacy because it is a personal experience. Success or failure depends on the individual's perception of self-failure and has the confidence to overcome the obstacles experienced (Bandura, 1997). Other factors that influence self-efficacy in parents are other people's experiences, social persuasion, physiological and emotional states of the individual. In addition, according to Bandura (1997), the high and low self-efficacy of a person in each task varies greatly which can also be influenced by gender, age, level of education, culture, nature of tasks faced, external incentives, and status or the role of individuals in the environment.

"Rumah Kanker Cinta" is one of the halfway houses for cancer children who attend cancer treatment. "Rumah Kanker Cinta" every month accommodate around 120 parents with children who have cancer who will be hospitalized in the Bandung region. The results of preliminary interviews with parents found that many parents were not sure about the care and healing of their children so that when they took care of their children they were less serious. The results of interviews conducted to 10 parents with cancer children at the "Rumah Kanker Cinta" showed that 6 parents said they were unsure about the treatment of their children, 3 felt confident, and 1 person felt doubtful. Most parents do not bring their children on time for chemotherapy, and some say they will not continue chemotherapy. As a child nurse, nursing services should be able to facilitate families in various forms of health services holistically, listen to family complaints, exchange ideas, and help find alternative solutions to problems by conducting health education or by helping parents understand the child's chemotherapy treatment process. Nurses should be able to identify things that affect self-efficacy in children with cancer to make an appropriate nursing intervention to improve parental self-efficacy so that it can support the care of cancer children. The purpose of this study was to determine the factors associated with self-efficacy (self-efficacy) in parents undergoing cancer treatment of children at the "Rumah Kanker Cinta".

Research Method

The research design of this study was the descriptive correlative using the cross-sectional design (Polit & Beck, 2008; Polit & Hungler, 1999). The independent variables in this study were enactive mastery experience, vicarious experience, verbal persuasion, and physiological state. While the dependent variable in this study was self-efficacy in parents undergoing treatment for children with cancer. The population in this study were all parents who had children with cancer at the "Rumah Kanker Cinta", an average of 32 parents and children per month who stayed at the "Rumah Kanker Cinta". The sample in this study was chosen by consecutive sampling. The inclusion criteria in this study were parents who had cancer children who were undergoing cancer treatment, for at least 1 month and the exclusion criteria include the parents were not the primary caregiver of the client. The number of samples obtained in this study was 40 respondents.

Parental self-efficacy data was measured using the instrument of self-efficacy developed by researchers based on the theory of Bandura (1997). The instrument validity test was carried out on 12 respondents at another halfway house. For tables tα = 0.05 degrees of freedom (dk = n-2), if the value of t count> t table means valid. The instrument is declared valid if the value of t count> 0.4973. In this study the value of t count ranged from 0.516 - 0.887; thus the instrument of self-efficacy is declared valid. The reliability test of the instrument carried out in this study used the Spearman Brown formula to determine the reliability of the test. In this study, the average value for reliability testing is around 0.765 where the reliability test value is> 0.600 so that the instrument is declared reliable.

The results showed that the data were normally distributed with a value of p> 0.05 based on the Shapiro Wilk test because the sample was less than 50 people (p = 0.480). Thus the statistical test performed is the parametric test. This bivariate analysis was conducted to test the hypothesis with different proportional tests using Pearson, Spearman, and chi-square statistical tests, and determine the magnitude of the relationship between the two independent and dependent variables. This statistical analysis uses a significance level of α 5% (p <0.05)

Research Results

Characteristic of children in the "Rumah Kanker Cinta".

Table 1 Characteristic of children (n = 40)

Characteristic	Frequency (n)	Percentage (%)
Age		
1–3 years (Toddler)	11	27.5
4–6 years (Preschool)	13	32.5
7–12 years (School)	10	25
13–19 years (Adolescent)	6	15
Sex		
Male	23	57.5
Female	17	42.5
Type of Cancer		
Acute Lymphoblastic Leukimia (ALL)	29	72.5
Acute Myeloblastic Leukimia (AML)	2	5
Retinoblastoma	6	15
Limfoma	1	2.5
Wilms Tumor	1	2.5
SLE	1	2.5
Year of Cancer Diagnosis		
2015	16	40
2014	12	30
2013	8	20
2012	2	5
2011	2	5
Treatment		
Chemotherapy	40	100
Radiotherapy	0	

Chemotherapy Cycles		
1–10	23	57.5
11–20	3	7.5
21–30	0	0
31–40	1	2.5
41–50	2	5
51–60	2	5
61–70	3	7.5
71–80	5	12.5
81–90	1	2.5
Children's Caregiver		
Mother	31	77.5
Father	4	10
Mother and Father	5	12.5

Table 2 Parents' Self- Efficacy levels (n = 40)

Self Efficacy	Frequency (n)	Percentage (%)
High Self-efficacy	23	57.5
Low Self-efficacy	17	42.5

Table 3 Factors related to self-efficacy in parents with children in cancer treatment (n = 40)

Variable	Frequency (n)	Percentage (%)	Self Efficacy
Enactive mastery experience			
Positive experience	32	80	p=0.011
Negative experience	8	20	
Vicarious experience			
Positive experience	33	82.5	p=0.030
Negative experience	7	17.5	
Verbal persuasion			
Positive verbal persuasion	28	70	p=0.003
Negative verbal persuasion	12	30	
Physiological state			
Mild Stress	20	50	p=0.284
Moderate-severe stress	20	50	

Table 1 shows that almost half of the respondents were in the preschool age range (4 to 6 years). The majority of children with cancer were male, 23 people (57.5%). Based on the type of cancer suffered by children, most children suffer from ALL as many as 29 people (72.5%). As for the first time diagnosed with cancer, nearly half of children diagnosed with cancer in 2015 were 16 people (40.0%) and in 2014 there were 12 people (30%). 40 children (100%) have chemotherapy. At the time of the study, most of the children were undergoing a chemotherapy cycle in the range of cycles 1 to 10 cycles as many as 23 people (57.5%). In addition, almost all of the children were accompanied by their mothers, which were 31 people (77.5%). While a small number of them were only accompanied by their father, there were 4 people (10.0%) and there were also those who were accompanied

by mothers and fathers of 5 people (12.5%).

Table 2 shows that the majority of parents have high self-efficacy as many as 23 people (57.5%), and nearly half of parents have low self-efficacy (as much as 17 people) (42.5%).

Factors Associated with Self Efficacy

Factors related to parents' self-efficacy of children with cancer treatment at the "Rumah Kanker Cinta" describe as follows.

Table 3 shows that there is a significant relationship between enactive mastery experience ($p = 0.011$), vicarious experience ($p = 0.030$), verbal persuasion ($p = 0.003$) with parental self-efficacy, while the physiological state does not have a significant relationship with parental self-efficacy ($p = 0.284$)

Discussion

Parents' Self Efficacy

Cancer is chronic diseases that appear in childhood and have effects to children's quality of growth. Cancer is a chronic disease that brings many problems for sufferers because of the process of the disease or the treatment. The results of this study indicate that most children suffer from ALL as many as 29 people (72.5%) and most children with cancer aged 1-6 years as many as 24 people (60%). As for the majority of children with cancer were males, 23 people (57.5%). This is in line with the latest update from NCI (2010) which states that leukemia is the most common type of cancer in children aged 0–19 years.

Cancer in children require treatments including chemotherapy. The results of this study showed that all children with chemotherapy have various cycles and most (57.5%) have a chemotherapy cycle in the range 1 to 10 cycles. Chemotherapy treatment had a therapeutic effect and side effects. Side effects include physical problems, such as children susceptible to infection, easy bleeding, fatigue, lethargy, hair loss, mucositis, nausea, vomiting, diarrhea, constipation, decreased appetite, neuropathy, hemorrhagic cystitis, urinary retention, facial to be round and translucent (moon face), sleep disturbances, and fertility of adult patients. In addition to physical problems, children undergoing chemotherapy can also experience psychosocial problems, such as mood disorders, anxiety, loss of self-confidence, decreased self-perception, depression, and behavioral changes that affect children unable to attend school (Hockenberry et al., 2010). All of these problems greatly influence the quality of life of children. Quality of life in children decreases. To overcome this problem, it is very necessary for the active roles of parents in caring for children with cancer.

Parents are very important sources in caring for cancer children. This is in accordance with the family-centered care concept that includes two concepts which are enabling and empowerment. Professional enabling families are formed by creating opportunities to demonstrate family abilities and competencies to gain new abilities to meet children's needs. Empowerment describes the professional interaction with the family to maintain or get a sense of control in everyday life and appreciate the positive changes that result from family behavior in strengthening family abilities (Hockenberry & Wilson, 2009). The results showed that nearly half (45%) of parents were in the age range of 31 to 40 years or in the productive age range. At this time parents will try as much as possible to seek treatment and healing of their children (Hockenberry & Wilson, 2009).

Self-efficacy is a model of health beliefs that predicting the possibility of individuals in taking an active role in their and others' health care. The ability and confidence of parents in caring for children with cancer would be seen from the self-efficacy that parents have. The self-efficacy study on parents with child cancer treatment at the "Rumah Kanker Cinta" shows that most parents in undergoing child cancer treatment have high self-efficacy and almost half of the parents have low self-efficacy. The ability or high confidence in caring for children with cancer is very supportive of the process of care, treatment, and healing of children which in the end is expected to improve the quality of life of children with cancer.

The results of this study are in accordance with the research of Harper, et al. (2013) conducted in three hospitals in the USA to parents of children whose children were

diagnosed with cancer, the study showed that most parents have high self-efficacy. High self-efficacy in parents makes children calm and comfortable before treatment and during treatment procedures, one of which is chemotherapy. This makes parents' anxiety decrease as long as children undergo cancer treatment. Parents' self-efficacy influences mid-term and long-term distress during a child's treatment procedure, so parental coping skills in overcoming challenges during a child's treatment procedure become adaptive is important.

Meanwhile, research in Brazil by Alves, Guirardello, & Kurashima (2013) shows different results where parents of children with cancer have a higher level of stress and anxiety, especially young adults parents, young children, and children newly diagnosed with cancer. The fear of child mortality and the impact of the disease on children's quality of life is a stressor that makes parents more stressed and anxious. This causes parents to have lower self-efficacy and are unable to care for their children who have cancer (Alves, Guirardello, & Kurashima, 2013). Therefore, parents' self-efficacy greatly determines the quality of childcare. Nurses should be able to provide support to help parents deal with the stress they experience and have positive coping in dealing with their child's cancer.
Parents who have higher self-efficacy will carry out their role in caring for their children not only at low levels of difficulty but also at a high level of difficulty, compared to parents who have low self-efficacy, such as when their children experience various complaints after chemotherapy. Parents' effort in carrying out their roles can be seen in increasing actions when facing failures or difficulties and how parents implement alternative actions that can make it achieve success. In addition, parents who have high self-efficacy will be able to carry out their roles in a wide range. Parents will learn from the experiences they have or learn from others in caring for their children.

In this study, information was obtained that parents believed they were able to care for children with chemotherapy treatment and were able to deal with complaints before chemotherapy, and side effects after chemotherapy. High self-efficacy make the experience to deal with and resolve obstacles. Difficulties and obstacles experience teaches that success should be accompanied by continuous efforts.

Analysis of Factors Associated with parents' Self Efficacy

Based on the results of research, factors related to self-efficacy (self efficacy) to parents in cancer treatment is enactive mastery experience ($p = 0.011$), vicarious experience ($p = 0.030$), and verbal persuasion ($p = 0.003$), while physiological state not related to parental self-efficacy ($p = 0.284$). Enactive mastery experiences are experiences of success or failure in the past as an effort to achieve treatment results. According to Bandura (1997) experience of success is the most influential source of one's self-efficacy because it is based on personal experience. The success experience would increase expectations for overcoming tasks well. After that, strong self-confidence is developed, the negative effects of failure can be reduced, even failure experienced will increase self-resistance and can overcome the most difficult obstacles. Based on the results of this study, the higher the enactive mastery experiences, the higher the self-efficacy of the parents. Parents' confidence in their efforts would make their children recover. Self-experience in treatment for children is a motivation for parents to continue in trying as much as possible for children recovery because parents also already know the positive effects of chemotherapy.

Vicarious experience is an experience gained by observing actions taken by others. When someone is unsure of the abilities they have, or when they have very limited personal experience, they will learn from other people's experiences (Bandura, 1997). They convince themselves that if other people can do it they are also able to do it. The results of this study indicate that the higher the vicarious experience, the higher the self-efficacy of parents. This study shows that parents get support from other parents so that parents continue to motivate themselves to succeed by learning the experiences of other parents who have succeeded.

Verbal persuasion is a condition that an individual is convinced by another person

(the surrounding environment) who has the ability to achieve the goal. According to this study, the higher the verbal persuasion, the higher the self-efficacy of parents. In this study, parents received support from other patients' parents, moral and material support from owners of shelters, health workers and families. According to parents, good suggestions from people around them are motivating parents to become more confident about children's treatments.

This study shows that there is no significant relationship between parents' physiological state with self-efficacy. This is probably due to the high spirit of parents who are not tired to seek the best care and treatment for children. Meanwhile, in a study conducted by Harper, et al. (2013); Alves, Guirardello, & Kurashima (2013); and Goldbeck (2006) showed that there was a significant relationship between stress levels, anxiety, and quality of life of parents with parental self-efficacy in undergoing treatment for their children. The higher levels of stress, anxiety, poor quality of life, maladaptive coping, abilities and beliefs may reduce parents in caring for their children as a result of low parental self-efficacy.

Conclusion

Parents are very important for caring for their cancer children. This is in accordance with the family-centered care concept which includes the implementation of enabling and empowerment. The ability and confidence of parents in caring for children with cancer is seen from the parents' self-efficacy. This study shows that most parents have high self-efficacy and almost half of the parents have low self-efficacy. Parents with cancer children in this study have high ability or confidence in caring for their children with cancer. This would support the process of care, treatment, and healing of children which ultimately is expected to improve the quality of life of children with cancer.

This study shows a significant relationship between enactive mastery experience ($p = 0.011$), vicarious experience ($p = 0.030$), verbal persuasion ($p = 0.003$) with self-efficacy in parents. While the physiological state ($p = 0.284$) does not choose a significant relationship with the self-efficacy of the person. Self-efficacy is obtained from the learning process and is formed and grown in a person that influenced by various factors. The higher the self-efficacy, the more capable and confident parents in caring for their children.

Parents who have high self-efficacy are expected to carry out their duties in undergoing chemotherapy treatment for cancer children properly. Families should be involved in caring for children with cancer. Nurses should also provide opportunities and support for families to demonstrate their abilities and competencies to meet children's needs. Nurses, health workers, and peer groups are expected to provide continuous support and motivation for parents who still have low self-efficacy.

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