

## Factors predicting maternal coping with childhood cancer: part I

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Factors predicting maternal coping with childhood cancer: part I

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Songkla Med J 2007;25(3):163-170

### Abstract:

*Childhood cancer is a life-threatening disease that has an impact on a child's quality of life and which causes physical and psychological stress to the mother. A study of factors connected to the ways mothers deal with childhood cancer can guide pediatric oncology nurses to assist mothers to cope effectively with the situation. Coping effectively with this matter would consequently lead to an improvement of the child's quality of life.*

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This study aimed to examine factors which can predict maternal coping with childhood cancer at 4–6 weeks after a child had been diagnosed with cancer. Seventy-six mothers whose children were newly diagnosed with cancer participated in the study during the 4–6 weeks stage. Seven questionnaires were used in this study, comprising: the Demographic Data Questionnaire, the Caregiver Role Stress Index, the Laffrey Health Conception Scale, the Personal Resource Questionnaire, the Rosenberg Self-esteem Scales, and the Knowledge in Caring for Children with Cancer Questionnaire. The reliability of these questionnaires ranged from 0.81–0.94. Descriptive statistics and multiple regression were used to analyze data.

The results indicated that maternal health status ( $\beta=.36, p<.001$ ), maternal social support ( $\beta=.30, p<.01$ ), and maternal stress ( $\beta=.36, p<.001$ ) were predictors of maternal coping at 4–6 weeks after the child was diagnosed with cancer. These three predictors could explain 42% of the total variance of maternal coping with childhood cancer.

The findings support the stress, appraisal and coping results of Lazarus and Folkman and are congruent with previous studies of childhood cancer. Nursing interventions for reducing maternal stress, and enhancing maternal health status and maternal social support are suggested to promote effective coping in mothers.

**Key words:** maternal coping, childhood cancer

## บทคัดย่อ:

โรคมะเร็งในเด็กเป็นโรคเรื้อรังร้ายแรงที่ส่งผลต่อคุณภาพชีวิตเด็กป่วยและความเครียดของมารดา การศึกษาปัจจัยทำนายการเผชิญความเครียดของมารดาสามารถเป็นแนวทางในการพยาบาลเพื่อลดความเครียดและส่งเสริมการเผชิญความเครียดที่มีประสิทธิภาพของมารดา อันจะส่งผลต่อการปรับตัวในการเผชิญความเครียดและคุณภาพชีวิตที่ดีของเด็กป่วยโรคมะเร็งต่อไป

การศึกษานี้มีวัตถุประสงค์เพื่อศึกษาปัจจัยทำนายการเผชิญความเครียดของมารดาเด็กป่วยโรคมะเร็งในระยะ 4–6 สัปดาห์หลังจากเด็กได้รับการวินิจฉัยโรคมะเร็ง มารดาเด็กป่วยโรคมะเร็งที่ได้รับการวินิจฉัยเป็นครั้งแรกจำนวน 76 คน เข้าร่วมในการศึกษาเครื่องมือวิจัยประกอบด้วยแบบสอบถามข้อมูลส่วนบุคคลของมารดาและผู้ป่วยเด็กโรคมะเร็ง แบบสอบถามการเผชิญความเครียดของมารดา แบบสอบถามความเครียดในบทบาทผู้ดูแล แบบสอบถามแหล่งสนับสนุนทางสังคม แบบสอบถามภาวะสุขภาพ แบบสอบถามความรู้สึกมีคุณค่าในตนเอง และแบบสอบถามความรู้ของมารดาในการดูแลเด็กป่วยโรคมะเร็ง แบบสอบถามมีค่าความเที่ยงระหว่าง 0.81–0.94 วิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนาและสถิติถดถอยพหุคูณ

ผลการศึกษาพบว่า ภาวะสุขภาพของมารดา ( $\beta=.36, p<.001$ ) แหล่งสนับสนุนทางสังคม ( $\beta=.30, p<.01$ ) และความเครียดของมารดา ( $\beta=.36, p<.001$ ) สามารถทำนายการเผชิญความเครียดของมารดาเด็กป่วยโรคมะเร็งได้ร้อยละ 42

ผลการศึกษานี้ สนับสนุนกรอบแนวคิดทฤษฎีความเครียดและการเผชิญความเครียดของ Lazarus และ Folkman และการศึกษาวิจัยที่ผ่านมาเกี่ยวกับการเผชิญความเครียดของมารดาเด็กป่วยโรคมะเร็ง ความรู้ที่ได้จากการศึกษานี้สามารถนำไปใช้เป็นแนวทางในการพยาบาลเพื่อส่งเสริมการเผชิญความเครียดของมารดาเด็กป่วยโรคมะเร็งได้

**คำสำคัญ:** การเผชิญความเครียดของมารดา, โรคมะเร็งในเด็ก

## Introduction

Childhood cancer is a life-threatening disease that has an impact on both children and their families. After a significant advancement in the treatment of childhood cancer, the overall survival rate of childhood cancer has risen to approximately 80%.<sup>1</sup> Children who survive cancer may be left with

physical and psychosocial sequelae which affects the child's quality of life<sup>2</sup> and may cause posttraumatic stress in mothers who had the most significant roles in caring for their ill children.<sup>3</sup> The most stressful periods reported by mothers were within 24–48 hours of the first diagnosis;<sup>4</sup> the first two months after treatment; and when a cancer recurs.<sup>5–6</sup> Mother's stress

experiences included changes in maternal roles, health problems, distress and uncertainty about the child's illness and treatment, and financial strain. Several studies reported that there were both positive and negative impacts on mothers' physical and psychological health.<sup>7-9</sup> The positive effects of childhood cancer reported by mothers include a feeling of being stronger and closer to their child and to other family members,<sup>8-9</sup> and the development of a more positive relationship with spouses.<sup>7</sup> The negative impacts included stress; anxiety and fear; uncertainty about the child's illness and its treatment; and negative health effects such as severe stress, headache, insomnia, and weight loss.<sup>7-9</sup>

By considering the effect of maternal stress on her child, there is the evidence that a child's coping abilities are influenced by the mother's level of anxiety and distress. Extremely stressful parents are less able to encourage their child to develop adaptive coping strategies.<sup>10</sup> Furthermore, it was reported that the child's ways of coping are strongly influenced by the mother's way of coping.<sup>10-12</sup> Mothers who understand the nature of the child's illness, the treatment and what is to be expected could decrease the child's fears of painful procedures and could assist him to cope with his illness and its treatment.<sup>13</sup> Thus, promoting effective maternal coping in order to reduce maternal stress will have a positive effect on a child's ability to cope with cancer.

When considering the factors which influence the maternal ability to cope with childhood cancer, many recent studies have reported maternal coping depends on elements such as: social support,<sup>7-8, 14</sup> self-esteem,<sup>9</sup> maternal stress,<sup>7-8, 11, 13</sup> health status,<sup>7-8, 11, 15</sup> and understanding of childhood cancer.<sup>7</sup> Personal factors related to maternal coping such as maternal age<sup>16</sup> and education level were reported.<sup>17</sup> However, mothers' coping strategies did not show any difference in relation to cancer treatment, stage, time since diagnosis, or type of cancer.<sup>11, 18-19</sup>

To date, there is little knowledge regarding the factors predicting maternal coping with childhood cancer at the first diagnosis in Thailand. A study of factors predicting maternal coping with childhood cancer in the south of Thailand will provide important information for pediatric oncology nursing

staff to enhance effective coping in mothers. As a result, children will be better able to cope with cancer and their quality of life will be improved.

### Conceptual framework

The stress and coping theory of Lazarus and Folkman<sup>13</sup> is used to explain the predicting variables in this study. A mother's perception of childhood cancer seems to be influenced by: her primary appraisal of the childhood cancer diagnosis and its life-threatening implication; her maternal role, and the potential for harm to others members of the family. This appraisal in turn influences the secondary appraisal in which mothers evaluate what, if anything, can be done to overcome or prevent harm or loss. The way that mothers appraise is influenced by their knowledge and experiences with cancer, coping style, self-esteem or belief about self and ability to adopt an appropriate behaviors and develop skills in caring for their children. Once the stressful situation is appraised, various coping strategies and available coping resources are used to cope with maternal stress.

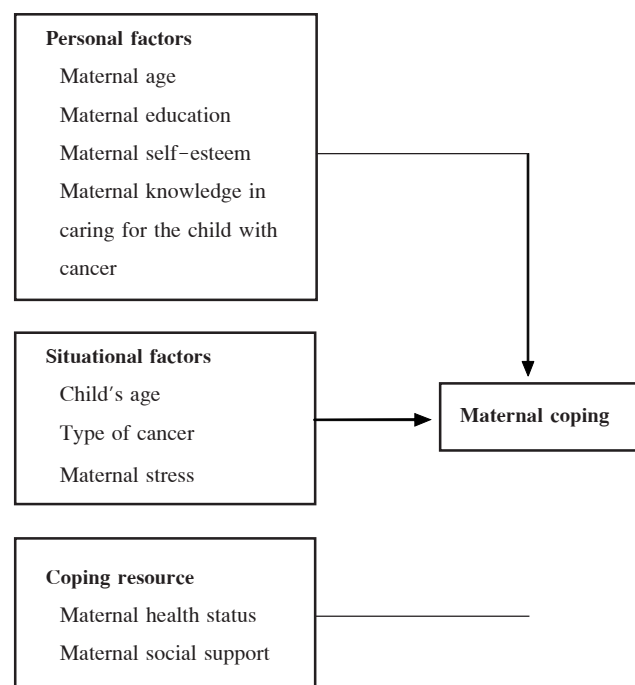


Figure 1 A hypothesized conceptual framework of maternal coping with childhood cancer at 4-6 weeks after the child was diagnosed with cancer

In this study, maternal health status and maternal social support were viewed as coping resources. Maternal health status was viewed as a physical resource of health and energy whereas maternal social support was viewed as an environmental coping resource which assists mothers to cope with stress. Maternal age and education level, maternal self-esteem and maternal knowledge in caring for the child with cancer were personal factors influencing maternal appraisal and coping. Maternal stress, child's age and types of cancer were situational factors influencing maternal appraisal and coping. These factors were expected to influence maternal coping with childhood cancer at 4–6 weeks after the child was diagnosed with cancer. The conceptual framework of this study is illustrated in Figure 1.

## Materials and methods

This predictive correlational study aimed to examine factors which can predict maternal coping with childhood cancer in mothers residing in the south of Thailand. The study was conducted at the pediatric ward of two tertiary care hospitals, located in the same district of Songkhla province. Seventy-six mothers were selected by purposive sampling with inclusion criteria: primary caregivers of a child aged 1–14 years who had been diagnosed with cancer within no more than one month. Mothers were able to read and write Thai language, had good orientation and communication skills, and were able to participate in interview and self-report. Sample size was based on a power analysis for multiple regression at power 0.80, alpha coefficient 0.05, and effect size 0.3.<sup>20</sup>

Seven questionnaires were used in this study, including: the Demographic Data Questionnaire, the Coping Health Inventory for Parents,<sup>21</sup> the Rosenberg Self-esteem Scales,<sup>22</sup> the Knowledge in Caring for Children with Cancer Questionnaire, the Caregiver Role Stress Questionnaire,<sup>23</sup> the Laffrey Health Conception Scale,<sup>24</sup> and the Personal Resource Questionnaire.<sup>25</sup> The reliability of these questionnaires ranged from 0.81–0.94. Descriptive statistics and multiple regression were used to analyze the data.

## Protection of human right

This study posed no physical risks to participants. Prior to data collection, all mothers received sufficient information about the purpose of the study, the methods and instruments in collecting data, and the protection of their rights. Before signing the consent form the research process was explained to the participants, who were assured of the privacy and confidentiality of their information. Moreover, participants were assured of their right to participate or withdraw from the study at any time with no effect on the service and treatment of their child during hospitalization.

## Results

The majority of mothers were 25–30 years old (32.9%), married (94.7%). Thirty-four mothers (44.7%) had completed primary school and 42.1% of mothers had graduated from secondary school. Twenty-seven mothers (35.5%) were housewives, 27.6% were employees, while 21% owned a business. Almost half of the mothers (43.4%) had a total family monthly income of less than 5,000 baht.

The majority of children whose mothers participated in the study were 1–3 years old (44.7%), and just over one half were girls (51.3%). Fifty-one children (67.1%) were diagnosed with leukemia, 21.1% were diagnosed with solid tumors, and only 11.8% were diagnosed with lymphoma. Most of the children (77.6%) were treated with chemotherapy while 6.6% received surgery, and 5.3% received radiation. Seven children (9.2%) were treated with chemotherapy and radiation while one child (1.3%) was treated with chemotherapy and surgery.

The mean score of maternal coping, maternal social support, maternal health status, and maternal stress of mothers were at a moderate level. High levels of both maternal self-esteem and maternal knowledge in caring for children with cancer was found (Table 1).

The results of hierarchical multiple regression testing for maternal coping with three sets of independent variables is presented in Table 2.

As shown in Table 2, personal factors, situational factors, and coping resources could explain 42% of variance

of the total score of maternal coping ( $p < 0.001$ ). Coping resources including maternal health status ( $\beta = .36$ ,  $p < .001$ ) and maternal social support ( $\beta = .30$ ,  $p < .01$ ) were predictors of maternal coping. Maternal stress ( $\beta = .31$ ,  $p < .01$ ) was the best predictor for the set of situational factors of maternal

coping with childhood cancer. The conceptual framework of maternal coping with childhood cancer at 4–6 weeks after the child was diagnosed with childhood cancer is illustrated in Figure 2.

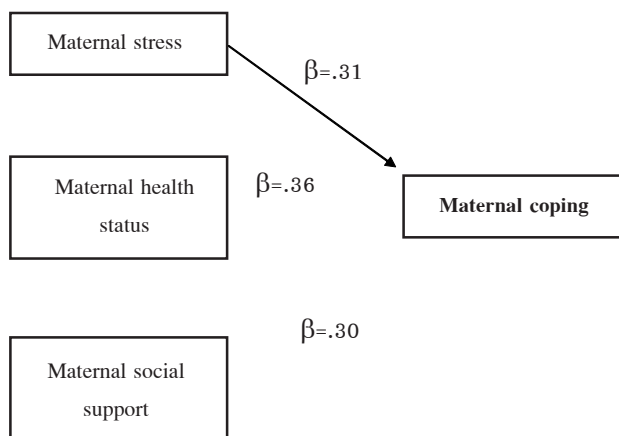
**Table 1 Mean, standard deviation, and range of the scores of maternal coping and the independent variables at 4–6 weeks after the child was diagnosed with cancer (N=76)**

Variables	$\bar{X}$	SD	Actual range	Possible score
Maternal coping	88.6	12.7	64–115	0–135
Coping pattern I: maintaining family integration, cooperation, and an optimistic definition of the situation	40.4	6.3	28–53	0–57
Coping pattern II: Maintaining social support, self esteem and psychological stability	29.7	7.0	11–44	0–54
Coping pattern III: Understanding the health care situation through communication with other parents and consultation with the health care team	17.7	3.1	10–24	0–24
Maternal stress	90.2	16.9	56–136	38–190
Maternal health status	110.1	22.4	84–153	28–168
Maternal social support	88.3	8.2	64–106	25–125
Maternal self-esteem	30.6	3.6	22–37	10–40
Maternal knowledge in caring for children with cancer	21.6	2.6	16–25	0–25

**Table 2 Multiple regression analysis for variables predicting maternal coping with childhood cancer at 4–6 weeks after the child was diagnosed with cancer (N=76)**

Variables	$R^2$	b	SEB	$\beta$	F change
<b>Personal factors</b>	.42	-13.12	22.65		12.28**
Maternal age		.25	.28	.10	
Maternal education		-.96	1.54	-.06	
Maternal self-esteem		.13	.39	.04	
Maternal knowledge		.04	.52	.01	
<b>Situational factors</b>					
Child's age		-.52	.37	-.15	
Leukemia		4.56	3.32	.16	
Lymphoma		-1.53	4.76	-.04	
Maternal stress		.25	.09	.31*	
<b>Coping resources</b>					
Maternal health status		.22	.06	.36**	
Maternal social support		.49	.18	.30*	

\* $P < 0.01$ , \*\* $P < 0.001$



**Figure 2 Conceptual framework of maternal coping with childhood cancer at 4–6 weeks after the child was diagnosed with cancer**

## Discussion

The findings of this study support the stress, appraisal, and coping theory<sup>13</sup> and previous studies on childhood cancer.<sup>3, 7-9, 11</sup> According to the stress, appraisal, and coping theory, health and energy are viewed as physical coping resources which are important in many stressful events. A person who is sick, tired or weak has less energy to cope than a healthy person.<sup>13</sup> Social support is viewed as an environmental coping resource that can facilitate effective coping by making the stressful event or threatening experience seem less important. Social support can also provide other valuable resources for coping with stress.<sup>13</sup> The influence of social support on maternal coping has been identified in several studies on childhood cancer. These studies indicated that social support was a factor which influenced maternal coping.<sup>7-9, 14-15</sup>

This study supports the findings of previous studies on childhood cancer that the most stressful period for mothers is four to six weeks after the child has been diagnosed with cancer.<sup>5-6, 8, 15</sup> After their child is diagnosed with cancer, mothers find that their maternal role becomes more complex.<sup>14</sup> Perceived social support can help mothers to cope with their stress. An ideal style of maternal coping would include: an ability to promote and maintaining family integration; an ease

to talk about the child's illness and its treatment with other parents and the health team.<sup>3, 8-9</sup>

In this study, maternal self-esteem, maternal knowledge in caring for children with cancer, maternal age and education level, child's age and type of cancer could not predict maternal coping with childhood cancer at 4–6 weeks after the child was diagnosed with cancer. The findings do not support the stress, appraisal, and coping theory.<sup>13</sup> However, this study is congruent with previous studies that seeking information,<sup>7, 14-15</sup> acceptance and understanding of the child's illness and their uncertainty about cancer and its treatment,<sup>15</sup> and sharing knowledge and experience with health care professional and mothers who had similar experiences<sup>7-8, 15</sup> were the way of maternal coping with childhood cancer at 4–6 weeks after the child was diagnosed with cancer. As a result, high levels of both maternal self-esteem and maternal knowledge in caring for children with cancer was found.

The results of this study are congruent with previous studies which indicated that maternal coping did not show any difference in relation to: maternal age or educational level of mother;<sup>18</sup> age of the child or length of illness;<sup>19</sup> type of cancer or time since diagnosis,<sup>11</sup> or with cancer treatment stage.<sup>11, 18</sup> This could be explained by the fact that maternal age and education level of mothers who participated in this study were not very different. The majority of mothers were young adults and had graduated from primary or secondary school. All of the children whose mothers participated in this study had been newly diagnosed with cancer and most of them were preschoolers. Several studies on childhood cancer revealed that mothers of children who were newly diagnosed with cancer perceived their child was thrown into a life threatening situation. Pain during treatment and the ultimate death of the child were the two possibilities mothers feared the most.<sup>4, 7</sup> Mothers of children with cancer struggled with uncertainty about the child's illness; their perception of the disease; and the fear of possible death and sequelae of long-term treatment.<sup>15</sup> This study suggests the need for developing nursing interventions for reducing maternal stress, enhancing maternal health status and maintaining social support for aiding maternal coping with childhood cancer.



## Conclusion

This predictive correlational research study confirmed the stress, appraisal and coping theory<sup>13</sup> that maternal coping with childhood cancer was based on individual appraisal that can be influenced by situational factors such as maternal stress due to changes in life and maternal role, and coping resources including maternal health status and social support.

According to the finding of this study, there should be an implication of nursing interventions aimed at reducing maternal stress and assist mothers to cope effectively with childhood cancer at the initial diagnosis. A provision of coping resources such as nursing support, group support, and family support has been advocated for reducing maternal stress and increasing maternal ability to cope effectively while caring for children with cancer.

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