Evaluation of the Relationship between Coping Strategies and Stress after Trauma in Parents of Children with Cancer in the City of Tehran in 2014

Damercheli.P1, Khoshkonesh.A2, Pourebrahim .T3
1MA Student in School Counseling, Shahid Beheshti University, Tehran, Iran
2Assistant professor, Shahid Beheshti University, Tehran, Iran
3Assistant professor, Shahid Beheshti University, Tehran, Iran
Corresponding Author email: pdamercheli@yahoo.com

ABSTRACT
The purpose of this study was to evaluate the relationship between coping strategies (with two general indices of emotion focused and problem-focused and 8subindices of self controlling, confrontive coping, planful problem solving, positive reappraisal, seeking social support, distancing, escape-avoidance and accepting responsibility) and stress after trauma in parents who have children with cancer. The study method was correlational research. Study population included parents of children with cancer from the city of Tehran in 2014. Sampling was performed via availability of participants and included 232 parents of children with cancer. Instruments used were the Lazarus and Folkman (1980) Coping Strategies Questionnaire and the PCL-C checklist. The data obtained was analyzed with the Pearson correlation test. Univariate regression analysis and stepwise multivariate regression was used to evaluate the contribution of coping strategies in predicting the variance of the variable of stress. Results showed that there is a negative and significant correlation between coping strategies and stress after trauma and coping strategies account for 17% of the sample variable variance. As a result, it is suggested that educational sessions for use of adaptive coping strategies be held for parents of children with cancer.

Keywords: Coping Strategies, Post Traumatic Stress, Parents of Children with Cancer

INTRODUCTION
Cancer and suffering from it are among the bitterest human experiences. Cancer is a disease where a group of body cells overgrow without control and destroy healthy body tissues. Despite significant progress in medicine, cancer continues to be one of the most important diseases of the current century and the second leading cause of morbidity and mortality after cardiovascular diseases. Currently, more than 7 million individuals in the world die from cancer and it is predicted that the number of serious infliction with cancer will increase from 10 million to 15 million people yearly until the year 2020. Among them, children are also included. Cancer not only involves adults, but also children. Every year, a large number of children across the world develop cancer and it exerts tremendous psychological pressure on the individual and families. There are rare families who have cancer patients and do not suffer from misery. Parents whose children get diagnosed with cancer, due to its high mortality, are faced with extreme treatment costs and long hospitalizations of their children and the heavy socio-economic burden creates difficulty for them in keeping their social role, appropriate future prospects and ability to return to work. The high stress level has negative influence on family and marital functioning and leads to fall in quality of life (Tonali 2005). Many parents, at the time of their child’s diagnosis, become shocked and symptomatic and thought of the hurtful experience of watching their child’s physical and emotional wasting leads them to post traumatic stress disorder [1].
Post traumatic stress disorder occurs when an individual experiences an emotional stress with an impact that is damaging to anyone. In other words, the individual has experienced or faced event or events that are considered truly dangerous or a threat to life or serious injury and responds with extreme fear, helplessness or fright [2]. The American Psychological Association has reported the prevalence of post traumatic stress disorder in communities from 1-14 percent in 1994 [3]. Yet, in patients at risk who had experienced the traumatic event, the prevalence of this disorder across the lifespan is 5-75% [4].

The kind of reaction of parents towards the stress is very important. A person's reaction in face of a stressful situation is determined by the method he or she evaluates the situation and the amount of the individual's perceived ability for confronting the situation. In fact, if the necessary preparation for facing these difficulties is not present, stress reduces psychological and physical strengths, by affecting thoughts, emotions and motivations on the one hand and physiologic parameters on the other, and decreases bodily and mental resistance.

The meaning of "coping" is the use of various methods. These ways include adaptive (useful) or maladaptive (useless) methods used by the individual for coping with a threat to create mental equilibrium in him or herself. Positive coping strategies can predict and facilitate the family's coping. Yet, using inappropriate strategies in facing stressful factors can increase difficulties. Using appropriate coping strategies can lead to positive solutions [5]. Kobk et al. [6] in a study evaluated the relationship between personality and coping methods. Results of their study showed that problem-focused coping is negatively correlated with neuroticism and positively correlated with accepting responsibility. Lazarus [7] is the initiator of confrontive thinking in evaluating coping strategies [8]. Coping strategies are cognitive and behavioral attempts by individuals in division and control over problems which overall includes two kinds, problem solving coping strategy and emotional coping strategy. Problem focused coping strategies include active confrontation, planning, avoiding competitive activities, self-restraint from hasty actions and seeking instrumental support; positive emotion focused coping strategies include emotion based strategies of seeking social support, positive reapplying, acceptance, joking and religion and negative emotion focused coping strategies include denial, lack of cognitive involvement with the problem, lack of behavioral involvement with the problem, focus on emotion and venting it out using drugs and alcohol [9 and 10]. Problem focused strategies are more appropriate in situations where something can be done and emotion focused strategies are more appropriate in situations where something has to be accepted [11].

Effective coping strategies decrease the person's reaction to high stress levels (such as stress in parents who have children with cancer) and amend its harmful effects. Considering that limited research has been performed on stress in parents of children with cancer, the results of this study can guide the attention of mental health professionals towards support and creation of programs of understanding and research and attract health planners and encourage them in teaching particular coping strategies in support of parents of children with cancer.

Overall Goals:
1-Determining the relationship between coping strategies and stress after trauma in parents of children with cancer.
2-Evaluation of predicting effect of the coping strategy variable as the independent variable in predicting stress after trauma as the dependent variable.

Study Hypotheses
1-There is a significant correlation between self controlling and stress level after trauma in parents of children with cancer.
2-There is a significant correlation between confrontive coping and stress level after trauma in parents of children with cancer.
3-There is a significant correlation between planful problem solving and stress level after trauma in parents of children with cancer.
4-There is a significant correlation between positive reappraisal and stress level after trauma in parents of children with cancer.
5-There is a significant correlation between seeking social support and stress level after trauma in parents of children with cancer.
6-There is a significant correlation between distancing and stress level after trauma in parents of children with cancer.
7-There is a significant correlation between escape-avoidance and stress level after trauma in parents of children with cancer.
8-There is a significant correlation between accepting responsibility and stress level after trauma in parents of children with cancer.
There is a significant correlation between use of problem focused coping strategies and stress level after trauma in parents of children with cancer.

There is a significant correlation between use of emotion focused coping strategies and stress level after trauma in parents of children with cancer.

**Method:**

This study is applied research and the method used is correlational.

**Study Population, Sample Size and Selection:**

Study population includes all parents of children with cancer in the city of Tehran in 2014. Due to the special situation of the families, study sample was selected using available sampling and sample size was 232 children with cancer.

**MATERIALS AND METHODS**

1. The Lazarus Coping Strategies Questionnaire

This questionnaire has 66 items that have been prepared based on a coping strategies checklist [8] by [12] and evaluates a wide range of thoughts and behaviors individuals use when faced with an internal or external stressful situation. This questionnaire has 8 sub indices: self controlling, confrontive coping, planful problem solving, positive reappraisal, seeking social support, distancing, escape-avoidance and accepting responsibility. The questionnaire is divided into two indices of problem focused and emotion focused coping strategies. The psychometry of the questionnaire has been evaluated in a sample of 750 middle aged couples. The Cronbach's alpha coefficient for the sub indices has been reported as follows: self controlling 70 percent, planful problem solving 67 percent, positive reappraisal 79 percent, seeking social support 76 percent, escape-avoidance 72 percent and accepting responsibility 66 percent and these values show acceptable reliability for the test. In a study by Vahedi with participation of 763 girl and boy students in second and third years of public high school in the city of Tehran, the reliability of the coping strategies questionnaire using the internal consistency method was 80 percent.

**Post Traumatic Stress Disorder Checklist (PCL-C)**

The PTSD checklist is self-reporting used for evaluation of disorder and screening of patients from normal individuals and other patients. This checklist has been prepared by based on DSM-IV criteria and includes 17 items, 5 of which are related to signs of reexperiencing the trauma, 7 are related to signs of numbness and avoidance, 5 are related to signs of hyper arousal. This checklist has 3 variants as follows:
1. Military variant PCL-M in relation to stressful trauma in war.
2. Regular or non-military variant PCL-C in relation with non-war or regular stressful events (general from the past).
3. Specific variant PCL-S in relation with occurrence of problems related to a specific stressful situation.

In the PCL questionnaire, items 1-5 evaluate reexperiencing of the trauma; items 6-12 evaluate numbness and avoidance and items 13-17 evaluate hyper arousal. Each item is scored from 1-5. Reliability and validity of the checklist has been evaluated in Iran by Goudarzi [13] and the Cronbach’s alpha coefficient of 93 percent shows appropriateness. Additionally, the reliability coefficient of the checklist has been shown to be 87% which is appropriate. Correlation with the Life-Events Checklist has been shown with a coefficient of \( r=0.37, n=117, P=0.0001 \) which shows concurrent validity. In this study, the Cronbach's alpha coefficient obtained was 76 percent.

**RESULTS**

The main study hypothesis was: there is significant correlation between coping strategies and stress level after trauma in parents of children with cancer. To test this hypothesis the Pearson correlation coefficient was used and the results are shown below.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standard Deviation</th>
<th>Mean</th>
<th>Correlation Coefficient</th>
<th>Number</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress</td>
<td>9.19</td>
<td>47.88</td>
<td>-0.41</td>
<td>232</td>
<td>0.001</td>
</tr>
<tr>
<td>Coping Strategies</td>
<td>12.28</td>
<td>68.68</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in Table 1, there is a negative and significant correlation between use of coping strategies and stress level after trauma, with a confidence level of 99%; such that increased use of coping strategies leads to decreased stress and the reverse.

\[ r(232)=-0.41, \ p<0.001 \]
To evaluate the predictive contribution of the coping strategies variable as the independent variable in predicting stress after trauma as dependent variable univariate statistical analysis was used.

Table 2: Results of Step by Step Regression Analysis of Stress based on the Predicting Variable Coping Strategies

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R^2</th>
<th>Adjusted Coefficient of Determination</th>
<th>Standard Error</th>
<th>F changes</th>
<th>Df1</th>
<th>Df2</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.41</td>
<td>0.17</td>
<td>0.17</td>
<td>8.37</td>
<td>47.59</td>
<td>1</td>
<td>231</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Based on the step by step regression analysis, it can be said that after one step, the predictor variable coping strategies, explains 17% of the variance of the variable stress in the sample group.

[R=0.41, R^2=0.17, F(1,231)=47.59, P<0.001]

Table 3: Results of Analysis of Variance of Stress based on the Predicting Variable Coping Strategies

<table>
<thead>
<tr>
<th>Model</th>
<th>Sources of Variance</th>
<th>Sum of Squares</th>
<th>Df1</th>
<th>Mean Square</th>
<th>F</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>3366.95</td>
<td>1</td>
<td>3366.95</td>
<td>47.95</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Remainder</td>
<td>16149.67</td>
<td>230</td>
<td>70.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>19516.62</td>
<td>231</td>
<td>16149.67</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on the step by step regression analysis, it can be said that after one step, the predictor variable coping strategies, explains 17% of the variance of the variable stress in the sample group.

[R=0.41, R^2=0.17, F(1,231)=47.59, P<0.001]

Table 4: Regression Coefficients for the Meaningful Predicting Variable

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>Nonstandard Coefficients</th>
<th>Standard Coefficients</th>
<th>T</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>fixed Amount</td>
<td>-0.31</td>
<td>-0.41</td>
<td>-6.92</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Coping Strategy</td>
<td>0.21</td>
<td>0.13</td>
<td>22.11</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Based on the results of regression analysis in Table 4, it can be concluded that after one step, coping strategies have had meaningful predicting effect on stress.

[B=-0.41, T=-6.92, P<0.001]

Table 5: Correlation between Sub indices of Coping Strategies and Stress

<table>
<thead>
<tr>
<th>Index Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Correlation with Stress</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Controlling</td>
<td>9.37</td>
<td>2.93</td>
<td>-0.61</td>
<td>0.001</td>
</tr>
<tr>
<td>Positive Reappraisal</td>
<td>11.37</td>
<td>1.96</td>
<td>-0.41</td>
<td>0.001</td>
</tr>
<tr>
<td>Planful Problem Solving</td>
<td>6.24</td>
<td>1.59</td>
<td>-0.51</td>
<td>0.001</td>
</tr>
<tr>
<td>Seeking Social Support</td>
<td>12.77</td>
<td>3.03</td>
<td>-0.28</td>
<td>0.001</td>
</tr>
<tr>
<td>Escape-Avoidance</td>
<td>6.46</td>
<td>1.39</td>
<td>0.64</td>
<td>0.05</td>
</tr>
<tr>
<td>Accepting Responsibility</td>
<td>4.58</td>
<td>1.45</td>
<td>0.10</td>
<td>0.50</td>
</tr>
<tr>
<td>Confrontive Coping</td>
<td>5.72</td>
<td>2.21</td>
<td>-0.16</td>
<td>0.05</td>
</tr>
<tr>
<td>Distancing</td>
<td>6.98</td>
<td>3.47</td>
<td>-0.41</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Number=232

1-There is meaningful correlation between self controlling and stress level after trauma in parents of children with cancer.

As shown in Table 5, negative and meaningful correlation exists between self controlling and stress level after trauma with a confidence level of 99%; such that with increased self control, stress level decreases and the reverse.
2-There is meaningful correlation between confrontive coping and stress level after trauma in parents of children with cancer.

1-There is meaningful correlation between self controlling and stress level after trauma in parents of children with cancer.

As shown in Table 5, negative and meaningful correlation exists between self controlling and stress level after trauma with a confidence level of 99%; such that with increased self control, stress level decreases and the reverse.

\[ r(232) = -0.51, p<0.001 \]

2-There is meaningful correlation between confrontive coping and stress level after trauma in parents of children with cancer.

As shown in Table 5, negative and meaningful correlation exists between confrontive coping and stress level after trauma with a confidence level of 95%; such that with increased confrontive coping, stress level decreases and the reverse.

\[ r(232) = -0.16, p<0.05 \]

3-There is meaningful correlation between planful problem solving and stress level after trauma in parents of children with cancer.

As shown in Table 5, negative and meaningful correlation exists between planful problem solving and stress level after trauma with a confidence level of 99%; such that with increased planful problem solving, stress level decreases and the reverse.

\[ r(232) = -0.16, p<0.001 \]

4-There is meaningful correlation between positive reappraisal and stress level after trauma in parents of children with cancer.

As shown in Table 5, negative and meaningful correlation exists between positive reappraisal and stress level after trauma with a confidence level of 99%; such that with increased positive reappraisal, stress level decreases and the reverse.

\[ r(232) = -0.41, p<0.001 \]

5-There is meaningful correlation between seeking social support and stress level after trauma in parents of children with cancer.

As shown in Table 5, negative and meaningful correlation exists between seeking social support and stress level after trauma with a confidence level of 99%; such that with increased seeking of social support, stress level decreases and the reverse.

\[ r(232) = -0.28, p<0.001 \]

6-There is meaningful correlation between distancing and stress level after trauma in parents of children with cancer.

As shown in Table 5, negative and meaningful correlation exists between distancing and stress level after trauma with a confidence level of 99%; such that with increased distancing, stress level decreases and the reverse.

\[ r(232) = -0.41, p<0.001 \]

7-There is meaningful correlation between escape-avoidance and stress level after trauma in parents of children with cancer.

As shown in Table 5, positive and meaningful correlation exists between escape-avoidance and stress level after trauma with a confidence level of 95%; such that with increased escape-avoidance, stress level also increases.

\[ r(232) = 0.64, p<0.01 \]

8-There is no meaningful correlation between accepting responsibility and stress level after trauma in parents of children with cancer.

As shown in Table 5, no meaningful correlation exists between accepting responsibility and stress level after trauma and any correlation is by chance or accidental.

\[ r(232) = 0.10, p>0.01 \]

**Table 6: Correlation between Indices of Coping Strategies and Stress**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Index</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Correlation</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Controlling</td>
<td></td>
<td>34.97</td>
<td>4.78</td>
<td>-0.49</td>
<td>0.01</td>
</tr>
<tr>
<td>Positive Reappraisal</td>
<td></td>
<td>28.54</td>
<td>6.75</td>
<td>-0.42</td>
<td>0.01</td>
</tr>
</tbody>
</table>
There is meaningful correlation between problems focused coping strategies and stress level after trauma in parents of children with cancer. As shown in Table 6, negative and meaningful correlation exists between problem focused coping strategies and stress level after trauma with a confidence level of 99%; such that with increased problem focused coping strategies, stress level decreases and the reverse.

There is meaningful correlation between emotions focused coping strategies and stress level after trauma in parents of children with cancer. As shown in Table 6, negative and meaningful correlation exists between emotion focused coping strategies and stress level after trauma with a confidence level of 99%; such that with increased emotion focused coping strategies, stress level decreases and the reverse.

**DISCUSSION AND CONCLUSION**

The present study was performed with the purpose of evaluating the relationship between coping strategies and stress after trauma in parents of children with cancer in the city of Tehran. The results of Table 1 show that negative correlation exists between amount of use of coping strategies and stress after trauma in parents of children with cancer with confidence level of 99% (-0.41). In other words, with increased use of coping strategies, stress level decreases and reverse. The variance obtained was 17%. As a result, it can be concluded that 17% of the variance in the variable of stress is explained by coping strategies.

High negative correlation between coping strategies and stress shows that coping strategies and stress in parents of children with cancer can affect each other. When there is ability to use coping strategies in families, less stress in the parents can be expected.

The results of this study agree with those obtained in studies by Kleinke [14], Besharat [2], Jafarnejhad [15], Johnson et al. [16].

In the study by Rostami, Ahadi and Cheraghali [17], neurosis has negative and meaningful correlation with self-control and the variable neurosis explains 16% of the variance of the variable of self control. Based on the studies by Samadi [18], self control has negative correlation with stress after trauma which agrees with this study.

Results of studies disagree with the present study. Based on their study, nurses in facing work difficulties used self controlling coping strategies more often and had more stress. Maybe the reason is that nurses use self control as their method of coping and wait for the right time for performing actions and this waiting leads to prolonged excitation and increased length of anxiety. Besharat [2] showed in his studies that there is correlation between personality characteristics and coping strategies in stress. These findings agree with the studies by Mousher, Perlow. In their research, the latter showed that self controlling personalities use adaptive mechanisms of coping more often. Additionally Jafarnejhad [15] showed in his studies that a positive and meaningful relationship exists between extroversion and adaptation with coping strategies in stressful situations.

Studies by Johnson [16] showed a meaningful relationship between coping strategies and personality disorders and post traumatic stress disorder. Kubek et al., [6] in their studies showed that a negative and meaningful correlation exists between coping strategies and neuroticism. Additionally, they showed positive and meaningful correlation between coping strategies and accepting responsibility.

The studies of Powell and Enwright [19] show that long-term use of maladaptive strategies leads to behavioral and psychological disorders. The results of the latter study agrees with the study of Bakhshani [20] which shows that coping strategies are one of the most important psycho-social factors that mediate between stress and illness. The research by Jafarizadeh [15] showed that in addicts to opium, ineffective coping strategies has direct relationship with neurosis. in their study showed that coping strategies are mediators between stress and physical and psychological disorders. Our study also shows high correlation between coping strategies and stress after trauma. It can be concluded that coping includes activities and behaviors used for stress management or decrease. The more appropriate the behaviors and methods used in confronting stress are, the more its level and harms decrease. considers coping skills as one of 8 elements effective in individual growth and health which have important role in interpretation of events and happy living.

Results obtained by Afshari [21] disagree with our study. Based on the first study, significant correlation does not exist between coping strategies and work stress in nurses in public hospitals. Additionally, studies by Afshari show that coping strategies in mothers of children with mental retardation are less useful and more focused on emotion.
Results of the following studies disagree with our research.
The results of the study by Krantz and McCenemymk [22] shows that patients with systemic cancer significantly use emotion focused strategies, particularly avoidant and emotion restraining methods, more than problem focused strategies. The data shows that emotion focused strategies are more appropriate in situations that something needs to be accepted [11].
As a result, to interpret results in parents of children with cancer, the kind of cancer and remission or recurrence of illness needs to be considered.
The results of step by step regression analysis of effectiveness of coping strategies on predicting stress after trauma, based on Tables 2, 3, and 4, showed that after one step, the coping strategies variable has predicting power on the stress variable and explains 17% of the variance of the stress variable in parents of children with cancer. Effectiveness of coping strategies and their components, teaching parents and informing them and attention to post traumatic stress disorder can lead to more appropriate multifaceted care of the patient and family. By combining treatment approaches, we may be able to help parents cope better with harmful aspects of illness and treatment in their children. Prospective studies show that parents who show highest amounts of hurting during their child's treatment, have more long-term distress. When we help caretakers and parents to pay attention to their mental health, we can be assured that the psychiatric needs of the patients will also be cared for.

Limitations of the Study:
1- Insecurity in participants in the sample group and pressures due to illness in their children decreased cooperation of the parents. Acquiring participant cooperation engaged a lot of the studytime.
2- The large number of items in the questionnaires took time and was beyond toleration by the sample participants. As a result, some questionnaires were partially completed.
3- Lack of control variables for the kind of illness, disease history and its exacerbation, decreases extending the results to study population. Considering the theoretical bases of the study, controlling these variables is necessary.
4- Evaluation of harmful stress while the child is under treatment for cancer is complex, because harmfulness may recur and make it difficult to identify an event individually.

SUGGESTIONS
1- It is recommended that this study be performed in parents of children with various kinds of cancer. Another study that can extend on the results of this study and compare stress coping strategies in patients of children with good and bad prognosis cancer can be useful.
2- Usually study variables are evaluated by questionnaire and quantitative data and next, the quantitative data are changed into qualitative ones. To reach a comprehensive and complete viewpoint, it is recommended that information be collected qualitatively and via interviewing.
3- Considering the interviews that have been performed with parents of children with cancer, holding educational sessions to teach stress control and teaching use of coping strategies are necessary. To help patients and their families, psychological interventions based on harm can be performed. For example, their experience can be considered as harmful and evidence based interventions for long-term healing can be used.
4- Evaluation of coping strategies and stress in parents of children with other diseases.
5- Considering that cancer treatment is harmful and since many of the reactions of patients and their families are considered common place by medical personnel, it is necessary that health care individuals retain their sensitivity towards families and their experiences during these events.

REFERENCES
1. Norberg, Lindblad, Kristsrk. Boman(2005), coping strategies in parents of-
2. Beshart MA. Relationship between personality traits and coping strategies with stress in sample student of university. Section scientific – research psychology Tabriz university. 2007, 2(7), 30- 54 [Persian].

**CITATION OF THIS ARTICLE**