Predicting Psychological Welfare Based on Resilience and Coping Strategies in Patients with Pancreatic Cancer

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Abstract

Objective: This study aimed to determine the role of resiliency and coping strategies in predicting psychological welfare in patients with pancreatic cancer.

Method: The study was descriptive and statistical population included all patients with pancreatic cancer treatment centers in Tehran. Based on the sampling method and based on inclusion and exclusion criteria, 100 patients of Milad Hospital and Imam Khomeini hospital were selected as the sample. Instruments used in this study included psychological welfare questionnaire of Rif (1989), resilience questionnaire of Kaner and Davidson (2003), and the scale of contrastive strategies of Blinger and Mous (1976). Research data using regression analysis test and by using software spss, version 19 was analyzed.

Results: The results showed that coping factors based on problem solving, cognitive assessment and resiliency with psychological well-being (5%) were the most meaningful relationship and in fact, these coefficients were positive and indicated that by increasing in these factors, psychological welfare increased too (p<0.05).

Conclusion: According to the results, it is taken into consideration in promoting psychological welfare of patients with pancreatic cancer, coping strategies and resilience of patients and with appropriate interventions, the use of effective coping strategies and resilience was increased in these patients.

Keywords: resilience, coping strategies and mental health, cancer of the pancreas.
Introduction

New developments in science and technology have changed cancer incurable and fatal condition to a chronic condition. Many of these diseases that are similar to other diseases have a long history which with special health care knowledge and behavior will be manageable and even treatable in some cases (Imami, 2010). Cancer has an impact on patients, families and others in relation to him. Cancer causes a significant imbalance in the patient and his family, and provides a set of new challenges for both of them. At least, normal life will change daily, to patients because they are trying to adapt and respond to the demands of these threats (Awadallah, 2006). Pancreatic cancer has the worst prognosis of any cancer and it is the only annual incidence of cancer is higher than its prevalence. Average survival after diagnosis is the survival rate in less than 6 months and older than 80 years far less.

Improving the psychological welfare is one of the objectives of this century psychology. Now one of the serious concerns psychologists focused on the psychological welfare is coping strategies and attitude toward patients etc. (Sommerfield and Mc Care, 2000). Psychological welfare consists of getting one of the co-ordinations between specific objectives and outlining or functional outcomes obtained in the process of continuous assessment and leads to a relatively stable inner satisfaction in life sequence (Cole, 2002). Efforts were made to explain the concept of welfare, the role of intrapersonal and interpersonal welfare centered on two levels (Ko and Rimpela, 2002).

Resilience is one of intrapersonal variables. Werner was one of the first scientists in the 1970s used the term resiliency. Resilience is the ability of the individual's bio-psycho balance in a dangerous situation (Conner & Davidson, 2003). Black believes that resilience and ability to adapt the level of control are based on environmental conditions. As a result of this adaptive flexibility, people with high levels of resilience are more likely to experience positive emotions in their life and they have higher self-esteem than those who have low levels of resiliency and better psychological welfare (Kiani, 2010). As a result of the process of resiliency, adverse effects are modified or adjusted or even disappeared and mental health is preserved (Fredrickson & Tugade, Inzalicht, Friborg et al. 2006).

Many researchers between resiliency and psychological problems have reported meaningful and negative relationship and they also suggest that these structures can act as a mediator between mental health and many other variables taken into account and by promoting resiliency, the person can against stress, anxiety and factors that are the reason of many psychological problems they may be shown their strength and overcome (Besharat 2008). In a study as the effectiveness of resiliency on the mental health of women with breast cancer showed that there was a positive relationship between resiliency and mental health and teaching styles and thinking skills and innovative twists improve resiliency and mental health (Katouli et al., 2006).

Another factor that could help people in situations of pressure and crisis is the way of coping. Coping is a process that is used by people to control conflicts, pressures and its resources. These efforts can be relatively modifier coping and does not necessarily lead to solving the problem (Sarafino, 2002). Folkman and Lazarus (1980) consider coping with cognitive and behavioral efforts to overcome stress or minimize its effects. Folkman and Lazarus (1980) have identified two general methods of problem-focused coping and emotion-focused coping to inhibit stress.
Problem-focused coping is a skill that focuses on addressing the problem or situation and it can be paid out if the emotion-focused coping on emotional distress and seeks to harness the emotions that are associated with that position not controlling the reality. From the perspective of Lazarus & Folkman' viewpoints, focused problem-oriented efforts to change the situation are stressful; therefore, the inhibition of factors causing stress discuss to its reducing or removing while emotion-focused efforts are directed at changing the factors causing stress and emotional reactions, i.e. inhibiting emotional responses and physiological arousal emphasize to stress reduction (Soltan Eini, 2005).

Numerous research studies have studied coping strategies in patients with cancer and have confirmed the different strategies used by cancer patients and healthy volunteers. Reynolds et al. (2000) use in their study on 807 black patients and white skin cancer compared with healthy individuals to cope with stressful life events and coping strategies. Ransom et al. (2005) and Aqajani (1997) also found similar results in their study, but in a retrospective study of Petticrew (2002), the use of coping strategies was observed between cancer patients and non-patients.

Henderson, Gover, Davis and Koundon (2003) showed that strategies employed to tackle cancer patients included cases such as engaging in prayer, having a positive attitude towards the disease, hoping to survive, active support from family, friends and support groups and Ashing, Padila, Tajero and Kagavav-Singer (2003) also reported the use of primary sources of support and coping strategies and religious beliefs more than other strategies in cancer patients.

With regard to the consequences of diseases such as cancer, in addition to physical problems, psychological problems for patients, and resulted in more stress, it is essential that psychological therapy should be considered as a complementary therapy to improve the treatment process and the promotion of mental health and quality of life of patients and their families. In fact, the treatment of patients with pancreatic cancer in particular has invested more psychological treatments and policy makers and health care professionals should focus their gaze on this issue and take steps towards understanding the mechanisms of psychological treatments. This increases efficiency has led to their effective coping and depression and predict the promoter behavior of psychological welfare and resulted in improving physical and emotional state, increased motivation, decreased anxiety, enhanced perception, one of the purposes of life, reducing the prevalence of mood, improve compatibility and hips behaviors of pancreatic cancer which can improve the psychological welfare (Brunner, 2000; Rustoen, Moum, Wiklund, Hanestad, 1999). In this regard, the present study aimed to determine the role of resiliency and coping strategies in predicting psychological welfare in patients with pancreatic cancer.

Method

The study was descriptive and statistical and population included all patients with pancreatic cancer treatment centers in Tehran during the period April to October 2015, respectively. Using the formula for calculating the projected sample size in this study (Formula Plant), the sample size 79 persons was estimated that in order to increase general and taking into account the possible value of 100 persons and the Hospital Imam Khomeini hospital and were chosen based on availability. Inclusion criteria for the study included people having at least a diploma of
pancreatic cancer, according to the doctor. And exclusion criteria included a history of psychiatric interventions over the past year. The instruments used in the study include:

**Psychological welfare questionnaire of Rif:** This questionnaire was performed by Reef (1989) and had 84 items in 6 dimensions (positive relations with others, autonomy, environmental mastery, personal growth, purpose in life, self-acceptance), each of them included 14 questions. Any questions is scored on a range of six degrees (from strongly disagree to strongly agree). Of the total questions, 44 questions are scored directly and 40 questions inversely. Cronbach's alpha obtained in the study Reef (1989) has been reported for personal growth (87%), positive relationships to others (91%), admission (93%), purpose in life (90%), dominance on environment (90%), autonomy (86%). In Iranian studies Cronbach's alpha coefficient for the above scale has been reported of 0.81, 0.73, 0.68, 0.75, 0.76, and 0.77 (Farahani, Cheraghi and Samani, 2008). In this study, Cronbach's alpha coefficient obtained 0.73.

**Resilience questionnaire of Kaner and Davidson:** This scale consists of 25 items and is provided by Kaner and Davidson (2003) to measure the strength against pressure and threats. For each item, the whole gradation of five options is scored (completely false = 1 to always true = 5). Although this scale measures various aspects of resilience, it obtains a total score. The Persian version of this scale has been prepared by Jokar (2007). In the study of Besharat et al (2007), reliability and validity of the questionnaire were approved (quoted by Ranjbar et al., 2011). In this study, Cronbach’s alpha coefficient for the questionnaire was obtained 0.87.

**Coping strategies questionnaire of Billings and Mous:**
This tool of 19 questions was prepared by Billings and Mous (1976) in order to achieve an easy and reliable method to measure coping responses for some of the adults (Hosseini Qadamgahi, 1997). In these cases, responses were divided against a variety of active, cognitive active and insecure behavior. The reliability coefficients obtained have been reported through internal consistency for the three subscales from 0.44 to 0.80. In 1984, the researchers increased the number of coping responses to 32 items (Hosseini Qadamgahi, 1997). In this study, of the 32-item questionnaire which was performed by Baraheni and Mousavi in 1995 was used with 4 options of the questions. Then, in 1997, Hosseini Qadamgahi obtained reliability coefficient 0.79 through test-retest for the total score. Also, the reliability value for the subscales of the questionnaire obtained as follows. To cope with solving the problem to 7 items of 0.90, to deal with the emotional inhibition to 11 items 0.65, to counteract cognitive assessment to 5 items 0.68, to cope with the physical problems to 9 items 0.91 and to cope with the session of social support to 4 items 0.90 were considered.

**Findings**
In using statistical method, first, using the Kolmogorov-Smirnov test for normality data were tested to be identified the kind of statistical method (parametric, non-parametric) that should be
used and in the case of normal data, one of the most important assumptions of parametric tests is established.

<table>
<thead>
<tr>
<th>Indicator variables</th>
<th>Coping strategies</th>
<th>Resiliency</th>
<th>Psychological welfare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>0/94</td>
<td>0/82</td>
<td>0/82</td>
</tr>
<tr>
<td>P</td>
<td>0/34</td>
<td>0/51</td>
<td>0/51</td>
</tr>
<tr>
<td>Significance level</td>
<td>0/05</td>
<td>0/05</td>
<td>0/05</td>
</tr>
</tbody>
</table>

Table1. Kolmogorov-Smirnov test of one-sample

According to the results presented in Table 1 and a significant level obtained, each variable in research that is larger than 0/05, all data variables are normal and to test each variable, parametric tests can be used.

To test the hypothesis that the study of resilience and coping strategies, Psychological welfare is predicted in patients with pancreatic cancer, multiple linear regression was used. The first test is the overall model. In fact, if at least one of the predictor variables has a significant impact study on variable criteria, the researcher model is confirmed. The null hypothesis and against are as follows:

\[
\begin{align*}
H_0 : \beta_1 = \beta_2 = \ldots = \beta_5 &= 0 \\
H_1 : \beta_i \neq 0 & \quad \forall \text{ one } i \text{ for } i = 1,2,3,4,5
\end{align*}
\]

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of squares</th>
<th>Degrees of freedom</th>
<th>The mean squares</th>
<th>F</th>
<th>R</th>
<th>R^2</th>
<th>R^2_adj</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
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<td>3966/63</td>
<td>8/21</td>
<td>0/59</td>
<td>0/35</td>
<td>0/30</td>
<td>0/001</td>
</tr>
<tr>
<td>Remaining</td>
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<td>93</td>
<td>483/43</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>68758/96</td>
<td>99</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table2. Results of regression coping strategies and resilience factors, psychological welfare

As it can be seen in the table, the value sig is less than 0/05, indicating the significance of model of regression, i.e. at least one of the predictor variables on criterion variables is significantly effective.

**Indicator of R^2 (coefficient of multiple determinations):**

The figure indicates what percentage of the variability criteria are explained by the predictor variables. In other words, what percentage of the ability to fit dependent variable predictor variables has? In this study, the value of R^2 is equal to 0/35. This means that the formation of five coping strategies and resilience of 35 percent and 65 percent of the ability for predicting the psychological welfare is related to prediction errors. Given the significance of the model, it must
now be examined which of the coefficients is not zero, or in other words which variable or variables in the model have a significant impact. For this purpose, the t-test is used.

<table>
<thead>
<tr>
<th>Significance level</th>
<th>sig</th>
<th>t-statistic</th>
<th>Regression coefficients</th>
<th>Dependent variable</th>
</tr>
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<td>0/05</td>
<td>0/03</td>
<td>2/11</td>
<td>0/27</td>
<td>Problem Solving</td>
</tr>
<tr>
<td>0/05</td>
<td>0/25</td>
<td>1/14</td>
<td>0/16</td>
<td>Emotional inhibition</td>
</tr>
<tr>
<td>0/05</td>
<td>0/96</td>
<td>0/04</td>
<td>0/01</td>
<td>Somatization</td>
</tr>
<tr>
<td>0/05</td>
<td>0/04</td>
<td>2/03</td>
<td>0/41</td>
<td>Cognitive Assessment</td>
</tr>
<tr>
<td>0/05</td>
<td>0/91</td>
<td>0/11</td>
<td>0/01</td>
<td>Advocacy</td>
</tr>
<tr>
<td>0/05</td>
<td>0/04</td>
<td>2/08</td>
<td>0/28</td>
<td>Resiliency</td>
</tr>
</tbody>
</table>

**Table3.** Coefficients, standard, nonstandard and t variables entered into the regression equation

As the results of the table show, coping factors based on problem solving, cognitive assessment and resilience to $\beta = 0/27$, $\beta = 0/41$ and $\beta = 0/28$ on psychological welfare at the level 5 have the most significant impact and positive coefficients actually represents that with the increase of these factors, the value of psychological welfare also increases. To test the hypothesis, the first research, since there is a relationship between the resiliency and psychological welfare in cancer patients, Pearson correlation test was used and the results are presented in Table 4.

<table>
<thead>
<tr>
<th>Statistical Indicators of Variables</th>
<th>The correlation coefficient</th>
<th>$R^2$</th>
<th>Sig</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resilience of psychological welfare</td>
<td>0/48</td>
<td>0/23</td>
<td>0/001</td>
<td>0/05</td>
</tr>
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</table>

**Table4.** Pearson correlation test for the hypothesis

According to Table 4, there is a significant positive relationship between resiliency and psychological welfare ($P<0/05$). The correlation coefficient between resiliency and psychological...
welfare is equal to 0.48. The coefficient of determination of the relationship shows that 23% of the variable variance of psychological welfare is due to resiliency.

To test the hypothesis that the second study, coping strategies and mental health in patients with pancreatic cancer predicts, the multiple linear regression was used. The first test is the overall model. In fact, if at least one of the predictor variables has a significant impact on variable criteria, the researcher model is confirmed. The null hypothesis and against are as follows:

\[
\begin{align*}
H_0 : \beta_1 = \beta_2 = \ldots = \beta_5 &= 0 \\
H_1 : \beta_i &\neq 0 \quad \forall \text{ one } i \text{ for } i = 1,2,3,4,5
\end{align*}
\]

<table>
<thead>
<tr>
<th>Model</th>
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<th>Degrees of freedom</th>
<th>The mean squares</th>
<th>F</th>
<th>R</th>
<th>R^2</th>
<th>R^2_{adj}</th>
<th>sig</th>
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</thead>
<tbody>
<tr>
<td>Regression</td>
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<td>4757/97</td>
<td>9/95</td>
<td>0/59</td>
<td>0/33</td>
<td>0/29</td>
<td>0/001</td>
</tr>
<tr>
<td>Remaining</td>
<td>44969/09</td>
<td>94</td>
<td>478/39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>68758/96</td>
<td>99</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 5.** Regression results of coping strategies, psychological welfare

As it can be seen in table 5, the value sig is less than 0.05, indicating the significance of model of regression, i.e. at least one of the predictor variables on criterion variables is significantly effective.

**Indicator of R^2 (coefficient of multiple determinations):** The figure indicates what percentage of the variability criteria are explained by the predictor variables. In other words, what percentage of the ability to fit dependent variable predictor variables has? In this study, the value of R^2 is equal to 0.34. This means that the formation of five coping strategies and resilience of 33 percent and 67 percent of the ability for predicting the psychological welfare is related to prediction errors.

**Indicator of R^2_{adj} (corrected coefficient of determination):** The index can predict the dependent variable predicted by variables in the community. In fact, with a little modification, the sample extends to the whole community. The value of this ratio is 0.29, in other words, the components of coping strategies has 29 percent the ability for predicting the psychological welfare.

Given the significance of the model, it must now be examined which of the coefficients is not zero, or in other words which variable or variables in the model have a significant impact. For this purpose, the t-test is used.
Table 6. Coefficients, standard, nonstandard and t variables entered into the regression equation

<table>
<thead>
<tr>
<th></th>
<th>1/49</th>
<th>0/28</th>
<th>2/68</th>
<th>0/009</th>
<th>0/05</th>
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</thead>
<tbody>
<tr>
<td>Problem Solving</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional inhibition</td>
<td>1/65</td>
<td>-0/14</td>
<td>1/55</td>
<td>0/12</td>
<td>0/05</td>
</tr>
<tr>
<td>Somatization</td>
<td>0/08</td>
<td>0/01</td>
<td>0/08</td>
<td>0/93</td>
<td>0/05</td>
</tr>
<tr>
<td>Cognitive Assessment</td>
<td>2/99</td>
<td>0/43</td>
<td>3/65</td>
<td>0/001</td>
<td>0/05</td>
</tr>
<tr>
<td>Advocacy</td>
<td>0/04</td>
<td>0/01</td>
<td>0/08</td>
<td>0/93</td>
<td>0/05</td>
</tr>
</tbody>
</table>

As the results of the table show, coping factors based on problem solving, cognitive assessment and resilience to $\beta = 0/28$ and $\beta = 0/43$ on psychological welfare at the level 5 have the most significant impact and positive coefficients actually represents that with the increase of these factors, the value of psychological welfare also increases.

Conclusion

In the study of the main hypothesis of the research, since resilience and coping strategies, psychological welfare are predicted in patients with pancreatic cancer, statistical analysis showed that response factors based on problem solving, cognitive assessment and resiliency with psychological welfare at the level of 5% had the most significant relationship and positive coefficients actually represents that with the increase of these factors, the value of psychological welfare also increases.

To explain these findings, we can say that one of the key components of welfare is a positive attitude towards themselves, but not in the sense of narcissism and self-esteem is very high and unusual, but it does mean that it is on the basis of respect for the self-awareness of strengths and weaknesses so that Furness (1964) has emphasized that the awareness of the own shortcomings and accepting their mistakes are one of the characteristics full-fledged personality which are very important. Ericsson (1959) stated that one of the factors ego integrity is to achieve peace while there are victories and defeats and disappointments of the past, such a high susceptibility has been performed based on a realistic assessment, awareness of errors and limitations and love towards us and others. On the other hand, one of the most important psychological characteristics of resilient individuals that live in environments with high risks is the ability to dream that cause dream possible for ourselves and develop the purpose and destination in their life. People who live in difficult situations or specific and often unique sense of spiritual belief about their existence in the world arrives. The purpose in life and existential sense help resilient people who endure hardship because they believe that they need to complete their mission to survive. So resiliency can be a predictor of psychological welfare in cancer patients.

Also, cognitive confrontation which its main purpose is to control stressful situation assessment, to some people it gives the opportunity that means to adversity, stress and inevitable losses that occur in the life cycle and to a future life where there is no such difficulties, it will be hopeful and optimistic.
In examining the first hypothesis, since there is a relationship between the resiliency and psychological welfare in cancer patients, statistical analysis showed there was a significant positive relationship between resiliency and psychological welfare.

Many studies show that there is a positive relationship between increased levels of mental health and life satisfaction and resiliency (Mastn, 2001). Also Kaner et al (2003) who have studied resilience in the social sphere believe that resilience is not only stable against damage or threatening situations but also active and productive person in the environment. They consider resilience as the ability to balance a person's psychological Bio dangerous conditions. In addition, the researchers believe that resilience is a kind of a recovery with positive emotional, affective and cognitive outcomes. In fact, in the explanation of these findings, it must be said that resiliency has a relationship by reducing risk factors, reducing exposure to these factors and increase their capacity to adapt and cope with stress, while strengthening processes and improving self-esteem and self-supportive family that all these cases are related to increased psychological welfare.

In the study of the second hypothesis of the research, since resiliency and coping strategies, psychological welfare are predicted in patients with pancreatic cancer, statistical analysis showed that response factors based on problem solving, cognitive assessment and resiliency with psychological welfare at the level of 5% had the most significant relationship.

In patients who use cognitive strategies, information based on cognitive component is tidy, comprehensive, structured and clear, and not confused, hurt, accident and inflexible. Men or women, who have a strong sense in the intelligibility of events, expect that incentives to face them in the future are predictable or at least when they confront with a sudden events, show clear and relevant behavior. Studies have shown that low cognitive strategies increase vulnerability to disease (Grohelt et al., 2003). In fact, public judgments about patterns of disease are of special concern, for those who have the wrong mentality may not be able to adapt his logic conditions, the adoption of healthy behaviors for prevention, treatment or follow-up time after the appearance of symptoms recommendations for medical diagnosis. Overall, given the definitions of cognitive strategies and psychological welfare it can be said that the more people with cancer use cognitive strategies, the more issues including the perception of pain have predictability for them and they try to adapt themselves with it and therefore their psychological welfare increases.
References

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