

The Self-efficacy Forecasting Based on Hope to Life and Resiliency in Adolescents Suffering from Cancer

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ABSTRACT

Objective: the present research has been performed with the aim to study the issue of self-efficacy forecasting based on hope to life and resiliency in adolescents suffering from cancer. **Methodology:** research method in the present study is correlation. Statistical society includes all children suffering from cancer who have file in Mahak Hospital at Tehran, Children Medical Recognition of Tehran, Mofid Medical Center in 2015-2016 are under treatment. Sample size in this study is 120 that were selected by targeted sampling method. The tool used in this study includes Schneider's hope questionnaire; general self-efficacy questionnaire (Case-10); Conner-Davidson's resiliency questionnaire (CD-RISC). **Findings:** analyzing data of this study indicated main hypothesis confirmation and so it can be said that hope to life and resiliency predict self-efficacy of adolescents suffering from cancer and also there is a significant relation between self-efficacy and resiliency and hope to life. **Conclusion:** as a result, it can be stated that the more hope to life in adolescents suffering from cancer, the higher is their resiliency and high level of hope and resiliency in an individual with cancer can results in his/her self-efficacy as well.

Keywords: Cancer, Self-efficacy, Hope to life, Resiliency.

INTRODUCTION

Although in recent years many developments have been made in treatment of different kinds of cancers but still cancer diagnosis imposes a lot of stress on patients and their family members. Hence, in many cultures cancer diagnosis is treated equal to death.

In Iran after cardiovascular diseases and accidents, cancer is third cause of death. Cancer is observed in children as well, however cancer is very rare in this age group (to 14) and constitute one percent of all cancers (Ebadi et. al. 2015).

Some psychological studies indicate that in bio-psycho-social model, health and disease is result of simultaneous interference of biologic, psychological and social factors. Among most common psychological and emotional problems

during adolescence are anxiety, stress and depression that often impact on individuals' cognitive and emotional actions. Some researchers have considered internal and external control level as an appropriate criterion to diagnose emotional disorders (Moatamed et. al. 2014).

In cognitive-social view, human behavior isn't only in control of external and environmental factors but all cognitive process is a part of psychological pathology that these processes require incorrect expectations and perceptions that an individual has from his/her self-efficacy and this expectations can result in anxiety and defensive avoidances from threatening situations (Shoaa Kazemi and Moameni Javid, 2013).

Results of many studies show that self-efficacy is considered a key mental source in adaptability with chronic diseases. Concerning

cancer, an individual's self-efficacy level plays an essential role in how he/she adapt with challenges from cancer. Self-efficacy in patients with cancer results in a better compatibility with cancer diagnosis and life quality improvement reduces signs of cancer and mental stress level in patients. Also a high level of self-efficacy improve mental image in patients suffering from cancer and promote their communication with health personnel (quoted from Seyyed Rasooli *et. al.* 2014).

Cancer is a serious disease that always accompany with psychological problems and pathologies. Cancer diagnosis, however, create a considerable stress and it is possible that cause acute or chronic maladaptive psychological reactions. An individual with cancer will suffer many psychological problems. In aim of this study is to examine level of hope, resiliency and self-efficacy in these patients after getting informed about cancer in their body and during treatment period. First, we address to the research variables:

One of the issues that have attracted much attention in recent decades is positive psychology (Seligman, 2000, quoted from Bahadori Khosroshahi, 2013). This view emphasizes on individual's abilities and properties and believes the aim of psychology must be promotion of individual's life level and realization of his hidden talents.

Researchers have identified many factors that are predicting individuals' life quality, among can refer to personal performance, belief and personal spirituality, comparing past and present circumstances of life and rate of social support perceived by a person. Hope has been defined as a thinking process about a person's objectives, with incentive to move toward objective (factorial thinking), and methods to achieve goals (passage thinking). Hope is considered as a targeted cognitive process (Wells, 2005, quoted from Bahadori Khosroshahi, 2014).

According Schneider's theory (2007) adults and children with high hope can create more ways to achieve their goals and become motivated effectively to reach a desirable end. In contrast, individuals with low hope neither have a chance to

find possible solutions for their goals, nor have a more incentive to reach their demands (Ahmadi Tahmoor Soltani *et.al.* 2014).

In research, "hope" remedial feature has extensively been studies. Hope like a medicine has biologic effects and can has a positive impact on pain control and patients disabilities. Hope and expectation cause activation of brain circuits and releasing endorphin and encephalin and consequently pain reduction. In situation of physical weakness and pain, helplessness and disappointment intensify in human and, as a result, less endorphin and encephalin are released in body. Hope, by changing biologic conditions of body, breaks this vicious circle and adjusts chain reactions of pain and as a result produce a pleasant feeling in human (Ahmari *et al.* 2015).

Research shows that high hope reinforces self-confidence, high self-efficacy and wellbeing of individuals. In fact it is recognized that quality of life has a positive relation with hope and confrontation strategies, meaning that individuals with a high quality of life are determined to achieve their goals and also use powerful strategies to reach goals and resolve problems (Ahmadi Tahoor Soltani *et. al.* 2013).

As mentioned, this study aims to measure variables such as hope, resiliency and self-efficacy on children suffering from cancer.

Self-efficacy was introduced in psychology history by Albert Bandura's article in 1977. From Bandura's view, self-efficacy is an individual's ability to perform a particular action to cope with a certain situation. In the other word, self-efficacy is defined as individuals' judgments about their abilities to realize designed levels of performance (Jahani Maleki *et. al.* 2011). Several decades activities have shown that self-efficacy beliefs have positive effects on different aspects of life. For example, self-efficacy beliefs can serve as a significant mechanism in changing mental patients psychological treatments (Gallagher, 2012, quoted from Besharat, 2015).

Jerosalem & Mitag (1995) showed that individuals, who have high self-efficacy, have better compatibility with changes of life. As a result,

researchers try to find and reinforce variables in disabled people that increase their compatibility and efficiency level. One of the most important abilities of human that results in effective compatibility with danger factors is resiliency (Besharat, 2015).

In the other hand, resiliency is defined as human adaptability in confrontation with overwhelming disasters or pressures, overcoming and even get strengthen by them (Diener et. al. 2009, quoted from Besharat, 2010). It can be said that resiliency is an individual's ability to make biopsych balance in dangerous conditions (Conner & Davidson, 2003, quoted from Samani, 2014).

The question of this research is that the discussed variables how are in people suffering from cancer. In fact the question is answered in the end of this research that hope, how are resiliency and self-efficacy level in children suffering from cancer during different period of treatment?

Study background

Esmaeeli et. al. (2012) in a research on "support: main need of patients suffering from cancer in confrontation with disease diagnosis" performed the study with qualitative and approach and by content analysis method. Participants consisted of 19 patients, physician, nurse and patient's close relatives selected from who referred to oncology, cancer specialized clinic and one of the help centers for cancer patients. Sampling continued in the form of beginning goal and to data saturation. Interviews and field notes were used to gather data. All interviews were recorded and then handwritten word by word. As a result, the research findings showed that patients suffering from cancer have many needs after confrontation with diagnosis and cancer that is particularly significant first, their recognition and understanding from clinical personnel and health and medicine policy makers, and secondly comprehensive support of these patients.

Hosseininan et. al. (2009) performed a research on "group meaning therapy effectiveness on patients with cancer hope to life". This research is a quasi-experimental pre-test and post-test with an evidence group. Statistical population included

people under 45 year old suffering from cancer that were under treatment in Shafa hospital, Ahvaz, in 2007. During investigation, they found that meaning therapy in group form increases hope to life in patients suffering from cancer.

Momeni Javid and Shoa Kazemi (2009) performed a study on "examination of relation between life quality and hope to life in patients with cancer after surgery". Research sample included 100 women with cancer that after 2 years from surgery referred to an oncology specialist in order to disease control every three months. These patients aged from 35-50. Research hypothesis was that there is a significant relation between quality of life and hope to life. Research design was descriptive-analytic. Research tool included two questionnaires: 1. Schneider's hope questionnaire (10 items) with positive and negative orientation that its reliability coefficient using Chronbach's alpha was calculated 70% and its reliability coefficient after a month was 0.74; 2. Short scale of World Health Organization life quality evaluation (WHOQOL-BREEF) with 26 items on physical, mental, social and life environment health dimensions that its validity was estimated 0.78. The applied statistical tests were descriptive and inferential statistics (correlation and regression). Research data indicated a positive and significant relation between hope to life and life quality. Hence, the more hope to life, the more is quality of life, vice versa. As a result, predicting a better quality of life from hope to life is possible as well.

Khoshnevisan 7 Dr. Afrooz (2011) studied "relation of self-efficacy with depression, anxiety and stress". The present research aim was determining rate of relation between self-efficacy and depression, anxiety and stress in students. Thus, 376 people (188 girls and 188 boys) selected from students of guidance grade of Tehran public schools by random staged sampling method and were tested in terms of self-efficacy, depression, anxiety and stress. Results showed that self-efficacy explains 27 percent of total score variance, 20 percent of depression variance, 15 percent of anxiety variance and 19 percent of stress variance.

Zareapoor et. al. (2009) performed a research on "study of game therapy impact on

depression rate in children and adolescents suffering from cancer". This study was an intervention study. Research population in this study included all children and adolescents aged 6-19 suffering from cancer who was hospitalized at Mahak health-welfare center in 2007. Sampling method in current research was based on available samples. After calculating depression score using CDS-A tool, 24 persons that were equal to statistical population, obtained a score over 83 and were depressed that were divided randomly in two intervention and control groups. Then game therapy sessions (7 sessions of 2 hours) was performed on intervention group in game room and in the end of this program, game therapy was performed again after a week on each of these two groups of depression test. Data analysis was performed using inferential statistical methods, such as Mann-Whitney tests U, Kruskal & Wallis and Wilcoxon. In this study game therapy significantly resulted in reduction of depression in intervention group compared with control group. Game can be used as an effective intervention by health team members to help hospitalized children to prepare them for painful remedial procedures and tension resulting from hospitalization.

Montazeri & Dr. Sharif (2008) performed a study on "identifying physical, mental and social problems of children with parents suffering from cancer". This cross-sectional study was performed on 100 children aged 6-12 that one of their parents was suffering from cancer and was hospitalized in Shiraz Namazi Hospital during 2004-2005. Data gathering tool was standard list of children behavior examination that included questions associated with physical, mental and social problems such as fear, regression, sleep disorder, communication disorder and educational performance that was performed according disorder presence or absence and through interview with parents. Data were analyzed using Chi-square statistical tests, Pearson and Fisher's correlation coefficient. According the findings it can be acknowledged that during appearance of life threatening diseases in parents, planning in different grounds of prevention and treatment through training and consultation with children and their parents is a necessary and undeniable issue.

Bhadori Khosroshahi and Dr. Hashemi Nosratabad (2011) did a study on "relation of hope and resiliency with psychological well-being in students". Psychological well-being includes an individual's perceptions from harmony level between certain and illustrated goals with performance messages that is obtained during continuous evaluation process and result in internal and partly sustainable satisfaction on life. The aim of present research is to study relation of hope and resiliency with psychological well-being in students. Statistical population included students of Tabriz University among which 400 individuals (200 boys, 200 girls) were selected by cluster sampling and evaluated in terms of hope, resiliency and psychological well-being. Data were examined using correlation coefficient and regression analysis. Results showed that there is a positive and significant relation between hope and resiliency with psychological well-being and prediction variables can predict physiological well-being changes. According these data, individuals with high hope and resiliency also have high psychological well-being.

Vafajoo Dianati et. al. (2014) performed "study of cancer epidemiological situation in Qom province". In this descriptive research, all patients with cancer referring to medicine training centers and chemotherapy centers in Qom city were investigated. Results showed that age of majority of patients suffering from cancer (21.4%) were 70 to 79 and male (58%).

Dr. Shoa Kazemi & Momeni Javid (2012) performed "comparative study of self-efficacy and ability level in women suffering from breast cancer and healthy women". Data obtained from this study indicated a positive and significant relation between self-efficacy and its sub-scales in both groups. There was a significant difference between two groups in self-efficacy feeling and ability level. Conclusion: women suffering from cancer had a lower self-efficacy and ability than healthy women. Such that disease can influence on individuals' self-efficacy and ability.

Dios et. al. (2003) in an investigation about study of physical and mental problems of children

suffering from cancer argues that child's reaction against such a tension is influenced by their evolution stages, their compatibility ability, time of tension appearance and its intensity and in general consist of: physical problems, depression, anxiety, fear, behavioral and communication problems, reduction of self-confidence and social interactions and regressive behaviors.

Berger (2001) performed a research in which studied mental situation of women suffering from breast cancer. His findings showed that children having parents with cancer demonstrate their reaction to their parents' disease in the form of disorder in education and social activities.

Method

The present research method is correlation. In the studies that regression analysis is used, the objective is usually predicting a criterion variable of several variables from a multiple regression model. In the case that objective is simultaneous prediction of several criterion variables from predictive variables or subset of them, multivariable regression model is used (Delavar, 2006).

Statistical populations in this research are all children suffering from cancer that have a file in Tehran Mahak hospital or are under treatment. Sample size in this research is 120 that are sufficient for correlation studies (Delavar, 2006).

In this research targeted sampling method was used and its tool included 3 questionnaires as following:

Schneider's hope questionnaire

Schneider's hope scale based on Schneider's hope theory (2002) is a measure that evaluates an individual's hope as a relatively stable personality feature (Khalaji, 2007). This scale is applicable for all people including mental patients and individuals with 15 years old and older. To assess two main scale factors initially 45 items were designed by Doomine (2006) and in the case of student sample was used with a four degree Likert from completely wrong to completely correct and

all instances correlation was calculated. Finally, 14 items remained that had a correlation higher than 0.2. From these items, 4 items which had most relation with factorial thinking, and 4 other items which had most relation with strategies were separated and calculated. Internal materials of each correlation factor showed between 0.38-0.57. Schneider et. al. using this 8 phrases and 4 other phrases that serve as fillers, built hope scale. This test consists of 12 items and two subscales of factorial thinking and strategies. A subject must in a 8 degrees likert scale – from completely agree to completely disagree – determines his agreement or disagreement with each phrases. The test scores range 8 to 64.

Chronbach's alpha obtained for hope questionnaire with 8 items in this study was 0.74.

General self-efficacy questionnaire (Gse-10)

General self-efficacy scale was constructed in 1979 by Schwartz and Jerusalem in order to evaluate general and social self-efficacy. The mentioned test has 20 phrases and measures two general subscales. The perceived self-efficacy construct shows optimistic view to him/her (Schwartz, 1992, quoted from Rajabi, 2010).

Chronbach's alpha obtained for self-efficacy questionnaire with 10 items in this research was 0.79.

Conner-Davidson resiliency questionnaire (CD-RISC)

Conner-Davidson resiliency scale (2003) is a 25 items tool that measures resiliency construct in a five degree Likert from zero to four. A subject's minimum resiliency score in this scale is zero and maximum score is 100. Results of primary study related to psychometrics features have confirmed its validity and reliability (Conner & Davidson, 2003).

Chronbach's alpha obtained for self-efficacy questionnaire with 25 items in this research was 0.85.

Data analysis in this study is performed using SPSS software. The data obtained from

questionnaire in two descriptive statistics (including average, median, criterion deviation, frequency...) and inferential statistics are analyzed by regression.

Findings

Main hypothesis: hope to life and resiliency predict self-efficacy of adolescents suffering from cancer.

In order to examine the research main hypothesis, "hope to life and resiliency predict self-efficacy of adolescents suffering from cancer", regression test was used by a step by step method. In the following table a selection of these calculations has been reported.

As table 1 show, this analysis has been performed in two steps. Resiliency variable is first variable that has entered in regression equation and in the following hope to life has entered in the equation in next step. Resiliency standard regression coefficient in first and second steps has been obtained 0.579 and 0.512, respectively, that both are significant in $p > 0.001$ level. Both the obtained regression coefficients are positive.

The standardized determination coefficient of this regression model has been obtained in first step with a prior variable 0.329. By entering next variable to model this coefficient in second step increased to 0.353 that this coefficient also is significant with f value by rate 33.48 in level $p > 0.001$. This results show that main hypothesis of research has been confirmed.

First sub-hypothesis: hope to life predicts self-efficacy of adolescents suffering from cancer.

In order to examine first sub-hypothesis of this research, "hope to life predicts self-efficacy of adolescents suffering from cancer", univariate regression test was used.

In the following table a selection of these results has been reported.

As table 2 shows, hope to life regression coefficient has been obtained over self-efficacy of 0.371 that significant with t -value of 4.33 in level $p > 0.001$. Considering this regression coefficient mark it is found that relation between these two variables is in the same direction numerically and positive, that is, hope to life has resulted in increase of self-efficacy in adolescents with cancer. Consequently the first sub-hypothesis is confirmed.

In order to graphic display of this relation, variables points' dispersion were drawn and have been reported as diagram 1:

Second sub-hypothesis: resiliency predicts self-efficacy of adolescents suffering from cancer.

In order to examine second sub-hypothesis of this research, "resiliency predicts self-efficacy of adolescents suffering from cancer", univariate regression test was used. Table 3 has reported a selection of these results.

As it is observed from table 3, resiliency regression coefficient over self-efficacy has been

Table 1: Results of analysis of self-efficacy step by step regression based on resiliency and hope to life

	Previous variable	b	β	t	p	R ²	R ² .adj	F	p
First step	resiliency	216/0	579/0	709/7	000/0	335/0	329/0	43/59	000/0
Second step	resiliency	191/0	512/0	454/6	000/0	364/0	353/0	481/33	000/0
	hope	135/0	183/0	312/2	023/0				

Table 2 : Results of regression analysis of predicting self-efficacy according hope to life

Predictive variable	b	β	t	p	R ²	R ² .adj	F	p
hope	274/0	371/0	339/4	000/0	138/0	13/0	824/18	000/0

obtained 0.579 that is significant with t value of 7.70 in level $p > 0.001$. Considering this regression coefficient mark, it is found that relation between two variables is numerically in the same direction and positive, that is, resiliency has resulted in increase of self-efficacy in adolescents with cancer.

Consequently the second sub-hypothesis is confirmed.

In order to graphic display of this relation, variables points' dispersion were drawn and have been reported as diagram 2:

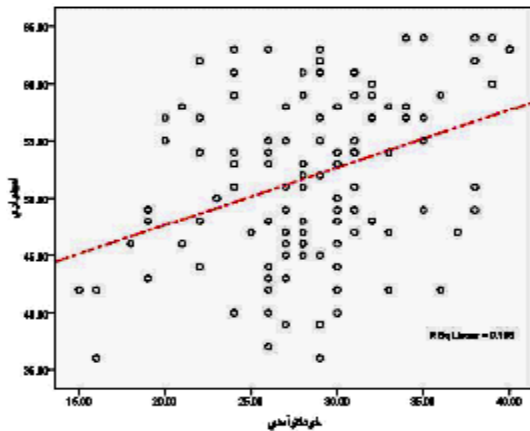


Fig.1: dispersion of scores points of self-efficacy with hope to life

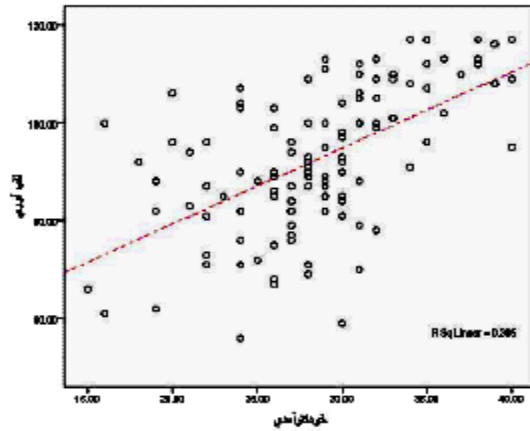


Fig. 2: dispersion of scores points of self-efficacy with resiliency

Table 3 : results of step by step regression analysis of predicting self-efficacy according resiliency

Previous variable	b	β	t	p	2R	R^2 .adj	F	p
Resiliency	216/0	579/0	709/7	000/0	335/0	329/0	43/59	000/0

CONCLUSION

High hope results in increase of individuals' self-confidence, high self-efficacy and well-being. In fact it has been determined that quality of life has a positive relation with hope and confrontation strategies. That is, individuals with a high quality of life are determined to achieve their goals and also use powerful strategies to reach their goals and solve problems.

As mentioned, the aim of this research is measuring variables such as hope, resiliency and self-efficacy on children with cancer.

Several decades of research has shown that self-efficacy beliefs have positive effects on different areas of life. For example, self-efficacy

beliefs can serve as a significant mechanism for changing psychological treatments of mental patients. In one hand, resiliency is defined as human adaptability in confrontation with overwhelming disasters or pressures, overcoming and even get strengthen by those experiences. It can be said that resiliency is an individual's ability to make bio-psycho balance in dangerous conditions. In fact in this research the question is answered that hope, how are resiliency and self-efficacy level in children suffering from cancer during different period of treatment?

Considering the interpretation and analysis of data obtained from this research, the findings of this analysis can be stated as following:

Hope to life regression coefficient over self-efficacy was obtained 0.371 that is significant with t-value of 4.33 in level $p > 0.001$. Considering this regression coefficient mark it is found that relation between these two variables is in the same direction numerically and positive, that is, hope to life has resulted in increase of self-efficacy in adolescents with cancer. It can be argued that this finding has a positive relation and aligned with previous findings that is hope to life and self-efficacy.

It has been proved in Hosseinin et. al. research (2009). They found that group meaning therapy results in increase of hope to life in cancer patients and as a result their self-efficacy.

In another research that was performed by Momeni Javid and Shoa Kazemi (2009), it was shown there is a significant relation between hope to life and quality of life. Such that the more hope to life, the more desirable is quality of life and self-efficacy and vice versa. As a result, prediction of better quality of life and self-efficacy from hope to life is possible.

Also resiliency regression coefficient over self-efficacy has been obtained 0.579 that is significant with t value of 7.70 in level $p > 0.001$. Considering this regression coefficient mark, it is found that relation between two variables is numerically in the same direction and positive, that is, resiliency has resulted in increase of self-efficacy in adolescents with cancer. Consequently the second sub-hypothesis is confirmed.

Results obtained from analyzing this hypothesis data is in line with results obtained from Bahadori Khosroshahi and Dr. Hashemi Nosratabadi analysis (2011). Bahadori Khosroshahi and his colleagues' research aim were also to study relation between hope and resiliency with psychological well-being and self-efficacy. Results showed that there is a positive and significant relation between hope and resiliency with psychological wellbeing and self-efficacy of students. According these data, individuals who have a high hope and resiliency have also high psychological well-being and self-efficacy.

It must be mentioned that because of subjects' reference to hospitals, data gathering was confronted with many limitations. For an example, a patient was hospitalized to take medicine for two weeks during which majority of individuals are the same individuals of previous days and this made the work hard for examiner that during this period more than 30 people wasn't available for her/him.

Also due to physical and chemotherapy problems of subjects it wasn't possible to complete questionnaire in all days, and before beginning it was necessary to inquire patient or his/her attendant's mental and physical conditions and this work must be done by coordination of nursing staff.

This research can be performed in country wide and other provinces extensively and also it is suggested that this study is carried out in other levels of society, including among pregnant women, and women suffering from breast cancer.

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