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The Study of the Relationship Between Coping Styles, Acceptance and Action in Parents of Cancer-Stricken Children

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Abstract: The aim of the present study was to determine the relationship between coping styles and acceptance and action in parents whose children are affected by cancer. Study plan was of correlation type. The study sample consisted of 160 parents of cancer-stricken children, who were selected via convenience sampling and responded to study tools consisting of Stress Copying Styles Questionnaire of Endler and Parker and Acceptance and Action Questionnaire of Bond. For data analysis, statistical methods of Pearson's correlation coefficient, multivariate regression and MANOVA were used. Results indicated that there is a positive relationship between coping style, problem-focused and emotion-focused stress and acceptance and action in parents of cancer-stricken children and also, there is a negative relationship between avoidance stress coping style and acceptance and action in parents of cancer-stricken children and there is a negative relationship between problem-focused and emotion-focused stress coping style and experimental avoidance in parents of children affected by cancer and there is a positive relationship between avoidance stress coping style and experimental avoidance in parents of children affected by cancer.

Key words: Coping styles, acceptance and action, experimental avoidance, cancer, regression

INTRODUCTION

Today, chronic diseases including cancer as a bitter reality affect millions of lives worldwide. The World Health Organization estimates that by the year 2020 there will be 15 million people affected by cancer in year worldwide. Studies suggest that life-threatening illnesses in a family member will lead to many changes in the individual and family's life (Montaseri and Sharif, 2008).

One of these illnesses is childhood cancer. Cancer is considerable at any age but its fatalities in children between ages of 13 and 14 are higher than that of other patients. Childhood cancer refers to a group of malignancies each having their own epidemiology-pathology and fatality. This illness that has greater variety than adult diseases is the most common cause of fatality between the ages of 1 and 16 in Western countries (Zare'pur *et al*., 2009).

Changes caused by cancer and its treatments and changes brought about in communicative roles and patterns of sexual functions are one of the most important factors affecting one's self-concept and creating adaptive disorders which are accompanied by depression in cancer patients (Virginia and Benjamin, 2000).

Children at any age show two general impressions to this illness: anger and guilt. About 30% of children with cancer eventually perish. It was concluded from a number of surveys that even children with relatively good condition are well aware of the graveness of this illness and might expect their premature death. Prevalence of cancer is equal in both genders before puberty and in adolescence it increase twice as much in girls as boys (Zarepur *et al*., 2009).

Studies indicate that having a child diagnosed with cancer can lead to emotional instability, uncertainty and stress in family members, especially parents (Grootenhuis and Last, 1997a, b). In addition to their child's emotional reaction to illness, they also have their own reaction; at the same time, these parents have to take care of other family members such as other children in the family. Longitudinal studies concerning physiological perturbation in parents of cancer children have shown that stress decreases over time (Hoekstra-Weebers *et al*., 1999).

In general, the transition of hospital care to home care for cancer patients imposes caregiver burden on the family (Papastavrou *et al*., 2012). Caregiver burden is defined as sensory, mental and social reaction of

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caregiver (Zarit, 2004) caused by imbalance between care-giving needs and other needs of the caregiver. This imbalance involves personal social roles, physical and emotional condition and financial resources of the caregiver (Lu *et al*., 2009).

Parents caregiver burden has two dimensions: objective and subjective. Objective caregiver burden can be defined as the amount of time and effort required to provide for others' needs which includes problems dealing with financial costs, family relations and social performance (Schene *et al*., 1994). Subjective caregiver burden is the amount of available caregiver experience in the face of objective caregiver burden which includes mental, emotional and behavioral problems caused by the illness (Montgomery *et al*., 1985; Maurin and Boyd, 1990).

Parents caregiver burden is expressed as an important priority in children oncology studies as currently, most medical cares are shifting toward being performed in home and outpatient care and it is expected that parents and other caregivers would have more responsibilities regarding medical duties, related side effects and discussing and reporting child condition to healthcare team; thus, studies in this regard can be a basis for increasing healthcare role and family performance in cancer (Wells *et al*., 2002).

Additionally, timely recognition of caregiver burden in caregivers has a defining role in improving their health (Abbasi *et al*., 2012) because caregiver burden is presented as the most important factor determining caregivers' quality of life. On the other hand, there is a direct and significant relationship between life quality of children and mothers as parents health is one of the factors influencing children life which can be affected by caregiver burden (Klassen *et al*., 2011).

Thus, what matters for improving life of cancer children is to timely identify these pressures in caregivers. Various studies have been conducted in this regard for example, research has shown that mothers of schizophrenic children have undergone a high caregiver burden, reporting low life quality for their children (Foldemo *et al*., 2005).

Also, long-term care of people diagnosed with chronic diseases such as Alzheimer's and mental disorders had considerable impact on caregivers health (Chang *et al*., 2010) and care-giving demands of the sick child have implications for life quality of the child and family caregivers (Wells *et al*., 2002). In some other studies direct and significant relationship between life of children and mothers has been confirmed.

Acceptance and action measure a structure that deals with variety, acceptance, experimental avoidance and psychological flexibility. Following the insufficient effectiveness of first wave and second wave treatments (behavioral, psychoanalytic, cognitive-behavioral, classic, treatments and so on) in treating many mental disorders, the third wave was developed by emphasizing emotional processes and also incorporating mental and behavioral processes. One of the treatments that is discussed in the third wave is treatment based on acceptance and commitment (Twohig, 2012).

Coping means using cognitive behavioral approaches to reduce stress and expand defensive skills (Bagheri *et al*., 2010). Coping with mental pressure refers to behavioral and cognitive attempts to manage outer or inner demands made by the threatening or damaging person (Lazarus and Folkman, 1984). The way of coping with mental pressures can be in problem-focused, emotion-focused or avoidance form (Piri and Shahr'aray, 2005).

Problem-focused (problem-focused) coping can be directed inward or outward. In outward-directed coping, the goal is to change situation or others' behaviors, whereas inward-focused coping involves all attempts that we do for reappraisal of our views and needs and to acquire fresh skills and responses. Emotion-focused coping is the main goal of focus on emotion and controlling emotional discomfort that is often accompanied by physical training, caring, feelings expression and seeking social support. Usually, when individuals feel they can do something about the problem, they employ problem-focused coping which has more certain results.

Coping with cancer can trigger any of coping approaches in individuals, each of which in various conditions can lead to higher or lower mental health. Coping with tension is responsible for reducing pressure of illness and returning to balance and mental health. If optimal coping method is used, the individual will be able to maintain his/her adaptation whereas insufficient methods will lead to increased insatiable pressure of critical needs and emotional instability (Taylor, 2006).

Coping styles are a process during which the individual deals with requests beyond personal resources and capabilities and are threatening. Based on this definition, coping is a process that changes depending on the success of one's attempts (Lazarus and Folkman, 1984).

Endler and Parker have divided coping styles into three categories, including:problem-focused coping: in this method, techniques such as cognitive evaluation, logical analysis or attempts to determine cause of the problem and seeking further information regarding the

problem to deal with stress is used. emotion-focused coping, focusing with regard to problem-focused emotions; avoidance coping: this type of coping involves responses the aim of which is to deny or minimize damages of a crisis or its consequences. In this coping, the individual consciously repulses stressful thoughts, replacing new thoughts in their stead.

Adlowin and Rewinsone believe that individuals show different reactions to stress and using various coping methods has different effects on individuals' mental health. Lazarus and Folkman (1984) believe that when facing stress, people show different reactions and using different methods of dealing with stress has varying effects on individuals' mental health. Lazarus and Folkman (1984) suggest that use of problem-focused coping is related to better mental health and use of avoidance coping method has a negative impact on individuals' mental health scales. Typically, people who use problem-focused methods better adapt to high-tension situations and less often show illness symptoms. It appears that using proper coping strategies in high tension situations in addition to improving mental health in individuals can also enhance sense of well-being and happiness.

In the present study, the researcher sought to find whether there is a relationship between coping methods and acceptance and action in parents of cancer-stricken children.

Goals:

- Goal 1: to determine the relationship between coping methods and acceptance and action in parents of cancer-stricken children
- Goal 2: to determine predictability of "acceptance and action" by "coping methods" and its components in parents of cancer-stricken children

Hypotheses:

- Hypothesis 1: there is relationship between "coping styles" and "acceptance and action" in parents of cancer-stricken children
- Hypothesis 2: "coping styles" and their components predict "acceptance and action" in parents of cancer-stricken children

Variables:

- Criterion variable: acceptance and action
- Predictor variable: components of coping styles (emotion-focused coping style; problem-focused coping style; avoidance coping style)
- Moderator variable: parent gender (male/female)
- Time since diagnosis and awareness of cancer in the afflicted child (less than three months, over three months)
- Control variable: Location (city) of treatment (children's parents both from Tehran and counties have their children treated in Tehran hospital

MATERIALS AND METHODS

- Study plan: the present study is a descriptive survey which is considered a practical study considering its goal
- Method of study: considering that the present study considers the relationship between variables, it is a correlation-type research

Research population includes all cancer-stricken children under treatment in the hospitals of Mahak, Ali Asghar, Mofid Children Center, Shohada-ye Tajrish, Imam Khomeini, Bahrami Children Center, Children Medical Center and Santral in the city of Tehran.

Criteria for inclusion into study: all parents whose children are under cancer care in hospitals qualify for inclusion in this study.

Note 1; this population does not include children whose treatment has been discontinued because of improvement.

Note 2; this population does not include children whose treatment has been discontinued because of death. Sample and sampling method: after going to hospitals and due arrangements, any parent of cancer-stricken children who were eager to answer questionnaires were evaluated. This method is known as convenience sampling. Sample size: sample size in correlation studies is obtained using Julie Pallant's equation:

$$\text{Sample size} = (8\times\text{number of variables})+50$$

$$50+(3\times8) = 74$$

About 74 was the minimum size of the sample but for sufficiency of numbers, more than this, i.e., 160 was considered.

RESULTS AND DISCUSSION

Using proper statistical methods, collected data were analyzed. Findings of the study are presented in the three following parts.

Descriptive findings: Descriptive findings of this study include the statistical indicators of mean, standard

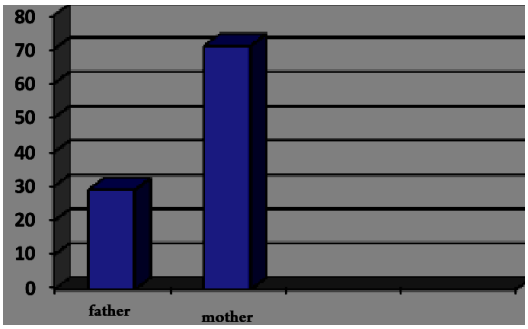

Fig. 1: Distribution of parents according to parent roles

Table 1: Number of cancer children in Tehran hospitals

Hospital*	Number of afflicted children
Mahak	5459
Ali Asghar	1479
Medical center	1054
Mofid children center	1227
Shohada-ye Tajrish	198
Shariati	103
Santral	285
Imam Khomeini	391
Naval force	60
Bahrami children center	212
Total	10460

Table 2: Education of parents of cancer-stricken children in Mahak hospital

Education of parents of cancer-stricken children	Education	Number
1	Uneducated	69
2	Under high-school diploma	323
3	High school diploma	536
4	Bachelor's degree	286
5	Over master's degree	65

Table 3: Five most common childhood cancers in Iran

5 highest-frequency childhood cancers in Iran	Name of cancer
1	Acute Myeloid Leukemia (AML)
2	Acute Lymphocytic Leukemia (ALL)
3	Brain tumors
4	Hodgkin's Disease (HD)
5	Non-Hodgkins Lymphoma (NHL)

*Statistics are given according to the Integrated Statistical System of Mahak Hospital as of July 2015

Table 4: Distribution of parents according to father and mother roles

Variable statistical indicators	Frequency	Percentage
Mother	114	71
Father	46	29
Total	160	100

deviation and number of sample subjects for all variables under study, as given in Table 1-4 and Fig. 1. As seen in Table 4 in the sample under study of parents, father and mother comprise 29 and 71% of the research sample, respectively.

As seen in Table 5, in the studied sample, parents of children with under 3 month old cancer diagnosis and those with over 3 month old cancer diagnosis, comprise 35 and 65% of the study sample, respectively. By 3 months, time lapsed since diagnosis and parents' awareness of the child's disease is meant.

Table 5: Distribution of parents per time after diagnosis

Variables	Values
Number of women	114
Number of men	46
Number of women less than three months*	37
Number of women more than three months	77
Number of men less than three months	19
Number of men more than three months	27
Whole sample under three months	56
Whole sample over three months	104

Table 6: Mean and standard deviation for styles of coping with stress, acceptance and action

	Statistical indicators		
Variables	Mean	SD	Number
Acceptance	18.66	1.76	160
Problem-focused coping style	66.83	10.30	160
Avoidance coping style	72.45	5.15	160
Acceptance and action	43.24	7.14	160
experimental avoidance	39.12	6.34	160

Table 7: Mean and standard deviation for styles of coping with stress, acceptance and action in parents with under 3 month old diagnosis and over 3 month old diagnosis

	Statistical indicators			
Variables	Group (month)	Mean	SD	Number
Acceptance	Under 3	16.57	5.27	56
	Over 3	18.54	2.17	104
Problem-focused	Under 3	61.41	3.34	56
coping style	Over 3	65.37	5.17	104
Avoidance coping	Under 3	74.31	3.27	56
style	Over 3	70.24	4.57	104
Acceptance	Under 3	42.31	4.27	56
and action	Over 3	44.37	3.24	104
Experimental	Under 3	41.29	4.43	56
avoidance	Over 3	37.46	3.12	104

As observed from Table 6, mean and standard deviation in problem-focused coping style for mothers are 68.34, 3.57, respectively and for fathers, 66.27, 2.27; in emotion-focused coping style, for mothers and fathers, 68.34, 3.57 and 67.32, 2.24, respectively for avoidance coping style in mothers, 70.14, 2.17 and in fathers, 74.24, 4.37 and finally, for acceptance and action in mothers and fathers, 44.34, 3.14 and 42.27, 2.24, respectively and for experimental avoidance in mothers and fathers, 38.71, 40.34 and 71.28, 2.3, respectively. As seen in Table 7, mean and standard deviation for the variable of problem focused coping style for parents with under 3 month old diagnosis are 61.41, 3.34 and for parents with over 3 month old diagnosis, 5.17, 65.37, respectively in emotion-focused coping style for parents with under

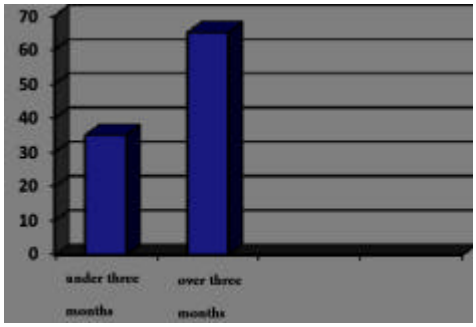

Fig. 2: According to time lapse since diagnosis

3 month old diagnosis and over 3 month old diagnosis, these values are 68.74, 3.46 and 69.57, 3.42, respectively for avoidance coping style in parents with under 3 month old diagnosis 74.31, 3.27 and in parents with over 3 month old diagnosis 70.24, 4.57 and finally for acceptance and action in parents with under 3 month old diagnosis and over 3 month old diagnosis, 42.21, 3.24 and 44.37, 4.27, respectively and for experimental avoidance, 41.29, 4.43 and 37.46, 3.12, respectively (Fig. 2).

Inferential statistics regarding the study hypotheses:

- Hypothesis 1: there is relationship between coping styles and acceptance and action in parents of cancer-stricken children

As seen in Table 8, correlation coefficient for problem-focused style and acceptance and action in parents of cancer-stricken children is r = 0.17 which is significant in the 0.01 level, correlation coefficient of emotion-focused style and acceptance and action in parents of cancer children is r = 0.18 which is significant in the 0.009 level and correlation coefficient for avoidance style and acceptance and action in parents of cancer-stricken children is r = -0.23 which is significant in the 0.005 level. In other words, there is a positive relationship between problem-focused and emotion-focused style and acceptance and action in parents of cancer-stricken children and there is a negative relationship between avoidance style and acceptance and action in parents of cancer-stricken children.

Before analyzing data related to this hypothesis, data of this study were investigated to ensure they satisfy underlying assumptions of regression analysis. To this aim, results of Kolmogorov-Smirnov test for the presumption of normality of scores distribution in population are presented in Table 9. Also, to test independence of errors, Durbin-Watson test was used.

As observed from Table 9, null hypothesis for normality of scores distribution in the variables of styles

Table 8: Relationship between styles of coping with stress and acceptance and action

Criterion variables	Number	Acceptance and action correlation coefficient	Level of significance
Problem-focused style	160	0.17	0.010
Emotion-focused style	160	0.18	0.009
Avoidance style	160	-0.23	0.005

Table 9: Results of Kolmogorov-Smirnov test regarding the presumption of normality of scores distribution

	Kolmogorov-Smirnov	
Normality of scores distribution	Statistic	Significance
Acceptance	0.17	0.12
Problem-focused style	0.11	0.15
Avoidance style	0.10	0.20
Acceptance and action	0.16	0.13

Table 10: Durbin-Watson test

Test	Desired value	Obtained value	Status
Durbin-Watson test	1.5<d<2.5	No correlation between errors	1.62
		No correlation between errors	1.62

Table 11: Prediction of acceptance and action from styles of coping with stress

Criterion/predictor variable	B	β	t-vaue	ρ	MR	R^2	F-value	ρ
Avoidance style	0.47	0.031	1.74	0.001				

of coping with stress and acceptance and action is confirmed. That is, presumption of normality of scores distribution for variables was confirmed.

As observed in Table 10, given that desired statistic is located between 2.5 and 1.5, so no correlation between errors is accepted and regression can be used.

- Hypothesis 2: "coping styles" (and their components), predict "acceptance and action" in children diagnosed with cancer

As seen from Table 11, according to the results of step-by-step regression analysis, from among variables, avoidance style with beta of $\beta = 0.31$ can predict acceptance and action in parents of cancer-stricken children. Its coefficient of determination is RS = 0.25, showing that 25% of the variance of acceptance and action in cancer-stricken children is accounted for by the variable of avoidance coping style.

Findings of study: As seen from Table 12, levels of significance for all tests suggest that there is difference between parents of cancer-stricken children at least in terms of one of dependent variables (coping styles and acceptance and action) ($p<0.001$, $F = 87.39$). To verify this difference, a one-way MANOVA was conducted with the results thereof presented in Table 13. Statistical power is 1 that is type 2 error was not possible.

As seen from Table 13, there is difference between parents of cancer-stricken children in terms of avoidance

Table 12: Results of multivariate analysis of variance (MANOVA) on the mean scores of coping strategies and acceptance and action of parents of cancer-stricken children

Name of test	Values	DF of hypothesis	DF of error	F-values	p-vaues	Statistical power
Pillai's trace test	0.97	14	145	87.39	0.001	1
Wilks' lambda test	0.02	14	145	87.39	0.001	1
Hotelling trace test	33.86	14	145	87.39	0.001	1
Roy's greatest root	33.86	14	145	87.39	0.001	1

Table 13: Results of one-way MANOVA on mean scores of coping strategies and acceptance and action in parents of cancer-stricken children

Variables	Sum of squares	DF	Mean of squares	F-values	p-values	Statistical power
Emotion-focused style	20.22	1	20.22	1.26	0.730	0.07
Problem-focused style	19.27	1	19.27	1.24	0.710	0.06
Avoidance style	124.21	1	124.21	59.01	0.001	1.00
Acceptance and action	57.31	1	57.31	2.02	0.570	0.13

Table 14: Results of multivariate analysis of variance on mean scores of coping styles and acceptance and action in parents of children with under 3 month old cancer diagnosis and over 3 month old cancer diagnosis

Name of test	Values	DF of hypothesis	DF of error	F-values	p-vaues	Statistical power
Pillai's trace test	0.78	5	345	80.66	0.001	1
Wilks' lambda test	0.12	5	345	80.66	0.001	1
Hotelling's trace test	16.67	5	345	80.66	0.001	1
Roy's greatest root test	16.67	5	345	80.66	0.001	1

Table 15: Results of one-way MANOVA one mean scores of coping strategies and acceptance and action in parents of children with under and over 3 months cancer diagnosis

Variables	Sum of squares	DF	Mean of squares	F-values	p-values	Statistical power
Emotion-focused style	19.28	1	19.28	3.49	0.390	0.10
Problem-focused style	19.34	1	19.34	3.57	0.430	0.12
Avoidance style	127.31	1	127.31	87.34	0.001	1.00
Acceptance and action	98.14	1	98.14	52.13	0.002	1.00

coping style ($p<0.001$, $F = 156.63$) but there is no difference in other coping styles and acceptance and action between parents. To put it differently, given the means of Table 14, fathers adopt more avoidance coping style than mothers.

As seen from Table 14, levels of significance for all tests suggest that there is difference between under 3 month diagnosis and over 3 months diagnosis parents at least in terms of one of the variables of coping styles and acceptance and action ($p<0.001$, $F = 80.66$). To verify this difference, a one-way MANOVA was conducted with results thereof displayed in Table 15. Statistical power is 1 that is type 2 error was not possible.

As seen from Table 15, there is difference between parents of children with under and over 3 months cancer diagnosis in terms of avoidance style ($F = 87.34$, $p<0.001$) and acceptance and action ($F = 52.13$, $p<0.001$), but no difference was obtained in other dimensions (problem-focused and emotion-focused). In other words, considering the means of Table 7, parents of children with under 3 months diagnosis adopt less avoidance style than those with over 3 months diagnosis.

CONCLUSION

- Hypothesis 1: there is relationship between styles of coping with stress and acceptance and action in parents of cancer-stricken children

Given the results of Table 8, it became clear that correlation coefficient of problem-focused style and acceptance and action in parents of cancer-stricken children is $r = 0.17$ which is significant in the 0.01 level; correlation coefficient of emotion-focused style and acceptance and action in parents of cancer-stricken children is $r = 0.18$ which is significant in the 0.009 level; correlation coefficient of avoidance style and acceptance and action in parents of cancer-stricken children is $r = -0.23$ which is significant in the 0.005 level. To put it differently, there is a negative significant relationship between avoidance style and acceptance and action in parents of cancer-stricken children. In explaining the result of research it could be suggested that child's cancer causes many stresses for parents of the child due to creating negative emotions. Stress caused by the child's illness affect parents' mental and physical capacity, resulting in their increased exhaustion. In Kepner model, it is suggested that there is relationship between mental agitation and coping mechanisms and mental agitation and exhaustion. In this study it became clear that there is a significant positive relationship between problem-focused strategy and acceptance and action in parents of cancer-stricken children. It could be said that problem-focused strategy causes one to feel they are in control of their life and are aware of their abilities and to regulate and manage their feelings in stressful situations and thus, doing proper and realistic

preliminary and secondary evaluation to find the most suitable way of coping with a certain event in solving problems and decreasing stress by using correct planning and using positive knowledge and feelings, not feeling lethargic and not resorting to escaping solutions. For this reason, it could be said that coping with stress using problem-focused style has significant positive relationship with acceptance and action. Also, it became clear that there is a positive relationship between emotion-focused coping style and acceptance and action in parents of cancer-stricken children. It could be suggested that emotion-focused coping, due to focusing on feelings and controlling feelings, allows the individual to unleash their feelings and try to reduce their tensions, control their feelings and therefore in stressful situations, emotion-focused strategies (such as physical exercise, vigilance, expressing feelings and seeking social support) for controlling emotional discomfort and perturbation, result in increased mental flexibility in individuals. Therefore, it could be observed that there is a significant negative relationship between emotion-focused strategy and acceptance and action in parents. However, it was determined in this study that there is a significant negative relationship between avoidance coping style and acceptance and action in parents of cancer-stricken children. It is worth noting that avoidance coping style as it requires denying or underestimating stressful situations, results in denying or minimizing damages of a crisis or its consequences in individuals and therefore is coupled with passivity and helplessness, leading the individual to fantasize about situation-changing ways, thus doing nothing to cope with the problem, denying any problem and hoping that the problem would be solved naturally so, this approach in the long term creates further stress and discomfort, exhaustion of the individual and is an inefficient strategy, resulted from weak view and lack of good judgment. Therefore, avoidance strategy has inverse relationship with mental flexibility and lack of avoidance in the face of emotional situations and mental acceptance in occurring incidents and experiences. Hence, it could be suggested that there is positive relationship between problem-focused style and acceptance and action in parents of cancer-stricken children and there is negative relationship between avoidance style and acceptance and action in parents of cancer-stricken children.

- Hypothesis 2: coping strategies and their components predict acceptance and action in parents of cancer-stricken children

Considering the results of Table 11, it became clear that from among components of coping styles, avoidance style can predict acceptance and action in parents of cancer-stricken children.

In explaining this result it could be said that avoidance coping style in parents leads to their not using their capacities in difficult situations to overcome problem and stressful situation, thus resulting in lack of motivation, non-adaptive coping, cognitive reappraisal and emotional suppression. Problem-focused and emotion-focused styles enable the parents to challenge the problem, do problem solving and seek solutions while avoidance style passively repulses them from the stressful situation they are afflicted with.

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