Original Article

Relationship between Metacognitive beliefs and Thought Control Strategies with Panic Disorder Symptoms in Female Students

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ABSTRACT

The main purpose of this research has been to determine relationship between Metacognitive beliefs and Thought Control Strategieswithpanic disorder symptoms in Female students of Allame University. The research method was correlational. Statistical population of research was all Female students of University of Allamein the academic year of 2012-2013. 200 students were randomly selected via randomized cluster sampling. To gather data, the following three instruments were used: Metacognitions Questionnaire (MCQ), panic Beliefs questionnaire and Thought Control Strategies Questionnaire. Statistical index (meanand standard deviation), Pierson correlation coefficient, Stepwise regression analysis and SPSS-16 program were used for statistical analysis. The findings were following: The relationship between general factor of MCQ and all its subscales, and all Thought Control Strategies (except social control) with panic disorder were significant (P<0.01). In addition, Uncontrollability and dangerous beliefs (negative beliefs) and positive beliefs were the best predictor of panic disorder, which explained 0.14 of variation of panic disorder. Also among Thought Control Strategies, punishment and worry was the best predictor of panic disorder, which explained 0.16 of variation of panic disorder. These findings provide some primary implications for role of in panic Disorders.

Key words: Panic Disorder, Students, Regression Analysis.

INTRODUCTION

The acute and severe anxiety accompanied by a feeling of imminent death is called panic disorder. Panic patients have a low social efficiency. They use public health services such as emergency room, and medical examinations and assessments [1].

Like other anxiety disorders, panic disorder has been defined in common psychological models such as the cognitive model although thought-based cognitive models have ignored the thoughts formation process [2,3].

In order to eliminate the shortfalls of the cognitive model, the metacognitive model mixed the scheme and information processes and presented a new approach based on self-regulatory function model (S-REF) for the cognitive model disorder [4].

Individuals suffering from cognitive disorder use five metacognitive harming beliefs based on the metacognitive model which include: 1- Positive beliefs about anxiety. 2- Negative beliefs about anxiety (uncontrollability and danger beliefs). 3- Superstition, punishment, and responsibility (SPR). 4- Cognitive confidence. 5- Cognitive self-consciousness [5].

Another aspect of metacognitive model, which is found in psychological disorders, is Thought Control Strategies. Though control strategies are the responses that individuals show to control the cognitive system activities [5, 6].

Wells and Matthews [3] associate the psychological disorders to thought control strategies; they identified five control strategies which were assessed through though control questionnaire. These five strategies included: worry, distraction, punishment, social control, reappraisal.

Studies prove the role of metacognitive beliefs in generalized anxiety disorders, depression, psychosomatic patients, obsession, and body deformity. A significantly positive relationship has been reported between metacognitive beliefs and assessment tools of obsession, anxiety, and worry [7, 8]. Yet, there is a paucity of studies associated with panic disorders. For example, Hudson and Elise [9] proved that anxiety and worry are the main components of anxiety disorder and are related to positive and negative metacognitive beliefs.

Results showed that juveniles scored higher than adults on worry and distraction although they got lower scores on social control and reappraisal. Punishment and worry and all metacognitive beliefs were significant predictors of obsession.

This research aims to determine the relationship of metacognitive beliefs and thought control strategies with panic disorder beliefs.

MATERIALS AND METHODS

Research method is descriptive and correlational. The statistical population consisted of all female students of Allameh Tabatabaei University. A total of 200 individuals were selected by cluster sampling and completed panic, thought control strategies, and metacognitive beliefs questionnaires. Finally, 198 questionnaires were prepared for final analysis.

Tools:

1- Metacognitive beliefs questionnaire (MCQ-30; 13): the questionnaire consists of 30 questions which are designed to assess the aspects of metacognitive beliefs. The test has five subscales including: positive recurring thoughts about worry. 2- Beliefs about uncontrollability and danger. 3- Superstition, punishment, and responsibility. 4- Cognitive self-consciousness. 5- Cognitive confidence. The participants were asked to report their approval of each item on a four-point scale from disapprove to strongly approve. MCQ-30 has plausible reliability and validity. The reliability obtained through alpha Cronbach's coefficient for subscales was in the range between 0.72 and 0.93, the retest reliability of the total score was 0.75 after 22 to 118 days, and between 0.59 and 0.87 for subscales [10, 11].

In Iran, Shirinzadeh Dastgiri [12] reported an internal consistency coefficient of 0.91 for the entire scale based on Cronbach's alpha coefficient, 0.71 to 0.87 for subscales. The test reliability was reported 0.73 for the entire scale within 4 weeks, and from 0.59 to 0.83 for subscales. The general correlation with characteristic anxiety scale was 0.43 and the correlation of subscales was under the category between 0.58 and 0.87.

2- Thought control questionnaire (TCQ), [4]: this is a 30-item questionnaire which assesses five harming strategies that the individual may use to control undesired thoughts. The strategies include reappraisal, punishment, social control, worry, and distraction.

The items of this questionnaire were in Likert scale each item containing four choices. Almost never receives 1 point and almost always receives 4 points. Each subscale in TCQ has 6 questions, totally 30 questions.

In a study by Wells and Davise, the reliability of TCQ for subscales was from 0.64 to 0.83 by reappraisal method within six weeks. In this study, TCQ proved a high correlation with assessment tools of anxiety symptoms, obsessions, personality, and inefficient attitudes.

Its face validity was confirmed in an Iranian research where Cronbach's alpha coefficient and its split-half reliability were gained 0.84 and 0.71 respectively.

3- The Panic Beliefs Questionnaire: this questionnaire was designed to assess the beliefs that could increase the likelihood of catastrophic reactions to physical and emotional experiences in panic disorder. It contains 42 statements and 4 subscales including: expectation anxiety, physical disaster, emotional disaster, and self-dissatisfaction.

The questions in this questionnaire were on Likert Scale, each with 6 items. "Strongly disapprove" gets 1 point, strongly approve gets 6 points. Higher scores on this scale prove the intensity or frequency of wrong thoughts about panic disorder. According to the report of designers of this questionnaire, the internal consistency coefficient (Cronbach's alpha) of each subscale in this questionnaire is as follows: expectation anxiety 0.90, physical disaster 0.89, emotional disaster 0.91, self-dissatisfaction 0.82, and the entire questionnaire 0.95.

Materials and Method: Research assistants referred to classes and asked the interested individuals to fill the research questionnaires. The participants were provided with explanations about research objectives and their consent was attracted. They were additionally assured that their information would be kept confidential. Data was gathered and entered into the statistical software SPSS-16 by Pearson correlation coefficient and multivariate regression.

RESULTS

Research participants consisted of 198 first year female students of Allameh University aging between 18 and 22 years. The average age of participants was 20.21 years and the standard deviation was 2.48.

Mean, standard deviation, and the results of correlation coefficient between panic disorder beliefs and metacognitive beliefs components and the strategies were illustrated in table 1.

Variables	Mean	Standard deviation	Pearson coefficient	Significance
Positive beliefs	13.03	3.33	0.31	0.001
Negative beliefs	14.80	3.63	0.34	0.001
Cognitive confidence	12.10	3.77	0.28	0.001
Superstition	14.70	3.57	0.25	0.001
Cognitive self-awareness	16.72	3.94	0.27	0.001
The general metacognition factor	71.36	13.20	0.41	0.001
Distraction	15.73+	(3.21)	0.162	0.03
Punishment	13.61	(3.42)	0.367	0.001
Reappraisal	15.54	(2.82)	0.190	0.02
Worry	13.80	(3.50)	0.322	0.001
Social control	14.51	(2.78)	0.051	0.09
Panic beliefs	111.18	8.54	-	-

$**P<0.01$ $*P<0.05$

Results show that all components of metacognitive beliefs were positively related with panic disorder. The highest correlation was associated with panic beliefs about negative beliefs component (r=0.34) and the lowest was related to superstition (r=0.25). All thought control strategies (self-punishment, worry, reappraisal, and distraction) except social control were positively related with panic disorder.

Results of table 2 showed that normality was not significant for any variable. Three main variables of research had normal distribution and hence parametric test could be used.

Table 2. Kolmogorov-Smirnov, normality test of the main hypotheses of research

Variables	KS	Degree of freedom	Significance
Metacognition general factor	0.07	200	0.054
Thought control strategies	0.06	200	0.062
Panic beliefs	0.03	200	0.11

In the following, in order to determine the predictability of research variables, a regression was considered for each general factor. In order to better identify the predictors, two regressions were taken stepwise for the components of each general variable:

Table3. Multivariate Regression by Entry Method, Panic Disorder Predictor from Metacognitive Beliefs Components

	Entry method	R	Rsquare	Adjustet R	S.D
Predictive variables	Metacognitive beliefs components	0.419	0.175	0.147	11.55

The results of regression analysis showed that the components of metacognitive beliefs predicted 41% of panic changes.

Table 4. Entry Multivariate Regression, Panic Disorder Predictor by Thought Control Strategies

	Entry method	R	R2	Adjustet R	S.D
Predicting variables	Thought control strategies	0.424	0.180	0.159	8.52

Results of regression analysis showed that in general terms, the components of thought control strategies predict 0.42 percent of panic changes.

Stepwise multivariate regression was used in order to predict metacognitive beliefs and thought control strategies on panic disorder. The results of table 4 showed that among metacognitive beliefs, negative and positive beliefs were the strongest predictors of panic disorder. In the first step, negative beliefs entered the equation and determined 0.11 of panic disorder changes. In the second step, positive beliefs were added to the equation, which determined 0.14 of panic disorder variance. Beta standard and non-standard B regression coefficients were also presented in the table and showed that every standard deviation in negative beliefs changed the panic beliefs by 0.25 standard deviation and every standard deviation in positive beliefs changed the panic beliefs by 0.20 standard deviation.

Stepwise multivariate regression was used in order to predict thought control strategies on panic disorder. Results of table 6 showed that among thought control strategies, punishment and worry were the strongest panic disorder predictors and determined 0.16 of panic disorder variance in the assurance interval of 95%.

Table 5. Stepwise Multivariate Regression, Predicting Panic Disorder by Metacognitive Beliefs Components

		R2	B	S.E	Beta	t	Sig
Step1	Constant	-	1.38	4.05	-	0.34	0.73
	Negative beliefs	0.11	1.16	0.26	0.34	4.39	0.001
Step 2	Constant	-	-3.07	4.41	-	0.69	0.48
	Negative beliefs	0.11	0.87	0.29	0.25	2.99	0.003
	Positive beliefs	0.14	0.68	0.28	0.20	2.36	0.01

Table 6. Stepwise Multivariate Regression, Panic Disorder Prediction by Thought Control Strategies

		R2	B	S.E	beta	t	Sig
Step 1	Constant	-	1.65	2.48	-	0.66	0.50
	Punishment	0.15	1.05	0.17	0.38	5.93	0.001
Step 2	Constant		-1.08	2.78	-	-0.39	0.69
	Punishment		0.80	0.20	0.30	3.93	0.001
	Worry	0.16	0.43	0.20	0.16	2.11	0.03

DISCUSSION

This research reviewed the relationship of metacognitive beliefs and thought control strategies with panic beliefs. One of the assumptions of metacognitive theory is that metacognitive beliefs are in direct relationship with psychological disorders assessment tools and emotional vulnerability [4].

The findings of this research showed a significant relationship between metacognitive beliefs and thought control strategies and panic beliefs. These findings confirm the predictability of metacognitive theory about disorder.

According to metacognitive theory, people with psychological disorder use five harming metacognitive beliefs and strategies. First of all most people have a collection of positive beliefs about the value of worry. For example I should be worry in order for my behavior to be more organized. With these beliefs the individuals thinks that they should be worried repeatedly and for a long time. Secondly, beliefs about uncontrollability and danger that are accompanied by worry. Beliefs such as "worry can render me crazy" cause the individual get involved in a collection of behavioral responses such as avoidance from worry triggers and reassurance seeking. These behaviors preclude the individual from understanding that some worries are controllable, particularly the harmless ones [4].

In a preliminary study on metacognitive model, Cartwright-Hatton and Wells [10] came to the conclusion that positive beliefs about worry and negative beliefs about worry are positively correlated with personality anxiety, obsessions and vulnerability to the worries about health and social worries.

The third negative strategy which most often arises by negative metacognitive beliefs is the beliefs about superstition, punishment, and responsibility. For example it would be my fault if I fail to prevent worry thoughts and a negative thing happens. These beliefs are probably the similar results of negative thoughts like what existed in the first factor. They cause the individual get involved in superstitious thoughts and cognitive reassurance. In support of this hypothesis, Wells and Hackmann [6] found that five out of ten patients diagnosed with hypochondriasis believe that worry thoughts has a protective function for them.

The next two factors include the beliefs that have an important role in preserving intrusive thoughts. First is the low cognitive confidence such as "I have a weak memory". Anxiety patients generally lack the assurance if they have done something or they imagine doing something. Lack of cognitive assurance leads to repeated worry and ruminating. McNally and Kohlbeck [13] showed that obsessive patients report lower cognitive assurance than experimental group.

Finally the last hypothesis "cognitive self-consciousness such as I review my thoughts. Excessive attention to internal events will gradually repudiate the external criteria for accepting and rejecting beliefs [3]. believe that selective attention to internal events is a key factor in emergence of anxiety and other emotional disorders.

As concerns thought control strategies, our findings could confirm the results of [14]. They proved that patients with anorexia used metacognitive control strategies about panic, weight and bad body shape than the women with normal and ordinary nutrition. These strategies included self-punishment, distraction, and neutralization, ruminating, and avoiding the triggers. They also obtained lower scores on reappraisal strategy than experimental group. Since no significant relationship was obtained between social control and eating disorder, this could be the result of cultural differences or assessment error and may need further research. Using multivariate regression it was found that punishment and worry are the strongest predictors of panic disorder symptoms. This finding is in conformity with Wells and Davise prediction which consider these two variables as highly related to emotional disorder particularly obsession. In a study, Wells and Rynolds reviewed the relationship of thought control strategies with depression and anxiety. The results showed positive and significant correlation between thought control scales and depression and PTSD. Distraction strategies, punishment, and assessment are the best predictors of depression and distraction is the best predictor of PTSD symptoms. In a similar study, Barahmand [15] proved that depressed individual is more concerned about using thought control strategy although OCD people use distraction against disturbing thoughts. The findings of this research could be parallel with the research of

Takashi Yamauchi and Sudo [16] about the relationship between thought control and paranoid thoughts. They found that from five factors of thought control, only reappraisal, punishment, and worry are correlated with paranoid thoughts. Using hierarchy regression in this research it was found that gender is a significant predictor of paranoia in the first block and distraction is the strongest predictor in the second block. Social control and worry with a weaker statistic were the next significant variables. There was no possibility of making such analysis since this research was conducted only on girls.

As research was limited to female students and the samples were non-clinical, it was a difficult task to generalize the findings. Collecting information based on self-reporting makes it possible to distort the information due to unconscious defense, being stubborn in answering and ways of personal introduction .

Recommendations for this research include using clinical samples and conducting research on the two sexes. It is also recommended to gather data by the tools that are not of self-report nature (such as interview).

The results of this research can be used about pathology and prevention and promotion of mental health of students in student centers.

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