



Comparing the effectiveness of mindfulness-based schema therapy and acceptance and commitment therapy on cognitive distortions and causal attributions in nursing and midwifery students with health anxiety

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ARTICLE INFORMATION	ABSTRACT
Article type Original research Pages: 105-111	Background and Aim: Nursing is one of the professions that is always faced with numerous and stressful factors in the work environment. The nature of this job is such that it involves a combination of roles through technical activities, professional skills, human relations and empathy. The present study was conducted with the aim of comparing the effectiveness of mindfulness-based schema therapy and acceptance and commitment therapy on cognitive distortions and causal attributions in nursing and midwifery students with health anxiety. Methods: It is a quasi-experimental research design with a pre-test-post-test design and a three-month follow-up with the control group. The statistical population included all nursing and midwifery students suffering from health anxiety in the free universities of Gilan branch in 2021. Among these, 45 people were selected by convenience sampling method and randomly replaced in experimental groups (schema therapy based on mentality and therapy based on acceptance and commitment) and control (15 people in each group). Mindfulness based schema therapy was performed in 10 90-minute sessions based on Young et al.'s (2003) educational package in the experimental group. Data were collected using Ellis' (2000) Cognitive Distortion Questionnaire, Peterson et al.'s (1982) documentary style, and Salkovskis' (2002) health anxiety. The data was analyzed using SPSS-22 software and through the analysis of variance test with repeated measurements. Results: The results showed that mindfulness-based schema therapy and acceptance and commitment therapy are effective on cognitive distortions ($P < 0.001$) and causal documents ($P < 0.001$) of nursing and midwifery students suffering from health anxiety. Also, the results of the follow-up test showed that mindfulness-based schema therapy on acceptance and commitment therapy has a greater effect on cognitive distortions and causal attributions than mindfulness-based schema therapy. Conclusion: Considering the role of beliefs and thoughts in cognitive distortions, it is suggested that therapists consider these interventions in reducing the symptoms of worry and disease perception.
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Introduction

Every person's profession and job play a decisive role in his mental health. Nursing is one of the professions that is constantly faced with numerous stressful factors in the work environment. The nature of this job is such that it is related to a combination of roles through technical activities, professional skills, human relations, and feelings of sympathy, and each of these activities causes a lot of role and responsibility for the nurse (Mokhtari, Moeidi, & Golitaleb, 2020). Anxiety in nursing students is high in most cases due to stressful events in their work life. One of the dimensions that affect psychological health is anxiety. Nowadays, anxiety disorders are the most prevalent in the area of mental disorders (Lebel, Mutsaers, Tomei, Leclair, Jones et al., 2020). The prevalence of anxiety disorders during life stages ranges from 8% to 29%. One of the types of anxiety disorder is health anxiety (Sultani, Ebrahimi, Mosania, & Jahanian, 2018).

According to cognitive models, one of the effective factors in the emergence of anxiety in people is cognitive distortions and ineffective attitudes towards situations. Cognitive vulnerability is considered a negative and distorted interpretation of information against the mental understanding of problems that can be caused by a person's negative experiences in childhood. This phenomenon is a risk factor for anxiety disorders (Oliver, 2007). Causal attributions are other factors that can play a role in nursing and midwifery students with health anxiety. Attributional theory is a cognitive-motivational approach that examines the process of perceiving causality in an individual. In fact, attributional style refers to the explanatory style people usually provide for a given event.

Mindfulness-focused techniques are a complementary part of schema therapy. Schema mode is a set of compatible or incompatible schemas or schema operations that currently exist in mind (Yang et al., 2010; Khodabandehloo, Najafi, & Rahimian Bogar, 2017). Young (1994) defines schema mode as maladaptive coping responses or healthy behaviors currently active in the mind. Research has shown that the role of people's beliefs in illness and changing their beliefs and perceptions can lead to a better and more adaptive life. Among the psychological approaches of the third wave, the therapy based on acceptance and commitment can control the attitudes and

perceptions of the person against stressful events in life. Research has shown that acceptance and commitment therapy in various fields such as anxiety and depression (Kanter, Baruk, & Gaynor, 2006); psychoses (Beck & Hayes, 2002); substance abuse (Gifford, Kohlenberg, & Hayes, 2004); and burnout (Bond & Bunce, 2003) has been effective. Hayes et al (2012) believe that the main message in treatment is based on acceptance and commitment to accept what is out of one's control and to be committed to doing whatever is in one's control (Hayes et al., 2012). This treatment approach is formed through acceptance, cognitive diffusion, self as a context, the connection of conscious attention with the present, values and commitment to action, which will lead to psychological flexibility as a result of these six main concepts. In fact, therapy based on acceptance and commitment is a context-oriented approach that challenges clients to accept their thoughts and feelings. Therapy based on acceptance and commitment believes that engaging with emotions worsens them (Sheidaei et al, 2013).

The necessity of conducting this research is considering that the third wave of treatments has received much attention from therapists. The treatment methods used in this research are new compared to other approaches, according to the surveys conducted on various Jihad sites. University, the comprehensive portal of humanities and other authoritative journals, a study has yet to be conducted on combining the mentioned variables. Since this research can have valuable achievements and suggestions for specialists and those involved in this field, it seems necessary and important to do it. Therefore, conducting this research can provide appropriate educational treatment to psychologists and counselors, universities, and public and private organizations, and on the other hand, in individual and group treatments and educational interventions in the field of mental health promotion. The aim was to compare the effectiveness of schema mode therapy and acceptance and commitment therapy on cognitive distortions and causal attributions in nursing and midwifery students with health anxiety.

Method

The current research method was a quasi-experimental type with a pre-test-post-test design and a three-month follow-up with the control

group. The statistical population included all nursing and midwifery students suffering from health anxiety in Gilan branch of Islamic Azad University in 1400. Among these, 45 people were selected by the available sampling method and randomly replaced in an experimental (therapy based on acceptance and commitment) and control group (15 people in each group).

Tools

1. Health Anxiety Questionnaire (2002): This questionnaire is a standardized questionnaire and its short form, which Saloskis and Warwick created, and it contains 18 items, which are paper-pencil type and are called HAI in short form. Each item has four options, and each option includes a description of the person's components of health and illness in the form of a news sentence, and the subject must choose one of the sentences that best describes him. to choose Scoring for each item is from 0 to 3 points. Choosing option A has a score of 0, option B has a score of 1, option C has a score of 2, and option D has a score of 3, and a high score is a sign of health anxiety (Salkovskis & Warwick, 2002). The test-retest reliability of this questionnaire was 0.90, and Cronbach's alpha coefficient for this questionnaire was reported from 0.70 to 0.82 (Salkovskis & Warwick, 2002). Salkoskis and Warwick (2002) used the Illness Belief Scale (LAS) questionnaire to measure validity. They obtained the validity of the health anxiety questionnaire at 0.63, and Abramowitz et al. (2007) calculated its validity coefficient at 0.94.

2. Cognitive Distortions Questionnaire (2000): This questionnaire is a standardized questionnaire designed and made by Albert Ellis and contains 20 statements that measure cognitive distortions. In this questionnaire, each unreasonable thought has two words assigned to it. In this order, the statements are: Distortion No. 1 (all or nothing thinking), Distortion No. 2 (Exaggerated generalization), Distortion No. 3 (Mental filter), Distortion No. 4 (Ignoring the positive), Distortion No. 5 (Jumping to conclusions), Distortion No. 6 (magnifying and underestimating), Distortion number 7 (emotional reasoning), distortion number 8 is statements (should; better), distortion number 9 (labeling) and distortion number 10 (personalization) are measured. Scoring is on a 5-point Likert scale;

strongly agree, agree, have no opinion, disagree and strongly disagree answer. The total score is obtained from the sum of the subscales' scores. Obtaining lower scores indicates more cognitive distortion in each of the dimensions. Cronbach's alpha was used to determine the internal consistency of Mohammadi's questionnaire (2006), and it was calculated as 0.80 (Shahkarmi, Zaharakar, and Mohsenzadeh, 2014). Ahmadi-Kani Golzar et al. (2012) reported the alpha coefficient of this questionnaire as 0.80; In this study, Cronbach's alpha reliability coefficient was 0.89.

3. Attributional Style Questionnaire (1982): Attributional Style Questionnaire (ASQ) Peterson et al. (1982) expanded the Attributional Style Questionnaire in order to measure optimistic and pessimistic attributions in people. In this tool, which includes twelve assumed situations, half of the situations are positive, and the other half are negative. Participants in this questionnaire answer each question on a seven-point scale from "1" to "7". In the study of Shokri et al. (2014), the confirmatory factor analysis of the document styles questionnaire showed that the factor structure of this questionnaire for positive and negative situations included three dimensions: internal/external, stable/unstable, and inclusive/special. In the present study, the internal consistency coefficients of the internal/external stable/unstable and general/special scales for negative situations are equal to 0.65, 0.65 and 0.79, respectively, as well as the internal consistency coefficients of the stable/unstable internal/external scales and Universal/specific for positive situations, were obtained as 0.70, 0.69 and 0.65 respectively. In this study, Cronbach's alpha reliability coefficient was 0.72.

4. Acceptance and commitment therapy: The content of acceptance and commitment therapy was implemented in 10 90-minute sessions in experimental groups.

5. Schema mode therapy: The content of schema mode therapy is based on therapeutic unity, identification and root tracking of mentalities, borderline pedagogy, and cognitive, experimental, and behavioral pattern-breaking strategies. This treatment protocol was compiled and implemented with the opinion of clinical

experts and using reliable sources (Arntz & Jacob, 2013).

Results

It can be seen that most of the respondents were between 18 and 28 years old, the least number of respondents were between 38 and 48 years old, and the age limit of 50 was considered in this study.

Table 1. Statistical indices of the subscales in the pre-test, post-test and follow-up stages

Group	Variables	Pre-test		Post-test		Follow-up	
		Mean	SD	Mean	SD	Mean	SD
Control	Cognitive distortions	32.85	6.53	31.95	6.00	31.58	6.44
	Pessimistic causal documents	36.89	7.17	35.51	6.45	36.00	7.66
	Optimistic causal attributions	18.19	5.13	15.54	5.56	18.70	5.62
Schema mode therapy	Cognitive distortions	33.28	7.53	30.73	5.44	30.20	5.49
	Pessimistic causal documents	35.11	6.23	28.71	7.45	29.33	7.17
	Optimistic causal attributions	18.86	4.48	24.63	6.70	25.11	6.82
ACT	Cognitive distortions	34.33	8.15	28.37	5.26	28.90	5.36
	Pessimistic causal documents	35.72	6.24	26.34	5.43	25.72	5.26
	Optimistic causal attributions	19.56	6.10	28.27	8.96	29.15	9.93

An analysis of variance with repeated measurements was used to investigate the significance of the difference between the score of cognitive distortions and causal attributions in two experimental groups and a control group. The results of the analysis of variance of the repeated measurement of several variables among the studied groups in the variables of cognitive distortions and causal attributions showed that the effect between the subject (group) is significant.

The within-subject effect (time) was also significant for the research variables, meaning there was a change in at least one of the average variables from the pre-test to the follow-up. The results show that the analysis of variance is significant for the within-group factor (time), and it is significant between groups. These results mean that considering the group effect, the time effect alone is significant. The interaction of group and time is also significant. Bonferroni's post hoc test was also used for the pairwise comparison of groups. The results show that cognitive distortions and pessimistic causal attributions in both schema mode therapy and acceptance and commitment therapy are less in the post-test stage than in the pre-test and more optimistic causal attributions compared to the

control group. It is from the pre-test ($p > 0.01$). Comparing the two experimental groups showed that the variable score of cognitive distortions in the two groups of schema mode therapy and acceptance and commitment therapy is significantly different. Acceptance and commitment therapy had a greater effect than schema mode therapy on cognitive distortions and causal attributions ($P < 0.01$).

Conclusion

This research was conducted to compare the effectiveness of schema mode therapy and acceptance and commitment therapy on cognitive distortions and causal attributions in nursing and midwifery students with health anxiety. The comparison of the two experimental groups showed that the variable score of cognitive distortions in the two groups of schema mode therapy acceptance and commitment therapy has a significant difference. Acceptance and commitment therapy had a greater effect on cognitive distortions than schema mode therapy. Moreover, the variable score of positive causal documents in the two groups of schema therapy based on mentality and therapy based on acceptance and commitment has significant differences. Acceptance and commitment-based therapy had a greater effect than mindset-based

schema therapy on optimistic causal attributions. The main purpose of this hypothesis is to the effectiveness of schema mode therapy and acceptance and commitment therapy on causal attributions in nursing and midwifery students with health anxiety. The post-test of the two groups was examined. The results showed the effectiveness of schema mode therapy acceptance and commitment therapy to change the causal documents significantly.

In explaining the effectiveness of schema mode therapy acceptance and commitment therapy in reducing cognitive distortions, the structure of their treatment should be said. These treatments provide the basis for obtaining better treatment results by creating insight into the studied people. Schema mode therapy was designed to treat patients with borderline personality disorder. Furthermore, because mindset-based schema therapy focuses more on the transformational roots of schemas, and in addition to cognitive behavioral methods, other methods such as Experimental and pattern breaking is also used. Moreover, it also examines the relationship between emotion and cognition. Thus, it works effectively. Since schema mode therapy has a case evaluation and conceptualization plan, and in this way, it informs the therapist about the results of the treatment and gives appropriate feedback to the patients. Some behavioral change principles can challenge schema mode therapy. Therefore, one of the reasons for the stability of treatment results in the follow-up phase is the increase in identifying the schema modes of people with health anxiety symptoms on their cognitive beliefs. Increasing the identification of mentalities allows people with health anxiety to establish a new relationship with their thoughts, to change schema modes that increase the maladaptive way of repeated negative thinking or cause the increase and intensification of negative beliefs. In addition, behavioral training and techniques allow people to go back and analyze their life conditions and react in a new way, not a habit (Veiskarami, Khodayi, & Ghazanfari, 2018).

In the explanation of the findings, it can be said that according to the research background and the findings of the current research, which showed that the schema mode therapy and acceptance and commitment therapy lead to the change of the causal documents of people. In other words, these treatments caused a decrease in the internal, stable, and general styles in the failure situation,

an increase in the internal, stable, and general styles in the success situation, and a decrease in the external, unstable and partial styles in the success situation. Therefore, it can be concluded that schema mode therapy aims to fix dysfunctional mentalities, fundamental beliefs, feelings, emotions, memories of childhood and adolescence, and the individual's relationships with others causes changes in causal psychological documents. In systematic schema mode therapy, it is important to recognize ineffective mindsets and ineffective coping styles. In such a way, the person first identifies his incompatible schemas and dysfunctional beliefs and their areas with the therapist's help and then tries to provide confirmation or denial evidence for each of them. In this approach, by using cognitive, behavioral, and experimental techniques, a person challenges his schema mode therapy created in childhood and adolescence and is resistant. In a schema mode model, the patient's main problems, symptoms, and interactive patterns are summarized. They should be justified and justified for both the therapist and the patient. Then, each type of schema mode will be related to special treatment goals in the treatment process. The combination of treatment elements and the relative importance of different treatment techniques and equally creating a balance between treatment interventions in the case of specific syndromes and treatment interventions in the case of personality syndromes should be compatible with the patient's condition (Hajipour et al., 2020).

Among the limitations of this research, the following can be mentioned: considering that this research was conducted only among nursing and midwifery students; Therefore, it is necessary to act with caution in generalizing the results because different results may be presented in another society. The age range between 18 and 50 years is one of the factors that may make a big difference in presenting the results; Therefore, it is necessary to separate the age groups more carefully. In future studies, not paying attention to the factor of people's education can also be taken into consideration in future studies. This is because the understanding of people with a higher degree and higher semesters and first-semester students differs from the answers to the questions. Considering that the research was conducted on the students, it is suggested to be conducted in non-student population as well, and compare the results with the results of this research. Conducting similar studies with a more

comprehensive sample in different populations, controlling demographic variables, using individual interventions and increasing the number of meetings as fundamental suggestions and holding educational meetings, and presenting messages with a cognitive-behavioral and schema-oriented approach for schools and parents and all relevant institutions as the applications of the present research are suggested.

Conflict of interest

According to the authors, this article has no financial sponsor or conflict of interest.

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