

The Effectiveness of Wells' Meta-cognitive Therapy on Improvement of the Emotional Intelligence Levels of Male Students at High Schools in Khoramabad

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Abstract

The aim of the current study was to investigate the effectiveness of Wells' meta-cognitive therapy on improvement of the level of emotional intelligence on male students of high schools in Khoramabad, during the academic year 2018-2019. The statistical Population of the study consisted of all the male students of high schools in Khoramabad. The study sample consisted of 30 students who were selected by multiphasic cluster sampling. The 30 selected subjects were randomly assigned into two groups of control and experimental; the experimental group received 7 sessions of Wells' meta cognitive therapy. Both groups were evaluated in three stages of pretest-posttest and follow-up. The study instruments consisted of Bar-On Emotional Intelligence-Inventory. The collected data were analyzed using descriptive statistical and inferential statistical (analysis of variance on repeated measures) and using the SPSS software. The Statistical results indicated that Wells' meta-cognitive therapy was effective on improvement of the emotional intelligence level. Findings obtained from analysis of variance with repeated measures indicated that Wells' metacognitive therapy is effective on improving the level of emotional intelligence of male students at high schools in Khorramabad ($P \geq 0.001$). According to the results of this study, the Wells' metacognitive therapy can be used to improve the level of emotional intelligence of students.

Keywords: Emotional Intelligence, Meta-cognitive Therapy, Male students.

Introduction

Human intelligence is not consisted of a limited collection of cognitive abilities, but an emotional aspect has been raised in it. The term of “emotional intelligence” was first introduced in 1985 by Van Pin and it gained popularity by Daniel Goleman in 1995 (Salovey and Mayer, 2002).

There are various theories in the field of emotional intelligence that generally fall into two categories (Salovey, Mayer and Caruso, 2000): *Number 1*: Ability model: this model considers emotional intelligence as comprehending, expressing, applying and managing emotions that the Salovey-Mayer model (1990) fall in this category. *Number 2*: Combined model: this model introduces the emotional intelligence as a mixture of non-cognitive abilities and some personality features and the model of Bar-on and Goleman fall in this category.

From the perspective of Salovey and Mayer (1990), emotional intelligence is the ability to monitor one's own and other's emotions and feelings, distinguish between them, and use this information to guide thought and action. They regarded emotional intelligence as including four skills: a) perceiving and expressing emotion, b) emotional facilitation of the thought, c) understanding and analyzing emotions and d) emotional reaction regulation.

Goleman, (1995; cited by Parsa, 2004) considers the emotional intelligence as the ability to perceive, describe, receive and control of emotions. Goleman has introduced emotional intelligence involving five components: (a) recognizing one's own emotions; (b) managing emotions; (c) arousing and exciting oneself (d) recognizing other's emotions; and (e) regulating own relationship with others.

According to the Bar-on model (Bar-on & Packer, 2000); emotional intelligence is a collection of non-cognitive abilities, skills that affect one's ability to cope with environmental demands and pressures. In this model emotional intelligence included interpersonal skills, intrapersonal skills, adjustment, stress management and general temperament.

Emotional intelligence is a type of intrapersonal intelligence that individuals achieve when they perceive and discover this skill (Hui-Hao & Schutte, 2015). Emotional intelligence assesses the person emotionally, that is, to what extent the individual is aware of his or her emotions and feelings, and how control and manage them. The considerable thing about emotional intelligence is that emotional intelligence abilities are not inherent but they can be learned. Human by possessing the emotional intelligence gives his / her life discipline and stability and shows more adjustment, so that people with high emotional intelligence are more skilled at establishing high-quality relationships (Ouyang Sang and Peng, 2015).

The results of the study by Lea, Qualter, Davis, Perez- Gonzalez and Bangee (2018) showed that people with high emotional intelligence tend to be more positive and happier than others. Also, the results of the study by Szczygieł and Mikołajczak (2017) indicated that people with high emotional intelligence have higher levels of life

satisfaction and psychological well-being, and higher emotional intelligence is associated with the greater happiness.

There are different ideas about whether emotional intelligence can be changed or not. Psychotherapy, counseling, guidance and training are the ways for increasing emotional intelligence (Bradbury and Graves, 2008). Therefore, considering the importance of emotional intelligence, an appropriate method should be implemented for improving its level. Meta-cognitive has been recognized as a powerful strategy for enhancing student learning in schools as well as one of the most important variables and effective strategies for the treatment of anxiety in the field of psychology. Metacognitive includes awareness and regulation of one's thinking process. This is a deliberate reflection on cognitive function. Metacognitive plays an important role in communication, language understanding, social cognition, attention, self-regulation, memory, writing, problem solving, and personality development. As a theoretical structure, metacognitive is not equivalent to learning or development, but is equivalent to conscious and deliberate regulation of that learning and development. Metacognitive increases with practice. The next logical step in promoting social and emotional health in schools is to pay close attention to meta-cognitive, not only as an educational strategy for children, but also as a mental health supportive strategy that is facilitated by teachers (Weight, 2017). In past years, disturbance in the process and content of metacognitive have been studied as the basis of many psychological disorders (Wells' & Matthews, 1996). Metacognitive is defined as any kind of knowledge or cognitive process involved in the evaluation, monitoring, or control of cognition. Thus, metacognitive beliefs (that individuals have about their thinking, processes, and cognitive experiences) can be the driving force behind deleterious thinking styles and lead to long-term emotional distress (Wells' 2009, Mohammad Khani, 2013). According to Meta-cognitive Theory of Mental Disorders, inconsistencies in knowledge, experiences, and strategies lead to dysfunctional thinking patterns and lead to psychological disorders (Wells', 2000). Meta-cognitive therapy consisted of a wide range of content areas. This means that each disorder within these domains has its own content. For example, positive metacognitive beliefs include beliefs that are related to the beneficial involvement in specific cognitive activities such as worry, rumination, and so on. On the other hand, negative metacognitive beliefs are beliefs about uncontrollability, meaning, importance, and danger of cognitive thoughts and experiences (Wells' 2009, Mohammad Khani, 2013).

In the metacognitive approach it is believed that individuals are trapped in emotional distress because their metacognitive leads to a specific pattern of response to internal experiences that perpetuates negative emotion and reinforces negative beliefs. This model is referred to as a Cognitive Attention Syndrome, which includes worry, rumination, consolidated attention, and self-regulation strategies or maladaptive coping behaviors (Wells', 2000; Wells' 2009, Mohammad Khani, 2013). Many studies have examined the effects of metacognitive therapy. The overall conclusion that can be inferred from these studies is that meta-cognitive therapy seems to be an effective therapeutic approach (Hashemi, Aliloo, and Hashemi Nosratabad, 2011).

For example, Weight (2017) conducted metacognitive research as a supportive strategy for mental health for students with anxiety, and Results of the study showed a

statistically significant relationship between the use of metacognition, self-regulation as a component of metacognition, and teacher confidence level in supporting students with anxiety.

Saricam (2015) in a study examines the mediating role of perceived stress between metacognitive and happiness. Participants consisted of 290 university students. In correlation analysis, metacognitive and perceived stress had negatively relationship with happiness. On the other hand, metacognitive was positively correlated with perceived stress. Structural equation modeling showed that for a sad person, metacognitive increases perceived stress, whereas in the same individual, stress reduction leads to happiness.

In a quasi-experimental study, Ghahvechi Hosseini, Fathi Ashtiani, and Setkin (2015) compared meta-cognitive therapy with cognitive therapy to reduce test anxiety and Meta worry in students. The sample consisted of 45 Male students of Tarbiat Modarres University who were selected by random sampling and then randomly assigned into 3 groups. The results showed that the effectiveness of metacognitive therapy and cognitive therapy were similar in reducing test anxiety, whereas metacognitive therapy was more effective in reducing Meta worry than cognitive therapy.

Spada, Caselli, Manfredi, Rebecchi and Rovetto (2012) account meta-cognitive dimensions including positive metacognitive beliefs about low worry and cognitive trust as causes that lead to anxiety and worry. Also, in another study, Spada, Georgio, and Wells' (2010) found that metacognitive dimensions including positive metacognitive beliefs about worry and low cognitive trust were significantly associated with social anxiety. Ellis and Hudson (2010) showed that worry and anxiety are one of the essential components of anxiety disorders; such as generalized anxiety disorder and social phobia, which are particularly associated with positive and negative metacognitive beliefs. Bergeron, Foslie, Sunnerhagen and Schank (2011), Wells' et al. (2008), Banhofer et al. (2009) in researches through meta-cognitive therapy design were able to improve the symptoms of a group of depressed patients and the results continued throughout the follow-up period. Wells' et al. (2008), Colbear & Wells' (2008) in their studies demonstrated the effectiveness of metacognitive therapy on post-traumatic stress disorder. Fisher and Wells' (2008), Rees & Van Koesreld (2008) found that group metacognitive therapy is effective on the patients with obsessive-compulsive disorder.

Regarding the novelty of this therapy and the fact that studies on metacognitive therapy have focused more on anxiety and depression disorders, there is no research that directly examines the effectiveness of this treatment on emotional intelligence, and also considering the importance of emotional intelligence in individual's mental health. Therefore, in the present study tried to test the effectiveness of metacognitive therapy on emotional intelligence in an experimental study design. Obviously, the findings from such studies can provide new strategies to researchers, clinical psychologists, and other interested in two areas of prevention and treatment. Therefore, the present study investigated the effectiveness of meta-cognitive therapy on promoting emotional intelligence.

Methods

This research is in the experimental research category and the research design consisted of two groups (experimental group and control group) and included three stages of pre-test, post-test and follow-up (60 days). The independent variable was Wells' metacognitive therapy that was applied only to the experimental group and its effectiveness on emotional intelligence scores on post-test and follow-up of experimental group was compared to the control group. There was no intervention in the control group. The statistical population of the study consisted of all the male students of high schools in Khoramabad in the academic year 2018-2019 that 30 students whose emotional intelligence scores were in the mean and below the mean point were selected as a sample group by multi-step cluster sampling and were assigned into two groups of 15 students of control and experimental; it is worth noting that there was no drop in the two groups. In the first session (before starting the treatment) and in the seventh session (after finishing the treatment), students were asked to answer the Bar-On Emotional Intelligence Inventory (1997) (pre-test and post-test). After 60 days, the follow-up session was held and after being informed of their overall situation, again the students were asked to complete Bar-On Emotional Intelligence-Inventory (follow-up). The students of the control group were on a waiting list and based on coordination completed the Bar-On Emotional Intelligence-Inventory. A follow-up session was held within 60 days and after being informed of the general situation, they were asked to complete the questionnaire again (follow-up).

The study instruments to gather the data in the phases of pretest, posttest and follow-up was the Bar-On Emotional Intelligence Inventory (1997). The obtained data from the administering the Emotional Intelligence-Inventory were analyzed applying the software of SPSS-16 in two sections of descriptive and inferential statistic. In the descriptive level the mean and standard deviation and in the inferential level analysis of variance on repeated measures was used.

Research Instruments are following:

The 117-items Inventory of Bar-On Emotional Intelligence (1997). This questionnaire in Iran was reduced from 117 questions to 90 questions after standardization and some changes in the original text. This questionnaire is scored based on a five-point Likert scale from "completely agree", "agree" to "nearly disagree", "disagree" and "completely disagree" items. The questions in this questionnaire were of two categories: questions with positive content and questions with negative content. Questions with positive content get 5 to 1 point from completely agree to completely disagree respectively; for negative questions the trend is the opposite. The mean of this test is 100 and its standard deviation is 15 (cited by Yavari Kermani, Bahrinian and Rahmani, 2010). According to the results of the scientific studies, the reliability coefficient for the tests with research aim is 0.70 and more, whereas for the tests with clinical aim, is 0.9 (cited by Sadri, Akbarzade and Poushne, 2008). Dehshiri (2003; cited by Yavari Kermani, Bahrinian and Rahmani, 2010) in a study by internal consistency method calculated the reliability for this test and the mean Cronbach's alpha

coefficient was 73%. This test is applicable for adolescent and adults' years (cited by Sadri et al, 2008).

One of the authors of this study, who has been working in counseling centers for more than 4 years and in the field of metacognitive therapy trained under the supervision of experienced professors, was in charge of treatment.

The brief format of the therapy sessions that carried out by the counselor is as follows:

1st session: Introducing the therapist and client to each other/ administering pretests; preparation and introduction of metacognitive therapy; definition and introduction of emotional intelligence; providing the logic of MCT; providing homework.

2nd session: reviewing of the homework of previous session; familiarity with cognitive-attention syndrome and how it affects the persistence of mental disorders; assessment of Cognitive-Attention Syndrome Scale; introducing and practicing attention training technique (ATT) and Completion of Summary Sheet of the attention training technique; providing homework.

3rd session: reviewing of the homework of previous session; Identifying and challenging negative beliefs about worry and uncontrollability and analyzing their advantages and disadvantages; conduct of the losing control test in the therapeutic session; Introducing and practicing distracted mindfulness (DM); Providing homework.

4th session: reviewing of the homework of previous session; Identifying and challenging with positive beliefs about worry and uncontrollability and analyzing their advantages and disadvantages; perform a Thought Suppression Test; practicing attention training technique (ATT) (increasing the level of difficulty); providing homework.

5th session: reviewing of the homework of previous session; Identifying and challenging negative and positive beliefs about rumination and analyzing their advantages and disadvantages; identifying triggers and applying distracted mindfulness (DM); providing homework

6th session: reviewing of the homework of previous session; introducing the practice of postpones the worry and rumination (cope with anxiety and rumination actively by conducting postpones the worry and rumination in the treatment session); practicing attention training technique (ATT); training of the technique of Situation Attention Refocus (SAR); providing homework.

7th session: reviewing of the homework of previous session and investigating the Cognitive-Attention Syndrome Scale; providing a summary of the techniques presented in all treatment sessions; Answering the questions and problems in the application of these techniques; Acknowledgement and getting feedback from the all sessions; Conducting post-test.

Results

Research hypothesis: Wells' metacognitive therapy is effective in enhancing the emotional intelligence level of high school male students in Khorramabad. Table 1 shows the mean and standard deviation of students' emotional intelligence by group.

Table 1: mean and standards deviation of emotional intelligence of students based on the experimental and control groups

Variables	Group	mean	Standard deviation	Number
EI pre-test	Experimental	266/00	1/98	15
	Control	265/27	1/86	15
EI post-test	Experimental	303/05	1/47	15
	Control	267/69	1/30	15
EI follow-up	Experimental	305/61	1/94	15
	Control	266/89	1/81	15

The results of Table (1) show that the emotional intelligence scores of the experimental group in the post-test and the follow-up have changed compared to the control group. In order to investigate the normality of the data the Shapiro Wilk test, In order to investigate the equality of variances the Leven test, In order to investigate the equivalence of covariance's of dependent variables the Box test and in order to investigate the covariance of dependent variables scores in two groups the Mauchly's test were used. The results of this analysis are shown in tables (2), (3), (4) and (5). Table 2 shows the results of the Shapiro-Wilk test to investigate the normality of the data

Table 2: Schapiro-Wilk test results to investigate the normality of the data

		Schapiro-Wilk	F	df	Sig.
	Pretest	Experimental	0/157	15	0/200
		control	0/176	15	0/173
EI	Posttest	Experimental	0/163	15	0/200
		control	0/192	15	0/118
	Follow-up	Experimental	0/177	15	0/200
		control	0/179	15	0/169

Table 2 shows that the emotional intelligence data of students in three groups is normal and this assumption is regarded in the use of analysis of variance with repeated sizes. Table 3 shows the results of the Levene's test to examine the assumption of equality of variances.

Table 3: Levene's test results to test the equality of variances of two groups in the student' emotional intelligence variable

Source of changes	F	df ₁	df ₂	Sig.
EI pre-test	0/094	1	28	0/766
EI post-test	0/220	1	28	0/640
EI follow-up	0/028	1	28	0/867

As shown in Table (3), the variance of students' emotional intelligence is equal, and

this assumption is regarded in the use of analysis of variance with repeated measures. Table 4 shows the results of the Box test to examine the equality of the covariance of the dependent variables in the two groups.

Table 4: Box test results to equalize the covariance in the two groups

Source of changes	Box test	F	df ₁	df ₂	Sig.
EI	8/134	1/195	6	5670/304	0/305

As shown in Table (4), the covariance of students' emotional intelligence of two groups in three phases measuring is not significant and this assumption is regarded in the use of analysis of variance with repeated measures. Table 5 shows the results of the Mauchly's test to examine the equality of the covariance of the dependent variables in the three measurement steps.

Table 5: Mauchly's test results to equalize the covariance of the dependent variables in the three measurement steps in total

Source of changes	F	df ₁	df ₂	Sig.
EI	0/854	4/395	2	0/111

Mauchly's test results in Table 5 shows that the covariance of the dependent variables in three measurement phases are equal and this assumption is regarded in the use of analysis of variance with repeated measures. Table 6 shows the results of analysis of variance of repeated measures of students' emotional intelligence by group.

Table 6: the result of the analysis of variance with repeated measure of emotional intelligence of students in each group

variable	Source of changes	Sum of Squares	df	Mean Squares	F	Sig.	Eta	Test power	
EI	Within groups	Factor 1 (time)	1640/022	2	820/011	418/032	0/000	837/647	1/000
		Factor1 group error	1701/800	2	850/900	434/117	0/000	871/238	1/000
	Between groups	group	109/511	56	1/956				
	Between groups	group	3960/100	1	3960/100	743/059	0/000	0/963	1/000

The contents of Table (6), shows a significant difference ($p=0.000$) in terms of the scores obtained from the Well's metacognitive therapy on students' emotional intelligence from the pre-test stage to the post-test stage and follow-up in general, and the interaction between time and group membership statistically were significant. This means that the trend of changes in students' emotional intelligence scores from pre-test to post-test and follow-up was significantly different between groups ($p = 0.000$). The statistical power of 00.1 shows that the sample size is appropriate for such a conclusion and the impact amount of group membership on emotional intelligence scores from pretest to posttest and follow-up based on this tool is 0.8. This means that 80% of changes in emotional intelligence are related to metacognitive therapy.

Discussion

The statistical analysis of variance with repeated measures in this study showed that Wells' metacognitive therapy was effective on promoting students' emotional intelligence. Metacognitive therapy is different from the standard CBT method, because treatment instead of involving challenge with thoughts and beliefs about trauma or repeated long-term exposures with trauma memories involves communicating with thoughts in a way that prevents resistance or complex perceptual analysis and be able to eliminate maladaptive thinking strategies as well as inflexible threat monitoring. Cognitive theories provide brief explanations of what leads to useless patterns of thinking. It is too naive for us to attribute these patterns of thinking to the existence of underlying beliefs about ourselves and the world (i.e. I am vulnerable, I am a failure). These beliefs create disturbed thought patterns that are mostly negative, repetitive, and increasing and lead to a wide range of responses. In addition, these beliefs do not always lead to long-term emotional stress. What is needed here is to take into account the factors that control thinking and change the state of mind. These factors form the basis of metacognitive theory (Wells, 2000; translated by Bahrami, 2004).

This study result was consistent with the studies of Momeni, Rezaei and Gorji (2013); Hashemi et al. (2011); Weight (2017); Ghahvechi et al. (2015); Saricam (2015); Spada, Caselli, Manfredi, Rebecchi & Rovetto (2012); Spada et al. (2010); Banhofer et al. (2009); Colbear and Wells' (2008); Wells' and King (2006). In explaining the promotion of emotional intelligence levels by Wells' metacognitive therapy, it can be said that, metacognitive therapy, in addition to therapeutic techniques focused on attention training, includes a wide range of specific treatment strategies designed to facilitate cognitive and emotional change. For example, the validity of techniques such as attention training and mindfulness training has been examined in some studies. Papageorgiou and Wells (2000) experimentally examined the metacognitive model of mental rumination and depression and showed the role of attention cognitive syndrome in rumination and depression. In their study, they examined the application of the attention training technique to identify and stop cognitive-attention syndrome, which the results showed the effectiveness of this technique. Other studies have also confirmed the effectiveness of these techniques in metacognitive therapy (Nolen-Hoeksema, Morrow, Fredrickson, 1993; Wells, 2005).

On the other hand, according to Salovey and Mayer (1990), emotional intelligence as ability is a supervisor on capacity of perception, expression, cognition and use and control of emotions in oneself and others. So, according to research conducted on emotional intelligence, people with higher emotional intelligence are more likely to have better mental health. On the other hand, according to the A-M-C model in metacognitive therapy that formulates emotion and disorder antecedent factor (A) is an internal cognitive event, not a specific situation. Component M also means metacognitive beliefs and Cognitive-Attention Syndrome, and many general negative evaluations or usual beliefs of B are influenced and controlled by metacognitive processes. In this study, Wells' metacognitive therapy through identifying and challenging positive and negative beliefs related to anxiety, using techniques such as

detached mindfulness (DM); Attention Training Technique (ATT); Situation Attention Refocus (SAR) technique and the technique of delaying anxiety was implemented. Therefore, it seems that students have learned the skills and techniques presented in the therapy sessions and applied them in their daily lives, which causes a change in cognitive-cognitive status, change in metacognitive beliefs, and the creation of alternatives methods to experiencing and coping with internal events and ultimately enhancing students' emotional intelligence.

Therefore, it can be concluded that metacognitive therapy by affecting M, namely challenging metacognitive beliefs and emitting cognitive-attention syndrome can affect the expression, cognition and control of emotions and prevent emotional disturbance and promote mental health and finally emotional intelligence.

In regard to limitation and suggestion, in this study, only male students were studied. Also, in this study, only high school students were studied. It seems that the use of this treatment for lower school students requires more sessions to explain the logic of treatment and understand the concepts and methods. The evaluation method in this study was self-assessment questionnaires and interview and observation were not used; If other sources were used, the validity of the data would be greater.

Conclusion

It is recommended to use the metacognitive therapy format with changes for girls as well as at higher or lower education levels. It is recommended that therapists and counselors use this treatment format to prevent appearance of emotional disorders as well as improving mental health, especially in adolescents.

Disclosure Statements

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