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Investigating Relationship between Meta-Cognition and Emotional Intelligence

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ABSTRACT

The present research was conducted with the goal of investigating the role of metacognitive believes in alexithymia. This is a descriptive and correlational research. The study population included all Pay am Noor University of Babul in the academic year 2013-14. The sample studied in this research included 175 of the above mentioned students selected through cluster sampling. To collect information, metacognitive believes questionnaire (MCQ-30) of Wales and alexithymia questionnaire (TAS-20) of Bagri *et al* (1994). Descriptive and inferential statistics methods such as average, standard deviation, correlation coefficient and regression were utilized. The analysis indicated a positive and significant relationship between metacognitive believes and alexithymia. The results also indicated a negative and significant relationship between alexithymia and emotional intelligence. Alexithymia among male and female students ($p < 0.05$). It was also made clear that metacognitive believe components such as cognitive contrast, positive believes and cognitive self-awareness can significantly predict alexithymia and emotional intelligence.

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INTRODUCTION

Metacognition refers structures, knowledge and psychological processes that deal with the control, change, and interpretation of thoughts and cognitions. Based on recent theories, Metacognition is one of the important factors in development and continuation of psychological disorders [16]. The hypothesis in this approach is that believes in psychological disorders include metacognitive components which lead the functioning of thoughts and confronting style and are affected by them. In self-regulatory functioning model, vulnerability to psychological disorders and continuation of these disorders is usually accompanied with cognitive-consideration signs and these signs are specified by intensified self-centered attention, review of the threat, ruminations process, activation of uncongenial believes and inefficient self-regulatory strategies. These signs are triggered by personal metacognitive believes and act as reference in control and interpretation of cognitive incidents [16]. This model of engagement predicts the metacognitive believes in vulnerability, development and continuation of cognitive vulnerabilities. In line with this approach, a positive correlation has been reported between negative and positive metacognitive believes and emotional intelligence. Metacognitive believes refer to believes and theories that people have about their mentality [16]. These believes can influence the responding patterns of a person to thoughts, behaviors, and emotions and lead to self-regulation [16]. Due to some factors and conditions, these metacognitive believes are disrupted and form a set of uncongenial met believes about internal feelings and thoughts and lead to unseal-regulation [16]. Costa (2010) believes that if we can manage to get aware of interior monologue in our mind and if we can identify problem solving and decision making procedures, we will experience metacognition. Metacognition is one's ability to recognize what he knows and what he doesn't. Flavel believes that Metacognition is one's knowledge of his cognitive procedures and includes enacting, organizing, and coordinating a set of these streams. Metacognition has a direct interaction with many factors, including the emotional intelligence. The results of many studies indicate that the role of emotional intelligence in more dominant in life and educational success than IQ. These results also indicate the importance of the presence of emotional intelligence in work environments, training courses, improving the performance in interviews, group work and mental issues. Over recent years, emotional intelligence has become increasingly

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popular due to her vast application in various fields such as education, occupation, individual growth, interpersonal differences, etc. Emotional intelligence is increasingly defined as the capacity to realize and control your own and others' emotions. The concept of emotional intelligence gained credit by Saloy and Mayor but in theoretical terms, it will be placed in a category of social intelligence and interpersonal and intrapersonal intelligence. Bastian *et al* showed that higher levels of emotional intelligence are associated with higher levels of life satisfaction and less anxiety. Lower levels of emotional intelligence are also associated with lower levels of emotional self-regulation. Siarochi *et al* proved that lower levels of emotional intelligence are associated with uncongenial coping, higher psychological pathology, and the signs related to stress disorder aftershocks. Rogers *et al* also reported a relationship between lower levels of realization of others' feelings and weaker social adjustability and showed those who are unable to manage the emotional states of their own and others' have less social and support skills. In an intrapersonal view, abilities in social performance especially communicating with others and good interaction with friends can contribute to the mental health of people in different ways. Introduction of the concept of emotional intelligence and various theories about it and extensive efforts made to form a tool for measuring it indicate the attention paid to the influence of intrapersonal relationships in mental health. Emotional intelligence can be one of the important dimensions of happiness in dealing with the everyday events of life. The studies have indicated a positive relationship between emotional intelligence and general health, optimism, lower levels of stress, satisfaction with the married life, social adjustability, anger and self-control, self-efficiency and solving new problems, however this variable is reversely related to alexithymia. Alexithymia generally means the lack and shortage of words for naming and describing the emotions which is derived from the Greek roots Alexi (lack of words) and thymus (emotion). This word is used to talk about psychological patients who are unable to describe and recognize their feelings. These patients report a very concrete cognitive style, limited ability for imagination and symbol processing and imaginative states.

It is necessary to mention that contrary to the complex relationship between Metacognition and cognitive activities, metacognitive skills are not equal to cognitive (intelligent) abilities. A study conducted by Winman and Spens (2011) indicates an average correlational coefficient between metacognitive skills and intelligence and the role they play in learning is more significant than cognitive abilities. Cognitive (intelligent) skills determine 10% of the dispersion of learning performance in the learners, while metacognitive skills determine 17% of the dispersion of learning performance in the learners and both of them (metacognitive and cognitive (intelligent) skills) predict only 20% of the learning in learners with different ages, and various cultural fields and assignments and modules. Thus, another variable named emotional intelligence can be investigated besides the concept of Metacognition. Emotional intelligence is another form of cleverness and includes understanding your own feelings to make appropriate decision in life. The emotional intelligence refers to the ability to control the worrying moods and reactions. This means to be highly motivated and hopeful in achieving your goals. Generally, emotional intelligence is a social skill and includes cooperation with other people, utilizing feelings in your relationships and the ability to lead other people. The emotional intelligence also plays a major role in the success of humans' personal and social life. Successes in the professional life depend 20% to IQ and 80% to emotional intelligence. On the other hand, another variable which needs to be studied along with metacognition and emotional intelligence is alexithymia. Investigating the clinical features of alexithymia and emotional intelligence shows that patients of the both groups lack psychological consciousness and don't respond to treatments based upon insight. Some studies have investigated the relationship between alexithymia and emotional intelligence. The results of several investigation have indicated a high and negative correlation between alexithymia and total score of emotional intelligence. We may conclude that alexithymia and emotional intelligence are 2 distinct categories. Alexithymia is a characteristic feature, while emotional intelligence is an ability. The studies that have investigated the relationship between emotional intelligence and alexithymia seem to have arrived at the conclusion that alexithymia can predict low levels of emotional intelligence.

Lack of emotional awareness, reduction of dream, concrete thinking, the external style of life in which behavior is determined by laws, plans and others' expectations, not the emotions, wishes, and personal values. These people are unable to utilize analytical psychotherapy and they are quite prone to mental tensions and usually suffer from disorders like eating disorder, alcohol abuse, and obsessive behaviors for regulating their troublesome internal states. Dey Susan & Markie (1963) who were working on treatment of psychological tension disorders in France issued a similar report later about the operational thinking style in physical patients, their disability to achieve a life inside feelings and dreaming and some sort of using emotions in their relationship with others.

Difficulty in describing the feelings, difficulty in distinguishing between emotions, physical arousal which triggers the emotions, lack of introspection, high social conformance, poor imaginative life and weakness in remembering the incidents. Alexithymia is also called childish personality or emotional illiteracy. Some features of these disabilities are listed here: disability in describing your emotions and the verbal description of these emotions, failure in symbolic thoughts, limitations in revelation of views, feelings, wishes and pullers and dry organ weakness, lack of emotional revelation, weakness in sympathizing and insight about yourself. Fryburgher (1977) has divided alexithymia to primary and secondary. The primary alexithymia is a clinical feature in people

who are prone to psychotherapy and psychotic disorders. Secondary alexithymia is considered to be a clinical state.

Research methodology:

The research methodology taken up in this study is a correlational method in which the researcher merely studies the synchronic and predictive relationships between variables without manipulating them. The statistical population of the research included all students of Babol Payam Noor University in the academic year 2013-14. The sample used for this research included 175 students chosen based upon the cluster sampling.

Research tools:

Metacognitive believes questionnaire (MCQ-30):

The initial form of this questionnaire consisted of 65 articles proposed by Cart Rite Hatton and Wales (1997) to investigate the bothering anxieties and thoughts. The accepted form of this scale (MCQ-30) consists of 30 questions which was developed and extended later by Cart Rite Hatton and Wales (2004) similar to the initial form (Wales, 1995, 1997; Quoted by Cart Rite Hatton & Wales, 2004). This scale is formed based on the self-regulatory executive function (SREF) proposed by Wales and Mateus.

Emotional intelligence questionair shearing:

The emotional intelligence questionnaire of Siberyashring was used in this research. This questionnaire consists of 33 items classified by Likret's scale. Each question refers to one situation and the respondent must put himself in those situations and choose the answer that best describes his mental and psychological state. This 5 modular test measures self-motivation, self-awareness, sympathy, self-control, and social skills.

To score this test, each item gets a score from 1 to 5 and some items utilize direct marking and others use reverse marking. As for questions 1, 9, 12, 13, 14, 18, 22, 28, 31, and 33, if the respondent chooses A, he will get 5; if he chooses B, C, D, E, he will get less marks. Higher marks in this questionnaire indicate higher emotional intelligence. The lowest mark in this test is 33, while the highest mark is 165. Higher marks in this test correspond to higher levels of emotional intelligence. Meanwhile, the questions associated with measuring each dimension of this questionnaire is clear.

The descriptive statistics and inferential statistics methods:

Descriptive statistics: the numerical descriptions are called descriptive statistics. Descriptive statistics is a general title for those statistical methods which help the researcher classify, summarize, describe, and interpret the data collected and create a link between them. The methods used in descriptive statistics are divided to 3 categories: A) Frequency distribution table and drawing charts, B) Central indicators, and C) Variation indicators.

Descriptive and inferential statistical methods including average, standard deviation, correlational coefficient and regression are used for data analysis.

Findings:

Table descriptive statistics of investigating the status of the variable "metacognitive believes" in research samples

central tendency indexes			dispersion indexes			distribution indexes		
mode	mean	average	extent of variation	variance	standard deviation	standard error	coefficient of curvature	coefficient of strain
65	68	66.7	17.9	4.20	17.23	0.66	0.67	0.49

Based on this table, we can say that no great difference is observed between mode, mean and average and since the coefficients of curvature and strain are below 1, this distribution has the assumption of normality and the index of average can be used as an appropriate index for investigations. The detailed proof of this fact is presented through appropriate tests in the forthcoming sections.

Table descriptive statistics of investigating the status of the variable "emotional intelligence" in research samples

central tendency indexes			dispersion indexes			distribution indexes		
mode	mean	average	extent of variation	variance	standard deviation	standard error	coefficient of curvature	coefficient of strain
104	105	104	23	3.68	12.34	0.66	0.27	0.38

Based on this table, we can say that no great difference is observed between mode, mean and average and since the coefficients of curvature and strain are below 1, this distribution has the assumption of normality and the index of average can be used as an appropriate index for investigations. The detailed proof of this fact is presented through appropriate tests.

Table 4.6: Pearson's correlation statistics (the relationship between cognitive believes, alexithymia and emotional intelligence)

variables	metacognitive believes		alexithymia		emotional intelligence	
	r ^M	sig	r ^M	sig	r ^M	sig
metacognitive believes	1		0.204*	0.01	0.245**	0.003
emotional intelligence	0.245**	0.003	-0.201	0.02	1	

n= 175, df= 173, *P<0.05 **P<0.01

Based on the results of table 4-6 in determining the relationship between metacognitive believes and alexithymia, since the calculated r^M correlation equals (0.204) in the confidence level of 95% (5% error) and the freedom degree of 173 and is bigger than the correlational coefficient of the critical table (0.194), thus 95% of the confidence of the researcher's hypothesis will be fulfilled. In other words, we can say that since the resulting level of significance equals (sig=0.01) and is smaller than 0.05 (p<0.05) Concerning the relationship between metacognitive believes and emotional intelligence, because the r^M calculated correlational coefficients equaling (0.245) in the confidence level of 99 percent (1% error) and a degree of freedom of 173 is bigger than the correlational coefficient of r^b critical table (0.194), thus the researcher's hypothesis will be confirmed with a confidence level of 95 percent. In other words we can say since the resulting level of significance equals (sig=0/003) and is smaller than 0.01 (p<0.01), the researcher's hypothesis is confirmed and the null hypothesis is rejected. Thus, we may say there is a positive and significant relationship between metacognitive believes and emotional intelligence. We will also conclude that a negative and significant relationship exists between alexithymia and emotional intelligence (p<0.05) & (p<0.01).

Fourth hypothesis: there is a significant difference in the emotional intelligence among male and female students.

Table Independent T statistics (a comparison of the emotional intelligence components among male and female students)

emotional intelligence variables	average		standard deviation		t _m	t _b	sig
	female	male	female	male			
self motivation scale	20.11	21.5	3.6	4.5	2.16	1.98	0.03
self awareness scale	24.8	24.9	3.2	3.4	0.29	1.98	0.77
self control scale	22.4	20.4	4.6	6.02	2.20	1.98	0.25
social consciousness scale	20.6	19.9	3.1	4.3	1.13	1.98	0.25
social skills scale	17.05	15.2	3.4	5.5	1.35	1.98	0.02
total emotional intelligence	105.9	102.1	10	12.06	2.06	1.98	0.04

Based on table in investigating the self motivation scale from the subscale and components of emotional intelligence, we can say that since the calculated t =2.16 in the confidence level of 95 percent (a=0.05) and the degree of freedom 173 (df=173) is bigger than T of critical table, thus the null hypothesis is rejected and the researcher's hypothesis is confirmed. In other words, we can say since the resulting level of significance equals (sig=0.03) and is smaller than 0.05 (p<0.05), we can infer that the null hypothesis is rejected and the researcher's hypothesis is confirmed. Thus, we may say that the self motivation scale has a significant difference between girls and boys.

Discussion and Conclusion:

The results of this study indicated a significant difference among male and female students in terms of components of self-motivation, self-control and social control from the subscales of emotional intelligence (p<0.05). No significant difference was observed among male and female students in terms of the components of self-awareness and social consciousness (p>0.05). A significant difference was also observed among male and female students in the total scale of emotional intelligence (p<0.05). These results are in line with the results gained by Batasitini (2001), Velfradet *et al* (2002), Chan (2005), Elizabeth, Oustin, Timoti, Catherine, and Vedanan (2008); Scott *et al* (2004), Varvich and Netelback (2004), Yaghoobi *et al* (2008) and Khosrojerdi and Khanzadeh (2007), however they fail to comply with the results gained by Gastlo *et al* (2004), Avick *et al* (2007) and Zenansi and Labart (2009). The important point in determining these differences is the method used to measure the variables in this investigation.

Considering the role and importance of emotional intelligence in various parts of the life such as education, social job and environment and mental health which help us to identify the emotions of ours and others', gain sufficient skill in establishing relationships with others and promote the sense of responsibility, learners must reach an appropriate level of growth and development for controlling emotions and feelings further to utilization of metacognitive strategies in order to reach a high level of educational performance and optimized learning. If one is smart in terms of emotional intelligence, he can appropriately benefit from emotional responses and balance them and protect himself from the destructive effects of the mental pressure in the fields of education, occupation and social responsibility.

The results indicated that the 2 components of uncontrollability and demand for control have moved out of the regression model and components of cognitive contrast, positive believes and cognitive self-awareness can significantly predict emotional intelligence.

Model coefficients indicate that by changing the cognitive contrast variable for 1 unit, emotional intelligence variable changes for 0.2 unit. By changing the positive believes variable for 1 unit, emotional intelligence changes for 0.45 unit and by changing the variable of cognitive self-awareness, emotional intelligence changes for 0.31 unit. This fact indicates that cognitive contrast variable in relation with emotional intelligence is a better indicator than cognitive contrast and cognitive self awareness.

The importance of the metacognitive belief of uncontrollability and danger can be studied from this view that this metacognitive belief will create more doubt in people about their capabilities and performance. They will probably assume higher levels of difficulty and problems for themselves. Activating this metacognitive belief will result in the experience of emotional tensions in the person (Spada, Hio and Nick Swiss, 2007) in this emotional tension can have a great influence on different dimensions of the mental health of the person. On the other hand, Lamli and Silki (2000) believe that the most comprehensive belief about alexithymia can refer to this point that alexithymia in men is usually caused by biological factors. However, alexithymia shows itself in women as a result of psychological damages. On the other hand, Kosa, Trakiano, and Mc Kerry (2001) believe that if we are to consider biological features, thus gender differences in personality traits must be uniform in all cultures. However by considering Levant's theory (1992) and the gender differences based upon cultural differences, these results can be considered as evidences that indicate the influence of social and cultural mental factors in gender differences of alexithymia.

It is believed that alexithymia is the dangerous factor for many psychological disorders, because people afflicted by that are under the intense pressure of the emotional physical associates and do not verbalize them. This disruption prevents emotional regulation and makes successful compliance difficult. As a matter of fact, people who can express their emotions in the right time will be free from the mental burdens, they are not able to share their emotions with others. In an attempt to describe the results of the investigation, we may infer that alexithymia is an emotional cognitive feature and the person afflicted with it is unable to comprehend and regulate his emotions. When emotional information can not be comprehended and evaluated in the cognitive processing procedure, people will experience a sense of emotional and cognitive desperation and this disability can disrupt the structure of their emotion and cognition. Due to the lack of emotional awareness and disability in the cognitive processing of their emotions, these people are usually unable to identify, realize or describe their emotions and harbor a limited ability in complying with stressful situations. One method for controlling tension, especially negative emotions, is to express the emotions caused by tension.

If these emotions are not dealt with and if the individual is unable to verbalize his negative feelings, the psychological element of mental confusion and emotion expression systems such as depression and anxiety begin to increase. People who are capable of identifying their emotions and express their emotional states in a much better way can deal with life problems more efficiently. They are more successful in complying with the environment and others, thus they will have a higher level of mental health. People afflicted with alexithymia experience unclear emotions and these emotions are usually accompanied with a physiological stimulation. Due to difficulty in distinguishing, describing and regulating emotions, active stimulation will remain and shall not diminish and it disrupts the automatic neural system and immune system.

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