Comparison of Early Maladaptive Schemas and Defense Styles in Asthmatic, Alexithymic and Normal Subjects

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ABSTRACT

Objective: The aim of the present article was to study the relationship between early maladaptive schemas and the defense styles (mature, immature, and neurotic) in asthmatics, alexithymics and normal subjects.

Methods: 216 asthmatic, alexithymic and normal subjects were selected and they completed Young Schema Questionnaire (short form), Defense Style Questionnaire and the Farsi version of the Toronto Alexithymia Scale. Descriptive and inferential statistics such as mean, standard deviation, MANOVA and multiple regressions analysis were used to analyze the research data.

Results: Results indicated a significant difference ($P<0.05$) in all domains of early maladaptive schemas, except other-directedness between the mean scores of the groups of normal subjects and asthmatic patients as well as alexithymic patients. In mature and neurotic defense style, there was not a significant difference between the mean scores of the three groups, while the immature defense style scores of normal subjects and patients with asthma were significantly different ($P<0.05$) from those of alexithymic.

Conclusion: Alexithymia is equivalent to difficulty in self-regulation. When emotional information could not be perceived and evaluated through cognitive processing, it results in the individual's emotional and cognitive confusion. This inability increases the possibility of the immature and neurotic defense styles in stressful situations.

1. Introduction

Psychosomatic disorders are defined as physical disorders generated by the influence of mind, thoughts and emotions. Psychosomatic disorders are recognized when there is a known physical disorder or injury and psychologically recognizable events help the onset or the worsening of the malady. Two criteria are considered as the special model for diagnosing psychosomatic disorders: Diathesis-Stress Model. Hereditary diathesis refers to innate weakness underlying the physical injury, and stress refers to psychological reaction to meaningful events. Psychological factors can affect various physical conditions of organ systems: respiratory system, cardiovascular system, skin, gastric system, sensory organs, etc. Today, psychologists recognize the important role of cognitive elements in creating nervous system diseases and psychosomatic disorders. They believe that when a persistent and stable diversion happens in one's thought, belief and cognition, they are gradually afflicted by psychological and physical diseases (Sarason & Sarason, 2005).

Asthma is a condition in which the airways get narrow and inflamed and extra fluid is flown into various stimuli. This leads to wheezing which in its extreme form can lead to convulsional struggle in respiratory system. Asthma happens under the influence of infection, allergies or psychological elements. It is estimated that every one of these

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elements play an important role in one third of cases (Wiener, 1977).

Young believed that maladaptive early schemas are the foundations for numerous disorders and that those schemas are dysfunctional and self-preservatory. During one's lifetime they force one to behave in a maladaptive way by distorting reality, stress and pessimism. Therefore, it is necessary to be sufficiently knowledgeable in regard to schemas that might create psychosomatic disorders (Young et al., 2003).

It seems that there are different variants interfere in physical reaction, because such variants help in the onset of the disease in people with the potential to be physically ill. William Grace and David Graham (1952, quoted from Rosenham & Seligman, 2007) believe that one's pervious perceptions and beliefs about the world and the threats they believe in, predict the possible psychosomatic disorder one would be afflicted with. For example, the asthmatic have always been wishing to get out of a problem or that someone else accept the responsibility for it, and when they have been confronted by it, they have been thinking that "I cannot face this at all!"

Alexithymia was first used by Sifneos (1973, quoted from Wagner & Lee, 2008) to describe the psychological inability to distinguish and express the emotional aspects. The alexithymic have four characteristics: problem in recognizing and describing feelings, problem in distinguishing feelings from physical sensations, lack of the ability for imagination and symbolic thought, and tendency to thinking and problem-solving objectively (Humpfries, Wood, & Parker, 2009).

A number of studies investigating the temporal stability of alexithymia (Salminen et al., 2006), have suggested that the construct may be considered to be a stable personality trait, characterized by a dysfunction in cognitive processing of emotional information. On the other hand, another group of studies (Taylor et al., 1991, as quoted by Wagner & Lee, 2008) have opposed this "trait" perspective questioning the temporal stability of alexithymia and arguing that the construct should be seen as a "state" which is expressed as a direct result of personal helplessness. Based on the latter perspective, alexithymia is seen solely as a simple defense mechanism to protect the person against emotional helplessness associated with extremely harmful situations.

Defense mechanisms have been defined as automatic self-regulating processes which operate with the aim of reducing cognitive discrepancies and minimizing sudden changes in internal and external reality by distorting the perception of threatening events (Ganji, 2013). Due to disagreements in the field of defense mechanisms, there is no standard classification of these mechanisms, but yet, researchers have classified the different defense. Andrews et al. (1993) categorized three major defense styles based on twenty different defense mechanisms suggested by Villiant. These three defense styles are named "mature", "immature", and "neurotic" according to which kinds of defense mechanisms are used by the individual. The mature defense style represents normal, adaptive and functional method of coping whereas the neurotic and immature styles may be considered to be a consequence of dysfunctional and maladaptive coping strategies.

Based on the clinical and theoretical importance of alexithymia, it has to be researched and studied in its different aspects. Thus, the main purpose of the present study is to compare the early maladaptive schemas (isolation and alienation, selfishness and dysfunctional activity, dysfunctional limitations, other orientations and over-sensitivity and prevention) and defense styles (mature, immature and neurotic) in the asthmatic and alexithymic and normal individuals. The research hypotheses are as follows:

Early maladaptive schemas (disconnection and rejection, impaired autonomy and performance, impaired limits, other-directedness, and over vigilance /inhibition domain schemas) are different in the asthmatic, alexithymic and normal subjects. Defense styles (mature, neurotic and immature) are different in the asthmatic, alexithymic and normal subjects. Early maladaptive schemas and defense styles predict alexithymia.

2. Methods

In this descriptive study 62 asthma patients, 99 Alexithymia patients and 55 normal subjects aged from 25 to 55 were chosen using the available sampling based on the entry criteria (asthma diagnosis in the medical record and the age between 25 and 55) and discharging criteria (being afflicted by allergy and visiting for the first time) from Tehran's asthma and Allergy Clinic. These people filled out the Farsi version of Toronto Alexithymia Scale, the short form of Young's Schema Questionnaire and the Defense Style Questionnaire. This study employed three questionnaires:

Toronto Alexithymia Scale (TAS-20)

This is a 20-item questionnaire developed by Bagby et al. (1994). This 20-item self-report inventory measures alexithymia subscales including Difficulty Identifying Feelings, Difficulty Describing Feelings, and Externally Oriented

Thinking in a five-point Likert-type scale from grade 1 (strongly disagree) to 5 (strongly agree).

The psychometric properties of the TAS-20 has been confirmed in several studies (Pandey, Mandal, Taylor, & Parker, 2006). Cronbach's alphas of 0.85, 0.82, 0.75 and 0.72 were reported (Besharat, 2008) for overall alexithymia and its three subscales (difficulty identifying feelings, difficulty describing feelings, and externally oriented thinking) respectively which indicates appropriate internal consistency.

Furthermore, test-retest reliability of the questionnaire using 67 participants after a four-week interval yielded correlations by calculating the overall alexithymia and its subscales ranging from r=0.80 to r=0.87. Concurrent validity of the questionnaire was established by calculating correlation coefficients between the TAS-20 and scales measuring emotional intelligence (r=-0.80, P<0.001), psychological well-being (r=-0.78, P<0.001) and psychological distress (r=0.44, P<0.001). Confirmatory factor analysis reiterated the existence of the three components of alexithymia (Besharat, 2008).

Young Schema Questionnaire-Short Form (YSQ-SF)

This questionnaire has been developed by Young. The patients completed the short form of Young schema Questionnaire (YSQ-SF, 15 EMSs, 75 schema items). This is a self-report, Likert-type questionnaire. Every EMS consists of five items, which can be rated from 1 (Completely untrue of me) to 6 (Describes me perfectly). If two or more of these five items are rated 5 or 6, the patient has a meaningful schema signifying that the schema exists and is of importance in the patient's life and has an effect on behavior.

The YSQ-SF was designed to assess 5 items, namely: Disconnection and rejection, impaired autonomy and performance, impaired limits, other-directedness, and over vigilance/inhibition domain schemas (Baranoff, Oei, Cho, & Kwon, 2006). The reliability of the individual EMS subscales varied between 0.94 and 0.97 (Cronbach's alpha) (Cui, Lin, & Oei, 2011; Baranoff et al., 2006). The reliability of the YSQ-SF varied between 0.62 and 0.90 (Cronbach's alpha) (Sadoughi, Aguilar Vafayi, Rasoul Zadeh Tabatabaei, & Esfahanian, 2008).

Defense Style Questionnaire (DSQ-40)

This is a 40-item questionnaire developed by Andrews et al. (1993) measuring three categories of defense mechanisms which may be used by respondents. The Farsi version of this questionnaire was translated by Beshart and et al. (2001). The 40-item measures three styles labeled mature, immature, and neurotic. Respondents respond to each item on a nine point Likert scale ranging from "Completely Agree" to "Completely Disagree". The mature defense style includes defense mechanisms of sublimation, sense of humor, anticipation and suppression. The neurotic defense style includes defense mechanisms of undoing, pseudoaltruism, idealization, and reaction formation. The immature style includes the following defense mechanisms: Projection, passive aggression, acting out, isolation, devaluation, autistic fantasy, denial, displacement, dissociation, splitting, rationalization and somatization.

Cronbach's alpha of 0.75, 0.73 and 0.72 were reported for the three defense styles of mature, neurotic and immature respectively. Furthermore, test retest reliability (r=0.81) was reported after a four week interval in 30 subjects (Basharat, 2008).

3. Results

Table 1 shows means and standard deviation for alexithymia and defense style scores for subjects. The following results were obtained:

To evaluate the first two hypothesis, a multivariate analysis of variance was used. Given that the basic assumptions of homogeneity of variance is MANOVA, before presenting the results of ANOVA Levine test was used to check the assumption of equality of error variance dependent variables. Based on the information, the assumption of homogeneity of variance was confirmed in all five main domains schemas and in groups of three defensive styles. So running a MANOVA is permitted

Table 2 indicates a significant difference between the study groups in all five domains of schemas and three defensive styles. For specific details and in order to compare the differences between the two groups and given the lack of equal numbers in each group, Scheffe post hoc test was used. The results of these tests are summarized in Table 3.

As Table 3 shows the results, in every domain of early maladaptive schemas, except other-directedness, between normal subjects and alexithymia as well as alexithymia and asthma patients in mean scores are significant differences, while no significant differences were observed between asthmatic patients and normal subjects. In other-directedness, the mean scores in groups of normal and asthmatic subjects as well as groups of asthmatics and alexithymia patients are significantly different, however, no significant differences were found between normal subjects and alexithymia .In mature, and neuroticism defense styles, and

Table 1. Mean and standard deviation scores of the groups in terms of early maladaptive schemas and defensive styles.

	Normal		Asthmatic		Alexithymia	
	Mean	SD	Mean	SD	Mean	SD
Disconnection and rejection domain schemas	52.309	19.844	48.596	14.228	66.333	23.811
Impaired autonomy and performance domain schemas	36.727	15.766	31.258	11.094	45.505	18.212
Impaired limits domain schemas	28.818	8.596	27.596	9.339	33.222	10.958
Other-directedness domain schema	28.218	8.020	23.523	6.837	31.161	10.763
Over vigilance/inhibition domain schemas	29.745	8.470	29.935	7.730	35.020	10.093
Mature defense style	44.200	9.613	43.758	9.422	43.282	11.425
Immature defense style	102.727	23.217	95.322	19.249	117.919	29.116
Neurotic defense style	40.854	11.325	40.177	8.925	44.292	11.040

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there is no significant difference among the mean scores of the three groups. The immature defense style, the mean scores of normal subjects and alexithymia as well as asthma patients and alexithymia are significantly different, while the mean scores of normal and asthmatic patients were not significant. So the first two hypotheses are confirmed.

To investigate the third hypothesis, a stepwise multiple regression analysis was performed using the results. Table 4 shows stepwise multiple regression analysis of defense styles and early maladaptive schemas with alexithymia in the entire sample. Based on the table data, model 1 disconnection and rejection domain schemas by entering the regression equation as a predictor of alexithymia is obtained 0.427 for correlation coefficient, and 0.182 for coefficient of determination which explained that 0.182 changes of alexithymia variance by disconnection and rejection domain schemas. In model 2, over-vigilance/inhibition domain schemas as predictive variables entered into the regression equation. In model 2, correlation coefficient is 0.467 and the coefficient of determination 0.218.

In other words, we can conclude that 0.218 changes of alexithymia are predicted by over-vigilance/inhibition domain schemas. In model 3, with the arrival of immature defensive style to the regression equation as a predictor of alexithymia is 0.492 for correlation coefficient, and 0.242 for the coefficient of determination which explained that 0.242 changes of the variance alexithymia is by immature defense style. In other words, increasing the disconnection and rejection, over-vigilance/inhibition domain schemas and immature defensive style, alexithymia increases.

4. Disscussion

The results of this study indicate that, in every domain of early maladaptive schemas, except other-directedness, there are significant differences between normal subjects and alexythimics as well as alexithymic and

Table 2. Results of multivariate analysis of variance between the five main domains early maladaptive schemas and three defensive styles in categories.

Dependent variable	Sum of square	df	Mean square	F	Sig.	Eta squared
Disconnection and rejection domain schemas	14114.997	2	7057.499	16.856	0.001	0.137
Impaired autonomy and performance domain schemas	8182.431	2	4091.215	16.307	0.001	0.133
Impaired limits domain schemas	1411.746	2	705.873	7.132	0.001	0.063
Other-directedness domain schema	2219.102	2	1109.551	13.369	0.001	0.112
Over vigilance/inhibition domain schemas	1436.635	2	718.318	8.741	0.001	0.076
Mature defense style	30.707	2	15.353	0.141	0.869	0.001
Immature defense style	21193.282	2	10596.641	16.744	0.001	0.136
Neuroticism defense style	786.569	2	393.284	3.530	0.031	0.032

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Table 3. Scheffe test for paired comparison groups in five domains early maladaptive schemas and three defense styles.

Dependent variable	Reference group	Comparison group	Mean difference	Standard error	Sig.
Disconnection and rejection domain schemas	Normal	Asthmatic	3.790	3.790	0.620
		Alexithymic	-14.024*	3.441	0.001
	Asthmatic	Alexithymic	-17.736*	3.313	0.001
Impaired autonomy and performance domain schemas	Normal	Asthmatic	5.469	2.933	0.178
		Alexithymic	-8.777*	2.663	0.005
	Asthmatic	Alexithymic	-14.247*	2.565	0.001
Impaired limits domain schemas	Normal	Asthmatic	1.221	1.842	0.803
		Alexithymic	-4.404*	1.673	0.033
	Asthmatic	Alexithymic	-5.635*	1.611	0.003
Other-directedness domain schema	Normal	Asthmatic	4.685	1.687	0.023
		Alexithymic	-2.943	1.532	0.160
	Asthmatic	Alexithymic	-7.629	1.475	0.001
Over vigilance/inhibition domain schemas	Normal	Asthmatic	-0.190	1.679	0.994
		Alexithymic	-5.274	1.524	0.003
	Asthmatic	Alexithymic	-5.084	1.468	0.003
Mature defense style	Normal	Asthmatic	0.441	1.933	0.974
		Alexithymic	0.917	1.755	0.872
	Asthmatic	Alexithymic	0.475	1.690	0.961
Immature defense style	Normal	Asthmatic	7.404	4.659	0.285
		Alexithymic	-15.191*	4.230	0.002
	Asthmatic	Alexithymic	-22.596*	4.074	0.001
Neuroticism defense style	Normal	Asthmatic	0.677	1.955	0.942
		Alexithymic	-3.438	1.755	0.156
	Asthmatic	Alexithymic	-4.115	1.709	0.057

* Significance: P<0.05 (2-tailed).

asthmatic patients in mean scores, while no significant differences were observed between asthmatic patients and normal subjects. In other-directedness, the mean scores in groups of normal and asthmatic subjects as well as groups of asthmatics and alexithymics are significantly different; however, no significant differences were found between normal subjects and alexithymics.

The results in mature and neurotic defense styles show no significant difference between the mean scores of the three groups. In the immature defense style, the mean scores of normal subjects and alexithymics as well as asthma patients and alexithymics are significantly different, while the mean scores of normal and asthmatic patients are not. Disconnection and rejection, and over-vigilance/inhibition domain schemas, and immature defensive style are good predictors of alexithymia. This can be explained by the following possibilities:

Alexithymia is equivalent of disability in cognitive processing of emotional information and regulating emtional disabilities. When emotional information cannot be analyzed in perception and evaluation process, the individual would be emotionally and cognitively confused and frustrated. This failure increases the probability of immature and neurotic defense styles and dysfunctional schemas in stressful situations (Zahradnik & et al., 2009; Pollatos et al., 2011).

Positive relationship between alexithymia and immature and neurotic defense styles can be expressed in terms of primary and secondary alexithymia. Lack of

Table 4. Results of stepwise multiple regression analysis of early maladaptive schemas and defense styles with alexithymia.

Model	Variable	R	R^2	Modified R^2	ΔR^2	F	p
1	Disconnection and rejection domain schemas	0.427	0.182	0.178	0.182	47.638	0.001
2	Over-vigilance/inhibition domain schemas	0.467	0.218	0.211	0.036	9.829	0.002
3	Immature defense style	0.492	0.242	0.231	0.024	6.656	0.011

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emotional experience and associated cognitions (primary alexithymia) can be seen as denial feelings and emotions (one of the immature mechanisms), an equation that explains the positive relationship between alexithymia and ineffective defenses. In secondary alexythimia, emotional feelings are experienced by someone, but the individual does not know these feelings. This may be responsible for the inability to manage emotions and debilitating exhaustion as a defense mechanism as the main task. Thus, alexithymia is related to mechanism dysfunctions by weakening emotional management ability. (Besharat & Shahidi, 2011).

On the other hand, maladaptive schemas have been the underlying reason for pessimism and frustration or stress in patients' lives. Early maladaptive schemas can activate stress, dysfunctional attitudes, pessimistic explanatory style, hopelessness and helplessness in various situations and events (Izadi, 2012). Hence, secondary alexithymia as a defensive mechanism for dealing with these factors can lead to physical illnesses including psychological factors (Ismaili, Mahmoud Aliloo, Bakhshi Pour Roodsary, & Sharifi, 2009).

Thus, there are two categories of theoretical and practical implications for this study: on a practical level, especially preparing clinical and educational programs based on identifying early maladaptive schemas can be used to help better emotional skills. These programs can be injected to the context of therapeutic intervention programs based on cognitive processing of emotional information and emotional regulation and increase their effectiveness. At a theoretical level, the findings of this study may raise new questions and hypotheses about the relationship between alexithymia and early maladaptive schemas. Examples of these questions include:

Does alexithymia determine the effectiveness of particular defensive styles or maladaptive schemas in dealing with stress?

Is the type of relationship and the amount of the effectiveness of alexithymia on the early maladaptive schemas and defense styles, and vice versa, the same in both genders?

What variables possibly possess mediating roles between alexithymia, early maladaptive schemas and the defense styles?

To answer each of these questions and hypotheses based on them requires independent research which is recommended to the interested researchers.

Limitations of the study population and research in the field of generalized constraints, interpretations and attributions of cognitive variables that must be considered suggestive.

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