

**Construction and validation of a scale for the measurement of alexithymia in university – students**\*Behnam Makvandi<sup>1</sup>, Alireza Haydarei<sup>2</sup>, Manijeh Shehni yailagh<sup>3</sup>, Bahnam Najarian<sup>4</sup> and Parviz Askery<sup>2</sup>

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**Abstract:** This text reports a research that is construction and validation of a scale for measurement of Alexithymia in students coordinated to cultural – social characteristics of society, and factor analysis method mean 175 girls and 205 boys students of Ahvaz Islamic Azad University were selected for this research by stratified random sampling method. At the first step of research, 65 articles were written for measuring peculiarities of alexithymia by psychology method that 20 articles of them were removed by psychologists within stages of investigation of articles and introductory study. Factor analysis of data indicated that 26 articles were based on single factor scale and hence an alexithymia single scale was made. Coefficient of internal consistency and test – retest were satisfactory and were significant at the level of  $P = 0.001$ . Simultaneous execution was used for evaluating the validity of alexithymia scale made of Toronto Alexithymia scale (TAS).

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**Key word:** construction, validation, Alexithymia.

**1. Introduction**

During two, there recent decades, the significance of alexithymia has been recognized as a personality construction. This significance is defined with special deficiencies in evaluating excitative – cognitive that indicate irregularity in cognitive – performance, inability of brain – cortex in regulating and adjusting and controlling the confused excitements (1).

The term alexithymia was initiated by Sifneos in 1972 and originate from Greek literature and indicate the inability in excitement statement (2). Four main qualification of this phenomenon include problems in cognition and description of feelings, and existence of problem in differentiating between excitementous and physical feelings, limited imaginary activities like shortage of fantasy and dream and a cognitive method with external orientation (1,3,4).

These individuals express disability in cognition & describing excitement of them selves and others. For empathy, show weakened talent from them selves. Individuals who have the characteristics of alexithymia can not communicate with others properly and be consistent with them and may be affected by variety of mental disorders and problems. Therefore alexithymia is a structure that leads to decrease of individual consistence and hence is being considered by behavioral sciences researchers, psychologist and psychiatrist (5). While at first the alexithymia was

considered as a psych somatic disorder but now is known as a passive disability and disorder and a personality attribute (6). It is understood that alexithymia is prevalent among patients that suffer from depression, drug abuse anorexia nervosa, bulimia nervosa, and sornato from pain disorder (7). It is common in patients suffering from severe posttraumatic stress, such as those who have endured sexual abuse or imprisonment in a concentration or prisoner of war camp, as adults or as children. It is also apparent in patients with life – threatening illnesses (2, 8).

Based on researches concerning this disorder it is concluded that this disease relate to male adulecent with low level of education and poor economic condition (9, 10). While, based on statistic, the level of prevalence among men are two – fold to woman, this disorder is different from other somatic diseases like hysteria and hypochondriasis that are more prevalent in females, sex differentiation is a dominant feature of alexithymia. While men and women identify feelings equally well, women tend to describe their feelings better than do men, and women appear to be less prone to externally oriented thinking than are men (2).

Alexithymia and stressful factors intensify vulnerability to somatic diseases. This view that disability intensify the possibility of being affected by disease in the cognitive and emotion trend, is completely similar with the base of psychosomatic

medicine that argue that excitements and personality may significantly affect performance and health of body (6). Research related to alexithymia got interesting directions that include discover of disorder prevalence in different directions and its relation with emotional conditions and mood including depression. Its social tension in promoting cerebral response and suffering sonic motivations and its performance in anticipating long treatment results including eating disorders (11).

## 2. Statistical community, statistical sample, sampling method:

In this research 380 students of B.S. from different College of Ahvaz Islamic Azad University were selected including 175 girls and 205 boy student with age ranging from 18 to 47 and age – average of 23, by using stratified random sampling procedure and formed statistical sample.

As is seen in table 1, average of 49.61 and standard deviation 12.53 for girls and average of 58.35 and standard deviation 9.69 for boys were obtained.

## 3. Research instruments and stages of construction of alexithymia test.

In this research following two instruments were used:

- A) *Toronto Alexithymia scale (TAS – 20)*
- B) *Alexithymia Scale made by researches and coworkers (Ahvaz Alexithymia Scale – AAS – 26)*

### A) *Toronto Alexithymia scale (TAS – 20)*

This scale was made by Taylor in 1986 and was revised by Taylor & Parker in 1994. The first copy of scale contained 22 questions (TAS – R, revised). In this copy all question that evaluated imaginary activity were removed (Tayer et al, 1992 quoted from Load and et al, 2001) (13). The second revised copy scale of alexithymia contain 20 questions that seemed an advance for primary makers of Tests (14, 15). Bagbay et al found that in its validation Toronto Alexithymia scale TAS – 20 have three structural factors that were consistent with alexithymia construct. Other researches also supported these results (16, 17, and 18). In this scale three subscales

Of Difficulty Identifying Feelings (DIF), Difficulty Describing Feelings (DDF) Externality Oriented Thinking (EOT) is evaluated. Method of numbering the test by Likert scale ( 1 completely opposite to 5 completely consistent) will be numbered. Besharat (2007) calculated Cronbach's alpha for total of questionnaire as .85 and its three components, .82, .75, .72 respectively. Also stability of retest was confirmed,

in two turn with interval of 4 weeks from  $r = .8$  to  $r = .87$  for total and different subscales. In this research total Cronbach's alpha is  $r = .73$  and for three its components Cronbach's alpha is  $\alpha = .71$ ,  $\alpha = .65$ ,  $\alpha = .63$  (19). In validity of test, Parker, Begbay and Taylor (2000) (19). Calculated the correlation of total number of scale with total number of excitative intelligence (EO-I) as  $r = .47$  Besharat (2007) obtained simultaneous validity of this scale with excitative intelligence as  $r = .80$ . In this research validity of test with made alexithymia test is (42, 19).

### B) *Scale of constructed (Ahvaz Alexithymia scale – AAS – 20)*

At first based on related text and with regard to feature of Alexithymia, 65 questions were selected for measuring scale of Alexithymia. Articles were seemed to be consistent with targeted construct. Then prepared items were presented to two persons of members of scientific Board of Farsi literature of University for auditing to be corrected by viewpoint of literature: then selected articles were presented to 8 persons of psychological scientific Board Members of Shahid Chamran & Ahvaz Azad University and they were requested to study and investigate all articles carefully and offer their suggestion for correcting any article. Thus the articles that had content with similar significance or by viewpoint of psychologist were similar and unrelated, were removed. Based on remained articles, prepared Alexithymia questionnaires, were assigned to 100 students of different educational fields of university and they were asked in addition to responding to articles of questionnaire, mark those articles they think are deficient, non – significant and ambiguous. As a result a 47- question test was obtained. To investigate face validity, the prepared questionnaire was offered to three psychologists of Ahvaz – Shahid Chamran and Azad universities psychology grouped that all articles be revised finally and content and writing be under final investigation. Also in this stage 3 other articles were removed, and finally a 45 – article test was obtained. The made test, in main stage, for factor – analyzing, was assigned to 380 students of Ahvaz Azad university different fields (175 girls and 205 boy) in form of stratified random sampling (in proportionate of girls and boys in different colleges).

## 4. Analysing the data:

To responding to this question that whether, questionnaire questions set that researcher made have proper construct validity or not, factor analysis was used. The term, factor analysis is not a unit significance, but includes relatively various and complicate stages in which each one of triple stages of preparing correlation matrix, extracting primary factors

and turning is performed. SPSS/ 16 software was used for analysis of data. Scree test (20) specified that maximum three factor of articles of questionnaire are realizable and could be extracted. As a result with regard to test situation that there is the probability of three factors, the data were analysed. In three factorial analyses, cronbach alpha was obtained as  $.29$  in second factor and in third factor was obtained as  $.06$  (in second and factor 7 questions and in third factor 3 question) and with regard to Lower cronbach alpha their factors of 2 and 3 we omitted and a one factor test was obtained with cronbach alpha  $.86$  (cronbach alpha of boys  $.78$  and cronbach alpha of girls  $.89$ ). Axes (third axis to orthogonal rotation of varimax sort and minimum factorial load  $.40$  (as minimum correlation degree acceptable any article and extracted factors) of data were analysed. Data factors analysis reached to its best factorial structure by main component method.

As it is shown in table 2, the amount of, KMO is equal to  $.810$  and Bartlett test is significant. Small amount of KMO indicate that correlation between even of variables can not be explicated through other variables (21). Thus with regard to sampling sufficiency and significance of Bartlett test, Matrix of data correlation is suitable for factor analysis. Therefore, implementing factorial analysis based on under study correlation matrix is Justifiable. Results show that correlation of question with whole test is between  $.32$  and  $.52$  that highest correlation is related to question no 20 with  $.52$  correlation and lowest correlation is related to question no 38 with correlation of  $.32$ .

That only three factors can be all factors that constitute alexithymia scale and are beyond danger gradient and rest of factors are in a limit and closed to each other. But low cronbach alpha results of second factor ( $.29$ ) and third factor ( $.06$ ) caused the removal of these two factors and extracting a one factor test with alpha  $.89$  with least factorial load  $.40$  and 26 articles.

The amounts of Eigenvalue (or sum of amount – square root of factorial coefficients) was  $5.7$  that justify  $13.71$  of alexithymia.

Total correlation coefficients and all three Toronto Alexithymia subscales (TAS – 20) is significant with Ahvaz alexithymia scale at level of  $0.1$ . Highest Alexithymia correlation made in Ahvaz with

subscale 2 ( $r=.42$ ) shows low correlation with subscale 3 ( $r=.28$ ) Alexithymia of Toronto.

### 5- Conclusion:

The purpose of this research is constructing and scale validation for Alexithymia measurement using factor analysis statistical method. Different stages for construction of an instrument for analysis of a discovery factor were completely considered. Firstly theoretic bases and data of conducted research about Alexithymia were considered precisely. Finally 65 four alternative questions that have been prepared after correction by several Psychologists and preliminary study on too sample of factors analysis on 45-questions questionnaire, the results of KMO test for sampling sufficiency and Bartlett test were significant. Scree test for diagnostic number of factors, at first specified three factors but results of cronbach alpha only on one factor was satisfying. As a result short 26 articles scale with/ 40 factorial loads were constructed for measurement of personality pattern of Alexithymia.

Alexithymia articles short scale. (Ahvaz Alexithymia scale) have coefficient of internal consistency test – retest were satisfactory, that this instrument can be used as an alternative instrument for Alexithymia consistent with Iranian culture – Asian and eastern: in researching and clinical studies. In validation measurement of this instrument by Toronto Alexithymia, it was found that Ahvaz Alexithymia has a significant relation with Alexithymia subscales. Also obtained results showed that a significant difference is considered between girls & boys testables marks in Alexithymia and girls have lower – Alexithymia to boys. This finding is consistent with some reported researches emphasizing that the prevalence of Alexithymia among boys is more than girls (9, 10, 2).

Certainly, Using these instruments on normal community and also clinical samples will be useful specially regarding to relation of Alexithymia with psycho somatic disorders that most attention were paid to it in initial and later studies (including Martines – sanchez and et al, 1998). This structure either as a personal pattern or as a disorder (Martines – sanchez et al, 1998) can be used by researcher and psychologist in clinical domain.

**Table1. Average, standard deviation and minimum & maximum of examination number that were constructed by alexithymia scale**

<i>Descriptive Data sample</i>	<i>Number</i>	<i>Average</i>	<i>Standard deviation</i>	<i>Minimum Number</i>	<i>Maximum Number</i>
<b>total</b>	380	54.47	11.85	26	91
<b>Girls</b>	175	49.61	12.53	27	91
<b>Boys</b>	205	58.35	9.65	26	83

**Table2. Amount of kmo and result of croult Bartlatt test for variables correlation matrix**

<b>Kmo test for sufficiency of sampling</b>		<b>810%</b>
<b>Bartlett test</b>	$\chi^2$	3086.87
	<b>df</b>	990
	<b>significancy</b>	001

**Table3. Factorial coefficients of scale data made by Alexithymia scale (26 articles)**

<b>Row</b>	<b>No. test question</b>	<b>Article</b>	<b>Factorial coefficients</b>
1	20	<i>I have problem in maintaining cordial relation with others</i>	0.59
2	10	<i>I don't enjoy from sport and recreation</i>	0.53
3	36	<i>In reaction to exciting conditions I show a weak feeling</i>	0.51
4	31	<i>I cannot react to needs of other people</i>	0.50
5	37	<i>I avoid cordial relation with others</i>	0.49
6	30	<i>It is difficult for me to recognize feelings of others from their face statue.</i>	0.49
7	29	<i>I am not so much interested to grouped activity</i>	0.49
8	2	<i>I have problem in communicating with others</i>	0.48
9	34	<i>My imagination are prompt, unpredictable and nonvoluntry</i>	0.48
10	19	<i>Cannot recognize feelings of others</i>	0.48
11	32	<i>I don't observe redness of my face and roising my heart beat</i>	0.48
12	22	<i>Stating the feelings of others is difficult for me</i>	0.48
13	3	<i>I cannot find proper terms for stating my feelings</i>	0.47
14	25	<i>I don't like long talks, especially those talks about emotional and social issues.</i>	0.47
15	35	<i>Others believe that I don't understand their feelings</i>	0.47
16	8	<i>Statings the feeling is difficult for me</i>	0.46
17	42	<i>I feel my behavior is unnatural in communications with others</i>	0.44
18	6	<i>By viewpoint of others, I don't state my feelings properly.</i>	0.44
19	12	<i>By viewpoint of others, I am a proud person</i>	0.44
20	45	<i>I am weak to understand different events and accidents deeply</i>	0.44
21	33	<i>I don't know the cause of my angriness</i>	0.44
22	41	<i>Contrary to will of others, I don't like to understand their needs.</i>	0.43
23	13	<i>Others believe that I don't pay attention to their speake</i>	0.43
24	28	<i>By other persons viewpoint, I am more logical and emotionless than normal limit</i>	0.43
25	38	<i>Sometime other persons are angry with me and I don't know why.</i>	0.42
26	4	<i>I cannot state my excitements easily</i>	0.40

**Table4. Correlation coefficients between test numbers in made Alexithymia scale (AAS – 26) and Toronto Alexithymia scale (TAS – 20)**

<b>Toronto Alexithymia subscales and total of test</b>	<b>Ahvaz Alexithymia scale (AAS – 26)</b>
<b>Subscale 1 (DIF)</b> <i>Difficulty Identifying feelings</i>	40
<b>Subscales 2 (DDF)</b> <i>Difficulty Describing Feelings</i>	42
<b>Subscale 2: (EOT)</b> <i>Externalty Oriented Thinking</i>	28
<b>Total</b>	42

**Table5. Results of test T, test of independent groups of girls scale and boys students in Ahvaz Alexithymia**

<b>Gender</b>	<b>Average</b>	<b>Tob</b>	<b>df</b>	<b>Level of significant</b>
<b>Female</b>	49.61	7.14	327	0.001
<b>male</b>	58.35			

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