

The Relationship of Dissociation Experiences and Alexithymia with Eating Attitudes in Female Students of Ahvaz University

Zahra Dehghanizadeh,¹ Ali Asghar Firoozi,² Majid Eydi-Baygi,^{3,*} Nilofar Khajeddin,⁴ and Fateme

Sajjadi¹

¹Young Researchers and Elite Club, Shiraz Branch, Islamic Azad University, Shiraz, IR Iran

²Shahid Beheshti University of Medical Sciences, Tehran, IR Iran

³Young Researchers and Elite Club, Torbat- Heydarie Branch, Islamic Azad University, Torbat- Heydarie, IR Iran

⁴Jondishapour University of Ahvaz, Ahvaz, IR Iran

*Corresponding author: Majid Eydi-Baygi, Young Researchers and Elite Club, Torbat- Heydarie Branch, Islamic Azad University, Torbat- Heydarie, IR Iran. E-mail: majid_eydi@yahoo.com

Received 2015 July 10; Revised 2016 February 04; Accepted 2016 July 22.

Abstract

Background: This study aimed to clarify the relationship between dissociation experience, and alexithymia and eating attitudes in female students of Ahvaz University.

Materials and Methods: The present study had a cross sectional design. Overall, 325 female undergraduate students were selected by multi-phase random clustering and completed the following rating scales; eating attitudes test-26 (EAT-26), alexithymia questionnaire (TAS-20), dissociative experiences scale (DES-28). Data analysis was done using the Pearson correlation and stepwise multiple regression analysis.

Results: With the Pearson method, we found a correlation between alexithymia and eating attitudes ($P = 11.3$), and a significant positive correlation between dissociative experiences and eating attitudes ($P = 36.8$) was also found. The multi-variable correlation coefficient for alexithymia and dissociative experiences with eating attitudes in female students was respectively $MR = 37.0$ and $MR = 11.3$, and F ratio was respectively equal to 36.7 and 2.86, which was significant at $P = 0.001$ and $P = 0.092$.

Conclusions: This study highlights the association between eating attitudes, and dissociation experiences and alexithymia, yet dissociation experiences were more relevant and a stronger predictor for eating attitudes.

Keywords: Alexithymia, Dissociative Experiences, Eating Attitudes

1. Background

Eating disorders are disorders of eating behaviors, associated thoughts, attitudes and emotions, and their resulting physiological impairments. Anorexia nervosa and bulimia nervosa are thought to proximally be derived from one or both of the following factors: (a) an over valuation of the presumed benefits of weight loss or shape change, usually in the context of overvalued beliefs internalized from sociocultural norms promoting the benefits of thinness or shape change, and (b) fear of fat, or somatovisceral discomforts associated with ingesting food that result in functional, medical, psychological, and social impairment (1).

The prevalence of eating disorders was reported to have increased in the recent decades, especially among young girls (2). Disordered eating is more prevalent among female university students than adolescent girls (3). Numerous studies have shown that abnormal eating behaviors and eating disorders frequently emerge in non-Western countries especially among Asian countries (4-6).

The lifetime prevalence of eating disorders among female adolescents in Iran is as much as 0.9% for anorexia nervosa (AN), 3.2% for bulimia nervosa (BN), and 6.6% for the partial syndrome (7). These rates are suggested to be comparable to prevalence rates reported by studies in Western societies, and somewhat higher than what has been reported in other non-Western societies. University students often claim to experience high level of psychological distress, such as depression, stress and anxiety that can have an adverse effect on their academic performance, emotion and health (8). University students may also eat more than usual when they experience these unpleasant emotional experiences (9). The associations between psychological distress and disordered eating are likely to be bi-directional (10, 11). Therefore, the search for specific psychological variables that may contribute to the pathophysiology of these disorders is of great importance. Two such relevant factors are Alexithymia (AL) and dissociation proneness, both considered as strategies of dealing with negative emotions (10)

Alexithymia has been defined as cognitive deficits in

identifying and verbalizing emotions and an inability to distinguish between emotional and physical sensations (12, 13). Body weight attitude, age of menarche and smoking have a role in increasing the incidence of eating disorders (14).

Research suggests that poorly-developed ER competencies and the use of strategies that prolong or magnify negative affects, poses a significant risk for the development and maintenance of mental illness. For example, greater use of emotion suppression, self-blame, rumination and catastrophizing, and less use of cognitive reappraisal and refocusing have been associated with higher levels of depression and anxiety and greater peer problems in adolescents (15-18). There is also some existing research linking difficulties in emotional functioning to eating disorders. For example, anorexia nervosa, bulimia nervosa, and binge eating disorder have been variously related to elevated negative affect, alexithymia, suppressed emotion and poor emotional awareness (19-22).

2. Materials and Methods

The present study had a cross sectional design. Students were chosen by random cluster sampling. For this purpose, selected from among eight faculty Shahid Chamran University 4 faculty. Then, three classes were selected from each faculty. The inclusion criteria were being female and having informed consent and a lack mental illness. Exclusion criteria were lack of the listed inclusion criteria. Overall, 325 female undergraduate students were selected by multi-phase random clustering and participants completed the following self-rating questionnaires; eating attitudes Test-26 (EAT-26), alexithymia questionnaire (TAS-20) and dissociative experiences scale (DES-28) individually. Data analysis was done using the Pearson Correlation and stepwise multiple regression analysis with the SPSS16 software.

2.1. Measures and Procedure

Eating Attitudes Test-26 (EAT-26): the EAT-26 is a 26-item measure that assesses the symptoms and characteristics of eating disorders, and yields an overall score. Questions ask the respondent how often they think and feel they have a disorder associated with food, eating, and their body. Items are rated on a six-point Likert scale, ranging from "Always" to "Never," although the three least symptomatic responses (never, rarely and sometimes) are given a value of 0. A Cronbach's alpha of 0.94 for a sample of females has been reported (23). Validity has previously been demonstrated in the form of correlations between the EAT-26 and

similar measures, such as those that assess disordered eating, in both females and males. In addition, the EAT-26 distinguishes between females and males with and without eating disorders (24). The EAT-26 is often used to screen for eating disorders and a score of 20 or higher is thought to constitute a high likelihood of having an eating disorder (25). A study at the University of Iran analyzed the validity and reliability of the eating attitude test. In this study 100 male and female students at Shahid Beheshti University were studied, and the factor analysis confirmed three factors, dieting, bulimia and food preoccupation and oral control, which confirmed and validated the test with Cronbach's alpha of 0.86 (26). In this study the reliability was calculated by Cronbach's alpha coefficient ($\alpha = 0.83$).

Alexithymia questionnaire (TAS-20): the prevalence of alexithymia was assessed using the Finnish version of the 20-item Toronto alexithymia scale (TAS-20) (27-29). Recent studies on Finnish populations have shown the validity of the TAS-20 in adolescents, although no cut-off scores have been established (30, 31). Each TAS-20 item was rated on a five-point Likert scale, with the total score ranging from 20 to 100. The mean value of each item was calculated and missing values were replaced with the mean if less than two responses for the items were unanswered. The scores of three TAS-20 sub-factors (difficulty identifying feelings (DIF), difficulty describing feelings (DDF), and externally oriented thinking (EOT)) were calculated by using the original factor structure of Bagby et al. (28). The DIF scale refers to subjects' difficulty in differentiating their affects from each other or the affective states from their accompanying bodily sensations. The DDF scale measures the subjects' capacity to name, describe and verbalize their feelings, and the EOT scale measures the extent to which subjects relate more to objective events than to psychological processes. We used the highest decile of the total scores and sub scores to indicate a high level of these symptoms (32). Cronbach's alpha was 0.78 for the TAS-20 total scores, 0.83 for DIF, 0.72 for DDF, and 0.47 for EOT. In the current study, the reliability was obtained by Cronbach's alpha coefficient, that for the overall sample was $\alpha = 0.74$.

Dissociative experiences scale (DES-28): the dissociative experiences scale (DES) is a self-report instrument that measures dissociative symptoms in both normal and clinical populations (32). Items include experiences of amnesia, gaps in the continuity of awareness, depersonalization, derealization, absorption, and identity alteration. Examples of DES items include having no memory for important past events in one's life (autobiographical amnesia), being in a familiar place and finding it strange and unfamiliar (derealization), feeling as if one's body is not one's own (depersonalization), becoming so absorbed in watching television or a movie that one is unaware of what is happen-

ing (absorption), and feeling as if one is two different people (identity alteration). Instructions on the cover sheet specify that participants should not include experiences that occurred when they were under the influence of alcohol or drugs. To answer DES questions, one must circle the percentage of times that dissociative experiences have occurred for them (given in 10% increments ranging from 0 to 100). Total scores are calculated by averaging the 28-item scores. These findings indicate good concurrent and criterion related validity (32). In the present study, the validity showed one factor by factor analysis on the Varimax rotation and the reliability was calculated by Cronbach's alpha coefficient ($\alpha = 0.91$).

3. Results

The participants comprised of 325 students in Shahid Chamran University of Ahvaz, aged between 20 and 24, (mean, 22 years). Table 1 shows scores of Pearson correlation between dissociation experiences and eating attitudes, and alexithymia and eating attitudes.

Table 1. Scores of Pearson Correlation Between Dissociation Experiences and Eating Attitudes, and Alexithymia and Eating Attitudes

Pearson Correlation	Dissociation Experiences	Alexithymia
Eating attitudes	37.8 ^a	11.3 ^b

^aCorrelation is significant at the 0.01 level (1-tailed).

^bCorrelation is significant at the 0.05 level (1-tailed).

As observed from Table 1, the result of Pearson correlation showed that the dissociative experiences and eating attitudes have significant positive relationships at $P = 37.8$ ($P < 0.01$). Also, the correlation between alexithymia and eating attitudes was set at $P = 11.3$ ($P < 0.05$).

With regards to Table 2, the multi variable correlational coefficient for the linear compound of alexithymia and dissociative experiences with eating attitudes in female students was respectively $MR = 37.0$ and $MR = 11.3$, and F ratio was respectively 36.7 and 2.86, which was significant at $P = 0.001$ and $P = 0.092$.

Table 3 indicates the result of stepwise regression analysis for alexithymia and dissociative experiences with eating attitudes.

Regression coefficients (β) showed that dissociative experiences are a good predictor of eating attitudes. Furthermore, coefficient of determination ($RS = 0.31$) also indicates that 14% of eating attitudes are justifiable by dissociative experiences (or independent variable).

4. Discussion

The aim of the current study was to investigate eating attitudes with regards to dissociation and alexithymia in female students of Ahvaz University. Alexithymia and dissociation can be considered distinctive but overlapping phenomena. According to our findings, dissociative experience in general and alexithymia in particular were strong predictors of eating disorders in university students. As expected, correlational analysis revealed a significant positive relationship between dissociative experience and eating attitudes. Correlations also confirmed the relevance of the relationship between alexithymia and eating attitudes. During the past decades several studies had suggested that alexithymia might constitute one of the psychological features of eating disorders. According to previous studies, the prevalence of alexithymia in general psychiatric clinical samples ranges between 11% and 48% (2). However, the result of our regression analysis pointed to a weak but significant relationship between alexithymia and eating disorders. There are several ways in which alexithymia can affect the clinical outcome of eating disorders: via the negative influence it exerts on the clinical expression of the disorders and on the response to therapeutic interventions (33). It must be acknowledged that the predictive power of alexithymia is limited (it explains a small amount of the variance of the clinical outcome); however, it remains significant even after having taken into account the impact of received treatments and the influence of initial clinical severity and depressive symptoms (33). Alexithymia can worsen the outcome of eating disorders by limiting the compliance to care and the efficacy of therapeutic strategies (33).

The relationship between binge eating and dissociation experiences can be considered from different perspectives. According to the cognitive-behavioral theory of eating disorder maintenance, the over valuation of shape and weight (together with "perfectionism") is of primary importance in maintaining eating disorders (34). According to the mood modulation theory, dissociation may coexist with bulimic symptoms as separate phenomena with a common function (decreasing self-awareness or negative emotional states); or according to the escape theory, by narrowing awareness, dissociation may enable patients to initiate bingeing behavior, without having to deal with the long-term consequences of their actions, such as weight gain, guilt and self-dislike (34).

Our study's findings are similar to those of van Strien et al. (35), who reported positive association between emotional overeating and alexithymia. It is important to note that the results of a study done by Fuller-Tyszkiewicz and Mussap suggested that alexithymia in eating disorders

Table 2. Regression Analysis for Alexithymia, and Dissociative Experiences and Eating Attitudes, Using the Enter Method in Students

Dependent Variable	Independent Variable	Multi-Variable Correlational Coefficient (MR)	Coefficient of Determination (RS)	F	P Value	Regression Coefficients (β)		
						B	t	P Value
Eating attitudes	Dissociative experiences	37.0	0.14	36.7	0.001	37.8	6.06	0.001
	Alexithymia	11.3	0.01	2.86	0.092	11.3	1.69	0.092

Table 3. Stepwise Regression Analysis for Alexithymia and Dissociative Experiences With Eating Attitudes

Dependent Variable	Independent Variable	Multi-Variable Correlational Coefficient(MR)	Coefficient of Determination (RS)	F	P Value
Eating attitudes	Dissociative experiences	0.37	0.14	36.7	< 0.001

is more related to mood disorder, than to eating behavior. This might justify the limited predictive value of alexithymia in our study. The present findings indicate that dissociation is relevant to a broad range of disordered eating symptoms in a nonclinical sample (36).

Some limitations of our study must be acknowledged. First, the participants were non-clinical undergraduate university students; they might not be representative of patients with eating disorder. Furthermore, the externally oriented thinking subscale in TAS-20 did not have enough internal consistency (37). We only used the TAS-20 to measure alexithymia. This can be considered as a limitation, since this scale does not include day dreaming items, which were removed in 1994 because of low corrected item-total correlations and high correlations with social desirability (28). The lack of reliability of this subscale has been reported in some other studies (37).

The generalizability of the results may be limited by the gender distribution of the sample (entirely females, who were university students).

Beside from these limitations, our study tested the hypothesis that eating attitudes is associated with alexithymia and dissociation experiences by examining a group of females; it provided further evidence in support of the relationship between eating attitudes and dissociation experience, and also found that alexithymia played a role in predicting eating attitudes. Further research could investigate the cause of the weak association between alexithymia and eating attitudes. Furthermore, longitudinal studies are needed to determine the effect of dissociation experiences on development and maintenance of eating attitudes. It is hoped that this research may provide further information and insight into the psychological basis and treatment of eating attitudes.

Footnotes

Authors' Contribution: Zahra Dehghanizadeh designed and conducted the study. Ali Asghar Firoozi collected the data and drafted the manuscript. Majid Eydi-Baygi performed parts of the statistical analysis and re-evaluated the whole statistical analyses and participated in designing the study. Nilofar Khajeddin participated in designing and evaluating the study and helped to draft the manuscript. Fateme Sajjadi collected the data and helped with revising the final manuscript. All the authors read and approved the final manuscript

Declaration of Interests: None.

References

1. Chatoor I. Feeding and Eating Disorders of Infancy and Early Childhood. In: Sadock BJ MD, Sadock VA MD, editors. Kaplan and Sadock's Comprehensive textbook of psychiatry. 2. Philadelphia: Lippincott Williams and Wilkins; 2009. pp. 3597-608.
2. Iancu I, Cohen E, Yehuda YB, Kotler M. Treatment of eating disorders improves eating symptoms but not alexithymia and dissociation proneness. *Compr Psychiatry*. 2006;47(3):189-93. doi: [10.1016/j.comppsy.2006.01.001](https://doi.org/10.1016/j.comppsy.2006.01.001). [PubMed: 16635647].
3. Erol A, Toprak G, Yazici F. Psychological and physical correlates of disordered eating in male and female Turkish college students. *Psychiatry Clin Neurosci*. 2006;60(5):551-7. doi: [10.1111/j.1440-1819.2006.01557.x](https://doi.org/10.1111/j.1440-1819.2006.01557.x). [PubMed: 16958937].
4. Mond JM, Chen A, Kumar R. Eating-disordered behavior in Australian and Singaporean women: a comparative study. *Int J Eat Disord*. 2010;43(8):717-23. doi: [10.1002/eat.20771](https://doi.org/10.1002/eat.20771). [PubMed: 19844975].
5. Cummins LH, Simmons AM, Zane NW. Eating disorders in Asian populations: a critique of current approaches to the study of culture, ethnicity, and eating disorders. *Am J Orthopsychiatry*. 2005;75(4):553-74. doi: [10.1037/0002-9432.75.4.553](https://doi.org/10.1037/0002-9432.75.4.553). [PubMed: 16262514].
6. Makino M, Tsuboi K, Dennerstein L. Prevalence of eating disorders: a comparison of Western and non-Western countries. *MedGenMed*. 2004;6(3):49. [PubMed: 15520673].
7. Nobakht M, Dezhkam M. An epidemiological study of eating disorders in Iran. *Int J Eat Disord*. 2000;28(3):265-71. [PubMed: 10942912].
8. Tosevski DL, Milovancevic MP, Gajic SD. Personality and psychopathology of university students. *Curr Opin Psychiatry*. 2010;23(1):48-52. doi: [10.1097/YCO.0b013e328333d625](https://doi.org/10.1097/YCO.0b013e328333d625). [PubMed: 19890212].

9. Cooley E, Toray T, Valdez N, Tee M. Risk factors for maladaptive eating patterns in college women. *Eat Weight Disord.* 2007;**12**(3):132-9. [PubMed: 17984637].
10. Gan WY, Mohd Nasir MT, Zalilah MS, Hazizi AS. Direct and indirect effects of sociocultural influences on disordered eating among Malaysian male and female university students. A mediation analysis of psychological distress. *Appetite.* 2011;**56**(3):778-83. doi: 10.1016/j.appet.2011.03.005. [PubMed: 21435366].
11. Bradford JW, Petrie TA. Sociocultural factors and the development of disordered eating: A longitudinal analysis of competing hypotheses. *J Counsel Psychol.* 2008;**55**(2):246.
12. Hund AR, Espelage DL. Childhood emotional abuse and disordered eating among undergraduate females: mediating influence of alexithymia and distress. *Child Abuse Negl.* 2006;**30**(4):393-407. doi: 10.1016/j.chiabu.2005.11.003. [PubMed: 16603242].
13. Nemiah JC, Sifneos PE. Affect and fantasy in patients with psychosomatic disorders. In: Hill OW, editor. *Moderntrends in psychosomatic medicine.* London: Butterworth; 1970. pp. 26-34.
14. Pourghasem Gargari B, Koushavar D, Seyed Sajadi N, Karami S, Shahrokhi H. Risk of eating disorders in Tabrizian school girls in 2007 [in Persian]. *Med J Tabriz Univ Med Sci.* 2009;**30**(3):21-6.
15. Hughes EK, Gullone E, Dudley A, Tonge B. A case-control study of emotion regulation and school refusal in children and adolescents. *J Early Adolescence.* 2010;**30**(5):691-706.
16. Betts J, Gullone E, Allen JS. An examination of emotion regulation, temperament, and parenting style as potential predictors of adolescent depression risk status: a correlational study. *Br J Dev Psychol.* 2009;**27**(Pt 2):473-85. [PubMed: 19998542].
17. d'Acremont M, Van der Linden M. How is impulsivity related to depression in adolescence? Evidence from a French validation of the cognitive emotion regulation questionnaire. *J Adolesc.* 2007;**30**(2):271-82. doi: 10.1016/j.adolescence.2006.02.007. [PubMed: 16600359].
18. Phillips KVF, Power MJ. A new self-report measure of emotion regulation in adolescents: The Regulation of Emotions Questionnaire. *Clin Psychol Psychother.* 2007;**14**(2):145-56.
19. Legenbauer T, Vocks S, Ruedel H. Emotion recognition, emotional awareness and cognitive bias in individuals with bulimia nervosa. *J Clin Psychol.* 2008;**64**(6):687-702. doi: 10.1002/jclp.20483. [PubMed: 18473338].
20. Markey MA, Vander Wal JS. The role of emotional intelligence and negative affect in bulimic symptomatology. *Compr Psychiatry.* 2007;**48**(5):458-64. doi: 10.1016/j.comppsy.2007.05.006. [PubMed: 17707255].
21. Geller J, Cockell SJ, Hewitt PL, Goldner EM, Flett GL. Inhibited expression of negative emotions and interpersonal orientation in anorexia nervosa. *Int J Eat Disord.* 2000;**28**(1):8-19. [PubMed: 10800009].
22. Cochrane CE, Brewerton TD, Wilson DB, Hodges EL. Alexithymia in the eating disorders. *Int J Eat Disord.* 1993;**14**(2):219-22. [PubMed: 8401555].
23. Garner DM, Garfinkel PE. The Eating Attitudes Test: An index of the symptoms of anorexia nervosa. *Psychol Med.* 1979;**9**:273-79.
24. Garfinkel PE, Newman A. The Eating Attitudes Test: Twenty-five years later. *Eat Weight Disord.* 2001;**6**:1-24.
25. King MB. The natural history of eating pathology in attenders to primary medical care. *Int J Eat Disord.* 1991;**10**:379-387.
26. Babaei S, Khodapanahi MK, Salehpour B. Validity & Reliability of eating attitude test [in Persian]. *J Behav Sci.* 2007:61-8.
27. Joukamaa M, Miettunen J, Kokkonen P, Koskinen M, Julkunen J, Kauhanen J, et al. Psychometric properties of the Finnish 20-item Toronto Alexithymia Scale. *Nord J Psychiatry.* 2001;**55**(2):123-7. doi: 10.1080/08039480151108561. [PubMed: 11802910].
28. Bagby RM, Parker JD, Taylor GJ. The twenty-item Toronto Alexithymia Scale-I. Item selection and cross-validation of the factor structure. *J Psychosom Res.* 1994;**38**(1):23-32. [PubMed: 8126686].
29. Bagby RM, Taylor GJ, Parker JD. The Twenty-item Toronto Alexithymia Scale-II. Convergent, discriminant, and concurrent validity. *J Psychosom Res.* 1994;**38**(1):33-40. [PubMed: 8126688].
30. Honkalampi K, Tolmunen T, Hintikka J, Rissanen ML, Kylmä J, Laukkanen E. The prevalence of alexithymia and its relationship with Youth Self-Report problem scales among Finnish adolescents. *Compr Psychiatry.* 2009;**50**(3):263-8. doi: 10.1016/j.comppsy.2008.08.007. [PubMed: 19374972].
31. Sakkinen P, Kaltiala-Heino R, Ranta K, Haataja R, Joukamaa M. Psychometric properties of the 20-item Toronto Alexithymia Scale and prevalence of alexithymia in a Finnish adolescent population. *Psychosomatics.* 2007;**48**(2):154-61. doi: 10.1176/appi.psy.48.2.154. [PubMed: 17329610].
32. Altman DG, Bland JM. Quartiles, quintiles, centiles, and other quantiles. *BMJ.* 1994;**309**(6960):996. [PubMed: 7950724].
33. Speranza M, Loas G, Wallier J, Corcos M. Predictive value of alexithymia in patients with eating disorders: a 3-year prospective study. *J Psychosom Res.* 2007;**63**(4):365-71. doi: 10.1016/j.jpsychores.2007.03.008. [PubMed: 17905043].
34. La Mela C, Maglietta M, Castellini G, Amoroso L, Lucarelli S. Dissociation in eating disorders: relationship between dissociative experiences and binge-eating episodes. *Compr Psychiatry.* 2010;**51**(4):393-400. doi: 10.1016/j.comppsy.2009.09.008. [PubMed: 20579513].
35. van Strien T, Ouwens MA. Effects of distress, alexithymia and impulsivity on eating. *Eat Behav.* 2007;**8**(2):251-7. doi: 10.1016/j.eatbeh.2006.06.004. [PubMed: 17336795].
36. Fuller-Tyszkiewicz M, Mussap AJ. The relationship between dissociation and binge eating. *J Trauma Dissociation.* 2008;**9**(4):445-62. [PubMed: 19042791].
37. Kiyotaki Y, Yokoyama K. Relationships of eating disturbances to alexithymia, need for social approval, and gender identity among Japanese female undergraduate students. *Pers Individ Differ.* 2006;**41**(4):609-18.