Alexithymia and Somatization in Depressed Patients: The Role of the Type of Somatic Symptom Attribution

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ABSTRACT

Introduction: This study aimed to establish the association between alexithymia and various factors, mainly somatization, and to determine the predictors of alexithymia in depressed patients.

Methods: A total of 90 patients with major depressive disorder who met The Diagnostic and Statistical Manual of Mental Disorders- Fourth Edition (DSM-IV) diagnostic criteria were administered the Toronto Alexithymia Scale (TAS), Beck Depression Inventory, Symptom Checklist-90 (SCL-90), Somatosensory Amplification Scale, and Symptom Interpretation Questionnaire. The patients were classified into two groups as alexithymic and non-alexithymic with respect to the TAS cut-off points (≥ 59 =alexithymic). Predictors of alexithymia were tested by multiple linear regression analysis.

Results: Of all patients, 36 (40%) were in the alexithymic group. The percentage of women, depression severity, level of general psychopathology and distress, and somatic symptom reporting (SCL-

90), as well as the tendency to somatosensory amplification and three forms of somatic symptom attributions, were significantly higher in alexithymic patients than in non-alexithymic patients. Furthermore, age, depression severity, somatic symptom reporting, and the tendency to attribute physical symptoms to somatic causes were predictors of alexithymia.

Conclusion: The results indicated an intimate association between alexithymia and somatization in depressed patients. Therefore, when evaluating depressed patients with alexithymia, their tendency for somatization should be considered, and alexithymic individuals should be assessed with particular attention, considering that somatization can mask the underlying depressive condition.

Keywords: Depression, alexithymia, somatization, somatic symptom attribution

INTRODUCTION

Alexithymia was first defined by Sifneos in 1973 based on observations of patients undergoing dynamic psychotherapy. Sifneos pointed out that some patients, particularly those suffering from psychosomatic diseases, showed marked difficulty during therapy in describing and differentiating their feelings; these patients were unable to find appropriate words to express their feelings during therapy. These patients had poverty of fantasy life and were focused on the realities of the world around them rather than on their emotions. Sifneos defined this as a personality trait and coined the word "alexithymia" (from Greek $\alpha(\alpha)$ =lack; $\lambda\epsilon\gamma\iota\varsigma$ =word; $\theta\upsilon\mu\omicron\varsigma$ =a mood or emotion) (1). This definition does not denote that alexithymic individuals have no emotions; it means that they have difficulty symbolizing and distinguishing between feelings (2).

Although many studies have indicated an association between alexithymia and depression, it is still debated whether these two concepts are independent and distinct or whether they overlap (3,4). While some studies support the opinion that alexithymia and depression are separate concepts, others stress that they overlap or that they co-exist (5,6,7,8,9). This controversy is significant, as it is critical in establishing whether alexithymia is a personality trait; in other words, if it is a permanent phenomenon (unlike and separate from depression) or a secondary condition developed in response to various psychological stresses (overlapping with depression), as initially proposed by Freyberger (10).

To date, several studies have investigated the factors associated with alexithymia. These factors include sociodemographic characteristics (age, gender, marital status, and education level), depression severity, general psychopathology and distress level, somatic symptom reporting, somatosensory amplification, and attribution styles of physical symptoms (3,4,11,12,13,14,15,16,17,18,19,20).

Somatosensory amplification refers to the tendency to experience normal somatic sensations as intense, noxious, and disturbing; it is proposed to be associated with various somatization presentations, particularly hypochondriasis (13,19). The attribution styles of somatic symptoms refer to the individual's interpretation of a given somatic sensation. Thus, individuals either attribute a physical sensation to causative factors, such as lack of sleep, weather conditions, or tiredness, to perceive it as normal, or they regard the sensation as a pathological condition

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by relating it to psychological or physical abnormalities (21). The studies conducted to date have indicated multiple associations of alexithymia and depression; this complicates diagnosis, as it affects the clinical presentation (20). The difficulties of evaluating these patients and misdiagnosis inevitably lead to the administration of inappropriate and inefficient therapies. Furthermore, costly and superfluous examinations conducted for diagnostic purposes not only result in overuse of healthcare resources but also create a considerable burden on healthcare expenditure. The present study aimed to determine the predictors of alexithymia and investigate the relationships between alexithymia in depressed patients and various sociodemographic characteristics, somatic symptom reporting, somatosensory amplification tendency, general level of symptoms, interpretation of somatic symptoms, and depression severity.

METHODS

Study Sample

Patients presenting at İstanbul University, Cerrahpaşa School of Medicine Hospital, General Psychiatry Outpatient Unit, diagnosed with a major depressive disorder according to the Major Depressive Episode section of the Structured Clinical Interview for DSM-IV Axis I Disorders, Clinical Version (SCID-I) were included in the study. Of the 95 eligible patients, five declined the invitation to participate. All patients provided written informed consent, and the study was approved by the Ethics Committee of İstanbul University Cerrahpaşa School of Medicine.

Materials

1) Sociodemographic data form: This form was designed by the investigators to record the basic social and demographic characteristics of the participants.

2) SCID-I, Major Depressive Episode section: The SCID-I was developed by First et al. (22); the Major Depressive Episode section was used in our study. The interview was adapted for the Turkish population by Çorapçıoğlu et al. (23).

3) Toronto Alexithymia Scale (TAS-20): This 20-item self-report instrument uses a five-point Likert scale to investigate alexithymia severity. The validity and reliability of the Turkish version of the scale, which was invented by Bagby et al. (24), was determined by Güleç et al. (25). The scale, in addition to the general alexithymia score, consists of three subscales reflecting the three main aspects of alexithymia: difficulty in identifying feelings, difficulty in describing feelings, and externally oriented thinking. However, only the general alexithymia score was calculated in this study because the validity and reliability assessment as well as our design did not support the three-subtype structure (the data regarding factor analysis are not given). In the study conducted by Güleç and Yenel (26), the cutoff point was established to be 59 for the Turkish version of the scale; patients with scores of 59 and above were regarded to be alexithymic.

4) Symptom Checklist-90 (SCL-90): This self-rating psychiatric inventory was developed by Derogatis et al. (27). In addition to the "global severity index," which helps to establish the general stress level of an individual, there are nine subscales: somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. The reliability and validity of the Turkish version of the scale were established by Dağ et al. (28).

5) Beck Depression Inventory (BDI): This 21-question self-report inventory measures the physical, emotional, and motivational symptoms of depression with a rating system of 0 to 3 for each item. The validity and

reliability of the Turkish version of the BDI, which was originally developed by Becket al. (29), were determined by Hisli (30).

6) Somatosensory Amplification Scale (SSAS): This five-point-Likert scale of 10 items was developed by Barsky et al. (31) to investigate an individual's tendency to amplify common somatic sensations. Its validity and reliability in Turkish have been established (32).

7) Symptom Interpretation Questionnaire (SIQ): This self-report scale evaluates the interpretation of common physical symptoms in terms of somatization, psychologization, and normalization. The scale evaluates the approach used to interpret physical symptoms and their frequency by assigning points to each answer. The scale was developed by Robbins and Kirmayer (33); two major changes were made when it was translated into Turkish (34). Firstly, instead of a four-point Likert scale, a five-point Likert scale was used, as five points are more commonly used in Turkish scales. Secondly, while the original scale contained 13 common somatic symptoms, a 14th item was added to the Turkish version: "tightness in the chest," a common idiom of distress in Turkish immigrants as reported in a study conducted by Mirdal (35). The Turkish version of the scale in its adapted format was established to have Cronbach's alpha values of 0.87, 0.87, and 0.86 for somatization, psychologization, and normalization, respectively. The values for the present study were 0.79, 0.86, and 0.80, respectively.

Statistical Analysis

All variables were found to be reasonably normal based on the Kolmogorov-Smirnov test. The Pearson correlation test was used to evaluate continuous variables. The participants were categorized into two groups with respect to their TAS scores (TAS score of ≥ 59 : alexithymic, TAS score of < 59 : non-alexithymic). The Chi-square test was used for ratios, and Student's *t* test was used for numerical values and clinical characteristics. Multiple regression analysis was used to determine independent associations of alexithymia. A regression model was developed by including sociodemographic variables, such as age and education level, as well as all three attribution styles (somatization, psychologization, and normalization) and the most commonly investigated clinical parameters, such as level of depression, physical symptom level, and tendency of somatosensory amplification. Variance inflation factors were calculated to check for multicollinearity among the determinants in the regression analyses. All analyses were conducted with Statistical Package for the Social Sciences for Windows, version 16.0 (SPSS Inc.; Chicago, IL, USA) and all statistical tests were evaluated with a significance level of $p < 0.05$.

RESULTS

Of the 90 patients in the study, 55 (61.1%) were female. The mean age was 35.0 ± 11.43 years, and the mean education level was 9.81 ± 3.60 school years. Fifty-four (60.0%) participants were married. The mean score on the TAS-20 in the group was 56.07 ± 9.59 . The alexithymic group consisted of 36 (40%) patients who had TAS-20 scores of 59 and above. There were no statistically significant differences between the groups in terms of sociodemographic variables (age, education level, marital status), except for a higher number of females in the alexithymic group (Table 1).

Comparison of the groups in terms of clinical characteristics revealed that all data, except for those from the SCL-90 phobic anxiety subscale, were significantly higher in the alexithymic group (Table 2). Thus, the depression severity, level of general psychopathology and distress, tendency to somatosensory amplification, and tendency to interpret somatic sensations by somatic, psychological, or normal causes were significantly higher in alexithymic patients than in non-alexithymic patients.

The bivariate correlation analysis between alexithymia scores and age and education level showed no significant correlation. However, there were significant correlations between alexithymia score and depression severity,

somatization level, somatosensory amplification, somatic symptom reporting, somatization, psychologization, and normalization subscale scores for all the patients (Table 3). When multiple logistic regression analyses, consisting of sociodemographic and clinic variables from the bivariate analysis, were conducted, the age, depression severity, somatization level, and SIQ somatization subscale scores were independently correlated with alexithymia (Table 3).

Table 1. Comparison of the groups in terms of sociodemographic characteristics (n=90)

	Alexithymic group (TAS≥59) (n=36)	Non-alexithymic group (TAS<59) (n=54)		
	Mean±standard deviation	Mean±standard deviation	t (d.f.)	p
Age	32.41±10.02	36.74±12.06	1.77 (88)	0.079
Education level (school years)	9.52±4.05	10.00±3.29	0.60 (88)	0.545
N (%)		N (%)	χ² (d.f.)	
Gender				
Female	27 (75%)	28 (51.9%)	4.87 (1)	0.030
Male	9 (25%)	26 (48.1%)		
Marital status				
Married	20 (55.6%)	34 (63.0%)	0.49 (1)	0.516
Evli değil	16 (44.4%)	20 (37.0%)		
TAS: Toronto Alexithymia Scale; t: Student's t test; χ²: Chi square test				

DISCUSSION

The number of patients in the alexithymic group was 36 (40%) in the present study. Studies conducted in various clinical settings have reported ratios varying between 21% and 42.2% (3,13,18). A study on 169 patients with depression reported a ratio of 39% (7). Therefore, the ratio established in the present study was observed to be consistent with the literature. In contrast, studies conducted on non-clinical samples have reported lower ratios, as expected (between 8.1% and 10.3%) (4).

The mean values for all the clinical evaluation parameters used in this present study were observed to be higher in the alexithymic group; the only exception was the scores from the phobic anxiety subscale of the SCL-90, where a statistical significance level was not reached. Several investigators have examined the associations between alexithymia and the psychopathologies evaluated in the subscales of the SCL-90 as well as distress level; significant differences were observed in alexithymic patients compared with non-alexithymic patients (13).

Alexithymic patients reportedly have difficulty identifying underlying psy-

Table 2. Comparison of the clinical characteristics of the groups (n=90)

	Alexithymic group (TAS≥59) (s=36) Mean±standard deviation	Non-alexithymic group (TAS<59) (s=54) Mean±standard deviation	t (d.f.)	p
Beck Depression Inventory	27.91±8.59	21.09±8.47	3.72 (88)	0.000
Symptom Checklist-90				
Global Severity Index	1.95±0.51	1.41±0.62	4.31 (88)	0.000
Positive Symptom Total	69.02±12.68	59.40±16.18	3.00 (88)	0.003
Positive symptom Distress Index	2.54±0.48	2.08±0.51	4.27 (88)	0.000
Subscales: somatization	1.97±0.80	1.44±0.79	3.04 (88)	0.003
Obsessive-compulsive	2.13±0.55	1.64±0.70	3.53 (88)	0.001
Interpersonal sensitivity	2.26±0.76	1.51±0.73	4.69 (88)	0.000
Depression	2.44±0.68	1.86±0.81	3.52 (88)	0.001
Anxiety	1.84±0.75	1.32±0.74	3.15 (88)	0.002
Hostility	2.41±0.99	1.52±0.93	4.30 (88)	0.000
Phobic anxiety	1.02±0.69	0.77±0.72	1.60 (88)	0.113
Paranoid ideation	1.99±0.80	1.38±0.70	3.75 (88)	0.000
Psychoticism	1.41±0.59	0.92±0.63	3.64 (88)	0.000
Symptom Interpretation Questionnaire				
Somatization	36.44±8.98	30.05±8.85	3.33 (88)	0.001
Psychologization	45.77±10.78	37.55±10.53	3.59 (88)	0.001
Normalization	38.11±9.99	33.66±8.82	2.22 (88)	0.029
Somatosensory Amplification Scale	30.61±5.28	27.51±7.33	2.17 (88)	0.032
TAS: Toronto Alexithymia Scale; t: Student's t test				

Table 3. Correlation and multiple regression analysis of Toronto Alexithymia Scale scores

Toronto Alexithymia Scale	Bivariate correlation analysis		Multiple regression analysis			
	r	p	B	S.E.	p	%95 CI
Age	-0.19	0.064	-0.19	0.08	0.021	-0.36 - 0.03
Education (School years)	-0.11	0.267	-0.21	0.25	0.411	-0.72 - 0.30
Beck depression inventory	0.41	0.000	0.30	0.11	0.010	0.07 - 0.52
Somatosensory amplification Scale	0.25	0.014	0.00	0.17	0.999	-0.34 - 0.34
Symptom Checklist-90 Somatization Subscale	0.37	0.000	0.22	0.10	0.037	0.01 - 0.42
Symptom Interpretation Scale Somatization Subscale	0.31	0.003	0.28	0.14	0.048	0.00 - 0.56
Symptom Interpretation Scale Psychologization Subscale	0.35	0.001	0.03	0.11	0.778	-0.19 - 0.25
Symptom Interpretation Scale Normalization Subscale	0.23	0.026	-0.15	0.13	0.257	-0.41 - 0.11

r: pearson correlation coefficient; B: non-standardized regression coefficient; S.E.: standard error; β : standardized regression coefficient; CI: confidence interval

chological stress and their emotions; therefore, these patients concentrate on physical sensations rather than the affective components of their emotions. Consequently, it is claimed that these patients express psychological stress alternatively through somatization (2). In fact, many epidemiological and clinical studies have demonstrated a significant association between alexithymia and somatic symptom reporting, and it was suggested that alexithymia was a potential factor in the somatization (15,36,37). A study conducted in our country reported that childhood trauma rates were higher in patients with depression accompanied with alexithymia and that alexithymia contributed to the emergence of somatic symptoms in depression (16). In contrast, "tendency to somatosensory amplification," which is one of the concepts suggested to explain somatization, is defined as the tendency to experience normal somatic and visceral sensations as intense, noxious, and disturbing; it was linked to alexithymia in studies including patients with chronic pain, functional dyspepsia, and depression, as well as in samples with various psychiatric disorders (13,17,18,19,31,38). In the present study, both the tendency to somatosensory amplification and somatic symptom reporting were significantly higher in alexithymic patients with depression than in non-alexithymic patients. As these results indicate a close association between alexithymia and somatization, when evaluating depressed patients with alexithymia, their tendency toward somatization should be taken into consideration.

Another factor believed to play a role in somatization is the interpretation of physical symptoms. During the somatization process, it is critically important how an individual interprets somatic sensations and to what they are attributed. Robbins and Kirmayer (33) maintained that individuals interpret a given somatic sensation in three ways: somatization, psychologization, and normalization. In our study, all three ways of interpreting sensations were significantly more common in the alexithymic depression group than in the non-alexithymic group. We can conclude from this result that alexithymic depressed patients attempt to normalize psychic stress and also perceive it as a pathology by attributing it to psychological and somatic causes. In a study conducted by Wise and Mann (18) on 100 patients presenting at a psychiatry outpatient clinic, alexithymic patients were observed to be more inclined to attribute somatic sensations to psychological causes compared with non-alexithymic patients; it was also noted that there were no statistically significant differences between the groups in terms of attribution to somatic and normal causes. The result observed in this present study may be due to the fact that, in contrast to Western countries, patients in Turkey can directly present themselves to

psychiatric clinics without referral by primary care physicians. Patients in Turkey can personally decide whether their somatic sensations are associated with psychological or physical causes and, accordingly, can consult a psychiatrist or another specialist. It appears that the patients in this present study sought help in different ways for their somatic sensations, attributing them to more than one factor (normalization, somatization, and psychologization); alexithymia, by definition, may have reinforced this condition. A study conducted in our country reported that patients seeking extramedical help had greater difficulty in describing their feelings and a greater tendency to consult other medical doctors; alexithymia was found to contribute to their help-seeking behaviors (39).

In our study, no significant differences were observed between the patients in the alexithymic group and those in the non-alexithymic group in terms of age, marital status, or education level; however, there were more female patients in the alexithymic group. In the literature, some studies are consistent with our results, while other studies report significant correlations with alexithymia and male sex, older age, low level of education, and lower socioeconomic level (11,12,40,41). The correlation between alexithymia and sociodemographic variables remains a controversial issue and, due to conflicting results, it has not been possible to draw a firm conclusion. However, the higher number of female patients in the alexithymic group in our study is in contrast with studies where more alexithymic patients are male; our study is noteworthy in this regard. A higher level of somatic symptom reporting in women has been demonstrated in several studies (42). Considering the finding supporting the close relationship between alexithymia level and somatization in our study, higher levels of alexithymia in women may be associated with a tendency toward somatization. However, cross-sectional studies are not sufficient to demonstrate this causal relationship; longitudinal studies are required.

The regression analysis established the predictors of alexithymia in depressed patients as age, level of depression, physical symptom reporting, and attribution of somatic sensations to physical causes. In the literature, most studies report a linear correlation between age and alexithymia and an increase in the level of alexithymia with age. However, in this study, alexithymia score and age and education level were not significantly correlated in the bivariate correlation analysis; younger age was found to be an independent predictor of alexithymia level in the regression model. This result is noteworthy because it indicates that the relationship between age and alexithymia is affected by many factors. Honkalampi et al. (4) report-

ed in their wide-scale study conducted on 2018 patients with depression that depression severity was a predictor of alexithymia. In other studies, the level of depression was reported to be higher in alexithymic patients (43,44). In our study, depression severity was a predictor of alexithymia. Accordingly, our result reinforces the idea that alexithymia may be a temporary condition secondary to depression rather than a personality trait (45,46). However, the cross-sectional nature of the study does not allow definitive conclusions on this issue, and the results should be considered to be case-specific and supportive.

As described above, it is hypothesized that alexithymic individuals have difficulty verbalizing their emotions, leading to somatization. Therefore, it may be claimed that these individuals attribute vague somatic sensations to physical causes. In fact, this study established physical symptom reporting and attribution of somatic sensations to physical causes as the other two predictors of alexithymia. Kirmayer and Robbins (36) reported in their study conducted on 244 patients who presented to primary care physicians that the tendency to attribute somatic sensations to psychological causes was a predictor of alexithymia, while the level of physical symptoms was not. However, our results are consistent with the hypothetical relationship between alexithymia and somatization. In contrast, it is notable that relationships between alexithymia and the other two methods of interpretation (psychologization and normalization) were not observable in the regression model. Therefore, we maintain that as all three methods of interpretation were more pronounced in the alexithymic group, there is a risk of initially reaching a wrong conclusion. Consequently, it is essential to conduct further statistical analyses.

This study had several limitations. First, the study group consisted of patients presenting at a university hospital providing tertiary care. As mentioned above, it is possible for patients in Turkey to directly resort to psychiatric outpatient clinics, including those at university hospitals, without referral from a primary care physician. Therefore, our study group can be regarded as a mixed group of patients presenting at primary and tertiary care clinics. This fact prevents us from reaching generalized conclusions and does not allow us to make definitive deductions. Secondly, because this study was cross-sectional, causality could not be clearly established. Another limitation of our study is the small sample size. Longitudinal studies with larger sample sizes are needed to clarify the contribution of alexithymia to depression and somatization.

The results of this study revealed a strong correlation between alexithymia and somatization in depressed patients. Therefore, when evaluating depressed patients with alexithymia, their tendency toward somatization should be taken into consideration, and alexithymic individuals should be assessed with particular attention during diagnosis and therapy because somatization can camouflage an underlying depressive condition.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of İstanbul University Cerrahpaşa School of Medicine.

Informed Consent: Written informed consent was obtained from patients who participated in this study.

Peer-review: Externally peer-reviewed.

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