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 the observation of some patients undergoing dynamic psychotherapy. Sifneos indicated that some patients, particularly those with psychosomatic diseases, showed marked difficulty during therapy in describing and differentiating their feelings, being unable to find appropriate words to express them during therapy. They had a poverty of fantasy life and 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 the Greek alphabet a (α) = lack; lexis (λέξις)=word; thymos (θυμός)=a mood or emotion] (1). This definition does not denote that alexithymic individuals have no emotions; instead, it means that they have difficulty in symbolizing and distinguishing between feelings (2).

Although there are many studies that indicate the association between alexithymia and depression (3,4), it remains debatable whether these two concepts are independent and distinct or whether they overlap. While some studies support the opinion that they are separate concepts (5,6), others stress that they overlap (7) or that they coexist (8,9). This controversy is significant as it is critical for establishing whether alexithymia is a personality trait or in other words, if it is a permanent phenomenon (unlike and separate from depression) or a secondary condition that is 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. Among these factors, sociodemographic characteristics (age, gender, marital status, and education level) (11,12), depression severity (3,4), general psychopathology and distress level (13,14), somatic symptom reporting (15,16) and somatosensory amplification (13,17,18,19), and attribution styles of physical symptoms (18,20) can be listed.

Somatosensory amplification refers to the tendency to experience normal somatic sensations as intense, noxious and disturbing, and is proposed to be associated with various somatization presentations, like hypochondriasis, in particular (13,19). The attribution styles of somatic symptoms refer to the individual’s interpretation of a given somatic sensations. 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 regard it as a pathological condition by relating it to psychological or physical abnormalities (21). The studies conducted so far have indicated multiple associations of alexithymia and depression, which made the diagnosis rather complicated as they had an impact on the clinical presentation (20). The difficulties...
in evaluation of these patients and misdiagnosis inevitably lead to admin-
istering inappropriate and inefficient therapies. Furthermore, expensive
and superfluous examinations conducted for diagnostic purposes result
not only in oversusing healthcare resources but also in creating a consid-
erable burden on healthcare expenditure. The present study aimed to
determine the predictors of alexithymia and investigate the association
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 Istanbul University Cerrahpaşa Medical Faculty
Hospital, General Psychiatry Outpatient Unit, diagnosed with a major de-
pressive disorder according to the Major Depressive Episode part of the
Structured Clinical Interview for DSM-IV Axis I Disorders, Clinical Version
(SCID-I), were included in the study. Of the 95 patients established to be
eligible, 5 declined the invitation to participate. All patients provided writ-
ten informed consent, and the study was approved by the Ethics Commit-
tee of Istanbul University Cerrahpaşa Medical Faculty.

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

2) Structured Clinical Interview for DSM-IV Axis I Disorders,
ClinicalVersion, SCID-I, Major Depressive Episode Part: This
was developed by First et al. (22), and the major depressive episode part
was used in our study. The interview was adapted to the Turkish popula-
tion by Çorapçıoğlu et al. in 1999 (23).

3) Toronto Alexithymia Scale-20 (TAS-20): This 20-item self-re-
port instrument uses a five-point Likert scale to investigate alexithymia se-
verity. The validity and reliability of the Turkish version of the scale, which
was invented by Bagby et al. (24), was investigated by Güleç et al. (25) in
2009. The scale, in addition to the general alexithymia score, consists of
three subscales that reflect the three main aspects of alexithymia: difficulty
in identifying feelings, difficulty in describing feelings, and externally orient-
ed 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 (data regarding factor
analysis were not given). In the study conducted by Güleç and Yenel (26),
the cut-off point was established to be 59 for the Turkish version of the
scale and those with scores of ≥59 were regarded to be alexithymic.

4) Symptom Checklist-90 (SCL-90): This self-rating psychiatric in-
ventory was developed by Derogatis et al. (27). Apart from the “glob-
al 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, para-
noid ideation, and psychoticism. The reliability and validity of the scale
was established by Dağ et al. (28).

5) The Beck Depression Inventory (BDI): This 21-question self-report
inventory measures the physical, emotional, and motivational
symptoms of depression, with a rating system of 0–3 for each item. The
validity and reliability of the Turkish version of BDI, developed by Beck et
al. (29), was established by Hısil (30).

6) The Somatosensory Amplification Scale: 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 was established (32).

7) The Symptom Interpretation Questionnaire (SIQ): This
self-report scale evaluates the interpretation of common physical symp-
toms in terms of somatization, psychologization, and normalization. The
scale examines 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), and two major changes were made when it
was translated into Turkish (34). First, instead of a four-point Likert scale,
a five-point Likert scale was used as this is more common in Turkish scales.
Second, while the original scale had 13 common somatic symptoms, a 14th
item was added to the Turkish version, namely “tightness in the chest,” a
common idiom of distress in Turkish immigrants, as reported in a study
by Mirdal (35). The Turkish version of the scale in its adapted format was
established to include Cronbach’s alpha values of 0.87, 0.87, and 0.86 for
somatization, psychologization, and normalization, respectively. The values
for this study were 0.79, 0.86, and 0.80, respectively.

Statistical Analysis
All variables were found to be reasonably normal based on the Kolmog-
orov–Smirnov test. The Pearson correlation test was used for evaluating
continuous variables. The participants were categorized into two groups
with respect to their TAS scores (TAS score of ≥59 for alexithymic, TAS
score of <59 for non-alexithymic). The chi-square test was used for ra-
tios, and the Student’s t-test was used for numerical values and clinical
characteristics. Multiple regression analysis was used for determining inde-
pendent 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 most commonly investigated clinical parameters, such
as level of depression, physical symptom level, and tendency for somato-
sensory 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
(SPSS Inc; Chicago, IL, USA) version 16.0, and all statistical tests were eval-
uated with a p<0.05 significance level.

RESULTS
Of the 90 patients in the study, 55 (61.1%) were females. The mean age
was 35.0±11.43 years, and the mean education level was (school years)
9.81±3.60 years. Fifty-four (60.0%) participants were married. The mean
score on TAS-20 in the group was 56.07±9.59. The alexithymic group
consisted of 36 (40%) patients who had a TAS-20 score of ≥59. There
were no statistically significant differences between the groups in terms
of sociodemographic variables (age, education level, and 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 than in the non-alex-
ithymic group (Table 2). Thus, the depression severity, level of general
psychopathology and distress, tendency to somatosexual amplification,
and tendency to interpret somatic sensations by somatic, psychological,
or normal causes were significantly higher in the alexithymic group than in
the non-alexithymic group.

The bivariate correlation analysis between alexithymia scores and age and
education level was not significantly correlated. However, for all patients,
there was a significant correlation between alexithymia scores and depression severity, somatization level, somatosensory amplification, somatic symptom reporting, somatization, psychologization, and normalization subscale scores (Table 3). When multiple logistic regression analysis consisting of sociodemographic and clinic variables from the bivariate analysis was conducted, age, depression severity, somatization level, and SIQ somatization subscale scores were independently correlated with alexithymia (Table 3).

**DISCUSSION**

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

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

Alexithymic patients reported to have difficulty in identifying underlying psychological stress and their emotions, leading them to concentrate on physical sensations rather than the affective components of their emo-
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Table 3. Correlation and multiple regression analysis of Toronto Alexithymia Scale scores

<table>
<thead>
<tr>
<th>Toronto Alexithymia Scale</th>
<th>Bivariate correlation analysis</th>
<th>Multiple regression analysis</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>r</td>
<td>p</td>
</tr>
<tr>
<td>Age</td>
<td>-0.19</td>
<td>0.064</td>
</tr>
<tr>
<td>Education (School year)</td>
<td>-0.11</td>
<td>0.267</td>
</tr>
<tr>
<td>Beck Depression Inventory</td>
<td>0.41</td>
<td>0.000</td>
</tr>
<tr>
<td>Somatosensory Amplification Scale</td>
<td>0.25</td>
<td>0.014</td>
</tr>
<tr>
<td>Symptom Checklist-90 Somatization subscale</td>
<td>0.37</td>
<td>0.000</td>
</tr>
<tr>
<td>Symptom Interpretation Scale Somatization subscale</td>
<td>0.31</td>
<td>0.003</td>
</tr>
<tr>
<td>Symptom Interpretation Scale Psychologization Subscale</td>
<td>0.35</td>
<td>0.001</td>
</tr>
<tr>
<td>Symptom Interpretation Scale Normalization Subscale</td>
<td>0.23</td>
<td>0.026</td>
</tr>
</tbody>
</table>

r: Pearson correlation coefficient; B: Non-standardized regression coefficient; SE: standard error; β: Standardized regression coefficient; CI: Confidence Interval

The regression analysis results established the predictors of alexithymia in depressed patients to be age, depression level, physical symptom reporting, and attributing somatic sensations to physical reasons. In the literature, it is mainly reported that there is a linear correlation between age and alexithymia, and the level of alexithymia increases with age. However, in this study, alexithymia scores and age and education level were not significantly correlated in the bivariate correlation analysis; a younger age was found to be an independent predictor of the alexithymia level in the regression model. This result is noteworthy in that the association between age and alexithymia is affected by many factors. Honkalampi et al. (4) reported in their wide-scale study, conducted on 2018 patients with depression, that depression severity was a predictor of alexithymia. In other studies, the depression level was reported to be higher in alexithymic patients...
than in non-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 being 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 as case specific and supportive.

As described above, it is hypothesized that alexithymic individuals have difficulty verbalizing their emotions and that this leads to somatization. Therefore, it may be claimed that such individuals most probably attribute vague somatic sensations to physical reasons. In fact, this study established physical symptom reporting and the attribution of somatic sensations to physical reasons as one of the predictors of alexithymia, while the level of physical symptoms was not, however, our results are consistent with the hypothetical association between alexithymia and somatization. Conversely, it is notable that the association between alexithymia and the other two ways of interpretation (psychologization and normalization) was not observable in the regression analysis model. Therefore, we maintain that as all three ways of interpretation were more pronounced in the alexithymic group, there is a risk for initially reaching wrong conclusions. Consequently, it is essential that further statistical analyses should be conducted.

This study had several limitations. First, the study group consisted of patients who presented at a university hospital that provided 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 the referral of primary care physicians. Therefore, our study group can be regarded as a mixed group of patients who present at primary and tertiary care clinics. This fact limits us in reaching generalized conclusions and does not allow definitive deductions to be made. Second, causality could not be clearly established as this was a cross-sectional study. Another limitation of our study is the small sample size. Longitudinal studies with larger sample sizes are required to clarify the contribution of alexithymia to depression and somatization.

The results revealed a strong correlation 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 during diagnosis and therapy, bearing in mind that somatization can camouflage the underlying depressive condition.

**REFERENCES**