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Liam Alexander MacKenzie Myles
DURHAM UNIVERSITY, DEPARTMENT OF PSYCHOLOGY, DURHAM, UNITED KINGDOM

Emanuele Maria Merlo
UNIVERSITY OF MESSINA, DEPARTMENT OF ADULT AND CHILDHOOD HUMAN PATHOLOGY “GAETANO BARRESI”, ITALY, emerlo@unime.it

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Recommended Citation
DOI: 10.22543/7674.81.P8693
Available at: https://scholar.valpo.edu/jmms/vol8/iss1/12

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Alexithymia and physical outcomes in psychosomatic subjects: a cross-sectional study

Liam Alexander MacKenzie Myles¹, Emanuele Maria Merlo²*

¹Durham University, Department of Psychology, Durham, United Kingdom
²University of Messina, Department of Adult and Childhood Human Pathology “Gaetano Barresi”, Italy

ABSTRACT

Backgrounds. Alexithymia is a relevant phenomenon, occurring transversally to healthy subjects and individuals affected by several conditions. Its role is considerable, according to current state of the art several conditions emerged as influenced, maintained and worsened by alexithymic structures and figures. The present study was aimed at highlighting the existing relations, the differences and the directions assumed by alexithymic factors and health status in patients affected by psychosomatic conditions. Methods. The sample consisted of 150 participants, 42 males (28.0%) and 108 females (72.0%), aged 26 to 78 years old with a mean of 42.24 years old (SD = 12.39). Subjects were previously assessed through DCPR-SI in order to identify psychosomatic issues. The study evaluated measures related to alexithymia (Tas-20) and health status (SF-36), and considered demographic characteristics such as age, gender, and education. Results and Conclusions. The analyses demonstrated a number of significant relationships between alexithymia, psychological outcomes, and physical outcomes, including psychosomatic disorders. In addition, sex differences were found in gastrointestinal outcomes, as well as outcomes related to energy/fatigue and physical functioning. The study of alexithymia may provide a fruitful approach in understanding various issues related to pathology and general health. Further studies are needed to expand the understanding of alexithymia to other groups and health-related outcomes.

Introduction

“Alexithymia” describes a condition characterized by marked difficulty in indicating, describing, and being aware of emotions, the reduction of imagination, and a marked concern with concrete and detailed aspects of the external environment [1,2]. Theoretical and clinical interest in alexithymia has grown over the past decades, producing new perspectives while also revealing the need to improve constructs and refine clinical practice and useful psycho-diagnostics tools [3-5].

Alexithymia has a number of physical consequences [6-8], and it is associated with psychological characteristics that may have a direct role in the onset of various disorders and medical conditions [9-16]. These physical disorders include [17], but are not limited to, dermatological [18], cardiovascular [19,20] and gastrointestinal functional/structural issues [21-23]. Given that psychosomatic research has associated dermatological issues with psychological factors, it is not surprising that alexithymia may play a role [24-28]. A similar process may well be described for gastrointestinal, eating, and cardiovascular disorders [29-35]. In addition, the role of alexithymia in understanding a number of chronic conditions may be facilitated by understanding its relationship to specific psychological factors such as externally oriented thinking/operative thinking) and structures (psychosomatic order), suggesting a possible mediating role for such factors in chronic and worsening health conditions [36-38]. As such, alexithymia may play an increasingly important role in clinical practice [39-41].

Given the above, further study is needed to understand the role of alexithymia in different populations and for other psychological and physical/medical outcomes. In the present study, we assessed the relationship of alexithymia with a number of physical and psychological outcomes.
including physical functioning, energy, fatigue, emotional well-being and general health status in subjects reporting psychosomatic outcomes.

**Study hypotheses**

To address the above goal, we carried out research that addressed three hypotheses. (1) demographic characteristics such as age and gender will be associated with alexithymia and health status. (2) various factors related to alexithymia will be associated with health status and psychosomatic outcomes. And (3) Differences will occur between male and female participants regarding health status and physical outcomes.

**Materials and Methods**

**Participants**

The sample consisted of 150 participants, 42 males (28.0%), and 108 females (72.0%), aged 26 to 78 years old with a mean of 42.24 years (SD = 12.39). Each participant completed the protocol, including providing information about education, gender, and age. Each participant, before providing informed consent, was informed about the anonymous nature of data collection process, consistent with the 1964 Declaration of Helsinki.

**Instruments and procedure**

Subjects were selected on the basis of their psychosomatic conditions, as evaluated by the Diagnostic Criteria for Psychosomatic Research Structured Interview-DCPR-SI [42,43], a structured interview containing a set of 12 syndromes of disease phobia, thanatophobia, health anxiety, illness denial, persistent somatization, functional somatic symptoms secondary to a psychiatric disorder, conversion symptoms, anniversary reaction, irritable mood, type A behaviour, demoralization, and alexithymia. According to Galeazzi et al. [44], the DCPR-SI indexes has high interrater reliability with kappa values of: Disease phobia, 0.97; Thanatophobia, 0.92; Type A behaviour, 0.92; Illness denial, 0.90; Demoralization, 0.90; Anniversary reaction, 0.90; Health anxiety, 0.89; Alexithymia, 0.89; Conversion symptoms, 0.82, Persistent somatization, 0.70; and Irritable mood, 0.69. Psychosomatic outcomes were considered on the basis of three main groups (assessed through a 10-point Likert scale, [17], as suggested by Picardi et al. [45]) regarding RAND Medical Outcomes Study, maintaining the same items) was used to study specific health dimensions: physical functioning, energy/fatigue, emotional well-being, general health. According to the validation study (adhering to RAND structure and factors), the various factors yielded the following alphas: physical functioning, 0.93, energy/fatigue, 0.86, emotional well-being, 0.90, general health, 0.78.

**Statistical analysis**

Numerical data were expressed as means and standard deviations, categorical variables as number and percentage. The Spearman test was used to evaluate correlations among alexithymia, health and psychosomatic variables of the following instruments. Student’s t-test compared gender groups, referring to health status and psychosomatic outcomes. A P-value smaller than 0.050 was considered to be statistically significant. All analyses were performed using SPSS 26.0 for Windows package.

**Results**

<table>
<thead>
<tr>
<th>Table 1. Descriptive statistics</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years of study</td>
<td>15.79</td>
<td>3.11</td>
</tr>
<tr>
<td>Tas-20 Total score</td>
<td>50.43</td>
<td>12.46</td>
</tr>
<tr>
<td>Difficulty in Identifying Feelings</td>
<td>15.45</td>
<td>6.55</td>
</tr>
<tr>
<td>Difficulty in Describing Feelings</td>
<td>13.24</td>
<td>3.84</td>
</tr>
<tr>
<td>Externally Oriented Thinking</td>
<td>25.32</td>
<td>4.88</td>
</tr>
<tr>
<td>Physical functioning</td>
<td>17.32</td>
<td>3.76</td>
</tr>
<tr>
<td>Energy/fatigue</td>
<td>9.06</td>
<td>3.64</td>
</tr>
<tr>
<td>Emotional well-being</td>
<td>12.98</td>
<td>4.51</td>
</tr>
<tr>
<td>General health</td>
<td>11.92</td>
<td>3.54</td>
</tr>
<tr>
<td>Dermatological outcomes</td>
<td>17.32</td>
<td>9.32</td>
</tr>
<tr>
<td>Gastrointestinal outcomes</td>
<td>20.72</td>
<td>8.39</td>
</tr>
<tr>
<td>Cardiovascular outcomes</td>
<td>17.00</td>
<td>7.70</td>
</tr>
</tbody>
</table>
Table 2. Spearman correlation coefficients among Hp-1 variables

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>Years of education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tas-20 Total score</td>
<td>.170*</td>
<td>-.165*</td>
</tr>
<tr>
<td>Difficulty in Identifying Feelings</td>
<td>.151</td>
<td>-.149</td>
</tr>
<tr>
<td>Difficulty in Describing Feelings</td>
<td>.104</td>
<td>-.124</td>
</tr>
<tr>
<td>Externally Oriented Thinking</td>
<td>.200*</td>
<td>-.117</td>
</tr>
<tr>
<td>Physical functioning</td>
<td>-.375**</td>
<td>.311**</td>
</tr>
<tr>
<td>Energy/fatigue</td>
<td>.073</td>
<td>-.275**</td>
</tr>
<tr>
<td>Emotional well-being</td>
<td>.101</td>
<td>-.129</td>
</tr>
<tr>
<td>General health</td>
<td>-.173*</td>
<td>.050</td>
</tr>
</tbody>
</table>

*p < 0.05 (two-tailed), **p < 0.01 (two-tailed). Bold values were the significant values.

Hypothesis 1

As noted in Table 2, age and education showed significant correlations with several assessment scores. Regarding age, significant and positive correlations emerged with Tas-20 total score, externally oriented thinking, and general health status. A negative and significant relation emerged with physical functioning. Regarding years of study, negative and significant relations emerged among years of study, Tas-20 total score, and energy-fatigue. The only positive correlation emerged was referred to physical functioning.

Hypothesis 2

Hypothesis 2 was concerned with relationships among alexithymia (including related factors), health status, and psychosomatic outcomes. Results demonstrated significant positive relations with the onset of psychosomatic issues and negative significant correlations with health status (Table 3).

Table 3. Spearman correlation coefficients among Hp-2 variables

<table>
<thead>
<tr>
<th></th>
<th>Tas-20 Total Score</th>
<th>Tas-20 Difficulty in Identifying Feelings</th>
<th>Tas-20 Difficulty in Describing Feelings</th>
<th>Tas-20 Externally Oriented Thinking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical functioning</td>
<td>-.326**</td>
<td>-.352**</td>
<td>-.269**</td>
<td>-.156</td>
</tr>
<tr>
<td>Energy/fatigue</td>
<td>-.190*</td>
<td>-.181*</td>
<td>-.206*</td>
<td>.004</td>
</tr>
<tr>
<td>Emotional well-being</td>
<td>-.320**</td>
<td>-.398**</td>
<td>-.177*</td>
<td>-.077</td>
</tr>
<tr>
<td>General health</td>
<td>-.328**</td>
<td>-.397**</td>
<td>-.205*</td>
<td>-.121</td>
</tr>
<tr>
<td>Dermatological outcomes</td>
<td>.106</td>
<td>.242**</td>
<td>.057</td>
<td>-.059</td>
</tr>
<tr>
<td>Gastrointestinal outcomes</td>
<td>.253**</td>
<td>.210**</td>
<td>.220**</td>
<td>.235**</td>
</tr>
<tr>
<td>Cardiovascular outcomes</td>
<td>.331**</td>
<td>.299**</td>
<td>.223**</td>
<td>.251**</td>
</tr>
</tbody>
</table>

*p < 0.05 (two-tailed), **p < 0.01 (two-tailed). Bold values were the significant values.

Regarding the Toronto Alexithymia Scale, significant negative correlations were found with physical functioning, energy/fatigue, emotional well-being, and general health status. Moreover, significant positive relationships emerged with gastrointestinal and cardiovascular outcomes. With regard to difficulty in identifying and describing feelings, significant negative correlations occurred with physical functioning, energy/fatigue, emotional well-being, and general health. Significant positive correlations emerged with dermatological, gastrointestinal, and cardiovascular outcomes, but no significant correlation was found between difficulty in describing feelings and dermatological outcomes. Externally oriented thinking was significantly and positively related to gastrointestinal and cardiovascular outcomes. In general, results concerning this second hypothesis highlighted relationships between alexithymia, negative health status, and increased psychosomatic issues.

Table 4. Comparison between male and female groups

<table>
<thead>
<tr>
<th>Variables</th>
<th>Male</th>
<th>Female</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dermatological</td>
<td>16.38±9.42</td>
<td>17.68±9.29</td>
<td>.447</td>
</tr>
<tr>
<td>Gastrointestinal</td>
<td>18.26±7.85</td>
<td>21.68±8.44</td>
<td>.021*</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>15.85±7.53</td>
<td>17.45±7.75</td>
<td>.251</td>
</tr>
<tr>
<td>Physical functioning</td>
<td>18.42±2.30</td>
<td>16.88±4.12</td>
<td>.005*</td>
</tr>
<tr>
<td>Energy/fatigue</td>
<td>10.14±4.00</td>
<td>8.64±3.41</td>
<td>.037*</td>
</tr>
<tr>
<td>Emotional well-being</td>
<td>14.04±5.41</td>
<td>12.57±4.06</td>
<td>.115</td>
</tr>
<tr>
<td>General health</td>
<td>11.92±3.47</td>
<td>11.92±3.59</td>
<td>.997</td>
</tr>
</tbody>
</table>

*p < 0.05; Bold values were the significant values.
Hypothesis 3

Hypotheses 3 was concerned with potential sex differences on a series of outcome variables (Table 4). Significant differences emerged on gastrointestinal outcomes, with higher scores in women, and on physical functioning and energy/fatigue, with higher scores in men.

Discussions

The current study examined relationships between alexithymia and health status using validated psychodiagnostic tools, with results indicating a number of significant findings. In the first set of analyses, we considered the role of the demographic factors of age and education. Both variables were related to alexithymic total scores, as well as other specific physical and psychological outcomes, similar to a number of other studies [52-57]. In this respect, the first hypothesis was supported by our findings and also consistent with previously reported studies.

Regarding the second hypothesis, several significant findings emerged regarding the alexithymic domains and health status. As might be expected, physical, psychological, and general health were negatively related to higher alexithymic symptoms. In contrast, higher alexithymic scores were related to increased psychosomatic outcomes, including dermatological, cardiovascular, and gastrointestinal.

Regarding dermatological outcomes, the results suggested the strong link with the first alexithymic factor, that is, difficulty in identifying feelings. Such a link has been previously documented by research on psychosomatics and dermatological issues, as in the case of psoriasis, vitiligo, and other relevant illnesses [58-61]. Gastrointestinal and cardiovascular outcomes were even more strongly related to alexithymia, relationships also strongly reported in the literature [23, 62-66].

The third hypothesis was concerned with differences in physical outcomes and health status between men and women. Some significant differences emerged, with higher scores in men on physical functioning and energy/fatigue, and higher scores in women on gastrointestinal disorders. These findings are consistent with other recent studies showing relationships between gastrointestinal outcomes and alexithymic functioning [21,23,67-70].

Current research on alexithymia has the potential for integrating findings over psychological and biological domains, which are often viewed as distinct entities [71-75]. Several authors have addressed this dichotomy, so it would be fundamental to try to reach integrity overcoming theoretical oppositions. In addition to Damasio’s earlier studies [76,77], more recent contributions have taken up the issue [78-80], suggesting ways to reframe classical perspectives through objective methods and rigorous analyses.

Conclusions

The current study investigated the relationship between alexithymia, demographic variables, and specific health outcomes using validated instruments. Results indicated that alexithymia may play a role in a variety of health outcomes, including gastrointestinal problems, and decreased physical and energy status. Subsequent studies should expand the observation group and balance gender groups, as well as use research designs that enable stronger inferences regarding causal relationships.

Conflict of interest disclosure

There are no known conflicts of interest in the publication of this article. The manuscript was read and approved by all authors.

Compliance with ethical standards

Any aspect of the work covered in this manuscript has been conducted with the ethical approval of all relevant bodies and that such approvals are acknowledged within the manuscript.

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Alexithymia and physical outcomes in psychosomatic subjects


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