Journal of Psychosomatic Research 97 (2017) 111–117

Contents lists available at ScienceDirect

Journal of Psychosomatic Research

journal homepage: www.elsevier.com/locate/jpsychores

Illuminating the clinical significance of alexithymia subtypes: A cluster analysis of alexithymic traits and psychiatric symptoms

J. Kajanoja*, N.M. Scheinin, L. Karlsson, H. Karlsson, M. Karukivi

University of Turku, FinnBrain birth cohort study, Finland

ARTICLE INFO

Keywords:
Alexithymia
Subtypes
Cluster analysis

ABSTRACT

Background: Alexithymia is a personality construct involving difficulties identifying and verbalizing feelings, and an externally oriented thinking style. There is preliminary evidence for alexithymia subtypes that may carry different risk profiles for psychiatric illness. The aim of this study was to gain support for the existence of alexithymia subtypes and further characterize their clinical relevance.

Methods: To identify possible subtypes, a cluster analysis was conducted for individuals with high alexithymic traits (N = 113). Current depressive and anxiety symptoms, self-reported psychiatric medical history, and self-reported early life adversity were compared between subtypes. The cluster analysis was replicated with the low (N = 2471) and moderate (N = 290) alexithymia groups.

Results: We identified two alexithymia subtypes. Compared to type A, type B alexithymia was associated with higher levels of difficulties in identifying feelings, and was more strongly associated with current depressive (Cohen's d = 0.77, p < 0.001) and anxiety symptoms (Cohen's d = 0.82, p < 0.001), and self-reported early life adversity (Cohen's d 0.42, p = 0.048). Compared to type A, type B alexithymia was also associated with a higher prevalence of self-reported diagnosis of major depressive- (30.2% vs. 8.3%) and anxiety disorder (18.9% vs. 3.3%).

Conclusions: The results of this study support the hypothesis of alexithymia subtypes, and add support to the growing evidence showing that alexithymia is likely a heterogeneous and dimensional phenomenon. The subtype (type B) with most pronounced difficulties in identifying feelings may be associated with a higher risk for psychiatric illness compared to type A alexithymia, and may exhibit a more severe history of early life adversity.

1. Background

Alexithymia, literally meaning “no words for feelings”, is a personality construct first used to describe features in some patients suffering from psychosomatic symptoms. The core features of the construct include difficulty identifying feelings (DIF), difficulty describing feelings (DDF), and an externally oriented thinking style (EOT) meaning a pragmatic cognitive style less inclined to introspection. Lack of imaginative and fantasizing capabilities is also considered characteristic of alexithymia [1]. Alexithymia is widely regarded as a personality trait, with relatively common prevalence rates of approximately 10–15% in the general population [2,3]. It is not considered a clinical diagnosis nor a personality disorder but it is associated with a wide range of increased psychiatric morbidity such as depression, panic disorder, eating disorders, substance abuse, hypertension, and even increased cardiovascular mortality [4–9].

On the cognitive and affective level, alexithymia is associated with decreased empathy [10], problems in emotional processing [11] and emotional face recognition [12]. It is also associated with social anhedonia [13,14], interpersonal problems [15], and lower levels of satisfaction in intimate relationships [16]. Altered HPA-axis and sympathetic activity has been depicted in alexithymic individuals [17,18]. However, the etiology of alexithymia is largely unknown. A population-based study of over 8000 Danish twin pairs has shown that both genetic and environmental factors play a role, with non-shared environment likely contributing the most [19]. Childhood emotional neglect and inadequate parental care have been specifically implicated in several studies [20–22].

Alexithymic traits are most commonly measured with self-report questionnaires. There are two widely used instruments, the 20-item Toronto Alexithymia Scale (TAS-20) [23] perhaps being the most prevalent. It measures only the cognitive dimensions of alexithymia (DIF, DDF and EOT). The Bermond-Vorst Alexithymia Questionnaire (BVAQ) [24] was developed later and includes the affective dimensions

* Corresponding author at: Turun Yliopisto, Teutori, FinnBrain, Lemminkäisenkatu 3, 20014, Finland.
E-mail address: jani.kajanoja@utu.fi (J. Kajanoja).

http://dx.doi.org/10.1016/j.jpsychores.2017.04.010
Received 21 January 2017; Received in revised form 5 April 2017; Accepted 8 April 2017

of fantasizing and emotionalizing. However, a recent large network analysis examining the alexithymia construct suggested that the affective dimension may be a less salient feature of alexithymia, and at least the deficit in emotionalizing may be better described as correlating with, rather than constitutive of alexithymia [25].

Some controversy remains over whether alexithymia represents a fixed trait, or rather a state-dependent phenomenon that co-occurs with mental illness. There is evidence showing that at least DIF and DDF react to changes in psychological distress and depression. However, these changes are relatively small, and in longitudinal studies alexithymia scores show good relative stability in individuals over time, which supports its conceptualization as a personality trait and a risk factor for psychiatric illness [26–30]..

As the concept of alexithymia covers different features, the existence of subtypes has been proposed. Bermond et al. [31] first suggested subtypes based on whether the individual scores high on the cognitive, affective, or both domains of the BVAQ-questionnaire. One neurobiological study found differences in gray matter volumes e.g. in the amygdalae, left insula and left hippocampus based on this classification [32]. Three studies have tried to uncover clinical subtypes by statistical methods: Firstly, a cluster analysis was conducted on 1788 healthy Chinese college students based on individual TAS-20 subscales [33]. Secondly, a recent study conducted a latent profile analysis on 217 alexithymic German individuals, as measured both by the TAS-20 and BVAQ. Despite marked methodological differences, the results were somewhat similar: those subtypes with high scores in DIF, as opposed to EOT, were associated with higher self-reported psychiatric symptom severity and mental distress [34]. This is in line with studies that have examined the association between individual subscales of alexithymia and psychiatric symptoms: DIF seems to have the strongest, and EOT the weakest association with psychopathology [35–37]. Finally, Ueno et al. [38] conducted a cluster analysis on 2188 healthy individuals. Focusing on clusters with high alexithymia scores and their relation to Big five personality traits, they reported findings of two distinct alexithymia subtypes. The first was characterized by high scores in DIF and neuroticism, and the second by high scores in EOT and low openness to experience [38].

The purpose of this study was to analyze the existence of clinically meaningful subtypes of alexithymia in a larger population and more diverse questionnaire data than in previous studies, and to examine their differences in psychiatric morbidity and early life adversity. Based on previous studies summarized above, we hypothesized that the subtypes most clearly associated with difficulties in identifying feelings would exhibit more psychiatric symptoms and history of early life adversity.

2. Methods

2.1. Study details and participants

This study is based on the FinnBrain Birth Cohort Study (www.finnbrain.fi), a prospective cohort established to study the effects of prenatal and early life stress exposure on child brain development and health. Subjects have been recruited between December 2011 and April 2015 from maternal welfare clinics in the South-Western Hospital District and the Åland Islands in Finland. The study population (Cohort N = 3808 families) comprises of consecutive women attending the free-of-charge ultrasound [coverage close to 100% in the population (www.thl.fi)] at the gestational week 12, their children-to-be-born and fathers of the children/partners of the mothers. After recruitment, the participants filled in a set of self-report questionnaires three times during pregnancy, at gestational weeks 14, 24, and 34. After birth, the families are followed up at three- to six-month intervals (the first 30 months) or 12-to 36-month intervals (from 36 months onwards) and the study is planned to continue for decades. The subjects for this substudy consist of those fathers (N = 994) and mothers (N = 1882) who have filled the alexithymia questionnaire sent to them when their baby was 6-months old.

2.2. Questionnaire data

Questionnaire data included a variety of background information on the subjects. For this study we included sex, age, education (divided into three classes: high school, vocational degree or lower education; college degree or applied sciences degree; and university education) and individual income (divided into four categories: < 1000€/mo, 1000–2000€/mo, 2000–3000€/mo and > 3000€/mo).

Toronto Alexithymia Scale (TAS-20) [23,39,40]: the TAS-20 is one of the most commonly used self-report scales used to measure alexithymic features. It consists of 20 items divided into 3 subscales: difficulty identifying feelings (DIF), difficulty describing feelings (DDF) and externally oriented thinking (EOT). Items are rated with a 5-point Likert-scale (1 = Strongly disagree, 5 = Strongly agree). Thus, the total score ranges from 20 to 100. An individual is considered “high” in the alexithymia scale if the TAS-20 total score exceeds 60 points and “moderate” if the total score is between 52 and 60 points [41]. Because each subscale consists of a different number of items, results are displayed as item mean scores per subscale.

The Trauma and Distress Scale (TADS) [42] is a 43-item self-report questionnaire developed to assess early life adversity retrospectively (exposure before 18 years of age). It includes five subdomains: emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect. The questionnaire measures frequency of trauma exposure using a five-point scale (0 = never, 4 = almost always). For this study, the sum of all five subdomains was used [42].

The Edinburgh Postnatal Depression Scale (EPDS) [43] is the most widely used questionnaire for screening postnatal depression. It is a 10-item self-report scale that asks respondents to rate their mood and other symptoms in the previous 7 days. Questions are scored from 0 to 3, the total score thus ranges from 0 to 30 points. Cutoff points for “possible” and “probable” depression have been suggested at 9/10 and 12/13 points respectively [44].

The Symptom Checklist-90 (SCL-90) [45,46] is a self-report questionnaire to assess intensity of symptoms on many subscales. In this study, only the anxiety subscale, that asks the respondent to report anxiety symptoms experienced in the previous month, was used. The items are rated on a 5-point scale of distress, from 0 (not at all) to 4 (extremely). The total score of the subscale ranges from 0 to 40 points.

Early life adversity was reported during the first trimester of pregnancy. Depressive symptoms, anxiety symptoms and alexithymia scores were all assessed 6 months after the baby was born. Subjects were also asked to report certain conditions in their medical history. Of interest for this study, the self-report of formally diagnosed major depressive disorder (MDD) and anxiety disorder (nonspecified) were included.

2.3. Statistical methods

All statistical analyses were conducted using the IBM SPSS (version 22.0). Normality of distribution within variables was tested with the Shapiro-Wilk-test. Chi-square–test was used to assess differences between categorical variables, and Mann-Whitney *U* test for ordinal and continuous variables. When comparing differences between subtypes, Bonferroni method was used to correct for multiple comparisons. Effect sizes were described using Cohen's d-value. In the correlation analyses, Spearman's rho (ρ) was used as all tests included non-normally distributed data. The reliability of the TAS-20 and internal consistencies of the individual subscales (DIF, DDF and EOT) were assessed by calculating the Cronbach's alpha for each measure. Hierarchical multiple regression was used to control for the effects of sex, education and income when analyzing the associations between alexithymia scores, and EPDS and SCL-90 scores. General linear model (univariate) was