Original Article

Alexithymia Construct in Dialysis Patients

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Abstract

Introduction. The concept of alexithymia means dysfunction in emotional awareness, social attachment, and interpersonal relating. The study was performed to evaluate the alexithymia construct in patients treated with chronic maintenance haemodialysis.

Methods. TAS-20 was applied as a measure of alexithymia to a group of 230 patients, mean age 55.5±13.5 years, recruited from three dialysis centers.

Results. The results obtained showed that 50% of patients were alexithymic, and 18% had possible alexithymia. A small positive correlation was shown between age and obtained scores for alexithymia (r=0.025). Duration of dialysis also positively influenced the alexithymia scores (r=0.013). In addition, the duration of dialysis was significantly influenced by age (ANOVA 0.004, p<0.05). Factors analysis showed that F1 and F2 were not influenced by age or duration of dialysis. Only factor F3 (externally oriented thinking) was very perceptible and influenced by the age and the duration of dialysis (ANOVA p=0.016; <0.05).

No significant differences in scores between males and females were obtained. Only F1 was higher in males (p<0.05). The scores obtained for alexithymia were compared between healthy population and cancer and dialysis patients. Patients with chronic diseases were more alexithymic than healthy people (p<0.05).

Conclusions. The alexithymia construct is a permanent personality trait related to neurobiological brain specifics. An alexithymia construct can influence the prognosis and outcome of dialysis patients as well as of other diseases. The psychological support for mediating alexithymia should be included in the therapeutic protocols, especially for end-stage renal diseases.

Key words: alexithymia, dialysis, end stage renal diseases

Introduction

Alexithymia (from the Ancient Greek word-e e l ks ϑ ' θa mi ϑ) refers to impairment of the ability to identify and describe one's own feelings and emotions. The core characteristics of alexithymia are marked dysfunction in emotional awareness, social attachment, and interpersonal relating. Furthermore, individuals suffering from alexithymia have difficulty in distinguishing and appreciating the emotions of others, which is thought to lead to unempathic and ineffective emotional responding. It is supposed that alexithymia is prevalent in approximately 10% of the general population and it is known to be comorbid with a number of psychiatric conditions.

The term and concept of alexithymia originally referred to a personality trait of psychosomatic patients. It was supposed that the poorer the capacity of a person to experience feelings and to express them verbally, the more the individual is liable to develop somatic symptoms in an emotionally stressful situation [1-3]. The construct was explicated on the basis of clinical observations of patients with classical psychosomatic diseases who manifested an externally oriented cognitive style and an inability to describe and differentiate feelings and to create fantasies. Many further studies confirmed that the clinical feature of the construct had been observed not only in psychosomatic patients but also among patients with posttraumatic stress disorders, patients with substance use disorders and patients with somatoform disorders [3,4]. Some cases of alexithymia are neurological, meaning that it is caused by a deficiency in the brain pathways that process emotions. Others develop psychological alexithymia as a self-defense measure against emotionally indigestible situations, such as terminal illness, or post-traumatic stress disorder. As a coping mechanism, the mind simply shuts down the pathways that process emotions, resulting in a stoic, emotionless state. This type of alexithymia could be reversible through psychotherapeutic interventions, and sometimes with the help of anti-depressants.

Since the formulation of the alexithymia construct in the mid-1970s, there has been controversy over its measurement. Several measures have been developed, including observer-rated questionnaires, self-report scales, projecttive techniques, etc. Although many investigators have used the Rorschach and/or the Thematic Apperception Test (TAT) to assess various facets of the alexithymia construct, there is little empirical support for the reliability and validity of these methods. The self-report Twenty-Item Toronto Alexithymia Scale [5-8] has become the most widely used test for the alexithymia construct.

One of the more challenging problems in the assessment of a personality trait, hypothesized to be a vulnerability or risk factor for certain medical or psychiatric illnesses, is to ensure that its measurement is not confounded by the state effects of the illness. Some investigators have argued that the presence of alexithymia may merely reflect a concomitant state reaction to an illness, which may be predicted by anxiety state, a depressed mood, or poorer quality of life, and lessens over time as the illness improves [9]. However, several longitudinal studies have yielded strong support for alexithymia being a stable trait that is independent of psychological distress or other effects of a medical or psychiatric illness.

Depression was used as the "disease" state on which the stability of the alexithymia construct was examined. Several studies with clinical or nonclinical populations have reported positive and significant relationships between the TAS-20 and measures of depression. It was hypothesized that depression and alexithymia would be correlated at both treatment initiation (baseline) and at follow-up (treatment completion), and that both constructs would show significant reductions from baseline to treatment completion [9,10].

In our previous article we discussed depression and personality profiles measured by the Beck Depression Inventory and MMPI-201 in dialysis patients [11,12] and concluded that depression is usually under-diagnosed even it is frequently present as comorbid in these patients. The aim of this study was to evaluate alexithymia as a specific personality construct in patients treated with chronic maintenance haemodialysis.

Material and methods

In this study we evaluated 230 patients recruited from three state dialysis centers in the Republic of Macedonia (two in Skopje and one in Struga). The patients were randomly selected. The psychological evaluation was made during the process of dialysis (mainly within three hours/day). The 20-item Toronto Alexithymia Scale (TAS-20) was used to measure alexithymia.

The Twenty-Item Toronto Alexithymia Scale (TAS-20) was developed by Bagby, *et al.* (1994) and is a revised version of the earlier 26-item Toronto Alexithymia Scale (TAS; Taylor, Ryan, & Bagby, 1985). As a psychometric instrument, the TAS-20 has demonstrated good internal consistency and test-retest reliability. In the initial validation study, exploratory factor analysis of the TAS-20 yielded a three-factor structure congruent with the theoretical construct of alexithymia: (F1) difficulty identifying feelings and distinguishing between feelings and the bodily

sensations of emotional arousal; (F2) difficulty describing feelings to others; (F3) externally-oriented thinking. Items are rated using a 5-point Likert scale whereby 1=strongly disagree and 5=strongly agree. The TAS-20

uses cut-off scoring: equal to or less than 51 indicates nonalexithymia, equal to or greater than 61 indicates alexithymia. Scores of 52 to 60 indicates possible alexithymia.

The three-factor structure was found to be theoretically congruent with the alexithymia construct. In addition, it has been found to be stable and replicable across clinical and nonclinical populations. The TAS-20 has been translated into many languages, including Macedonian, using the method of back translation to establish crosslanguage equivalence [13].

The statistical evaluation was performed using the software package IBM SPSS Statistics 21. For descriptive purposes, mean values and standard deviation of continuous variables and percentage for categorical variables are presented. Correlations were calculated using the Student's t-test, and regression analysis (ANOVA) was calculated to determine significant differences. Statistical significance was taken at $p \le 5\%$ level.

Results

Of the total sample comprising 230 patients, 110 were females (mean age 55.5 ± 13.5 years), and 120 males (mean age 54.5 ± 14.3 years).

The mean duration of maintenance haemodialysis was 8.3 ± 5.8 years (Figure 1).



Fig. 1. Duration of haemodialysis in the analyzed group

The level of education was as follows: 51% had completed primary education; 43% had completed secondary school; 6% had a university degree. The TAS-20 was filled-in by patients themselves.

The results obtained for TAS-20 were as follows: 50% showed alexithymia, 18% possible alexithymia, while 32% were no alexithymic (Figure 2). This means that the alexithymia construct appeared to be a very frequent personality trait in patients treated with dialysis.

The duration of dialysis appeared to be slightly positively correlated with total scores for TAS 20 (r = 0.013) (Figure 3).



Fig. 2. Obtained results for alexithymia

Concerning the correlation between age and scores obtained for alexithymia, regression analysis showed a small positive correlation (r=0.025). ANOVA was p=0.721, (>0.05) which means that age could not be a predictor for scores obtained for TAS-20.

However, the duration of dialysis was significantly influenced by the age (ANOVA 0.004; p<0.05), as presented in Figure 4.

Factors analysis showed that F1 and F2 were not influenced by age or duration of dialysis. Only factor F3 (externally oriented thinking) was very perceptible and influenced by age and by duration of dialysis (ANOVA p = 0.016; <0. 05) (Figures 5 and 6).



Fig. 3. Duration of dialysis and alexithymia scores



Fig. 4. Duration of haemodialysis and age



Fig. 5. Correlation between F3 and duration of dialysis



Fig. 6. Correlation between F3 and age

In addition, statistical analysis showed that no differrences between gender and total scores for TAS 20, as well as gender and F2 and F3, were found. Only F1 (difficulty identifying feelings and distinguishing between feelings and the bodily sensations of emotional arousal) was significantly higher for males than for females (p< 0.05), which seems quite logical.

Only the results obtained for the group manifesting real alexithimia are presented in Figure 7 (total mean score, together with three factors).

If we compare obtained alexithymia scores for patients on dialysis with the control group (N=100) and patients with cancer (N=100) [14] it is clear that patients on dialysis showed the highest alexithymia scores (Figure 8).



Fig. 7. Results obtained with TAS-20 for alexithymic group of dialysis patients

ANOVA confirmed the significance of the differences between groups on haemodialysis and control (t=18.35; p<0.05), as well as between groups of cancer and control (t=11.95; p<0.05). The analysis of differences in factors also confirmed significance between dialysis and control groups (for F1 t=10. 60; p<0. 05; for F2 t=23.21; p<0.05 and for F3 t=9.92; p<0.05).



Fig. 8. TAS-20 obtained for control, cancer and dialysis patients



Fig. 9. Correlation between depression and alexithymia scores

Discussion

In our research we confirmed that alexithymia could be an important personality trait, which influences the adjustment, course and mortality rate in patients on haemodialysis. The results obtained showed that half of the examined patients on dialysis manifested a real alexithymia and 18% a possible alexithymia. Age of patients did not influence directly the scores for alexithymia, but the duration of dialysis was positively correlated with alexithymia scores. The alexithymia scores obtained in the study by Cabras, et al. [15] appeared to be directly correlated with the duration of dialysis. It was suggested that the prominence of the alexithymic phenomenon may be related to defense mechanisms against recurrent anguish about dying and to the tendency to assume certain characteristics of the particular therapeutic regimen, such as concreteness and rationality, so as to be able to tolerate the aggressive aspects of the treatment. Obtained alexithymia scores are almost the same for male and female patients. Factor analysis showed that only F3 was sensible and influenced by both, age and duration of dialysis. Only F1 (difficulty identifying feelings and distinguishing between feelings and the bodily sensations of emotional arousal) was signifycantly higher in males (p<0.05).

Comparison of the alexithymia construct of patients on dialysis with healthy people and cancer patients showed significant differences confirming that alexithymia is much more specific for the dialysis group. The differrence between cancer and dialysis patients confirmed a significant difference not only for total scores, but also in two factors (F1 and F2).

Chronic kidney diseases, like other chronic illnesses, are related to many psychological characteristics [16-18]. Some characteristics are primary, but many of them could be secondary to the chronic disease. As a common comorbid psychological characteristics depression at different levels appeared to be present especially in patients treated by dialysis. In a recent review and meta-analysis Palmer, *et al.* (2013) [19] analyzed the prevalence of depression among these patients using MEDLINE and Embase articles. They concluded that the prevalence of interview-based depression was 22.8%, but it was much higher (39.3%) if the depressive symptoms were diagnosed with self-report or clinician-administered scales.

In our previous research concerned with the personality characteristics of patients treated by maintenance haemodialysis [11,12] we found a variable percentage of depression in examined patients checked with the Beck Depression Inventory: minimal in 21.43%, mild in 35.71%, moderate in 17.85% and severe in 14.28%. In addition, as specific characteristics of personality obtained with MMPI, we found hypersensitivity, depressive mood and withdrawal from friends and relatives. As more specific emotional traits we found accentuated anxiety, a low level of hostility, and high passive aggression which destroys their social communications. In many other studies the psychological factors are pointed out as very important in the course and prognosis of patients with chronic kidney diseases.

Bearing in mind our previous findings about personality characteristics of patients treated by haemodialysis, we supposed that the alexithymia construct could be another important personality characteristic in these patients. Results confirmed high alexithymia traits in these patients. However, alexithymia in our research was not related to the level of depression.

Alexithymia, as a poor ability to experience and express emotions, has been evaluated in many other studies of patients with chronic kidney diseases.

In the research of Jula, *et al.* (1999) [20] it was concluded that alexithymia appeared to be associated with elevated blood pressure independent of sodium and alcohol intake, body mass index, and physical fitness. Kojima, *et al.* [21] in his research concluded that alexithymia had a stronger independent association with the increased risk of 5-year mortality than depression among patients on chronic haemodialysis.

Some findings suggest that cultural background may affect adaptation to chronic haemodialysis therapy and in this context could influence psychological problems [22]. The results may suggest the possibility that the differences in dialysis policy between different countries have secondary effects on alexithymia, which is one of the psychosomatic factors reflecting self-control ability in dialysis patients [23].

There are scanty data available on alexithymia in patients with end-stage renal disease, which point to an independent association with depression and social support [24-26].

Many individuals with alexithymia have somatic complaints. Considerable empirical evidence links prolonged states of emotional arousal, and the concomitant physiological arousal, with susceptibility to certain somatic disorders. Clearly, someone who cannot verbally express negative emotions will have trouble discharging and neutralizing these emotions, physiologically as well as psychically. All feelings, whether normal or pathological, are ultimately bodily feelings. Those with alexithymia lack a lived understanding of what they experience emotionally.

It was found that alexithymia was associated with somatization independently of somatic diseases, depression and anxiety and confounding sociodemographic variables. The TAS-20 factor scale "Difficulties Identifying Feelings" was the strongest common denominator between alexithymia and somatization [4].

From the perspective of development, alexithymia implies a glitch in the process that permits the expression of feelings in words that capture the body's involvement in these feelings. Perhaps the child's mother failed to sufficiently encourage a language of feelings (surely excluding her from the pantheon of Winnicott's "good enough" mothers). Alternatively, emotional trauma later in life may compromise the connection between what is felt and what can be grasped about this feeling and can be put into words, particularly if that link was tenuous to begin with.

Kojima, *et al.* (2010) [26] found that depression increases the risk of mortality in haemodialysis patients. Alexithymia, a disorder of affect regulation, has also been reported to be associated with mortality risk in the general population. They concluded that alexithymia is a strong independent risk factor for all-cause mortality in haemodialysis patients.

In addition, it was found that alexithymia scores were significantly positively correlated with anxiety scores, suggesting that alexithymia may be related to anxiety derived from the stress associated with dialysis therapy [27,28].

The influence of psychodynamic aspects such as the defense mechanisms for conflict on secondary alexithy-

mia in hemodialysis patients was examined among dialysis patients and their family members. The results that have been obtained suggest that this defense mechanism strongly suppresses the manifestation of conflict, and that secondary alexithymia in dialysis patients may be derived from defense mechanisms such as denial [29].

Neuroimaging of alexithymia is in its infancy, and there are not so many functional brain imaging studies which have attempted to clarify brain mechanisms related to alexithymia.

The review of neuroimaging studies on alexithymia suggests that alexithymia is associated with reduced neural responses to emotional stimuli from the external environment, as well as with reduced activity during imagery, in the limbic and paralimbic areas (i.e., amyg-dala, insula, anterior/posterior cingulate cortex). Alexithymia is also known to be associated with enhanced neural activity in somatosensory and sensorimotor regions, including the insula. Moreover, neural activity in the medial, prefrontal, and insula cortex was lowered when people with alexithymia were involved in social tasks [30,31].

It is supposed that alexithymia is present in about 10% of the general population and generally is associated with a lower quality of life. However, alexithymia is a major risk factor for a range of medical and psychiatric problems, especially in chronic patients.

Conclusions

Generally, we can conclude that alexithymia is an important topic in the field of chronic end- stage diseases, such as patients on dialysis are. Alexithymia could have an effect on the progression of the disorders, as well as on the quality of life.

The alexithymia construct is a permanent personality trait related to neurobiological brain specifics. In our research alexithymia has been confirmed as an important personality trait in patients treated with haemodialysis. In any case, psychological support mediating alexithymia should be included in the therapeutic protocols of all chronic patients, especially in those treated with haemodialysis.

Conflict of interest statement. None declared.

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