RESEARCH ON SOCIAL ANXIETY IN PATIENTS WITH ESSENTIAL TREMOR AND PARKINSON'S DISEASE IN A SAMPLE OF THE LATVIAN POPULATION

Ligita Smeltere¹ #, Vladimirs Kuzņecovs^{2, 3}, and Roberts Smelters¹

¹ Health Centre 4, Barona iela 117, Rīga, LV-1012, LATVIA;
ligita.smeltere@inbox.lv; roberts.smelters@inbox.lv

² Medical Faculty, University of Latvia, Raiņa 19, Rīga, LATVIA;
vladimirs.kuznecovs@lu.lv;

³ Rīga Centre of Psychiatry and Addiction Disorders, Tvaika iela 2, Rīga, LATVIA

Corresponding author

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Essential tremor is considered to be one of the most common movement disorders in the world, but its non-motor symptoms have been studied relatively little in clinical practice. The objective of this study was to identify the symptoms of social anxiety and their association with motor symptoms in 40 patients with essential tremor (ET), in comparison with 35 patients with Parkinson's disease (PD) and 39 patients of the control group from the Latvian population. This was conducted by neurological investigation, five patient self-assessment questionnaires (DASS, BDI, SIAS, SPS, STAI), and clinical interviews. The findings are as follows: using SIAS (Social Interaction Anxiety Scale), in ET patients there was no significant correlation between the severity of tremor and anxiety during social contacts ($p > 0.05$), but there was a moderate positive significant correlation with the social phobia scale (SPS) score ($r_s=0.35$; $p < 0.05$). In the ET group, social anxiety (phobia) disorder was found in 50% of the patients according to ICD-10, but in 35% according to DSM-5. In the PD group, the diagnostic criteria of social anxiety disorder were met by 42.86% according to ICD-10 and 25.71% according to DSM-5. In the control group mild social anxiety was found and the criteria met by 20.51% according to ICD-10 and 7.69% according to DSM-5.

Key words: *movement disorders, self-assessment questionnaires, social phobia.*

INTRODUCTION

The aim of the study was to determine in samples of the most common diseases of movement disorders (Fahn *et al.*, 2011) in the Latvian population: neurological and psychiatric symptoms of essential tremor (ET) and Parkinson's disease (PD), their severity, frequency and correlation.

During the last 2–3 decades, both PD and ET have been much investigated. In the pathogenesis of both diseases differences have been found in the genes and multiple and complicated neurological structures, and mediators and pathological processes (Fahn *et al.*, 2011). Initially only motor symptoms were verified for both diseases, but subsequent studies described involvement of many neuro-mediators and, thus, genes and therapy of non-motor symptoms in PD have been much studied. PD patients have been studied in relation to depression and its features — its onset already in the pre-motor stage, variability of its severity,

prevalence of apathy, anhedony, hopelessness, and lack of energy in its symptomatology. Earlier, ET was considered to be only a monosymptomatic (tremor) disease, but in the last 15 years a wider range of neurological symptoms has been described (Lyons and Pahwa, 2005). Comparatively less attention has been paid to the ET neuropsychiatric domains with cognitive, behavioural, and psychosocial deviations. Consequently, this represents an interesting field of research. It is known that, typically, fluctuations of ET tremor frequency and amplitude are in the range of up to 50%, irrespective of standardised description and repeated accelerometer investigation (Lyons and Pahwa, 2005, p. 94). Moreover, the fluctuation is affected by many other factors, such as the physical and mental condition of the patient (for example, emotional state) and natural tremor perturbations. However, the clinical practice of the authors of the present article provided the opportunity to assess the importance of anxiety and cognitive and behavioural features

in ET and PD patients. As a literature search found no comparative research on clinical neuropsychiatric symptoms of ET and PD, the study was focused on investigation of social anxiety (phobia), assessment of personality traits concerning anxiety, as well as diagnostics of comorbid depression. Recognition of psychic features or disorders might help to change the tactics in the treatment in the future.

PATIENTS AND METHODS

In Latvia, great experience has been accumulated in consulting ET and PD patients. Patients involved in the investigation were selected during the period from September, 2013 – January 2015 from those who were consulted by L. Smeltere at the Neurology Outpatient Centre, Pauls Stradiņš Clinical University Hospital, and at the Consultation for Parkinson's Disease and Other Movement Disorders, Health Centre 4. The investigation was conducted on 40 ET and 35 PD patients, and 39 people in the control group (residents of Latvia of the respective age, not suffering from any of the above diseases). Only patients meeting all inclusion criteria and with clear ET or PD diagnosis and without exclusion criteria were involved (see Table 1). ET diagnosis was made on the basis of anamnesis data for tremor for at least five years, neurological investigation and (according to) the score on the Fahn, Tolosa, Marin Tremor Rating Scale and the MDS (Movement Disorder Society) diagnostic criteria for ET. PD diagnosis was made on the basis of neurological investigation using UPDRS (unified Parkinson's disease rating scale) Part III (MDS PD rating certificate possessed by the first author of the article) and PDS BRC (Parkinson's Disease Society Brain Bank Re-

search Centre) Criteria for Idiopathic Parkinson's Disease. PD patients of stages I–IV were involved. Both groups of patients had undergone magnetic resonance imaging of the brain and clinical analysis to exclude other phenotypically similar diseases. The patients for investigation were those L. Smeltere had consulted repeatedly (2–10 times during a 10-year period) and the dynamics of neurological symptoms were assessed. The patients for investigation signed a form of agreement to participate in the research. The research was approved by the Ethics Committee. The clinical research was done by assessing the neurological condition of the patients. All of them were asked to complete in their native language five internationally recognised self-assessment questionnaires of high reliability, validity, and internal consistency (Spielberger *et al.*, 1983; Mattick and Clarke, 1998; Peters, 2000; Coles *et al.*, 2001; Nutt and Ballenger, 2003; Skuskovnika, 2004; Schrag *et al.*, 2007): DASS (Depression Anxiety Stress Scale), DBI (Beck Depression Inventory), SIAS (Social Interaction Anxiety Scale), SPS (Social Phobia Scale) and the STAI (State – Trait Inventory) or C. D. Spielberger's test with the aim to differentiate between anxiety as a personality trait and anxiety as a condition. The results of the questionnaires were complemented with clinical interviews to objectivise the condition and diagnose comorbidity, if inherent, according to the classifications ICD-10 (www.who.int/classifications/icd/icdonlineversions/en/) and DSM-5 (www.appi.org/pages/dsm.aspx). Initially the number of patients for investigation was greater, but some patients were excluded from the research due to only partially filled in self-assessment forms. This was a result of bradykinesia, tremor, and fatigue, which hampered the writing process.

Table 1

INCLUSION AND EXCLUSION CRITERIA FOR ET AND PD PATIENTS AND THE CONTROL GROUP

Inclusion criteria for ET patients:	<ol style="list-style-type: none"> 1. Conformity to MDS classic ET diagnostic inclusion and exclusion criteria 2. Conformity to TRIG criteria for definite ET 3. Duration of disease more than 5 years 4. Age > 18 5. No other severe somatic disorder interfering with proper interpretation of ET symptoms 6. Signed written informed consent about being involved into clinical research of Dr. L. Smeltere.
Exclusion criteria for ET patients:	<ol style="list-style-type: none"> 1. Other phenotypically similar diseases 2. Any of ET diagnosis exclusion criteria 3. Any of TRIG ET diagnosis exclusion criteria, including patients who use DA, MAO-B inhibitors, L-dopa (at least 6 month wash-out since interruption of medication) 4. Moderate or severe cognitive impairment
Inclusion criteria for PD patients:	<ol style="list-style-type: none"> 1. Conformity to idiopathic PD diagnostic criteria (UK PDS Brain Bank Criteria for idiopathic PD) 2. I–IV Hoehn & Yahr stage of disease 3. Signed written informed consent about being involved into clinical research of Dr. L. Smeltere.
Exclusion criteria for PD patients:	<ol style="list-style-type: none"> 1. Parkinsonism syndrome (Patient has PD diagnosis exclusion criteria) 2. Moderate or severe cognitive impairment (MoCA ≤ 24) 3. Comorbid ET and PD
Inclusion criteria for the control group:	<ol style="list-style-type: none"> 1. Inhabitants of Latvia matching the same age group as ET, PD patients 2. Written informed consent
Exclusion criteria for the control group:	<ol style="list-style-type: none"> 1. ET or PD 2. Hard decompensated somatic disorder

Statistical analysis. Statistical data processing was done by using the SPSS software (IBM SPSS Statistics Version 22). The quantitative variables were measured by arithmetic mean (M) and standard deviation (SD). In cases when the distribution sharply differed from the normal distribution, the median and the interquartile range were calculated. Qualitative variables were characterized as the number and percentage ratio. A p value smaller than alpha (0.05) was considered statistically significant. Comparison of normally distributed quantitative variables was done by using the independent samples t -test between two groups or the analysis of variance (ANOVA) method between three or more groups; eta squared was used to calculate the statistical effect size. To determine group differences, the ANOVA Post-hoc Tukey correction was applied. The Kruskal-Wallis test was used for the variables that did not correspond to the normal distribution. The analysis of association between two variables was done by applying Pearson's r or Spearman's r_s correlation, depending on data distribution. The qualitative variables were analysed by using the Pearson's chi square test.

RESULTS

The age of ET patients was 19–93 (M = 52.05; SD = 20.18 years); PD patients — 45–78 (M = 61.51; SD = 9.02 years); the control group: 28–81 (M = 55.85; SD = 16.36 years). The ET group consisted of 26 (65%) females and 14 (35%) males. The PD group included 19 (54%) females and 16 (46%) males, and the control group — 29 (74%) females and 10 (26%) males. The Kruskal-Wallis test showed that the median age of the groups did not significantly differ ($p = 0.09$). The results of clinical assessment of the ET patients according to the Fahn, Tolosa, Marin Tremor Rating Scale were as follows: the score ranged between 8–112 of the maximum score of 144 (M = 28.98, SD = 20.14). Using the Hoehn and Yahr scale, the PD patients had disease stage I–IV: 14.29% were with stage I or had unilateral disease process; 40% were with stage II or bilateral disease process; 34.29% with stage III, bilateral disease process and postural reflexes (balance) disturbance; and 11.43% were with stage IV. Patients with stage IV often fall and they might have mild cognitive impairment. The cognitive function of the patients with stage IV was assessed by applying the Montreal cognitive assessment test; not including patients with cognitive disturbances, the minimum score was 24. Patients with stage V were not included as in that stage all patients suffer from cognitive disorders.

The UPDRS Part III rating scale assigns 100 as the maximum score for the severity of 14 motor symptoms. The assessment of clinical symptoms of the studied group was in the range of 6–60 (M = 25.49, SD = 13.44).

Analysis of variance (ANOVA) of the median SIAS values on the questionnaire “Social Interaction Anxiety Scale” (SIAS) showed a significant difference [$F(2.111) = 3.72$; $p = 0.02$; eta squared = 0.06 which can be evaluated as medium effect] between the patient groups. The SIAS test val-

ues for ET (M = 21.68; SD = 14.96) were by 4.19 points higher than for Parkinson's disease (M = 17.49; SD = 11.06), this difference was not significant by the Post-hoc Tukey correction method PD ($p > 0.05$). However, the ET group significantly differed from the control group ($p < 0.05$).

The results of the SIAS self-assessment questionnaire revealed that ET and PD patients, as well as the control group, experienced anxiety during social contact. Mild and moderate anxiety was characteristic of all groups, but the severe stage was observed only for seven ET patients and one PD patient. Only three people from the control group did not suffer from social anxiety symptoms; the other respondents admitted anxiety at a lower level than the other groups. All the groups in the SIAS test revealed good internal consistency (Cronbach's Alfa = 0.92). Correlation between each score and the total score of the SIAS test (internal consistency analysis) is shown in Figures 1, 2, 3). In the SIAS test, the ET patients were mostly worried by statement 15 (“I find myself worrying that I won't know what to say in social situations”), followed by statement 1 (“I get nervous if I have to speak with someone in authority (teacher, boss, etc.)”), and statement 11 (“I find it easy to think of things to talk about”) (see Fig. 1). The PD patients experienced anxiety mostly in situations as described in statement 7 (“When mixing socially, I am uncomfortable”), statement 3 (“I become tense if I have to talk about myself or my feelings”), and statement 12 (“I worry about expressing myself in case I appear awkward”) (see Fig. 2). The respondents of the control group were mostly worried by statement 3 (“I become tense if I have to talk about myself or my feelings”), statement 15 (“I find myself worrying that I won't know what to say in social situations”), and statement 11 (“I find it easy to think of things to talk about”) (see Fig. 3).

According to the Social Phobia Scale (SPS), the largest SIAS and SPS values were in the ET group (SIAS: M = 21.68; SD = 14.96 and SPS: M = 20.80; SD = 17.66), slightly smaller in the PD group (SIAS: M = 17.49; SD = 11.06 and SPS: M = 18.11; SD = 15.19) and the smallest in the control group (SIAS: M = 14.18; SD = 9.88 and SPS: M = 8.85; SD = 8.82). Analysis of variance (ANOVA) showed that the median values in the SPS test significantly differed between the studied groups ($F(2.111) = 7.42$; $p = 0.001$, eta squared (η^2) = 0.13). Social phobia signs in the ET patients (M = 20.80; SD = 17.66) were non-significantly (Post-hoc Tukey correction method, $p = 0.70$) higher (by 3.14 points) than those for Parkinson's disease (M = 18.11; SD = 15.19), while the PD group significantly differed from the control group ($p = 0.01$). According to the SPS self-assessment questionnaire results, signs of social phobia were not observed in 7.5% of ET patients, in 5.71% of PD patients and in 20.51% of the control group. Mild signs of social phobia were observed in all groups: 52.5% in ET, 65.71% in PD, 66.67% in the control group. A moderate level was observed in 27.5% of the ET group, in 14.29% of PD and 12.82% in the control group. A severe level was found in 10% of ET, 14.29% in PD, but not observed in the control

Fig. 1. Mean values of SIAS test results of ET patients.

Fig. 2. Mean values of SIAS test results of PD patients.

group. An extremely severe level was observed only in 2.5% of the ET group. Irrespective of signs of social phobia in the answers to the self-assessment questionnaire, subsequent clinical interviews did not show a diagnosis of social

anxiety (phobia) to be applicable to all patients. All groups in the SPS test had good internal consistency (Cronbach's Alfa ET = 0.95, PD = 0.96, control group = 0.93).

Fig. 3. Mean values of SIAS test results of the control group.

The Spearman's correlation coefficient between ET severity and SIAS was not significant ($p > 0.01$), while a significant moderate positive correlation occurred between tremor severity and SPS ($r_s = 0.35$; $p < 0.05$).

Linear regression analysis revealed that increase in tremor severity by 1 point on the Fahn, Tolosa, Marin Rating Scale resulted in increase of total SPS score by 0.64 points.

Pearson's correlation analysis showed that the only significant correlation between severity level and SPS was in the PD group ($r = 0.47$; $p < 0.01$).

Spearman's correlation analysis showed a close significant positive correlation between SIAS and SPS (ET $r_s = 0.80$, PD $r_s = 0.77$; $p < 0.001$) in all groups.

No significant difference ($p > 0.05$) was found between age groups (younger and older than 60 years) for SIAS, SPS and BDI test results.

Internal consistency analysis was done to evaluate correlation between each score and the total score of the test the (see Figs. 4, 5, 6).

Signs of social phobia in ET patients mostly occurred in situations as described in statement 18 ("I can get tense when I speak in front of other people"); statement 13 ("I would get tense if I had to carry a tray across a crowded cafeteria"); statement 7 ("I worry about shaking or trembling when I'm watched by other people"); statement 1 ("I

become anxious if I have to write in front of other people"); and statement 20 ("I feel awkward and tense if I know people are watching me") (see Fig. 4).

Signs of social phobia in PD patients mostly occurred in situations as described in statement 13 ("I would get tense if I had to carry a tray across a crowded cafeteria"); statement 7 ("I worry about shaking or trembling when I'm watched by other people"); statement 18 ("I can get tense when I speak in front of other people"); and statement 20 ("I feel awkward and tense if I know people are watching me") (see Fig. 5).

In the control group, social phobia was associated with situations as described in statement 18 ("I can get tense when I speak in front of other people"); statement 20 ("I feel awkward and tense if I know people are watching me"); and statement 13 ("I would get tense if I had to carry a tray across a crowded cafeteria"); (see Fig. 6).

The Independent Samples t-test showed that gender of the patient in the PD and ET groups did not affect the SIAS and SPS test results ($p > 0.05$).

To determine association of possible human emotional reactions (anxiety) and mechanisms of adaptation, their reaction to a stressful situation (disease) and to other factors were summarised.

To distinguish between state anxiety (Y-1) and trait anxiety (Y-2), the Spielberger's test (STAI) was used.

Fig. 4. Mean values of SPS test results of ET patients.

Fig. 5. Mean values of SPS test results of PD patients.

To evaluate state anxiety (situational anxiety), STAI (Y-1) was used for assessing how all the respondents felt just then, at the given moment. The Y-1 answers were within the range from 21 to 64 ($M = 46.75$) in the ET group, 20–68 ($M = 44.57$) in the PD group and 20–56 ($M = 37.0$) in the control group. Answers to Y-2, used to to evaluate trait

anxiety, were as follows: 31–64 ($M = 41.07$) in the ET group, 23–56 ($M = 37.94$) in the PD group, 28–62 ($M = 42.0$) in the control group.

The Spielberger's test (STAI) for ET patients showed prevalence of low Y-1 and Y-2 (32.5% – 13 patients).

Fig. 6. Mean values of SPS test results of the control group.

Ranking second was high Y-1, followed by moderate Y-2 (20% – 8 patients). A total of 15% (6) patients showed moderate levels of both Y-1 and Y-2.

The Spielberger's test (STAI) for PD patients showed that 11 patients (31.43%) had low Y-1 and low Y-2; 9 patients (25.7%) had moderate Y-1 and low Y-2; and 8 patients (22.86%) had moderate Y-1 and moderate Y-2.

The STAI results of the control group were as follows: in 15 patients (38.46%) Y-1 and Y-2 were low; in 10 patients (25.64%) Y-1 was low, Y-2 moderate; and in 9 patients (23.08%) Y-1 and Y-2 both were moderate.

Spearman's correlation between the SIAS, SPS test results and STAI (Y-1 and Y-2) in the ET group showed a moderate, significant correlation ($r_s = 0.61$; $p < 0.001$) between SIAS and Y-1, between SPS and Y-1 ($r_s = 0.63$; $p < 0.001$), SIAS and Y-2 ($r_s = 0.54$; $p < 0.001$), and SPS and Y-2 ($r_s = 0.40$; $p < 0.001$). In the PD group there was no significant correlation ($p > 0.05$) between SIAS and Y-1, but there was a moderate correlation ($r_s = 0.46$; $p < 0.001$) between SPS and Y-1, SIAS and Y-2 ($r_s = 0.39$; $p < 0.05$), and SPS and Y-2 ($r_s = 0.45$; $p < 0.001$).

DISCUSSION

The clinical symptoms of depression and PD are phenotypically similar (hypomimia, bradyphrenia, bradykinesia, fatigability, posture disturbances, etc.), which is also the case for ET and anxiety (hands tremor, affected by anxiety).

Comorbidity of ET and social anxiety (phobia) is very possible (Schneier *et al.*, 2001; Topcuoglu *et al.*, 2006; Louis, 2010) and they can affect each other. The psychogenic tremor component and enhanced physiologic tremor cannot be excluded either. Lundervold *et al.* (2013) observed an association between social anxiety with tremor severity in ET patients. We found a significant relationship between tremor severity and SPS test results, but not with SIAS results. Schneier *et al.* (2001) considered social phobia to be associated with disability, but independent of tremor severity. In the PD group, the SIAS and SPS data scores were correlated with the severity of the disease, but not with the manifestation of tremor.

Patients in Latvia commonly complain about somatic symptoms. They mentioned increase of tremor, when worrying, only as a subjective factor of little importance. This is likely due to the socio-cultural features of the country — not to display inner feelings, to hide them. However, in the case of social anxiety, the disease is also characterised by fear or anxiety about one or more social situations in which the individuals is exposed to possible scrutiny of others (Anonymous, 2013). Patients avoid speaking about how much the reaction of others worry them, or about anything that is said or what is said about them, or negative expectations and fear of what might really occur. Only delicate handling of sensitive issues and trust in the professionalism of the physician may help the patient open up and speak about his/ her inner feelings. Consequently, we believe that self-assessment questionnaires serve as a kind of bridge for cooperation between the patient and the physician, although some

researchers consider that self-report measures of social anxiety with ET patients may underestimate distress (Lundervold *et al.*, 2013) or that patients have a tendency to overestimate their symptoms (Beurs *et al.*, 2014). We agree that patients overstate subjectively the tremor severity, but distress and feelings of anxiety are subjective feelings that the physician, taking into account the patient's assessment, must consider in objective evaluation. Significant correlation between the severity of essential tremor and manifestation of social phobia according to the SPS data suggest that mainly secondary social phobia and comorbid depression are factors that need consideration by a psychiatrist in making accurate differentiation.

In Latvia, partly the middle-age group, but mostly senior citizens, refrain from consulting a psychiatrist, and therefore many psychic disorders are not identified and adequately treated. For this reason, the greatest part of the ET and PD patients in the studied groups had not been diagnosed with comorbid anxiety disorder or depression. However, increase in tremor was attributed to the disease process. The statistical data of the Centre for Disease Prevention and Control in Latvia (Anonims, 2013) in 2011 recorded 198 patients with diagnosis code F40 and in 2013 — 220 patients. Most databases do not provide a separate indicator for the diagnosis of 'social anxiety' (F40.1), but it is included in the group of other diseases under code number F40-F42 or F40-F48. This implies indirectly that the disease is not adequately recognised or there are insufficient diagnostic criteria; moreover, both patients and general practitioners, including specialists, believe that anxiety in public is a norm and therefore do not diagnose severe distress in social contacts as a disease.

We observed that diagnosis is encumbered by differences in the existing two classifications of psychiatric diseases, namely, DSM-5 and ICD-10, as observed previously (Nutt and Ballenger, 2003; Skocis *et al.*, 2015). In Latvia in clinical practice only ICD-10 is used, but in the present study both were used. The prevalence of diagnosed social anxiety in Switzerland 16% when estimated using DSM-5, but 9.6% according to ICD-10 (Wacker *et al.*, 1992; Lyons and Pahwa, 2005). Diagnostic criteria are more detailed in DSM-5 (300.23) with 12 diagnostic criteria, including duration criterion (6 months) and it is recognised that social anxiety can be manifested as pronounced fear or worry in one or several social situations, including possible evaluation by other people, fear of humiliation and avoidance. The ICD-10 (especially the clinical version) includes less structured diagnostic criteria for social phobia.

Irrespective of the presence of signs of social anxiety in the self-assessment questionnaire, the diagnosis of social anxiety (phobia) was not applicable to all during the subsequent clinical interview. In the ET group, 50% of patients were diagnosed with social anxiety (phobia) according to ICD-10, compared with 35% of the patients when applying DSM-5. In the PD group, 42.86% corresponded to the ICD-10 criteria, while 25.71% according to DSM-5. These proportions are larger than those mentioned in other sources (Leentjens

et al., 2008). In the control group, the correspondence to the ICD-10 social anxiety criteria was 20.51% and 7.69 to DSM-5, mainly at a mild stage. As already stated above, social anxiety had stronger manifestation in ET patients than in the PD and the control group. Social anxiety diseases with the clinics of movement disturbances are usually in the range 33–42% (Lundervold *et al.*, 2013) This range is slightly less than in the ET group, which might be associated with genetical differences, historical conditions and comorbid diseases. The results for the control group were similar to those obtained by Tharwani and Davidson (2001). However, the limited sample size does not allow to make accurate conclusions about the prevalence of social anxiety in the population. It should also be noted that BDI tests indicated high prevalence of depression in all groups (ET 79.49%; PD 91.18% and the control group 66.67%). Regardless of whether it might be a comorbid disease, depression may enhance the anxiety level and, consequently, the manifestations of social anxiety.

The results of the Spielberger's test with ET patients shows different ways of emotional reaction to stressful situations. 32.5% of the patients had a low level of both Y-1 and Y-2, and thus, there was little likelihood of developing social anxiety disease (only one patient). 20% of the patients suffered from strong anxiety at the given moment, but their personal signs of anxiety were at a moderate level. In such cases it is rather difficult to calm down and adapt, and the clinical interview confirmed the diagnosis of social anxiety disease in all these patients (20%). In cases where anxiety is a personality trait, the disposition to situational anxiety is higher and very likely that it will be permanent. In 37.5% of all the ET patients, situational anxiety was greater than for a personality trait. Anxiety as a personality trait was more expressed than situational anxiety in only 10% of cases, and these patients will have difficulties in adapting to the disease. 5% of the patients were diagnosed with a high level anxiety as a personality trait (Y-2).

The STAI test results showed that 88.56% of the PD patients had a low or moderate anxiety level, and 11.4% had a high level respectively at the given moment (Y-1), i.e. due to the disease, but anxiety as a personality trait manifested only at low or moderate level. 59.99% of patients had a low Y-2 harmonised with lower diagnostic criteria of social anxiety, if compared to ET. Social anxiety disease was not confirmed in patients with low Y-1 and Y-2 after the interview.

Most of the control group experienced low or moderate anxiety at the given moment. Anxiety as a personality trait was also at low or moderate level and only 7.69% manifested high level anxiety as a personality trait (Y-2).

The study indicated that in cases of low anxiety as a symptom and personality trait, there is a lower chance of development of social anxiety and vice versa, except in PD patients. Mattick and Clarke (1998) found a non-significant correlation between SIAS, SPS and STAI, while in our study the correlation was moderate.

A non-motor symptoms questionnaire on Parkinson's disease can be used for timely identification and treatment of the symptoms. It would be important to diagnose non-motor symptoms such as social anxiety and depression also in ET patients. Although avoiding socialization seemingly decreases social anxiety in these patients, it does not provide the possible positive feed-back from society that is needed. Prescribing antidepressant therapy (Davis *et al.*, 2014) and cognitive behavioural therapy might improve the emotional wellbeing of the patient, as it reduces anxiety, negative thoughts, negative expectations, interpretation of possible negative social scenarios and raises low self-assessment.

Though the study involved a small number of patients and the given sample does not allow to make conclusions about the whole Latvian population, it is the first investigation of patients with movement disorders with detailed neurological and psychic examination in Latvia.

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SOCIĀLĀS TRAUKSMES IZPĒTE PACIENTIEM AR ESENCIĀLU TREMORU UN PARKINSONA SLIMĪBU LATVIJAS POPULĀCIJĀ

Esenciāls tremors tiek uzskatīts par biežāko kustību traucējumu slimību pasaulē, taču tās nemotorie simptomi klīniskā praksē ir pēti salīdzinoši maz. Tāpēc mērķis bija izpētīt sociālas trauksmes simptomus un to saistību ar motoriem simptomiem 40 esenciālā tremora (ET) pacientiem un izvērtēt tos arī 35 Parkinsona slimības (PS) un 39 kontroles grupas pacientiem Latvijas populācijā, veicot neiroloģisku izmeklēšanu, 5 pašaptaujas anketu aizpildīšanu (*DASS*, *BDI*, *SIAS*, *SPS*, *STAI*), klīnisku interviju. ET pacientiem netika konstatēta statistiski ticama korelācija starp tremora izteiktību un *SIAS*-satraukumu sociālo kontaktu laikā ($p > 0.05$), bet ar *SPS*-sociālu fobiju pastāvēja vidēja korelācija ($r_s = 0.35$; $p < 0.05$). ET grupā, vadoties pēc *SSK-10*, sociālas trauksmes (fobijas) slimības, diagnozi konstatēja 50% pacientu, bet pēc *DSM-5* — 35%. PS grupā sociālas trauksmes diagnostiskajiem kritērijiem atbilda 42,86% pēc *SSK 10* un 25,71% pēc *DSM-5*. Arī kontroles grupas pacientiem sociālas trauksmes diagnostiskajiem kritērijiem atbilda 20,51% pēc *SSK 10* un 7,69% pēc *DSM-5*.