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ORIGINAL ARTICLE

Depression, Anxiety, Personality Traits, and Gender Differences in Patients with Primary Restless Leg Syndrome

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ABSTRACT

Aim: This study aimed to investigate some personal traits accompanying primary restless leg syndrome

Method:The study included 75 patients with restless leg syndrome who visited Physical Therapy and Rehabilitation outpatient clinic in Malatya Research and Training Hospital, between February and June in 2016. The diagnostic criteria for restless leg syndrome were determined according to the 2003 minor criteria of the International restless leg syndrome Working Group. The depression and anxiety levels of the patients were evaluated using Beck depression and Beck anxiety scales. Hacettepe Personality Inventory (Team A) was used to detect personality traits.

Results:The gender-based results indicated statistically significant differences in some subtypes such as neurotic symptoms, psychotic symptoms, personal adaptation, and general adaptation. Higher neurotic and psychotic symptoms (with less scores), lower personal adaptation score, and higher general adaptation score were observed in females relative to males. However, males were younger than females.

The patient group was very similar to the general population in terms of self-fulfillment, family relation, social relation, social norm, antisocial personality features, social adaptation, and general adaptation sub-parameters, but emotional stability, neurotic and psychotic symptoms, and personal adaptation sub-parameters were different and stayed under the 25% percentile.

In multiple regression analysis, evaluation of personality sub-features with Beck anxiety scale results detected significant correlations between emotional stability, social norms, and personal self-reliance. Evaluation of personality sub-features of the patients according to Beck depression scale results also revealed a statistically significant correlation between psychotic symptoms.

Conclusion:Patients with restless leg syndrome showed gender-based differences in neurotic, psychotic, emotional stability, and personal adaptation parameters compared with the general population.

Keywords: Anxiety, depression, personality disorder, restless leg syndrome, Willis-Ekbom syndrome

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INTRODUCTION

Restless leg syndrome (RLS) is a dysesthesia syndrome characterized by an unidentified, abnormal feeling in the lower extremities [1]; 39% of the cases are seen together with psychiatric comorbidities [2]. Therefore, the psychosomatic diseases should be taken into account in patients with RLS.

This study evaluated outpatients who visited the clinic and were diagnosed with primer RLS according to Hacettepe Personality Inventory (HPI). Depression and anxiety levels were also considered. It is better to know related cases and conditions for an efficient treatment and follow-up of RLS.

METHOD

The study included 75 patients with RLS who visited Physical Therapy and Rehabilitation outpatient clinic in Malatya Research and Training Hospital, between February and June in 2016. The diagnostic criteria of RLS were determined according to the 2003 minor criteria of the International RLS Working Group. Secondary RLS causes such as pregnancy, diabetes, anemia, and kidney failure were eliminated.

Age, gender, height, weight, and body mass index (BMI) of the patients were recorded. The depression and anxiety levels of the patients were evaluated using Beck

depression and Beck anxiety scales. HPI (Team A), which contained 168 questions, was used to detect personality traits of the patients. The ones whose validity scores (G) were higher than 5 (out of 8) were included in the study. The results were evaluated according to the percentile scores of the social norm groups.

Hacettepe Personality Inventory

HPI was first created in 1976. Then, a "short form" (Team B) was also developed in 1985. In 1978, the "HPI Team A" was obtained from a revised version of "HPI Trial Team," which was prepared in 1976.

Team A is formed from eight subscales, four of them for "personal adaptation" and the other four for "social adaptation."Each subscale has 20 items. Eight items are also used for validity scores (G). This inventory contains 168 items. HPI Team A gives 13 scores:3 total, 8 subscales, and 2 validity scores. The general adaptation score is obtained from the sum of personal and social adaptation scores.

A system that allows direct interpretation of the raw scores obtained from the HPI inventory was developed. According to this system, some critical and important values of the percentile scores about social norm groups were already transferred. For this reason, raw score equivalents of the percentile mean values represent the nonconforming critical interval between 75% and 50% percentiles.

In the development of HPI, the system is organized in such a way that rising scores indicate compatibility and decreasing scores indicate incompatibility. The 75% percentile shows the average, 50% percentile shows the mean, and 25% indicates the first quartile in score distribution. This percentile-based categorization gives the basic information to evaluate the HPI results.

Statistical Analysis

The statistical evaluation was conducted using the SPSS version 21 (SPSS Inc., IL, USA). The Kolmogorov–Smirnov test was applied to check the distribution of parameters. Categorical data were presented as numbers and percentages, and continuous data were expressed as mean ± standard deviation. The difference between the categorical variables was determined using the chi-square test. The independent Student t test was used to determine the difference in normally distributed data, and the Mann–Whitney U test was used for comparing medians for the non-parametrically distributed variables. Spearman correlation test is used for correlation analysis. A P value less than 0.05 was considered to be statistically significant.

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RESULTS

This study included 75 patients who were 15–33 years old (43 females, 32 males). The average BMI value of the patients was 25.0±3.58 kg/m2, the average Beck depression value was 15.0 (low heat burden), and the average Beck anxiety value was 20 (moderate anxiety).

HPI values of the patients are summarized in Table 1. The scores that were taken from the Beck depression and Beck anxiety questionnaires, and the gender-baseddistribution of the HPI scores are given in Table 2. The gender-based results indicated statistically significant differences in some subtypes such as neurotic symptoms (P=0.001), psychotic symptoms (P=0.049), personal adaptation (P=0.14), and general adaptation (P=0,005). Higher neurotic and psychotic symptoms (with less scores), lower personal adaptation score, and higher general adaptation score were observed in females relative to males. However, males were younger than females (P=0.017).

The results of the Beck depression inventory are summarized in Table 3, and the results of the Beck anxiety inventory are summarized in Table 4. The distribution of the HPI-dependent personality traits according to social percentileare summarized in Table 5. According to social percentile, the patient group was very similar to the general population in terms of self-fulfillment, family relation, social relation, social norm, antisocial personality feature, social adaptation, and general adaptation sub-parameters, but emotional stability, neurotic and psychotic symptoms, and personal adaptation sub-parameters were different and stayed under the 25% percentile.

In multiple regression analysis, evaluation of personality sub-featureswith Beck anxiety scale results detected significant correlations between emotional stability (t= –3.2; P=0.002), social norms (t=1.8; P=0.047), and personal self-reliance (t=2.1; P=0.040). In addition, personality sub-features of the patients were also evaluated according to Beck depression scale result and a statistically significant correlation was detected between psychotic symptoms (t= –2.4; P=0.016).

In the Spearman correlation analysis, a negative correlation was found between Beck anxiety and both emotional stability (r= –.533; P=0.000) and self-fulfillment (r=-.470; P=0.000). No correlation was found between Beck anxiety and social norms (P=0.807). Moreover, a negative correlation was detected between Beck depression scale and psychotic symptoms (r= –.548; P=0.000).

DISCUSSION

RLS or Willis-Ekbom disease is a neurological disorder characterized with a sudden unpleasant desire to move legs. Symptoms are usually seen at night. They start or worsen at the resting time and decrease with the continuation of the movement. Recent studies have reported the prevalence of the disease to be 5%–10%. It can be primary or secondary (iron deficiency dependent), but usually it is chronic [4].

The clinical procedure changes according to age at which this condition starts. Although RLS is known as a benign disease, it affects the quality of life in physical, psychological, and even social perspectives. Five essential criteria have been determined by theInternational RLS Working Group for the clinical diagnosis of RLS (5).

In the literature, recent studies have indicated that both genetic and environmental factors play a role in the development of primary and secondary RLS [6]. In disease pathogenesis, genetic disposition, alterations in intracerebral iron homeostasis, and dopaminergic dysfunction have been characterized very well [7]. RLS incidence increases in iron deficiency and kidney diseases. A poor correlation was also found between RLS incidence and some clinical cases such as cardiac disease, hypertension, diabetes, migraine, and Parkinson disease [6].

RLS can easily be misdiagnosed in different subspecialty practices. The most common comorbidity of RLS is sleep disorder. Other RLS comorbidities have not been described very well. Some periodical leg movements are other most common comorbidities of RLS [8,9]. RLS also occurs together with different psychiatric disorders such as adult inattention, hyperactivity disorder (ADHD), depression, and anxiety. The synaptic dysfunction in dopaminergic transmission is the common pathway for the development of these diseases [10]. ADHD can sometimes be mixed with RLS. A high-level depression, anxiety, and ADHD were observed in mothers of the children who were diagnosed with RLS. Fathers had high-level personality disorders, too. The cluster B type personality disorders were observed more in parents with RLS [10]. It is known that the pathophysiology of migraine and RLS is related to dysfunction of the heritable dopaminergic system. The literature shows that the risk for RLS is higher in migraine patients[11].

RLS-related personality disorders have not been studied well. Turkel Y [12] et al. evaluated patients with RLS using Minnesota Multiphase Personality Questionnaire. High hypochondriasis, hysteria, psychasthenia, and hypertension scores were observed relative to the control group. Another study showed a high correlation between RLS and neuroticism. As a personality disorder, neuroticism partially explains the association between RLS and panic disorder/major depression. However, more studies should be conducted to understand the underlying mechanism of this relation [13].

The study by Trautman14 et al. indicated that patients with RLS showed more depressive disorders, more psychopathological symptoms, and less well-being, but no difference was detected in their personality traits. More neuroticism was thought to be related to more frequent depression [14].

Kim15 et al. reported that somatization was related to bad sleep quality in patients with RLS. They also stated that these sleep disorders increased with the severity of the anxiety disorder symptoms.

The study by Mungan16 et al. evaluated polysomnographs of 18 patients with RLS. Their results showed that 77% of the patients had insomnia, 55% of the patients had a sleepy state during the day, 13% had snoring problem, and 3% had sleep apnea. The present study did not investigate any subjective sleep complaints in the patients.. An epidemiological study conducted by Broman17 et al. in 1962 found the RLS prevalence to be 18.8%. The study also found a correlation between insomnia and daily stress. Another study by Ulfberg9 et al. reported the RLS incidence to be 5%; it also found a correlation of this disease with sleep disorders (such as insomnia, excessive sleepiness, and periodical feet movement during the sleep) and depressed mode.

In the present study, depression and anxiety scores were not high (the average depression score was low; the average anxiety score was moderate). Statistically significant differences were observed between genders in terms of neurotic symptoms, psychotic symptoms, personal adaptation, and general adaptation scores. In females, neurotic and personal adaptation scores were higher and personal adaptation scores were lower. However, their general adaptation scores were higher relative to males. According to social percentile, the patient group showed different emotional stability and neurotic and psychotic symptoms from the general population; personal adaptation sub-parameters were different and stayed under the 25% percentile.

In summary, psychosomatic symptoms are higher and personal adaptation and well-being are lower in patients with RLS. Also, Beck anxiety scores have a correlation with self-fulfillment, social norms, and emotional stability. Moreover, psychotic symptoms are also correlated with Beck depression scores, but they are not correlated with other subpersonality features. The present correlation analysis results indicate that as anxiety increases, emotional stability and self-fulfillment decrease in patients with RLS. In addition, as depression increases, psychotic symptoms increase, too (score decreases).

Medical treatments with low-dose dopaminergic agonists were suggested for RLS. In refractory cases, benzodiazepines and opioids may be effective. In less severe cases, patients should avoid stimulants and the underlying factors should be treated [7]. Daily gabapentinenacarbil (Gen) intake is thought to be effective intreating primary (severe) RLS [18]. In clinical studies,

pregabalin was indicated to increase the quality of life by attenuating RLS symptoms and decreasing sleep disorders. Its augmentation risk is relatively lower in comparison to other drugs [19]. Severe complications (such

as treatment-relatedimpulsive control disorder (ICD) and augmentation) have not been reported in the dopaminergic treatment against RLS. Patients with ICD should be evaluated for augmentation [20].

CONCLUSIONS

As evident from the literature, RLS occurs with several comorbid diseases such as insomnia, migraine, ADHD, depression, anxiety, personality disorders (hysteria, psychasthenia, and neuroticism), somatization, and periodical leg movements at sleep. The drugs prescribed for insomnia and depression treatment may aggravate RLS symptoms. Therefore, having awareness of RLS comorbid diseases is necessary, and patients with RLS should be followed because of psychosomatic comorbidities.

REFERENCES

[1] Kısabay A, Sarı US, Korkmaz T, et al. Evaluation of neurodegeneration through visual evoked potentials in restless legs syndrome. Acta Neurol Belg. 2016;116(4):605-613. Epub 2016 Apr 6.

[2] Kallweit U, Werth E, Seiz A, et al. Psychiatric Comorbidities in Restless Legs Syndrome. J Neuropsychiatry Clin Neurosci. 2016;28(3):239-42. doi: 10.1176/appi.neuropsych.15030055. Epub 2016 Mar 28

[3] Özgüven, E. (1992). Hacettepe Kişilik Envanteri (HKE), Psikolojik Danışma Rehberlik Ve Eğitim Merkezi (PDREM), ANKARA (in Turkish)

[4] Marelli S, Galbiati A, Rinaldi F, et al. Restless legs syndrome/Willis Ekbom disease: new diagnostic criteria according to different nosology.Arch Ital Biol. 2015 Sep 1;153(2-3):196-205. doi: 10.12871/0003982920152343.

[5] Pratt DP. Restless Legs Syndrome/Willis-Ekbom Disease and Periodic Limb Movements: A Comprehensive Review of Epidemiology, Pathophysiology, Diagnosis and Treatment Considerations. Curr Rheumatol Rev. 2016;12(2):91-112.

[6] Trenkwalder C, Allen R, Högl B, et al. Restless legs syndrome associated with major diseases: A systematic review and new concept. Neurology. 2016 Apr 5;86(14):1336-43. doi: 10.1212/WNL.0000000000002542. Epub 2016 Mar 4.

[7] Ruppert É, Batailiard M, Bourgin P. [RESTLESS LEGS SYNDROME--WILLIS-EKBOM DISEASE]. Rev Prat. 2015 Sep;65(7):963-6. [Article in French]

[8] Batool-Anwar S, Li Y, De Vito K, et al. Lifestyle Factors and Risk of Restless Legs Syndrome: Prospective Cohort Study. J Clin Sleep Med. 2016 Feb;12(2):187-94. doi: 10.5664/jcsm.5482.

[9] Ulfberg J, Bjorvatn B, Leissner L, et al. Comorbidity in restlesslegssyndromeamong a sample of Swedish adults. Sleep Med. 2007;8(7-8):768-72. Epub 2007 Sep 6.

[10] Steinlechner S, Brüggemann N, Sobottka V, et al. Restlesslegssyndrome as a possible predictor for psychiatric disorders in parents of children with ADHD.Eur Arch Psychiatry Clin Neurosci. 2011 Jun;261(4):285-91. doi: 10.1007/s00406-010-0140-z. Epub 2010 Sep 4.

[11] Ferreira KS, Eckeli A, Dach F, et al. Comorbidities, medications and depressive symptoms in patients with restless legs syndrome and migraine. Arq Neuropsiquiatr. 2013 Feb;71(2):87-91. Epub 2013 Jan 11.

[12] Turkel Y, Oguzturk O, Dag E, et al. Minnesota Multiphasic Personality Inventory profile in patients with restless legs syndrome. Asia Pac Psychiatry. 2015 Jun;7(2):153-6. doi: 10.1111/appy.12151. Epub 2014 Sep 15.

[13] Kalaydjian A, Bienvenu OJ, Hening WA, et al. Restless Legs Syndrome and the five-factor model of personality: results from a community sample. Sleep Med. 2009 Jun;10(6):672-5. doi: 10.1016/j.sleep.2008.07.004. Epub 2008 Nov 8.

[14] Trautmann E, Barke A, Frisch JU, et al. Restless Legs Syndrome: Psychiatric Comorbidities Are More Important Than Neuroticism. Behav Sleep Med. 2015;13(5):375-86. doi: 10.1080/15402002.2014.919917. Epub 2014 Jun 19

[15] Kim JB, Koo YS, Eun MY, et al. Psychosomatic symptom profiles in patients with restless legs syndrome. Sleep Breath. 2013 Sep;17(3):1055-61. doi: 10.1007/s11325-013-0800-0. Epub 2013 Jan 23.

[16] Mungan S, Ozcan M, Orhan G, et al. Clinical and polysomnographic features of patients with Restless Legs Syndrome. J Pak Med Assoc. 2016 May;66(5):568-73.

[17] Broman JE, Mallon L, Hetta J. Restless legs syndrome and its relationship within somnia symptoms and daytime distress: epidemiological survey in Sweden. Psychiatry Clin Neurosci. 2008 Aug;62(4):472-5. doi: 10.1111/j.1440-1819.2008.01825.x

[18] Lee DO, Buchfuhrer MJ, Garcia-Borreguero D, et al. Efficacy of gabapentin enacarbil in adult patients with severe primary restlesslegs syndrome. Sleep Med. 2016 Mar;19:50-6. doi: 10.1016/j.sleep.2015.11.002. Epub 2015 Nov 14.

[19] Griffin E, Brown JN. Pregabalin for the Treatment of Restless Legs Syndrome. Ann Pharmacother. 2016 Jul;50(7):586-91. doi: 10.1177/1060028016643097. Epub 2016 Apr 18.

[20] Heim B, Djamshidian A, Heidbreder A, et al. Augmentation and impulsive behaviors in restless legs syndrome: Coexistence or association? Neurology. 2016 Jun 3. pii: 10.1212/WNL.0000000000002803. [Epubahead of print]

