Determining the Frequency of Restless Legs Syndrome in the Adult Population

Erişkin Popülasyonda Huzursuz Bacak Sendromu Sıklığının Belirlenmesi

Neşe KISKAÇ[1], Mehmet ZORLU[2]

[1]İstanbul Gelişim University Faculty of Health Sciences, Department of Nursing, İstanbul, Turkey
[2]Bezmialem Vakıf University Faculty of Medicine Hospital, Clinic of Internal Medicine, İstanbul, Turkey

ABSTRACT

Objective: Restless legs syndrome (RLS) is a chronic disease that usually occurs in the legs, resulting in involuntary movement of the legs with uncomfortable sensations. RLS negatively affects the quality of life of individuals. In this study, it is aimed to increase awareness by determining the frequency of RLS in the adult population.

Methods: The study was a descriptive and cross-sectional study. In the study, 565 individuals aged 18 and over participated. The data were collected online from individuals with the form of describing the personal characteristics of the individuals, the RLS Diagnostic Criteria Questionnaire, and the RLS Severity Rating Scale. IBM SPSS statistics 26.0 program was used in the analysis of the data.

Results: In this study, the frequency of RLS was 17.5% and the severity score was 19.22±6.97 (moderate). The rate of admitting to a health institution due to the symptoms of individuals is 5.8%. In this study, the frequency of RLS was found to be significantly higher in those with diabetes, hypertension, age, and high body mass index.

Conclusion: Although most of the participants in this study had symptoms of RLS, it was seen that they were not admitted to a health institution. If these individuals are not treated, their quality of life gets affected negatively, and this negatively affects the quality of health care. In order to increase the quality of health care, RLS should be screened especially in risky groups and treatment should be started in determined patients.

Keywords: Care, restless legs syndrome, population, prevalence

ÖZ

Amaç: Huzursuz bacak sendromu (HBS), genellikle bacaklarda oluşan, rahatsızlık verici hislerle birlikte bacakları istem dışı oynatma durumuyla ortaya çıkan kronik bir hastalıktır. Bu hastalık bireylerin yaşam kalitesini olumsuz şekilde etkilemektedir. Bu çalışmada, erişkin popülasyonda HBS sıklığının belirlenerek farkındalığın artırılması amaçlamaktadır.

Yöntemler: Çalışma tanımlayıcı ve kesitsel bir araştırmadır. Çalışmaya 18 yaş ve üzeri 565 birey katılmıştır. Veriler bireylerden; bireylerin kişisel özelliklerini tanımlama formu, HBS Tanı Kriterleri Anket Formu ve HBS Şiddeti Derecelendirme Skalası ile online olarak toplanmıştır. Verilerin analizinde IBM SPSS statistics 26.0 programı kullanılmıştır.

Bulgular: Bu çalışmada HBS sıklığının %17,5, HBS şiddetinin ise 19,22±6,97 (orta düzey) olduğu belirlenmiştir. Bireylerin belirtilerinden dolayı sağlık kuruluşuna başvurma oranı %5,8 idi. Bu çalışmada diyabeti, hipertansiyonu, yaşı ve vücut kitle indeksi yüksek olanların HBS sıklığı anlamlı şekilde daha yüksek bulunmuştur.

Sonuç: Bu çalışmada katılımcıların büyük bir kısmında HBS belirtileri görülmesine rağmen, katılımcıların çoğunun bir sağlık kuruluşuna başvurmadığı görülmektedir. Bu bireyler tedavi edilmediği takdirde yaşam kaliteleri olumsuz olarak etkilenmekte ve bu durum da sağlık bakım kalitesini negatif etkilemektedir. Sağlık bakım kalitesinin yükselmesi için HBS'nin özellikle riskli gruplarda taranması ve belirlenen olgularda tedavisinin başlanması gerekmektedir.

Anahtar Sözcükler: Bakım, huzursuz bacak sendromu, popülasyon, prevalans

Introduction

Restless legs syndrome (RLS) is a chronic disease that usually occurs in the legs, resulting in involuntary movement of the legs with uncomfortable sensations. In this syndrome, symptoms occur mostly at night and when individuals go to resting state, they decrease or temporarily improve with movement and walking (1). RLS can occur primarily with genetic transmission, and secondarily in conditions such as drug use, caffeine consumption, Parkinson's disease, diabetes, fibromyalgia, hypothyroidism, multiple sclerosis, end-stage kidney disease, iron deficiency anemia, and pregnancy (2). Although RLS, which is common in society, is a treatable disorder, it cannot be adequately defined by clinicians and therefore cannot be treated (3). Studies indicate that 5-15% of the population may have RLS (4). Since symptoms occur at night and at rest in individuals, they significantly affect sleep, decrease quality of life, increase psychological disorders such as depression and anxiety, decrease work efficiency, and cause social and economic burden (5,6). RLS has an important place in the health care discipline in terms of holistic evaluation of the patient, as it negatively affects the quality of life of individuals. Although there are studies on RLS in the literature, there is a need for new studies that will raise awareness because it is common in the society (4). This study aims to increase awareness by determining the frequency of RLS in the adult population.

Methods

Study Design

The study was descriptive and cross-sectional.

Sample of the Research

The sample of the study consisted of 565 individuals aged 18 and over who voluntarily agreed to participate in the study. They were informed about the research and their rights, and their "informed consent" was obtained before the research. All the rights of the participants were respected and the principles of voluntariness and confidentiality were paid attention to.

Data Collection Method

Data were collected by online survey method between 09 May and 09 June 2023.

Data Collection

While collecting the data, a form describing the personal characteristics of the individuals, the RLS Diagnostic Criteria Questionnaire Form and the RLS Severity Rating scale were used.

Personal Characteristics Identification form of Individuals

The form was created by scanning the literature. It was a 13-item questionnaire including the following questions: age, gender, educational status, height, weight, presence of any additional disease, whether the patient consumed more than a glass in total from drinks such as tea, coffee, instant coffee, cola, cold tea, whether the patient engaged in activities such as regular exercise, walking, yoga, and relaxation exercises for at least 30 minutes in his/her spare time apart from his/her work, smoking and alcohol use, presence of hypertension, being overweight, and whether the patient was admitted to a health institution due to his/her complaints.

Restless Legs Syndrome Diagnostic Criteria Questionnaire form (RLSDCQF)

The diagnostic form was created by the International RLS Working Group in 1995 based on the patient's history. The form consists of 5 questions. RLS is diagnosed by answering "yes" to all questions in the form (7). The reliability and validity study of the form in Turkey was performed by Sevim et al. (8), and it was reported that the cronbach alpha coefficient of each item was greater than 0.81.

Restless Legs Syndrome Severity Rating Scale (RLSRS)

The scale was developed by the International RLS Working Group. The scale consists of 10 questions. RLS severity values in each question are graded as no effect of RLS (0 points) or very severe effects (4 points). Thus, a total score ranging between 0 and 40 is obtained; A score of 1-10 indicates mild disease, a score of 11-20 indicates moderate disease, a score of 21-30 indicates severe, and a score of 31-40 indicates very severe disease. The RLSRS is a scale that has been used in many studies in our country and has been shown to be valid and safe (9-11). The scale was adapted in our country by Ay et al. (12), and the cronbach alpha value was found to be 0.89. In this study, the cronbach alpha value was found to be 0.887.

Statistical Analysis

IBM SPSS statistics 26.0 program was used for statistical analysis in the study. While evaluating the study data, in addition to descriptive statistical methods (mean, standard deviation, frequency, percent), the Student's t-test was used to compare normally distributed data, and the Mann-Whitney U test was used to compare data that did not show normal distribution. The chi-squared test was used to evaluate the relationships between the variables. The results were evaluated at the 95% confidence interval and the significance level of $p < 0.05$.

Ethical Aspect of the Study

Before starting the study, permission obtained from the Ethics Committee of İstanbul Gelişim University with the date of 19.04.2023 and the decision number 2023-04-87. Permission was obtained from the scale's authors. Participants who voluntarily accepted to participate in the study were informed about the research and their rights as necessary, and their "informed consent" was obtained before the research. All the rights of the participants were respected and the principles of voluntariness and confidentiality were paid attention to.

Results

The personal characteristics of the individuals participating in the study are shown in Table 1. It was determined that 65.8% of the participants were women, 51.3% were university graduates,

Table 1. Personal characteristics of individuals and the frequency and severity of restless legs syndrome (n=565)

	n	%
Gender		
Male	193	34.2
Female	372	65.8
Age (mean)	37.68±12.07	
Body mass index (mean)	26.09±4.82	
Educational status		
Literate	17	3.0
Primary school graduate	43	7.6
Secondary school graduate	32	5.7
High school graduate	183	32.4
Graduated from a university	290	51.3
Those with diabetes	41	7.3
Those with COPD	6	1.0
Those with cardiovascular disease	22	3.9
Those with chronic kidney failure	1	0.2
Those treated for vitamin B12 deficiency (in the last 1 year)	77	13.6
Those treated for iron deficiency (in the last 1 year)	81	14.3
Those receiving treatment for Mg deficiency (in the last 1 year)	21	3.7
Those with hypertension or those who are overweight	214	37.9
Those with other comorbidities	82	14.5
Those who consume beverages such as tea, coffee, cola, cold tea more than 1 glass a day	426	75.4
Those who do activities such as exercise, walking, yoga, relaxation exercises for at least 30 minutes a day while working or at home, apart from routine work.	146	25.8
Smokers	185	32.7
Alcohol users	84	14.9
Those with RLS	99	17.5
Those who are admitted to any health institution due to symptoms	33	5.8
Total severity score in patients with RLS (mean)	19.22±6.97	

Descriptive statistical methods (mean, standard deviation, frequency, percent).
RLS: Restless legs syndrome

and the mean age was 37.68±12.07. While the mean body mass index (BMI) of the individuals was found to be 26.09±4.82 and the rate of being hypertensive or overweight was 37.9%. (Table 1). The rate of those who consumed more than 1 glass of beverages such as tea, coffee, cola, and cold tea per day was 75.4%, the rate of those who did activities such as exercise, walking, yoga, relaxation exercises for at least 30 minutes a day outside of their routine work or at home was only 25.8%, the rate of those who smoked was 32.7%, and the rate of alcohol users was 14.9% (Table 1). As a result of the RLSDCQF, RLS was diagnosed in 99 (17.5%) of 565 individuals and applied the mean score in RLSRS was determined as 19.22±6.97 (moderate level). The mean scores of RLS severity were compared between male and female genders and no significant relationship was found (p=0.692). Thirty-three (5.8%) of the participants were admitted to a health institution due to RLS symptoms. (Table 1).

The relationship between the personal characteristics of the participants and RLS is shown in Table 2. A significant correlation was found between the individuals' age, BMI and RLS (p<0.05). RLS increased as age and BMI increased. A significant relationship was found between the education levels of the individuals, the presence of diabetes and hypertension, and RLS (p<0.05).

Discussion

In this study, RLS was found in 17.5% of the adult population, and the mean score was 19.22±6.97 (moderate level), as a result of RLSRS applied to those with RLS (n=99) (Table 1). In the study conducted by Demirci and Şahin (13) with 447 university students with an average age of 20.3±1.76 years, it was determined that 7.6% of the students had RLS and the mean severity was 13.1±5.44. In studies conducted in various patient groups in our country, the incidence of RLS was between 8% and 30% (14-16), and in studies conducted with individuals without any

disease, the frequency was between 2% and 9% (17-19). In the study conducted by Phillips et al. (3), it was determined that the frequency of RLS was 10% and increased with age. In this study, similar results were found with the literature. In the study, RLS was found to be higher in groups with diabetes and hypertension. In the literature, the results of the studies conducted in similar patient groups are similar to this study.

In the study, no significant relationship was found in terms of RLS between those who received treatment for iron, B12 and Mg deficiencies in the last 1 year and those who did not have iron, B12 or Mg deficiency (p>0.05). RLS can be passed on primarily through genetic inheritance, or it can occur secondary to drug use, caffeine consumption, Parkinson's, diabetes, fibromyalgia, hypothyroidism, multiple sclerosis, end-stage kidney disease,

Table 2. The relationship between personal characteristics of individuals and restless legs syndrome (n=99)

	n	p
Gender		
Male	33	0.907
Female	66	
Age		
Average age of patients with RLS	42.79±10.35	0.001
Mean age of those without RLS (n=466)	36.59±12.14	
BMI		
Mean BMI of those with RLS	27.64±5.25	0.001
Mean BMI of those without RLS (n=466)	25.76±4.67	
Educational status		
Literate	2	
Primary school graduate	15	
Secondary school graduate	8	0.019
High school graduate	28	
Graduated from a University	46	
Consumption of beverages such as tea, coffee, cola, cold tea more than 1 glass a day		
Yes	81	
No	12	0.209
Sometimes	6	
The state of doing activities such as exercise, walking, yoga, relaxation exercise for at least 30 minutes a day outside of routine work or at home		
Yes	22	
No	58	0.494
Sometimes	19	
Presence of diabetes		
Those with diabetes	15	0.001
Non-diabetic individuals	84	
B12 deficiency treatment (in the last 1 year)		
Those treated for B12 deficiency	17	0.258
Those without B12 deficiency	82	
Status of receiving iron deficiency treatment (in the last 1 year)		
Those receiving treatment for iron deficiency	16	0.568
Those without iron deficiency	83	
Receiving Mg deficiency treatment (in the last 1 year)		
Those treated for Mg deficiency	7	0.051
Those without Mg deficiency	92	
Presence of hypertension		
Those with hypertension	14	0.033
Those without hypertension	85	
Descriptive statistical methods (mean, standard deviation, frequency), Student's t-test, Mann-Whitney U test ,The chi-squared test. RLS: Restless legs syndrome		

iron deficiency anemia, and pregnancy (2). In the case report of Sayin and Atilla (20), it was found that iron deficiency increased the symptoms of RLS, and in the study conducted by Çetinkaya et al. (15), the frequency of RLS was 12.5% in patients with iron deficiency anemia. The result of this research is not similar to the literature. In this study, those treated for iron deficiency, B12 or Mg deficiencies in the last 1 year were included in the sample. Treatments taken by individuals during this period may have eliminated iron, B12 and magnesium deficiencies and may have been effective in reducing the symptoms of RLS causing discomfort. Therefore, the results may differ from the literature.

In this study, a significant relationship was found between the education levels of individuals and RLS (p<0.05). When statistical analysis was examined in detail, primary school graduates had higher rate of RLS. The mean age of primary school graduates (51.02±10.54) was higher than other graduates. A significant correlation was found between age and the frequency of RLS (p<0.05). According to this analysis, although being a primary school graduate did not directly affect the rate of RLS, it may have affected the rate of RLS indirectly due to higher average age.

Study Limitations

In the study, a significant relationship was found between BMI and RLS (p<0.05). The rate of RLS was higher in those with higher BMI. Both age and BMI were found to be higher in patients with RLS compared to those without RLS. According to this result, as the age increased in patients with higher BMI as in primary school graduatesthe rate of RLS also increased.

Conclusion

As a result, it was determined that the frequency of RLS in the adult population was 17.5% and the severity was 19.22±6.97 (moderate level). Although 17.5% of the participants had symptoms, only 5.8% of them were admitted to a health institution because of the symptoms. RLS can be treated when detected. However, as a result of the study, it was determined that a high rate of patients was not admitted to a health institution. The life quality of individuals who cannot be treated will be adversely affected by these symptoms. In this study, the rate of RLS was found to be significantly higher in those with diabetes, hypertension, older age, and higher BMI. The negative impact on the quality of life of individuals also negatively affects the quality of health care. In order to increase the quality of health care, RLS should be screened especially in risky groups and treatment should be started in determined patients.

Ethics

Ethics Committee Approval: Before starting the study, permission obtained from the Ethics Committee of İstanbul Gelişim University with the date of 19.04.2023 and the decision number 2023-04-87. Permission was obtained from the scale's authors.

Informed Consent: Obtained.

Peer-review: Externally peer reviewed.

References

1. Picchietti DL, Hensley JG, Bainbridge JL, Lee KA, Manconi M, McGregor JA, et al. Consensus clinical practice guidelines for the diagnosis and treatment of restless legs syndrome/Willis-Ekbom disease during pregnancy and lactation. Sleep Med Rev 2015;22:64-77.

2. Antelmi E, Rocchi L, Latorre A, Belvisi D, Magrinelli F, Bhatia KP, et al. Restless legs syndrome: Known knowns and known unknowns. Brain Sci 2022;12:118.

3. Phillips B, Young T, Finn L, Asher K, Hening WA, Purvis C. Epidemiology of restless legs symptoms in adults. Arch Intern Med 2000;160:2137-41.

4. Kutner NG, Zhang R, Huang Y, Bliwise DL. Racial differences in restless legs symptoms and serum ferritin in an incident dialysis patient cohort. Int Urol Nephrol 2012;44:1825-31.

5. Guo S, Huang J, Jiang H, Han C, Li J, Xu X, et al. Restless legs syndrome: From pathophysiology to clinical diagnosis and management. Front Aging Neurosci 2017;9:1-14.

6. Winkelman JW, Armstrong MJ, Allen RP, Chaudhuri KR, Ondo W, Trenkwalder C, et al. Practice guideline summary: Treatment of restless legs syndrome in adults: Report of the Guideline Development, Dissemination, and Implementation Subcommittee of the American Academy of Neurology. Neurology 2016;87:2585-93.

7. Yüksel B, Seven A, Yıldız Y, Kucur KS, Gözükara İ, Polat M, Şencan H, et al. Restless Leg Syndrome In Pregnancy. The Journal of Gynecology - Obstetrics and Neonatology 2015;12:144-6.

8. Sevim S, Dogu O, Camdeviren H, Bugdayci R, Sasmaz T, Kaleagasi H, et al. Unexpectedly low prevalence and unusual characteristics of RLS in Mersin, Turkey. Neurology 2003;61:1562-9.

9. Güzel S, Kurtcebe Z, Şencan S, Turhan N. Hormonal Influences on the Severity of Restless Legs Syndrome, Sleep and Health-Related Quality of Life in Women of Reproductive Age. Turk J Phys Med Rehap 2013;59:45- 51

10. Gökçal E, Tamer S, Kiremitçi Ö. The Frequency of Restless Leg Syndrome in Hospital Staff and the Effect on Life, Sleep Quality. Van Tıp Derg 2015;22:260-5.

11. Çakır T, Doğan G, Subaşı V, Filiz MB, Ülker N, Doğan ŞK, et al. An evaluation of sleep quality and the prevalence of restless leg syndrome in vitamin D deficiency. Acta Neurol Belg 2015;115:623-7.

12. Ay E, Helvacı Yılmaz N, Arıcı Düz Ö, Öze FF. Validity and reliability of the Turkish version of the international restless legs syndrome study group rating scale. Acta Medica Alanya 2019;3:105-10.

13. Demirci S, Şahin AT. The frequency of restless legs syndrome and relationship with quality of life among university students. Cukurova Med J 2016;41:423-8.

14. Özkayran T, Çetin S, Acar H, Meral H, Öztürk O, Aydemir T, et al. Frequency and Clinical Features of Restless Leg Syndrome in Patients with Idiopathic Parkinson's Disease. Parkinson Hast Harek Boz Der 2006;9:33-7.

15. Çetinkaya Y, Yılmaz NÇ, Türkoğlu R, Gencer M, Tireli H. The relationship between tension-type headache patients with anemia and restless-leg syndrome. J Neurol Sci 2009;26;305-10.

16. Yüksel Ş, Yılmaz M, Demir M, Ertürk J, Acartürk G, Koyuncuoğlu HR, Sezer MT. Restless Legs Syndrome and Associated Factors in Dialysis Patients. Türkiye Klinikleri J Med Sci 2009;29;344-52.

17. Yılmaz KO, Şadiye A, Bayram FB, Esenboğa T, Yapa AB, Çoker B, Oğuz N. Tıp fakültesi öğrencilerinde huzursuz bacak sendromu prevalansı. Parkinson Hastalıkları ve Hareket Bozuklukları Dergisi 2009;12:13-7.

18. Sevim S, Dogu O, Camdeviren H, Bugdayci R, Sasmaz T, Kaleagasi H, et al. Unexpectedly low prevalence and unusual characteristics of RLS in Mersin, Turkey. Neurology 2003;61:1562-9.

19. Erer S, Karli N, Zarifoglu M, Ozcakir A, Yildiz D. The prevalence and clinical features of restless legs syndrome: a door to door population study in Orhangazi, Bursa in Turkey. Neurol India 2009;57:729-33.

20. Sayin S, Atilla FD. Overlooked Clinical Presentation of Iron Deficiency; Restless Leg Syndrome. Ankara Med J 2019;19:694-7.