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Evaluation of Prevalence and Associated Factors of Restless Leg Syndrome among Medical Students at University of Tabuk -2017

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ABSTRACT

Restless leg syndrome (RLS) is a disorder affecting a significant portion of the general population. The syndrome has a strong family component and several comorbid conditions may be associated with RLS. Researches over the past 10 years had highlighted its heritability and had shed some interesting light to this disorder. Restless legs syndrome (RLS), or Willis-Ekbom disease, is a neurological disorder that is characterized by unpleasant or painful sensations in the legs and a distressing, irresistible urge to move them. RLS symptoms worsen during inactivity and at night. Partial or complete relief may result from movement such as walking, stretching, or bending of the legs. Yet, the relief is often temporary and symptoms return when movement ceases. **Aim of the work:** this study aimed to evaluate the prevalence and associated factors of restless leg syndrome among Medical Students at University of Tabuk. **Methods:** we have conducted a descriptive cross-sectional study in Tabuk city population, Saudi Arabia. The study was conducted during the period from July to December 2017. The participants who attended the college of medicine at university of Tabuk were included in the study. The total sample obtained was 151. A self-administered questionnaire about restless leg syndrome was filled by the participants. **Results:** age of the participants was ranged from 18 to 27 years old, with a mean (SD) of 22.72 (1.837), the majority were 6th year medical students (39.7%). 39.7% reported that they had urge to move the legs with unpleasant sensations in the legs, from those who reported they had urge to move the legs with unpleasant sensations in the legs, 80% of them reported that it is relieved by movements. **Conclusion***:* more attention is needed on recognition of RLS among medical students and to manage the aggravating factors of RLS.

Keywords: restless leg syndrome, prevalence, symptoms, associated factors.

INTRODUCTION

Restless Legs Syndrome (RLS) was first depicted in 1685 by Sir Thomas Willis, an English physician, in a sharp description of patients who cannot fall asleep because of leapings and contractions of the arms and legs. Sir Willis wrote that restlessness and tossing could be so severe that the patients were no more able to sleep than if they were in a place of a greatest torture **(1).** In the nineteen century, RLS was termed as anxietas tibiarum in Germany by Wittmaack**(2).**

In 1945 a group of eight patients was studied by the Swedish neurologist Karl-Axel Ekbom who coined the term "Restless-Legs syndrome" apparently unaware of Willi's previous description indicating the syndrome could also involve the upper extremities**(2).** RLS is a disorder affecting a significant portion of the general population. The syndrome has a strong family component and several comorbid conditions were associated with RLS. Researches over the past 10 years had highlighted its heritability and had shed some interesting light to this disorder **(3).** Restless legs syndrome (RLS), or Willis-Ekbom disease, is a neurological disorder that is characterized by unpleasant or painful sensations in the legs and a distressing, irresistible urge to move them **(4).** RLS symptoms worsen during inactivity and at night. Partial or complete relief may result from movement such as walking, stretching, or bending of the legs. Yet, the relief is often temporary and symptoms return when movement ceases. If the disease progresses, symptoms may occur earlier in the day and intensify even further at night and/or extend beyond the legs to the arms and/or trunk. The clinical course of RLS varies and periods of remission are common. Severe restless legs syndrome, however, may require long-term treatment **(5).**

In the general population, the prevalence of RLS increases with age and women are more frequently affected than men. RLS was associated significantly with social status, worse somatic and mental health and diabetes **(6,7).** Other potential correlates of RLS in both the general population and in patients with kidney disease are anemia and iron deficiency **(6).** RLS was diagnosed clinically, on the basis of 2012 revised International restless legs study group (IRLGSG) diagnostic criteria **(8).** This criteria consists of five cardinal symptoms all of which were present in patients who were diagnosed as suffering from RLS this includes: 1-

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The urge to move the legs usually not always accompanied by or felt to be caused by uncomfortable and unpleasant sensations in the legs, 2- The urge to move the legs and any accompanying unpleasant sensation begin or worsen during periods of rest or inactivity such as lying down or sitting, 3- The urge to move the legs and accompanying unpleasant sensations are partially and totally relieved by movements, such as walking and stretching, at least as long as activity continues, 4- The urge to move the legs and any accompanying unpleasant sensations during rest or inactivity only occur or are worse in the evening or night than during the day, 5- The occurrence of the above features are not solely accounted for as symptoms primary to another medical or behavioral condition. RLS were seldom investigated in the general population. Existing figures for RLS were estimated using a limited set of questions that could have inflated the prevalence of the disorder, which was found to be around 10% [9,10]. However, the prevalence of this disorder is not well known in the general population. This study aimed to document the prevalence of RLS among medical students at Tabuk University and to identify factors associated with these conditions.

METHODS

We have conducted this descriptive cross-sectional study in Tabuk city Medical Students attending College of Medicine, University of Tabuk, Saudi Arabia. The study was conducted during the period from July to December 2017. The participants who attended the College of Medicine at University of Tabuk were included in this study. The total sample obtained was 151. All the pupils were approached to obtain the desired sample size. A self-administered questionnaire, about restless leg syndrome, was filled by participants. A letter that explains the objectives of the study and asks for participants consent was sent with the questionnaire. The questionnaire required information about symptoms of restless leg syndrome, caffeine consumption, smoking and hours spent in studying .

The questionnaire responses were analyzed using the Statistical Package for the Social Science (SPSS Inc. Chicago, IL, USA) version 23. Categorical variables were described by frequencies and percentages. Descriptive analysis involved Chi-square test was used to test significance of association between categorical variables.

The research was approved by the local Research Committee of the Faculty of Medicine, University of Tabuk. **The study was done after approval of ethical board of University of Tabuk**.

RESULTS

Table 1 showed general characteristics of the participants. Age of the participants ranged from 18 to 27 years old, with a mean (SD) of 22.72 (1.837), the majority were sixth year medical students (39.7%), 14.6% were fifth year medical students, 13.2% were third year medical students, 13.2% were second year medical students and 10.6% were forth year medical students.

Table 2 showed frequency of possible aggravating factors of restless leg syndrome, 39.7 showed that they had urge to move the legs with unpleasant sensations in the legs, from ,80% of them reported that it was relieved by movements. From those who reported they had urge to move the legs with unpleasant sensations in the legs and 80%) of them showed that it was worsen during periods of rest or inactivity. 70.9% reported that they had intermittent studying hours. 77.5% reported they had intermittent hours spent in using phone. 70.9% reported that they had intermittent hours spent in watching TV and movies. 94.7% reported that they had drinking coffee. 25.2% reported that they had smoking.

Table 3 showed the quality of life among participants. 62.9% reported that they still enjoying what they used to enjoy. 84.1% can see the positive side of the things. 65.5%reported themselves as feeling happiness. 37.1% reported themselves as feeling of dawdling. 31.8% lost caring in their look. 74.8R% reported lost enjoying in things.

Table 4 showed significant relation between urge to move the legs with unpleasant sensations in the legs and smoking ($p<0.05$), urge to move the legs with unpleasant sensations in the legs and still enjoying in what he/she used to enjoy ($p<0.01$), urge to move the legs with unpleasant sensations in the legs and feeling happiness ($p<0.01$). 33.3% of those who reported urge to move their legs with unpleasant sensations in the legs were smokers. Half of those who reported urge to move their legs with unpleasant sensations in the legs still enjoying in what he/she use enjoy (50%). Less than half of those who reported urge to move their legs with unpleasant sensations in the legs reported themselves as feeling unhappiness.

Table 1: general characteristics (n=151)

Character		
Age	Mean (SD) (y)	22.72 (1.837)
	Range (y)	9
Medical year	First year (n (%))	8 (5.3%)
	Second year (n (%))	20 (13.2%)
	Third year (n (%))	20 (13.2%)
	Forth year (n (%))	16 (10.6%)
	Fifth year (n (%))	22 14.6%)
	Sixth year (n (%))	60 (39.7%)
	Intern (n (%))	5 (3.3%)

Table 2: frequency of symptoms of restless leg syndrome and possible aggravating factors

Question		Frequen	Percent
Urge to move the legs with unpleasant sensations in the legs			
	Yes	60	39.7%
	No	91	60.3%
If yes, did it relieved by movements			
	Yes	48	31.8%
	No	103	68.2%
If yes, does it begin or worsen during periods of rest or inactivity			
	Yes	54	35.8%
	No	97	64.2%
Hours spent in studying			
	intermittent study hours	107	70.9%
	continuous study hours	44	29.1%
Hours spent in using the phone			
	intermittent hours	117	77.5%
	continuous hours	34	22.5%
Hours spent in watching TV and movies			
	intermittent hours	107	70.9%
	continuous hours	44	29.1%
Do you drink coffee ?			
	Yes	143	94.7%
	No	8	5.3%
Smoking			
	Yes	38	25.2%
	No	113	74.8%

Table 3: quality of life among participants

Question		Frequency	Percent
Still enjoying in what he/she used to enjoy			
	No	56	37.1%
	Yes	95	62.9%
Can lough and see the positive side of the things			
	No	24	15.9%
	Yes	127	84.1%
Feeling happiness			
	No	52	34.5%
	Yes	99	65.5%
Feeling of dawdling			
	No	95	62.9%
	Yes	56	37.1%
Lost caring in my look			
	No	103	68.2%
	Yes	48	31.8%
Lost enjoying in things			
	No	38	25.2%
	Yes	113	74.8%

Table 4: urge to move the legs in relation to possible aggravating factors

	to move the legs with unpleasant sensations in the legs		
	Yes n=60	**N0 n=91**	
			p-value
Hours spent in studying			
Intermittent study hours	76.7%	67.0%	
Continuous study hours	23.3%	33.0%	***p>0.05***
Hours spent in using the phone			
Intermittent study hours	80.0%	75.8%	
Continuous study hours	20.0%	24.2%	***p>0.05***
Drinking coffee			
Yes	93.3%	95.6%	
No	6.7%	4.4%	***p>0.05***
Smoking			
Yes	33.3%	19.8%	
No	66.7%	80.2%	***P<0.05***
Still enjoying in what he/she use enjoy			
Yes	50%	71.4%	
No	50%	28.6%	***P<0.01***
Feeling happiness			
Yes	56.7%	71.4%	
No	43.3%	28.6%	***P<0.01***

DISCUSSION

To the best of our knowledge, there are no much data about RLS which remain largely undiagnosed, perhaps due to a lack of understanding of RLS as a medically significant disorder. Restless legs syndrome can have serious clinical consequences and a significant impact on patient's quality of life and therefore correct diagnosis and appropriate management are important **[(11)].** To the best of our knowledge, there is no much data and insufficient studies regarding the prevalence of and associated and aggravating factors of RLS among the medical students. The current study showed that 39.7% of participants had RLS. Another study showed higher results (64.8%)**[(12)].** In this study, half of those who reported urge to move their legs with unpleasant sensations in the legs were not enjoying in what they used to enjoy (50%), and less than half of them reported themselves as feeling unhappiness (43.3%). Findings from several recent studies indicate that the adverse impact of RLS on quality of life is comparable to some authors [(13-16)] or worse than others [(14, 15, 17)] that in other serious chronic conditions.

CONCLUSION

More attention is needed to recognize RLS among the medical students and to manage the aggravating factors of RLS. Proper management of RLS will improve the quality of life and consequently will improve the outcome and performance among medical students.

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