Original Article

Association between Physical Activity levels and Sleep Quality among University Faculty: A Descriptive Approach

Sidra Hanif ,[1] Saba Mehmood,[2] Omama Aziz,[3] Aliza Razzaq,[4] Seerat Tayyab[5]

Abstract

Objective: The present study focused to find the physical activity level of faculty members of universities of Islamabad and to identify its association with quality of sleep.

Study design: It was a correlational descriptive survey.

Place and duration of study: The study was conducted on faculty members of various institutions of Islamabad.

Material and Methods: This study was conducted on faculty members of various institutions of Islamabad by calculating the sample size through Rao soft software, keeping 752 population size, came out to be 255. Participants were selected using non-probability convenience sampling technique. Participants of either gender aging between 25-50 years. While those having any type of physical disability, diagnosed patient of type II diabetes, cardiac problems, taking sleep medications and pregnant females were excluded from current study. Sample was collected using a semi structured questionnaire using IPAQ and PSQI and analyzed using SPSS version 24.

Results: Out of 226 participants, it was found that 53 participants were physically inactive, 92 were moderately physically active, and 81 were highly physically active. Among the respondents, 38 from highly physical active faculty members had good sleep quality, compared with 49 moderately active and 28 of physically inactive. No significant association, keeping p-value < 0.05, was found among physical activity levels and PSQI components of the study sample.

Conclusion: There appeared to be no significant association of physical activity and sleep quality among faculty members. Females are more poor sleepers as compare to males participants. Female faculty members as compared to males were more frequently involved in low, moderate and high levels of physical activity.

Key Words: Physical activity, Sleep quality, Association

1. Introduction

Physical activity status is unrelentingly the most important factor, due to its various beneficial effects on physical, mental and spiritual wellness. Physical exercise are any muscular movements or activities that outcome calorie loss[1]. Physical activity, by definition, is all-encompassing of activities that may comprise occupations, transportations, household activities, along with leisure activities[2]. Assessment of physical activity status is very pivotal in epidemiological studies to explore the relationships between inactivity and progress of any diseases. Nonetheless, lifestyles that include physically active status encompassing or exceeding 150 minutes of physical activity per week have been linked to pronounced positive improvements in mental health [3] and overall improving the conditions such as type-II diabetes, some types of cancer, cardiovascular disease, premature mortality, chronic debilitating diseases, and multi-morbidity[4,5]. Some of the causes that may reduce physical activity and encourage sedentary attitudes may involve the environment of workplace, overall sitting time, level of education achieved, perceived lack of time, occupational background and socioeconomic status[6].

Another vital bodily process is sleep that shows a crucial role in biological functions[7]. Disorders related to sleep are more often and may be responsible for both quality and quantity of sleep, causing amplified morbidity.

Senior Lecturer, Ibadat International University,[1] Physiotherapist, University of Lahore,[2,3,4,5]

Correspondence: Sidra Hanif, Senior Lecturer, Ibadat International University **Email:**drsidrahhaneefpt@gmail.com

Disorders related to sleep in patients can be categorized as those who cannot sleep, those experiencing movement in sleep and those with increase daytime sleepiness[8, 9]. These disorders of sleep are often associated with many morbidities that are primarily psychiatric[10]. Sufficient sleep is proven to play a crucial effect on cognitive function, person's productivity and academic performance[11].

There is limited literature available that highlighted the physical activity levels among faculty members working in the academic settings. Few studies focused on finding the relationship of physical activity and age among faculty members while current study aims to find association between physical activities and sleep quality among faculty members of various universities of Islamabad which previously has less available literature. Through this research, a clear relation can be established between physical activities level and sleep quality among faculty members of universities of Islamabad. This can also help the health planners and policy makers to pay attention towards improved strategies in accordance with the results current study.

2. Materials & Methods

A correlational descriptive survey carried. Sample size calculated using Rao soft software, keeping 752 population size, came out to be 255. Participants were selected using non-probability convenience sampling technique. Participants of either gender aging between 25-50 years and were willing to participate after signing the consent form were included in the study. While those having any type of physical disability, diagnosed patient of type II diabetes, cardiac problems, taking sleep medications and pregnant females were excluded from current study. Data was collected using a semi structured questionnaire that had three parts, first part of the questionnaire comprised of demographical and questions related to inclusion and exclusion criteria, 2nd part incorporated the standard questionnaire of physical activity which is the IPAQ (international physical activity questionnaire short form) for the purpose of measuring the physical activity level. While 3rd part of questionnaire incorporated standard tool for sleep which is the Pittsburgh sleep quality index (PSQI) that contains 7 components including subjective sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbance, use of sleep medication, and daytime dysfunction. Scoring of these two standard questionnaires were done as per their respective author guidelines. Data analysis was done using SPSS version 24. Cross tabulation was formulated to find out the correlation IPAQ and PSQI keeping p-value < 0.05.

3. Results

226 participants that met eligibility criteria of the study out of 255 sample size were included in the study.

Table 1 demonstrating sociodemographic characteristics of study sample. 44.7% faculty members were male, while 55.3% were female. About 4.9% faculty members were underweight, 61.5% were healthy, 20.4% were overweight, and 13.3% were obese.

Table 1: Demographic attributes of Subjects (n=226)

Demographic Attributes	Frequency	Percentage
Age groups		
25-30	128	56.6
31-35	40	17.7
36-40	21	9.3
41-45	24	10.6
46-50	13	5.8
Gender		
MALE	101	44.7
FEMALE	125	55.3
BMI Category		
UNDERWEIGHT	11	4.9
HEALTHY	139	61.5
OVERWEIGHT	46	20.4
OBESE	30	13.3

Table 2 showing the Pearson correlation among physical activity levels and sleep quality. The significance level for analysis was set at $p < 0.05$ hence, significant association was found.

Table 2: Pearson correlation among Physical Activity Levels and Sleep Quality among Study Participant.

Physical Activity Levels	Sleep Quality			p-value
	Good Sleep (Global score less than 5)	Poor Sleep (global score more then 5)	Total	
Low	19	34	53	**0.014**
Moderate	35	57	92	
High	28	53	81	
Total	82	144	226	

4. Discussion

The current study was focused to find out the association between physical activity levels and sleep quality among faculty members of universities of Islamabad. A study conducted in Saudia Arabia by Muhammad Salih Mahfouz et al. investigated majority of students were having poor sleep quality and were physically inactive[14]. While current study attempted to explore the association between physical activity levels and sleep quality among faculty members of universities of Islamabad, Pakistan. Our results revealed that more than two third faculty members 100% n= 92 were moderately active as compare to 62.7% n=276 were physically inactive in Saudia Arabia[14]. As of aforementioned study stated prevalence of physical inactivity was 52.6% and 72.4.0% among male and female students of Jazan University[11]. In the current study, females appeared to be more likely to engage in all type of PA especially vigorous physical activity than males.

Present study reported that the prevalence of poor sleep quality was of 55.9% and 44.1% in female and male faculty members respectively. These finding are consistent with another study conducted by Mcclain JJ et al. according to which sleep quality can be effected with gender. As of their results, 64% males display day time sleepiness in comparison to females.[12]

Current study also reported that there is significant association of physical activity and sleep quality among faculty members as $p<0.05$. These findings are also consistent with study conducted at United Kingdom University by Safi et al. which state that high prevalence of poor sleep might not be affected by the levels of physical activity[13].These results are also consistent with another study by Lewin et al. showing that more physically active individual have improved sleep quality[12]

Few limitation of current study can be taken into consideration. The selected sample included only private universities of Islamabad. Whereas the data from public sector universities is absent. The design of this study was cross-sectional in nature that is less robust. No interviews were conducted regarding Physical Activity levels and sleep quality. Lastly, the IPAQ part of the questionnaire was self-administered and can contribute into over or under estimation of physical activity levels of respondents.

Conclusion:

This study highlighted that there appeared to be no association of physical activity level and sleep quality among faculty members of universities of Islamabad. Females were more poor sleepers as compare to males. Female faculty members as compared to males were more likely to have low, moderate and high levels of physical activity.

Conflict of Interest:

The author declare no conflict of interest in this study.

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