ORIGINAL ARTICLE

SLEEP QUALITY AND PSYCHOLOGICAL DISTRESS AMONG UNIVERSITY STUDENTS

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ABSTRACT

OBJECTIVE
To identify the relationship between sleep quality and psychological distress among university students.

STUDY DESIGN
Correlational study

PLACE AND DURATION OF STUDY
The research was conducted during 2010-2011. The data were obtained from students studying in GC University and University of Agriculture Faisalabad.

SUBJECTS AND METHODS
A purposive sample of 200 university students (50% men and 50 % women; 19-25 years old) completed Pittsburgh Sleep Quality Index (PSQI) and General Health Questionnaire–28.

RESULTS
Results showed a significant association between sleep quality and level of psychological distress among university students. PSQI total scores and only one of the subscales, sleep duration significantly predicted the psychological distress. Regression analysis further revealed that sleep disturbances subscale was the most important predictor of somatic complaints, depression and anxiety.

CONCLUSION
Knowledge of sleep quality and psychological problems is discussed for clinical implications and better mental health of university students.

KEY WORDS
Sleep Quality, Psychological Distress, Mental Health.

INTRODUCTION

University students could be at great risk to develop disturbed sleep patterns due to demanding academic duties, social opportunities and erratic study schedules[1]. Sleep quality is considered to be a multifaceted phenomenon including dimensions like perceived sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbance, use of sleep medication, and daytime dysfunction[2].

Poor quality of sleep leads to adverse physical and psychological outcomes. Physiologically, it may result in greater somatic complaints and lower levels of energy[3],and is linked with a variety of diseases, such as cardiovascular problems[4]. Psychological outcomes of poor sleep quality may include emotional flux, poor self-confidence and self-esteem, great impetuosity, carelessness and irresponsibility[5].

Enjoying a good quality of sleep is important for students for their smooth learning process. Yet, studies have demonstrated that many of the students experience sleep problems. They may develop inadequate sleep patterns such as later or irregular sleep-wake timings[1],insufficient sleep hygiene; inadequate sleep time and complaints of sleeplessness[6]. Such type of sleep-wake schedules are often escorted by adverse daytime outcomes, lower levels of enthusiasm and dedication, decreased cognitive capacity and function, as well as higher levels of fatigue[3,7].Additionally, it is linked to greater levels of anxiety, mental strain, confusions, negative affect, depressive symptoms, poor psychological and subjective well-being [5,8].

Since local evidence on the quality of sleep in university students and its impact on health related issues is scarce, current study was designed to investigate the phenomenon. the study aims at identifying the relationship between sleep quality and psychological distress among university students.

SUBJECTS AND METHODS

Participants

Data were collected from students (Mage = 21.58; SDage = 1.51) of GC University Faisalabad and University of agriculture Faisalabad using purposive convenient sampling strategy. 200 Students of BS honors and Masters participated in the study. half of the sample consisted of men and half women. age range of the sample was from 19 years to 25 years. Those studying in 1st semester were not included in the study.

Instruments

This study was carried out by using the following measures:

***Pittsburgh Sleep Quality Index (PSQI)*[9]**
Pittsburgh Sleep Quality Index differentiates between "poor" and "good' quality sleepers by

assessing seven aspects: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction during the past month. A total score of more than 5 is refers to a poor-quality sleeper, while a score of 5 or below is suggestive of a good-quality sleeper. The overall internal consistency of PSQI is high (0.83).

General Health Questionnaire _ 28 (GHQ _ 28)[10]

GHQ-28 was used to assess the psychological distress of university students. GHQ is a useful tool of current mental health and measures the amount of distress through four kinds of symptoms; somatic symptoms, anxiety symptoms, social functioning and depressive symptoms. GHQ score of 23 or more indicates poor general mental health and greater distress.

Procedure

First of all formal permission was sought from the chairpersons of different departments of the Universities. An informed consent was obtained from the participants. PSQI and GHQ-28 were administered to the sample in their class rooms. Participants were properly instructed. Ethical issues were taken under consideration.

RESULTS

Overall PSQI showed significant positive relationship with GHQ, r = .44, p< .001. Furthermore, Sleep Latency, r = .33, p< .001; Sleep Duration, r = .19, p < .05; Sleep Efficacy, r = .19, p< .05; Sleep Disturbances, r = .33, p< .001; Sleep Medication, r = .26, p< .001and Daytime Dysfunctioning, r = .28, p< .001, were also found to be positively correlated with GHQ. Similarly PSQI and its subscales were found to be significantly correlated with Subscales of GHQ except for Sleep Efficacy and Sleep Duration, which could not demonstrate significant relationship with Social Dysfunctioning and Depression.

Table 1
Relationship among Total Scores and Subscales of PSQI and GHQ

Scales	GHQ	SS	AI	SDys	Dep
PSQI	.44***	.37***	.39***	.31***	.34***
SL	.33***	.21**	.24**	.30***	.30***
SDu	.19*	.20*	.22*	.08	.09
SE	.19*	.17*	.22*	.07	.11
SDs	.33***	.30***	.30***	.20*	.30***
SM	.26***	.22*	.20*	.19*	.25***
DD	.28***	.21*	.23**	.23**	.25***

**p<.05. ** p<.01. ***p< .001.*
Note: PSQI = Pittsburgh Sleep Quality Index; SL = Sleep Latency; SDu, = Sleep Disturbances; SE = Sleep efficacy; SDs = Sleep Disturbances; SM = Sleep Medication; DD = Daytime Dysfunctioning; GHQ = General Health Questionnaire; SS = Somatic Symptoms ; AI = Anxiety Insomnia; SDys = Social Dysfunctioning; Dep = Depression.

Table 2
Stepwise Regression Analysis Predicting Psychological Distress among University Students from PSQI and its Subscales.

Scales	B	SE	β	t	p
Step 1					
PSQI	1.52	.22	.44	6.96	.001
Step 2					
PSQI	2.32	.32	.68	7.27	.001
SDu	-3.35	.99	-.31	-3.33	.001

R2= .19, Δ R2= .19 for Step 1; R2= .24, Δ R2= .23 for Step 2.
Note: only significant results are reported.

Stepwise regression analysis showed that over all sleep quality in terms of PSQI total score and only one of the subscales, Sleep Duration, significantly predicted psychological distress in term of GHQ-28 total score. PSQI was identified as the most significant predictor in step 1, predicting 19% of psychological distress, R2= .19, F (198) = 48.48, p< .001. It increased up to 24% in step 2, when Sleep duration was added, R2= .24, F (198) = 31.20, p< .001. Rest of the PSQI subscales were automatically excluded during stepwise-regression analysis.

Step-wise regression analysis identified possible predictors of GHQ subscales from PSQI subscales. Table 3 presents the results of the final step for each of the dependent variable. Regression results showed that both Sleep Disturbances and Medication significantly predicted Somatic Symptoms, Anxiety/Insomnia and Depression among students. Duration of Sleep significantly contributed in developing Somatic Symptoms. Subjective Sleep Quality accounted for both Social Dysfunction and Anxiety/Insomnia. Anxiety/Insomnia was also significantly predicted by Sleep Efficiency. Sleep Latency proved responsible for Depressive symptomology and Social Dysfunctioning..

Table 3
Regression Analysis for PSQI Subscales Predicting Psychopathological Symptoms of Distress

Dependent Variables	Subscales PSQI	*B*	*SE*	*β*	*t*	*p*
Somatic Symptoms						
	Sleep Disturbances	1.62	.42	.26	3.84	.001
	Sleep Medication	1.07	.41	.18	2.62	.01
	Sleep Duration	.53	.23	.16	2.33	.05
Anxiety/Insomnia						
	Sleep Disturbances	1.42	.43	.22	3.28	.001
	Subjective Sleep Quality	1.04	.37	.19	2.78	.01
	Sleep Efficiency	.62	.22	.18	2.74	.01
	Sleep Medication	.89	.42	.14	2.12	.05
Social Dysfunction						
	Sleep Latency	.74	.24	.22	3.09	.001
	Subjective Sleep Quality	.76	.31	.17	2.42	.01
	Daytime Dysfunction	.56	.25	.15	2.22	.05
Depression						
	Sleep Latency	.89	.28	.22	3.21	.001
	Sleep Medication	1.24	.39	.21	3.15	.01
	Sleep Disturbances	1.26	.42	.21	2.98	.01

DISCUSSION

This study intended to provide an in-depth account of sleep quality of university students and their relationship with the amount of psychological distress experienced by them. The results provided sufficient evidence for this relationship and as not only the total scores of PSQI and GHQ showed highly significant association, but one of the subscales named as sleep duration significantly predicted overall psychological distress. This indicates that importance of sleep duration in mental health of university students which has also been emphasized in the existing literature[11]suggesting that short sleep duration is an indicator of a poorer consequence of psychological

distress. Another researcher had also investigated and confirmed the link between unhealthy sleep duration and emotional distress[12].A detailed assessment of sleep-wake schedule is suggested in this regard.

Sleep disturbances not only weakens physical and mental functions, lower work productivity, but also could cause mental problems. This notion has been confirmed in the present study as sleep disturbances strongly predicted physical complaints and internalizing symptoms (Depression and Anxiety). It has been controversial as whether sleep disturbances cause internalizing problems or the mood disturbances cause sleep problems. Sleep disturbances are mostly considered an outcome of severe symptoms e.g. psychiatric disorders[13], but they can equally contribute in developing psychopathology because prolonged sleep disruptions set the stage for negative thinking and emotional susceptibility. Further studies should explore the nature of these disturbances and also the stage of sleep during which they are experienced. Consistent with the existing findings[14], personal dissatisfaction with overall quality of sleep and use of sleep medication was also found related to somatic issues, anxiety and depression. However it should be noted that sleep problems may overlap internalizing symptoms especially within patient samples[15].
It is obvious that poor sleep quality, sleep disruptions and changes in regular sleep patterns not only cause poor physical and psychological health but also affect the individual's daily life performing tasks. The study affords insight for university authorities to take useful steps for improving student's physical and mental health. Student's counseling centers can be helpful in this regard to motivate for opting healthy life styles, engaging in physical activity, maintaining sleep hygiene, and should conduct workshops on relaxation trainings etc.

CONCLUSION

The study strongly suggested that psychological well-being of university students was affected by poor sleep quality, resulting in overall distress and different psychopathological symptoms. In this regard sleep disturbances have worse effects on mental health followed by sleep medication and sleep latency. The study would be helpful for practitioners and university students to prevent detrimental effects caused by higher levels of distress resulted by poor sleep quality. It is also useful in identifying students who are at risk of developing psychological disorders.

LIMITATIONS AND RECOMMENDATIONS

Although university students are educated enough to comprehend the English versions of the Scales, however validity of findings could be increased by using Urdu versions. The manuscript's length did not allow accounting for differences across, gender, age and other demographic variables. Sample was limited and for an extensive study of the prevalence of sleep difficulties in university students, study should be conducted within different geographic locations. A longitudinal study may also provide more consistent information regarding sleep quality in university students.

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