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Incidence of Insomnia and Anxiety among the Biotechnology Students: A Cross-sectional Study at BUITEMS, Quetta

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Abstract

Objective: Anxiety and Insomnia is mostly seen in students engage in biological researches belonging to the life sciences or applied sciences discipline. Since biotechnology students are also engaged in extensive research work along with the stress associated with maintaining good grades, GPA, participating in extracurricular activities, completion of assignments, maintaining monthly attendance etc., signs of insomnia and anxiety are quiet prominent which affects their interpersonal and psychological functioning. Therefore, the aim of this study was to determine the incidence of insomnia and anxiety among the Biotechnology students of BUITEMS.

Method: This study was conducted in BUITEMS among the biotechnology students. Athens insomnia scale with sensitivity and specificity of 93% and 85% respectively and Hamilton Anxiety Scale with sensitivity and specificity of 85.7% and 63.5% respectively were used. Besides that demographic information like age, gender etc. was also obtained from the participants.

Result: The incidence of anxiety was found to be prevalent in females 66.66% than in males 63.41% and insomnia was found to be more prevalent in males 75.60% than in females 63.15%.

Conclusions: Therefore, the factors that contribute to increase anxiety and insomnia should be identified and ways should be devised to reduce them.

Keywords: Insomnia; Biotechnology; BUITEMS; Anxiety

Introduction

Insomnia is considered to be a great health threat today because it poses a great risk towards mental and physical health of an individual. Now days teenagers are commonly affected by this disorder mainly the ones engage in studies. Anxiety is one of the most prominent behavioral issues that are seen in today's generation which may be caused by a number of reasons that affects not only an individual's personality but also affect their everyday performance. Insomnia and anxiety is mostly seen in medical students or the ones engage in biological researches belonging to the life sciences or applied sciences discipline [1-10].

Stress involving work load, academic performance, amount of work, research oriented studies, late night studies, competition etc. All these factors contribute towards anxiety and insomnia [11] and have a negatives effect that is reflected in their psychological behavior and in their physical health [12]. Since biotechnology students are also engaged in extensive research work along with this, stress associated with maintaining good grades, GPA, participating in extracurricular activities, completion of assignments, maintaining monthly attendance etc., signs of insomnia and anxiety are quiet prominent which affects their interpersonal and psychological functioning [13]. Therefore, the main objective of this research work was to determine the incidence of insomnia and anxiety among the Biotechnology students of BUITEMS to find out the possible contributing factors and to devise ways to reduce it as much as possible.

Materials and Methods

This research survey was a cross-sectional study carried out in Balochistan University of Information Technology, Engineering and Management Sciences (BUITEMS) in the Department of Biotechnology and Informatics. The participants included in this study were the ones that were currently enrolled in the department of Biotechnology as regular students in different semesters i.e. from 1st to 8th. However, the 1st semester was excluded because there was no admission opening for the Biotechnology department for spring 2016. And the students who were absent or were on leave due to some reason were also not considered in this research study. A total number of 98 students studying in different semesters from 2nd to 8th were included in this study.

Two recognized diagnostic scales were used for the collection of data in order to determine the incidence of insomnia and anxiety among the Biotechnology students of BUITEMS, Athens insomnia scale [1] with sensitivity and specificity of 93% and 85% respectively [2] and Hamilton anxiety scale with sensitivity and specificity of 85.7% and 63.5% respectively [3]. Besides that demographic information like age, gender etc. was also obtained from the participants. Microsoft excel was used for the statistical analysis of the raw data.

Results

Out of 98 students were included studying in different semesters of Biotechnology. Among them 41.83% were males while the females were in majority 58.16%.

S.no	Demographic characters	N=98	Percentage (%)
1	**Gender**		
	Male	41	41.83
	Female	57	58.16
2	**Semester**		
	2nd	15	15.30
	3rd	13	13.26
	4th	21	21.42
	5th	10	10.20
	6th	23	23.46
	7th	6	6.12
	8th	10	10.20

Table 1: Demographic characteristics of the participants.

Table 2 depicts the number of students studying in different semester with/without anxiety. And the overall anxiety was found to be 65.30% (64/98).

S.no	Semester	No. of students (with anxiety) N=98	No. of students (without anxiety) N=98
1	2nd (n=15)	9	6
2	3rd (n=13)	9	4
3	4th (n=21)	12	7
4	5th (n=10)	8	5
5	6th (n=23)	14	11
6	7th (n=6)	4	2
7	8th (n=10)	8	1
		Total=64	Total=36

Table 2: Prevalence of anxiety among the participants according to the semester.

Table 3 shows the number of students studying in different semester with/without insomnia. And the overall insomnia was found to be 68.36% (67/98).

Table 4 shows the sex-wise incidence rate of insomnia and anxiety among the participants and Anxiety was found to be prevalent in females 66.66% than in males 63.41% while on the other hand insomnia was to be more prevalent in males with a percentage of 75.60 than in females 63.15%.

S.no	Semester	No of students (with insomnia) N=98	No of students (without insomnia) N=98
1	2nd (n=15)	9	6
2	3rd (n=13)	8	5
3	4th (n=21)	13	8
4	5th (n=10)	9	1
5	6th (n=23)	16	7
6	7th (n=6)	5	1
7	8th (n=10)	7	3
		Total=67	Total=31

Table 3: Prevalence of insomnia among the participants according to the semester.

S.no	Sex	Anxiety (%)	Insomnia (%)
1	Male (n=41)	26 (63.41)	31 (75.60)
2	Female (n=57)	38 (66.66)	36 (63.15)

Table 4: Prevalence of anxiety and insomnia among the participants according to the sex.

Discussion

A total of 98 biotechnology students studying in different semesters in BUITEMS were included in the study. Out of the 98 included participants 64 were suffering from anxiety. And out of these 64 majorities was of females 38 showing that anxiety is more prevalent in this particular gender. The reasons for this high prevalence may be due to the sensitive nature of the females as it was clearly observed from the Hamilton Anxiety Scale that majority of the females experienced feelings like worries related to academics, fearful anticipation, irritability, restlessness, inability to relax, depression, lack of interest, poor concentration, etc. and they rated these feelings lying from moderately to severely.

In comparison males are affected less by such feelings or the degree to which they take the effect of these factors are less than females. Therefore, the prevalence of Anxiety is low in males as out of the total 64 individuals affected by anxiety only 26 were males. Another interesting finding that was observed in this research was that the number of students affected by anxiety increased as we ascend from 2nd to 8th semester the obvious reason for that was the increase in the level of workload related to research and academics and the pattern was same for both the genders.

However, opposite findings were observed for the prevalence of Insomnia which was found to be high in males 31 out of the total 41 male students were suffering from insomnia with varying levels from moderate to severe than in females in which the prevalence was low, only 36 out of 57 were affected by it. But the overall prevalence of insomnia was high among the biotechnology students as indicated in Table 3 that out of 98, 67 were suffering from sleeplessness. It was also observed during the study that the number of students suffering from insomnia increased as we ascend from 2nd to 8th semester and the trend is similar for both the genders. Late night work, excessive use of

internet, awakening during the night, unsatisfactory quality of sleep, delayed sleep induction etc. all these factors accounts for this high prevalence. However, there were a number of limitations in this piece of research study such as factors like socioeconomic status of the students, home stressors and substance abuse were not elicited.

Conclusion

Insomnia and anxiety is of great concern among the Biotechnology students of BUITEMS which affects not only their physical health but also hampers their mental functioning. Therefore, it is important to address this problem at university level and it should be recognized as a serious health issue with disturbing consequences in the future. So measures should be taken or ways should be devised in order to control or alleviate it.

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