Mental and Behavioral Problems in Medical Students of a Health Science Institute in Eastern Nepal

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Abstract

Introduction

Literature shows a high prevalence of mental disorders among medical students. Psychiatric morbidity data help enhance all levels of management. We have limited data about 'mental and behavioural problems' in medical students.

Objective

To see and sort out psychiatric problems among medical students of BP Koirala Institute of Health Sciences (BPKIHS), Nepal.

Methodology

It is an institute based prevalence study. Twenty percentages of all medical students of all programs (1125) of academic year of 2008/9 were (systematic) randomly selected. After informed written consent, the subjects were enrolled. A semi-structured proforma was used to record socio-demographic and clinical profiles. The 'Structured clinical interview for DSM-IV Axis I disorders' (SCID-I) was used to diagnose major psychiatric disorders.

Result

Out of the total sample students, 219 students were enrolled. Among the enrolled subjects, life time diagnosis of psychiatric problem (till the time of the study) was about 55%. At the time of the study, approximately 30% had psychiatric problem. During BPKIHS stay inclusive of current problem, slightly more than 40% had mental problems. The most common diagnosis was adjustment disorder.

Conclusion

A great proportion of medical students suffer from mental and behavioural problems.

KEYWORDS

BPKIHS, medical students, mental illness, SCID-I

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INTRODUCTION

Compared to general population[1-4], more health science/ medical students appear to suffer from mental and behavioral problems[5-10]. Due to some particular stressors of and those resulting from circumstances arising during medical education and training,[6-14] psychiatric disorders predominate among medical students. Stress related disorders, mood disorders mainly depression,[15-17] anxiety disorders,[17] substance use disorders,[6,11,12] disorders of medically unexplained physical symptoms[18] are common psychiatric disorders among the students.

Some factors generally linked with higher prevalence of mental illness are among medical students. Clustering of certain personality traits,[19] stresses of entrance examination, those resulting after joining medical education, isolation, highly competitive and mechanical daily routine etc. are some factors associated with such higher prevalence[20] and even suicidality[17,21].

Developed countries address the problem by running separate unit, through acts and legislation and mobilization of adequate resources.[5,15,20] There is increasing number of medical/ health science institutes established in last couple of years in Nepal.[22] B.P. Koirala Institute of Science (BPKIHS) has

been home to many medical students since its inception on January 18, 1993.[23,24] As we have few comprehensive study from this institute on this aspect despite many students with psychiatric disorders and even suicidality,[25,26] this study was carried out to produce data of overall prevalence of psychiatric disorders and to sort out common psychiatric diagnoses among the health science/ medical students of the institute.

METHODOLOGY

Design: It is a **c**ross sectional, prevalence study conducted among health science/ medical students of BPKIHS.

Setting and Subj ects: BPKIHS is an innovative community health oriented multi-program institute being one of the pioneers in Nepal. It runs different health science/ medical academic programs: MBBS; BDS; Nursing- certificate (present when study conducted; now removed) and OT/ AS; BSc-Nursing, MLT, MIT; MPH, MD and MS, and later added PhD, DM, MCH etc. Altogether, it had 1125 students in study year (2008/9) in different academic programs. The numbers of students in different academic programs were as follows: 1. MBBS- 439 (100+100+75+75+89), 2. BDS- 237 (40x5 +35+2), 3. Certificate- Nursing- 120 (40X3), 4. Certificate- OT and AS- 20 (10X2), 5. BSc- Nursing- 80 (20X4), 6. BSc- MIT- 18 (6X3), 7. BSc- MLT- 20 (10X2), 8. MD/ MS- 155 (52+13+45+45), 9. MSc.- 26 (8+12+ 6), 10. MPH- 10.

Sample students: A systematic random sampling method was used and 20% of all health science/ medical students of the institute were enrolled as samples. The frame/ list of all students of all academic programs in the academic year was prepared as per campus role number and academic programs prior to the determination of the index number by lottery method. Every 5th students were selected as the subjects. If the selected student was not willing, not available at the time of enrollment or unable to be present or interviewed, the student of subsequent role number was approached and was enrolled. If the later also could not be enrolled, the students of preceding role number were approached.

Procedure: Written, informed consent was taken from the subject. Socio-demographic data were collected using semi-structured proforma and the subjects were assessed for the psychiatric disorders with the help of the 'SCID-I' by a psychiatrist with MD- Psychiatry (DRS). Regular meetings and interactions were held to sort out difficulties.

Materials/ Instruments:

1. ***Semi-structured proforma was used to record*** all information related to socio-demographic profiles and overall health.
2. ***'Structured Clinical Interview for DSM- IV Axis I disorders' (SCID-I)-***[27] This Schedule developed in 90's is widely used and validated in many clinical and epidemiological studies in different countries. This instrument, based on the DSM-IV classification of mental and behavioral problems, i.e. Axis I diagnoses, is a most widely utilized one in psychiatric research. Before covering various major Axis I diagnoses modules, the interviewer focuses on the main problem affecting the person in order to get enough information to decide which module to use. It, then allows a comprehensive review of criteria utilized to make major DSM-IV psychiatric diagnoses (mania, depression, psychosis, substance abuse disorders, anxiety disorders, post-traumatic stress disorders, somatization disorders, eating disorders, and adjustment disorders). It is well validated to tap major mental and behavioral disorders. Inter-rater reliability has been good and the test-retest reliabilities are above 0.6.

Data Processing: The coded proforma was collected at the end of the week by research staffs. The information were entered into computer. Quantitative and qualitative data processing were used with computer. The output of the project was able to provide data on the: prevalence of different types of mental and behavioral problems.

Ethical Consideration: The study was done after obtaining the approval of Research Committee of BPKIHS (Ref. No. Acd 297/065/066, Research Code No. 41/15). The subjects were enrolled after informed written consent from the subject. Strict confidentiality of information was maintained.

Socio-demographic profiles: Out of estimated number 225 (20%) of 1125 students, we could enroll 219 (97.33%) in study period; 6 students could not be enrolled because of reasons like: refusal, multiple time absences etc. There were more male students 124 (56.62%) than females 95 (43.38%). Average age was 23.3, minimum: 17, maximum: 33 years. Majority of subjects (80%) were in age groups (20-25) and (26-30) years. Brahmins, indigenous Terai tribes and Chhetris predominated among the students (Terai origin- Mandal,

Table 1: Sex, Age and Ethnicity Distribution

Sex	No. of responses (%)
Male	124 (56.62)
Female	95 (43.38)
Age (in years)	**No. of responses (%)**
< 20	30 (13.70)
20- 25	134 (61.19)
26- 30	43 (19.63)
31- 35	11 (5.02)
≥ 35	1 (0.46)
Ethnicity	**No. of students (%)**
Brahmin	63 (28.76)
Chhetri	25 (11.42)
Newars	21 (9.59)
Mongols	14 (6.39)
Indigenous Terai tribes	57 (26.03)
Disadvantaged/ dalit	6 (2.74)
Indians	33 (15.07)

Majority of the students were unmarried/ single 88.12% (193), 11.42% (25) married and one was separated. Majority came from nuclear family 156 (71.23%), followed by joint 60 (27.40%), broken 2 (0.91%) and compound family1 (0.46). Hindus predominated (201, 91.78 %). Buddhists were 12 (5.48%), Kirat 3 (1.37%), Christians 2 (0.91%) and Muslims 1 (0.46%).

Maximum students were from cities 133 (60.73%), followed by semi-urban 56 (25.57%) and rural areas 30 (13.70%) (Figure 1).

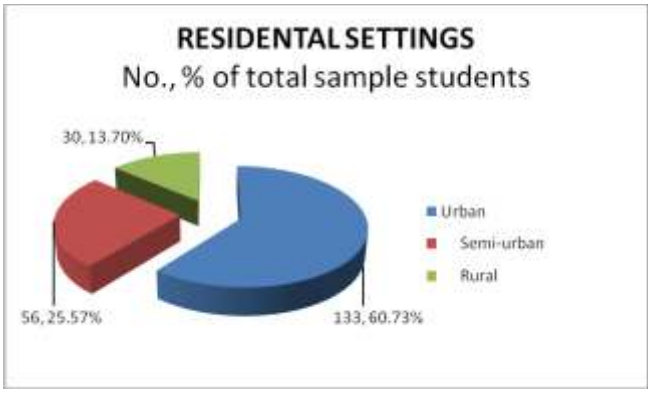

Figure 1. Residential Settings

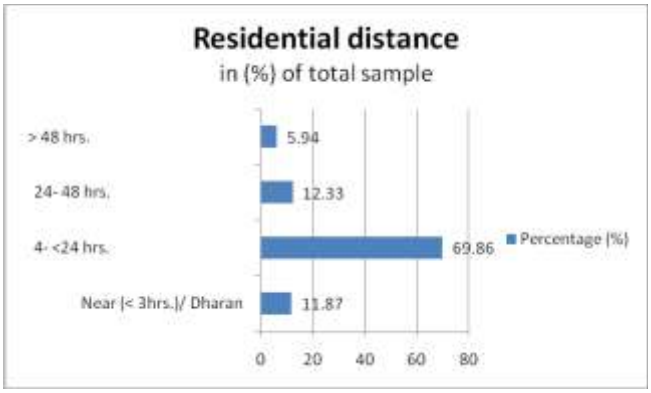

Figure 2. Residential Distance from BPKIHS

Most students were from the places of distance of (4- <24 hours) bus travel, average distance being 16.78 hrs. Some students were from the distance of more than 2 days travel (Figure 2).

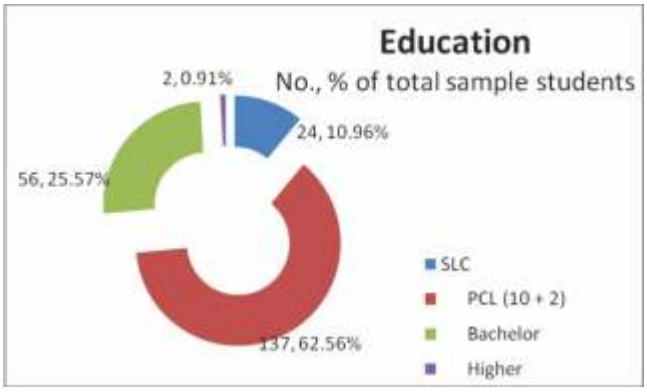

Figure 3. Completed Education

A large proportion of students had completed certificate level of education before current program (Figure 3).

Teaching, business and farming were top 3 occupations of the father of the students whereas great majority of the mothers were home makers. Main occupations of their mothers were again teaching and farming. Father of 6 students and mother of 4 students were expired (Table 2).

Table 2. Occupation of the Parents

Occupation	Father (%)	Mother (%)
Farming	26 (11.87)	14 (6.39
Service	19 (8.68)	4 (1.83)
Business/ shop	50 (22.83)	3 (1.37)
Teaching	71 (32.42)	26 (11.87
Technical	4 (1.83)	0 (0)
Working abroad	2 (0.91)	0 (0)
Home making	0 (0)	164 (74.89
Self generated/manual	23 (10.50)	3 (1.37)
Retired	18 (8.22)	1 (0.46)
Expired	6 (2.74)	4 (1.83)

Results

Many students 85 (38.81%) revealed that they had close relatives suffering from mental illness. The most common psychiatric illness was mood disorders and suicidality (self injurious/ suicidal thoughts, expression, behavior, attempt, suicide) among the relatives as revealed by 18 (8.22%) of the students (Table 3).

Table 3. Mental Illness among Close Relatives#

Mental illness	Number (%)
Absent	134 (61.19)
Present	85 (38.81)
Mood disorders	39 (17.80)
Schizophrenia related	13 (5.94)
Anxiety spectrum	15 (6.85)
Substance use disorder	8 (3.65)
Mental retardation	5 (2.28)
Dementia	5 (2.28)
Other mental illness	6 (2.74)
Suicidality	18 (8.22)
Seizure/ epilepsies	5 (2.28)

Study related stressor was almost ubiquitous. A majority 143 (65.30%) had other stressors along with study related ones; 76 (34.70%) did not reveal any perceived stress. Being away from home and family, strained interpersonal relationship with someone like friend, family members, boy/girl friend and ragging were the top 3 stressors perceived by the students. More students revealed psychological complaints than physical symptoms. Almost half (48.86%) had some complaints about their health. Some students had both physical and psychological complaints (Table 4).

Table 4. Types of Stressors & Health related Complaints among the Students #

Stressor type	Frequency (%)
Home away	55 (25.11)
Strained relationship	43 (19.64)
Ragging	30 (13.70)
Illness of relative	18 (8.22)
Financial	18 (8.22)
Ill health	17 (7.76)
Death of relative/ near	16 (7.31)
Recent major life events	10 (4.57)
Family member away	1 (0.46)
Others	33 (15.07)
Complaints	**No. of responses (% of total cases)**
Absent	112 (51.14)
Physical symptoms	41 (18.72)
Psychological/ mental	52 (23.74)
Mixed/ both	15 (6.85)

One third of the students (74, 33.79) had one or other current mental and behavioral disorders (SCID-I DSM IV axis-I diagnosis) at the time of study (within 2 months of study). By the time of study enrollment, more than half (117; 53.42%) had experienced some psychiatric disorder (life time diagnosis prevalence till the time of study). About 1/5th of students had mental illness in past, each both before and after joining BPKIHS. Depression and adjustment disorders were most common (Table 5).

One third of students had mental illness in current time (within 2 months of the study enrollment). Phobias and anxiety, adjustment and alcohol use disorders were among the most common psychiatric illnesses among the students (Table 6).

Table 5: Psychiatric Illness in their Past #

SCID-I diagnosis	Before joining BPKIHS	After joining BPKIHS
	Number (%)	Number (%)
Major depressive	12 (5.48)	10 (4.57)
Bipolar mood	0 (0)	1 (0.46)
Dysthymia	1 (0.46)	0 (0)
Other mood	0 (0)	0 (0)
Schizophrenia related	0 (0)	0 (0)
Nicotine use	2 (0.91)	0 (0)
Alcohol/ Cannabis/ other subs.	0 (0)	0 (0)
Panic disorder	0 (0)	1 (0.46)
Obsessive compulsive	2 (0.91)	2 (0.91)
Post traumatic stress	2 (0.91)	3 (1.37)
Phobia/ other anxiety	8 (3.65)	2 (0.91)
Somatoform	0 (0)	0 (0)
Adjustment	17 (7.76)	25 (11.42)
Others (non-SCID I)	1 (0.46)	0 (0)
Present	42 (19.18)	45 (20.55)
Absent	177 (80.82)	174 (79.45)

Table 6: Current SCID-I Psychiatric Disorders #

SCID I diagnosis	Onset before joining BPKIHS	Onset after joining BPKIHS	Total current Prevalence
	No. (%)	No. (%)	No. (%)
Major depressive	2 (0.91)	7 (3.20)	9 (4.11)
Bipolar mood	1 (0.46)	0 (0)	1 (0.46)
Dysthymia	3 (1.37)	1 (0.46)	4 (1.83)
Other mood	1 (0.46)	0 (0)	1 (0.46)
Schizophrenia related	0 (0)	0 (0)	0 (0)
Alcohol use disorder	10 (4.57)	8 (3.65)	*18 (8.22)*
Nicotine use	13 (5.94)	5 (2.28)	18 (8.22)
Cannabis/ other subs.	3 (1.37)	3 (1.37)	6 (2.74)
Panic disorder	0 (0)	0 (0)	0 (0)
Obsessive compulsive	4 (1.83)	2 (0.91)	6 (2.74)
Post traumatic stress	0 (0)	0 (0)	0 (0)
Phobia/ other anxiety	22 (10.05)	4 (1.83)	*26 (11.87)*
Somatoform	1 (0.46)	0 (0)	1 (0.46)
Adjustment	1 (0.46)	22 (10.05)	*23 (10.50)*
Others (non-SCID I)	2 (0.91)	0 (0)	2 (0.91)
Present	46 (21.01)	45 (20.55)	74 (33.79)
Absent	173 (78.99)	174 (79.45)	145 (66.21)

About a half of the enrolled students had experienced psychiatric disorders (SCID-I) by the time of study. Adjustment, phobias/anxiety, major depressive and alcohol use disorders were the most common psychiatric illnesses as life time diagnoses till then (Table 7).

Table 7: Life Time Prevalence of SCID-I Psychiatric Disorders till Time of Study Enrollment#

SCID-I diagnosis	Number (%)
Major depressive	*22 (10.05)*
Bipolar mood	2 (0.91)
Dysthymia	5 (2.28)
Other mood	1 (0.46)
Schizophrenia related	0 (0)
Alcohol use disorder	18 (8.22)
Nicotine use	19 (8.68)
Cannabis/ other substance	5 (2.28)
Panic disorder	0 (0)
Obsessive compulsive	9 (4.11)
Post traumatic stress	3 (1.37)
Phobia/ other anxiety	*32 (14.61)*
Somatoform	1 (0.46)
Adjustment	*56 (25.57)*
Others (non-SCID I)	3 (1.37)
Present	117 (53.42)
Absent	102 (46.58)

Many students 144 (67.29%) had ever used substances, mainly alcohol and nicotine. Average age of start of substance use was 17.8 years (Table 8).

Many students (16.44%) reported to have sustained head injuries in their past, mainly minor though one had major, requiring hospital admission. Other main physical illnesses in their life time till study enrollment were related to infection, ear and orthopedic origin. Almost 40% of the students revealed physical illness at the time of study enrollment. The most common three illnesses were related to surgery, eye and gastro-intestinal origin (Table 9).

Table 8: Psycho-active Substance Use #

Substance use	Number (%)
Absent	71 (32.42)
Single taste of alcohol	52 (23.74)
Frequent/ recreational alcohol use	75 (34.25)
Alcohol abuse	16 (7.31)
Alcohol dependence	2 (0.91)
Nicotine use	26 (11.87)
Nicotine dependence	15 (6.85)
Cannabis use	11 (5.02)
Cannabis use disorder	5 (2.28)
Others	3 (1.37)

Table 9. Major Physical Illness Currently and in their Lifetime till the Study #

Physical diseases related with	Current No. (%)	Lifetime No.%
Infection/ infestation	5 (2.28)	43 (19.63)
Endocrine, nutritional & Metabolic	2 (0.91)	1 (0.46)
CNS- Neurological / primary headaches	10 (4.57)	7 (3.20)
Head injuries (minor plus major) (35+1=)	0 (0)	36 (16.44)
Other injuries	0 (0)	3 (1.37)
Eye, including refractive errors	19 (8.68)	3 (1.37)
ENT	10 (4.57)	21 (9.59)
Circulatory/ Cardio-vascular	1 (0.46)	3 (1.37)
Respiratory	5 (2.28)	9 (4.11)
Digestive/ Gastro-intestinal	17 (7.76)	10 (4.57)
Skin diseases	9 (4.11)	2 (0.91)
Musculoskeletal & connective/Orthopedics	6 (2.74)	16 (7.31)
Genito-urinary & obstetric/Gynecological	5 (2.28)	5 (2.28)
Surgical	19 (8.68)	19 (8.68)
Dental	3 (1.37)	2 (0.91)
Present	86 (39.27)	131 (59.82)
Absent	133 (60.73)	88 (40.18)

DISCUSSION

This is an institute based prevalence study among the students of BPKIHS. The diagnoses were made by a consultant psychiatrist (DRS) with the help of the instrument, 'Structured Clinical Interview for DSM- IV Axis-I disorders' (SCID-I). This interview schedule, to be administered by a mental health professionals or trained personnel is widely validated across the world.[27] In the pretext of constrained resources, this time consuming tool is a sort of limitation of this study. At the same time, it can be viewed as a great strength itself. Most of the studies have looked into common psychiatric morbidities[17,28], mainly syndromes[29], and have adopted self-response questionnaires[10-12] in the studies among medical students. Hence, this study may prove to be a different and realistic one because of its methodology.

Many students (39%) had close blood relatives with some psychiatric illness. Main among the illness were mood, anxiety and even schizophrenia and related disorders. Relatively greater proportion of students had relatives who had either attempted suicide or lost life by suicide. These facts, in a way show that mental illness is ubiquitous.[1-4] It needs further study whether the illness of near and dear could be a motivating factor for joining health science education.

Medical education has been one of the very stressful careers.[6,28] Stressors related to study was expressed by almost all medical students. A majority (65%) of them had other stressors too, besides study related ones. Being away from home and family, strained interpersonal relationship with someone like friend, family members, boy/girl friend and ragging were the top 3 stressors perceived by the students keeping with the studies of Nepal[28,30] and abroad[6]. Despite average distance of their residence was about 17 hours of bus travel from the institute and most of them were from city or semi-urban areas, many of them perceived staying away from home as a stressor. Ragging was another striking one which affected many students as reported in other study of same institute.[31] The institute should seriously look into and take necessary steps to curtail this problem. Health related problems, both of themselves and their family members disturbed many students. Many students had financial problems as reported in literature.[32]

Almost half of the students revealed that they recently had some health problems. More health problems were psychological (almost one fourth) than physical (19%). It might be because the subjects knew about the interviewer being a consultant psychiatrist and they inclined more to report their psychological problems though the investigating team equally focused on both physical and psychological symptoms in a particular question about present complaint or symptom. By this, at least one can infer that psychological problems are not less among medical students.

Nearly one fifth of the medical students (19%) had some psychiatric disorders with onset prior to joining the institute which had abated by the time of the survey. Adjustment disorders (in 7.76%), depression (5.48%) and anxiety/ phobia (3.65%) were the common mental illnesses. Similarly, slightly more than one fifth of the students (21%) had some mental illness with onset after joining the institute and which had disappeared by the time of study enrollment. Here again, adjustment disorders (11.42%) and depression (4.57%) were the most common disorders. Adjustment disorders were the most common both, before and after joining the institute. They were even more after joining the institute. It might indicate that there were more stressors in the institute and or in the medical education. This, in a way replicate that medical education is a stressful career as in other studies.[6,28] Phobia and other anxiety with onset after joining the institute were less (0.91%) than before joining the institute. This finding is explainable by the fact that phobias are common in younger ages; they disappear in later years by the illness course or by exposure to the feared situation or object. For common phobia such as social phobia, the academic activities of medical education such as seminars and presentations are like self-help measures.

During the time of study (within at least 2 months), about one third of the medical students fulfilled the criteria for SCID-I diagnosis. The current illness of about 21% of the students had started before joining the institute and almost similar number of the students had illness starting after their admission to the institute. Over all, phobias and anxiety, adjustment, alcohol use and nicotine use disorders were among the most common psychiatric illnesses affecting medical students. Though, there was minimal difference in incidence of psychiatric disorders prior to and subsequent to joining the institute, there were some notable differences regarding specific disorder incidences before and after the admission to the institute. Like the past psychiatric disorders, adjustment and depressive disorders were the disorders of which onset was more after joining the institute. Adjustment disorders rose from among 0.46% to 10.05% and depression from 0.91 to 3.2%. It might indicate the role of some factors inherent in medical education and the institute and this deserves a further study. More students (5.94%) currently smoking had started it before joining institute than those starting afterwards (2.28%). As the past psychiatric disorders, phobia and anxiety had onset more before joining the institute (10.15%) in comparison to those afterwards (1.83%). The diagnostic profile of this study represents a medical student population. In many ways, the findings are specific to the particular sector of general population. At the same time, many of the findings simulate general population data[1-4] which are different from the findings of studies done in clinical settings.[22,33]

Somewhat more than a half of the enrolled students (53.42%) had experienced psychiatric disorders (SCID-I) in their life time till the time of the study enrollment. By the time of their young adulthood itself, they had experienced psychiatric disorder which seems to be higher than in life time prevalence studies among general population.[2,4] Adjustment, phobias/anxiety, major depressive, nicotine use and alcohol use disorders were the most common psychiatric illnesses as life time diagnoses till then. This profile is close to diagnostic profile of a community study.[2] The outstanding diagnosis is the adjustment disorder which appears far

exceeding the picture among these students in this study in comparison to general population studies.

The figure of 67% of the medical students who ever used substance is very close to a study from the same institute looking into substance problem among junior doctors and medical students (63.5%).[25] The major psychoactive substances used among medical students were nicotine and alcohol. Among the users, alcohol use disorders and nicotine use disorders were present among 8.22% each.

We also looked into the major/significant (as per students' view) physical problems the students had suffered in their past and current time. About 60% of the students had a history of some significant physical illness till the time of study enrollment (lifetime prevalence till study enrollment). Many students (16.44%) reported to have sustained head injuries in their past, mainly minor though one had major requiring hospital admission. Other main physical illnesses in their life time till study enrollment were related to infection, ear and orthopedic origin besides head injury. At the time of study also, many students (almost 40%) were suffering from physical illness. The most common three current physical illnesses were related to surgery, eye and gastro-intestinal origin.

These findings/ observations corroborate that medical students suffer from psychiatric disorders, even more than general people. Hence, all concerned sides including students themselves, their parents and family, teaching institutes and society should remain aware about the fact, maintain alert watch and take timely appropriate steps.

CONCLUSIONS

Stressors were almost ubiquitous among health science students. Along with study related stressors, many students had other stressors; main were: being away from home, interpersonal problems, ragging and health related problems. Many students had close relatives suffering from mental illness, the most common being mood disorders. A remarkable number of students reported that they had relatives who had self injurious behavior and suicide/ attempt.

Nearly half of the medical students had some health-related complaints. More Students revealed psychological complaints than physical symptoms. Many medical students had ever used substances, mainly alcohol and nicotine. One third of the students had one or other mental and behavioral disorders (SCID-I DSM IV axis I diagnosis) at the time of study. About 20% of the students had mental illness in past, each both before and after joining the institute. Depression and adjustment disorders were common disorders. By the time of study enrollment, slightly more than half had experienced some psychiatric disorder (life time diagnosis till the time of study). One third of medical students had mental illness in current time (within 2 months of the study enrollment of particular student). Phobias and anxiety, adjustment and alcohol use disorders were among common psychiatric illnesses. About a half of the enrolled students had experienced psychiatric disorders (SCID-I) till time of study. Adjustment, phobias/anxiety, major depressive and alcohol use disorders were most common psychiatric illnesses as life time diagnoses till then.

A great proportion of medical students (about 60%) had experience of physical illness by the time of the study. Many students reported to have sustained head injuries in their past, mainly minor ones. Other main physical illnesses in their life time till study were related to infection, ear and orthopedic origin besides head injury. Almost 40% revealed physical illness at the time of study. The most common three illnesses were related to surgery, eye and gastro-intestinal origin.

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