Original Research Paper

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Assessment of Psychological Health of First Year Medical Undergraduate Students-A Longitudinal Study

Medical Science

KEYWORDS : GHQ, Longitudinal, Medical students.

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ABSTRACT

Objective: *The study was conducted to prospectively assess the psychological health of first year medical students at the beginning and end of an academic session, and to determine their demographic correlates.*

Method: *165 students (M=94, F=71) participated in longitudinal, self-administered questionnaire based study. Data was collected in two sessions; after completion of first week in the institute (baseline) and at the end of first academic term (follow-up). Psychological health was assessed using 12-items General health questionnaire (GHQ-12).*

Result: *Prevalence of psychological morbidity was 43% in the baseline session which increased significantly ($p<0.001$) to 65% in the follow-up session. No significant difference was observed in the mental well-being of the participants on the basis of the demographic characteristics.*

Conclusion: *Considerably high prevalence of psychological morbidity was self-reported by the participants, both, at the beginning as well as, at the end of an academic session, with significant deterioration at the follow-up session as compared to the baseline session as indexed by the GHQ-12.*

INTRODUCTION

Psychological health refers to a state of mental well being which directly impacts the cognitive and emotional capabilities of an individual and enables them to function effectively with a sense of purpose in life (1). Medical education, in itself, can impose considerable derangement in psychological well being of an individual (2). Significant number of previous researches has reported varying degrees of psychological distress, drug and alcohol addiction as well as suicidal ideation amongst medical undergraduate students in different phases of their training (3-5). These in turn, predispose to not only a decrease in attention and learning ability in them during their student life, but also adversely affect their clinical practice in future (6). However, most of the previous researches have been primarily cross-sectional studies (4,5). There are very few scientific studies available so far about the assessment of longitudinal trajectory of psychological health of medical students at different times in an academic year. Even less is known about the mental well being of students at the very onset of their medical studies.

The present study was conducted to prospectively assess the psychological health of first year medical students at the beginning and end of an academic session, as well as, to determine their demographic correlates.

METHODOLOGY

The present study was self-administered, questionnaire based prospective trial conducted in the Department of Physiology, Maulana Azad Medical College, New Delhi. The Institutional Ethical committee's approval was obtained prior to the commencement of the study.

All the newly admitted, first year undergraduate medical students of the Institute were invited to participate in the study. The purpose of the study was fully explained to the participants and their informed signed consent was taken.

The Sample size for prevalence study was estimated to be 143 by assuming prevalence of stress to be 50%, an allowable error of 5%, confidence limits 95% and non-responders 15%.

Participants

Out of a total of 190 new medical undergraduate students,165 students (M= 94, F=71) volunteered to participate in the study. Those who returned incomplete forms or failed to come for follow-up were excluded from the study. The identity of each student was kept anonymous by allocating a random number to each one of them and strict confidentiality was maintained.

Data collection

Data was collected using pre-designed, pre-tested, self-reported questionnaires (in English language) at 2 times during their medical curriculum. Baseline data was collected at the completion of their first week in the medical college and Follow up data was collected at the end of first academic session. The paper-based versions of questionnaires were distributed amongst students during breaks from their teaching schedule. The process of filling in the questionnaire took about 15 minutes and the completed questionnaire was collected on the same day. Completion of the questionnaires was voluntary and did not affect their progression in the medical course.

The questionnaire consisted of two parts: the first part was collected only during the baseline session and dealt with data pertaining to the personal factors such as gender, age and demographic profile like mother tongue, medium of education, residence of student after admission to college and any kind of physical exercise done by them and for how much time. The second part of the questionnaire comprised of the General Health Questionnaire (GHQ-12). In completing the questionnaire, the individual was required to indicate on the given likert scale how, each statement applied to them over the previous week.

General Health Questionnaire (GHQ-12)

The 12-item version of the General Health Questionnaire (GHQ-12) is one of the best screening devices available for identification of minor psychological disorders in the general population. It is suitable for all ages from adolescent upwards. The self-reported questionnaire focuses on two major areas namely, the inability to carry out normal functions and the appearance of new and distressing phenomena. The 12 items on the GHQ-12, represent 12 manifestations of psychological morbidity. Respondents were asked to rate the presence of each of these manifestations in themselves' over the last week" compared to their usual state on a 4-point likert scale ('better than usual'=0, same as usual =1, less than usual=2, much less than usual=3). The possible range of scores is from 0 to 36. A total score of more than 12 was considered as a 'GHQ case' and attrib-

uted to with a higher risk of psychological morbidity (7).

Statistical analysis

The data was analyzed using SPSS version 20.0 for Windows (Inc.,Chicago, Illinois, USA). All data collection forms were given serial numbers. Reliability analysis of all measures was conducted by calculating Cronbach's alpha internal consistency coefficients using the data from all participants. Descriptive statistics in the form of mean, standard deviation (SD) and/or range was calculated for the continuous data. Categorical data was expressed as frequency and percent. Chi- square test was used to measure association between categorical variables.Difference between means of variables was evaluated using Student's paired "t" test. A p value <0.05 was considered statistically significant. Logistic regression analyses were carried out to assess determinants of GHQ "cases".

RESULTS

Demographic characteristics of the participants

Out of 190 new medical undergraduate students, 165 (Male:94, Female:71) completed and returned the questionnaires giving an overall response rate of 86.8%. Mean age of the participants was 18.51±1.09yrs. Table I shows the demographic characteristics of the participants.

Table I: Demographic characteristics of the participants (n=165).

Characteristic		Frequency (percentage)
Gender	Male	94 (56.9)
	Female	71 (43.1)
Mother-tongue	Hindi	151 (91.5)
	English	2 (1.2)
	Others	12 (7.27)
Medium of education	Hindi	4 (2.4)
	English	161 (97.5)
Stay	Day-scholar	119 (72.1)
	Hostler	46 (27.8)
Exercise	Yes	22 (13.3)
	No	143 (86.6)

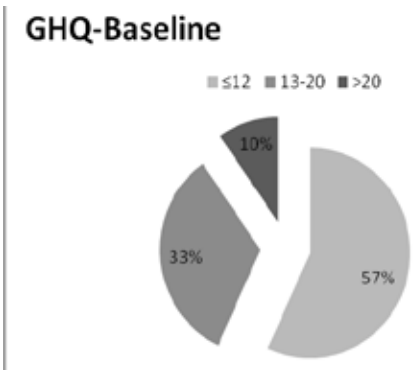
GHQ-12

Reliability analysis of GHQ-12 questionnaire showed that it had a high internal consistency as their Cronbach's alpha coefficient value was 0.83, which is more than the acceptable cut-off point of 0.6 (Downing.,2004).The overall and gender-wise mean±SD scores for GHQ in baseline and follow-up sessions are shown in Table II. The GHQ scores were significantly higher ($p<0.001$) in the follow-up session as compared to the baseline session. Figure 1a & 1b shows the overall percentage of "cases" on the basis of GHQ scores (GHQ score of 12 as the cut-off point) in the baseline session and follow-up sessions.

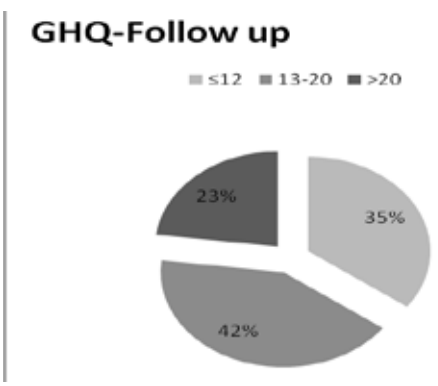
Table II: Mean ±SD of GHQ-12 in Baseline & Follow-up sessions

Session	Male + Female	Male	Female
Baseline	12.29±5.70	12.06±5.74	12.53±5.74
Follow-up	16.61±11.51	15.43±7.24	16.49±6.76

Figure 1a &b: Percentage of GHQ "case" in the baseline & Follow-up sessions (n=165).



(1a)



(1b)

There was no difference in the prevalence of psychological morbidity on the basis of gender, mother tongue, medium of education, place of stay or exercise.

DISCUSSION

The key findings of our research are the high prevalence of psychological morbidity amongst the newly admitted students to the medical undergraduate course, both, at the beginning as well as, at the end of an academic session. The mental well being of the participants decreased significantly at the follow-up session as compared to the baseline session as indexed by the GHQ-12. However, no significant difference was observed in the psychological health of the participants on the basis of any of the demographic characteristics.

In our study, we assessed the psychological health of the students who had embarked their undergraduate medical education and had just completed their first week in the college. This enabled us to discern the inherent psychological characteristics of these students. Moreover, we also evaluated their psychological health at the completion of their first semester. Due to the longitudinal study design, we were also able to observe the changes that occurred in the mental well being of the participants over the course of an academic session, which was not plausible in majority of the earlier studies that were either cross-sectional(8) or included subjects from different stages of medical training (9,10)

The relatively high response rate seen in this study is in concurrence with various other previous studies (11,12). It indicates that the budding medicos not only want to know about their psychological well being per se, but are also keen to track any potential impact that their professional studies might impose on it. Furthermore, there is a growing perceptive concern about the globally increasing trend

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in psychological distress amongst the medical students, and hence, the new entrants too, may have been skeptical about the probability of developing it themselves.

Our GHQ-12 data illustrated that the psychological morbidity of the first year medical students increased during an academic session. There was a significant ($p<0.001$) increase in the mean GHQ scores in the follow-up session as compared to the baseline session. It is noteworthy that, even at the beginning of the professional studies, the overall percentage of "cases" on the basis of GHQ scores (GHQ score of 12 as the cut-off point) was 43%, out of which about one-tenth of the participants had GHQ score of >20. This observation in our study reflects that the natural levels of psychological distress in these participants were quite high. This result is in contradiction to the previous studies which have postulated that, the psychological health of students at the start of medical studies is similar or almost similar to their non-medical peers, and tends to worsen during the course of medical training (13). Ours is one of the country's premiere most medical institutes, and the majority of the students who are selected here are from amongst the national and state toppers. One possible reason for the relatively high prevalence of psychological morbidity in our participants could be due to their being over achievers. It is perhaps the high expectation of themselves and their peers to excel as medical professional that could have contributed to the psychological ill-health even at the very onset of the medical studies.

The increase in the prevalence of self-reported psychological morbidity could be as a result of varied factors including those related to academics. These observations in our study are in concurrence with various other previous studies that have assessed the psychological health levels in medical students using different study populations and protocols (4,14,15). *M*edical education in India is considered to be highly stressful as the students besides pursuing knowledge in medical university, also have to simultaneously adjust and adapt to the alterations in teaching methodologies, lifestyle and social environment. Moreover, due to the voluminous medical curriculum, frequent assessments and examinations, there is very little time available for recreation and relaxation. All of these, in turn, may have contributed to the increase in psychological morbidity seen in our subjects.

There was no significant difference in the psychological health of the participants on the basis of either gender or any other demographic factor. These results are in contradiction to some earlier works that had reported significantly higher levels of prevalence of stress in female students as compared to their male counterparts(11,16). The disparity in the methodological factors relating to the measures used or subject selection (students in different years of medical training) may have been potential sources for the inconsistency in our findings with those of previous research.

The increase in the prevalence of psychological morbidity seen among medical students is a cause of concern. As the study findings also showed a high prevalence of psychological distress among the new entrants, we suggest supporting them and training them properly in order to avoid burnout. This will also help them cope well with stressful situations in the later years. Furthermore, it is important to detect such students earlier to prevent deleterious long term effects of psychological ill-health on them.

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