JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH

How to cite this article:
KHAN T M, Humera T, KHAN A. INCIDENCE OF MAJOR DEPRESSION AMONG FIRST YEAR PHARMACY UNDERGRADUATES. Journal of Clinical and Diagnostic Research [serial online] 2010 April [cited: 2010 April 5]; 4:2265-2270.

Available from
http://www.jcdr.net/back_issues.asp?issn=0973-709x&year=2010 &month= April &volume=4&issue=2&page=2265-2270 &id=572

ORIGINAL ARTICLE

Incidence of Major Depression among First Year Pharmacy Undergraduates

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ABSTRACT

The objective of this study was to determine the prevalence of major depression and the factors responsible for its incidence among first year pharmacy students at a private pharmacy college in Penang. Face to face interviews were conducted among the pharmacy first year students using a structured study tool. The entire fresh first year pharmacy students were approached for their potential participation in the study. The evaluation for the depression was done using the Diagnostic Statistics Manual Four Text Revision (DSM IV-TR) criteria for depression. All the data was analysed using SPSS® version 13®. Binary Logistic regression was applied in order to further predict the factors that had a major contribution in the resulting depression. The findings demonstrated that the incidence of depression was higher among female students in comparison to males, which was found to be significant (t=5.538, p=<0.001). Among all demographic factors, gender was found to significantly correlate with the incidence of the symptoms of depression (r=0.77, p=<0.001). The respondents were further evaluated in order to identify the stressors responsible for the depression. A majority 96.2% highlighted Assignments, Quizzes and Projects and work overload as the potential stressors for depression. However, the lecturer's attitude and the work over load were the two main stressors identified, that are significantly (F=12.736, df=25, p=<0.042) found to be associated with the prevalence of depression. on the whole it was revealed that female students had a higher prevalence of depression (Odd ratio=1.250, CI 0.688- 2.271). However, on racial grounds, Malay students were found more likely to be at a higher risk (Odd ratio=1.618, CI 0.378- 6.923) than that of their Chinese classmates (Odd ratio=0.863, CI 0.570- 1.306. Overall findings demonstrated that Malay female students were at a higher risk of depression. The lecturer's attitude and work overload were the stressors identified for the possible association with the depressive state of the students.

Key Words: Major depression, pharmacy, fresher's,

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Introduction

In the past few years, the number of institutions offering medicine and pharmacy education in Malaysia have drastically increased [1]. The scarcity of these professionals in Malaysia is the main reason for the increase in the number of tertiary medical and pharmacy institutions. However, recent studies have proved that a majority of the students choose pharmacy as the profession because of the chance of

self employment and good earning opportunities [2].
No matter whatever the motivations are for the students to choose pharmacy as their profession, one have to face academic challenges. Moreover, the educational environment and issues regarding their practice are proven to be stressful for the students [1]. Such a stressful environment may lead to various emotional disorders [3] Among all, depression is the most prevalent emotional disorder which is identified by the symptoms of sadness, lack of interest in routine activities and fatigue [3],[4].

According to NIHM, 2003 major depression is the most prevalent type of depression, disturbing the daily life routines of an individual. According to the Diagnostic Statistics Manual IV Text Revision (DSM IV TR) criteria for major depression, when five or more symptoms (as listed in Table 2) of depression are found in an individual for more than two weeks, then that individual is said to suffer from major depression [13]. The World Health Organisation has declared depression as the leading cause of disability because of its physical, psychological and social impacts [5]. Previous studies in Malaysia provided evidences of the high prevalence of depression among medical students [3],[6]. The factors which have been identified as causative for depression among medical students, were problems of examination, relationship and understanding with partners, parents, siblings, lecturers, course mates and loved ones [3,6]. In addition to social issues, the educational environment can be a possible factor that can result in depression. Stecker, 2004 has provided the evidence of depression and emotional disorders among fresh medical undergraduates and new house officers [1],[7],[8],[10]. Such situations not only affect their academic performance, but also affect their functionality as future medical professionals. In the United States, a study showed that 26% of medical students had reported high scores on the depression scale as compared to pharmacy students [8]. Emotional problems if left unresolved can lead to personality changes [9] and may even put the individual at a risk of suicide attempts [10].

So far, in the national and international scenarios, there is a scarcity of any effort that reports the level of emotional and depressive disorders among the pharmacy students, especially among the fresh first year pharmacy undergraduates. There are some studies that provide an evidence of depression among college students, especially among freshers [11] due to the transitional nature of college life [12]. It is a type of adjustment response for being away from home for the first time [12]. Moreover, the new social environment and the desire to score a high grade are the other factors that may cause depression among the fresh students [12]. The objective of this study was to determine the prevalence of major depression and the factors responsible for its incidence among first year pharmacy students at a private pharmacy college in Penang.

Methodology

Face to face interviews were conducted among the first year pharmacy students using a structured study tool. The sample was drawn from a local private college that is offering a pharmacy degree program in collaboration with one the public university. The entire batch of fresh first year pharmacy students were approached for their potential participation in the study. The new semester had started on 5th July 2009 and the students' evaluation for the depression was done on the 27th of July 2009 by using the Diagnostic Statistics Manual Four Text Revision (DSM IV-TR) criteria for depression.

Contents Of The Study Tool

The study tool comprised of four sections; section one covering the information about

the demographics of the respondents. Three items were a part of section one i.e age, gender and race. Section two comprised of two questions which retrieved information about the first choice of profession as a carrier and the motivation to choose pharmacy as a profession. Section three was the core section of the study tool that evaluated the prevalence of the symptoms of depression among the pharmacy students in the past two weeks. The student's evaluation for the prevalence of depression was done by using the DSM IV-TR criteria for major depression. The evaluation for major depression was done on the basis of eleven symptoms which were adapted from DSM IV-TR. These eleven items are illustrated in detail in [Table/Fig 2]. The students were questioned to compare their mood before and after joining the college. Scoring was done for the prevalence of every symptom; those having no symptoms of depression were score zero. However, those with the prevalence of 2-4 symptoms were marked for the possibility of minor depression. Those with the prevalence of 5-6 symptoms were classified as having major depression. However, those with the prevalence of 7 -11 symptoms were ranked in the criteria for severe depression. In the final section four, six options were presented to the respondents to know what the potential stressors were for the depressive mood.

Statistical Analysis

All the data was analysed using SPSS® version 13. For the comparison among two groups, Student t-test was applied. However, in order to find out the correlation of the demographical variables with the prevalence of depression, Pearson's correlation was applied. Binary logistic regression was applied in order to further predict the factors that have a major contribution in the resulting depression.

Results

A total of N=28 students registered for the Bachelor of Pharmacy degree, of which a majority (71.4%) of the students were Malays and rest were Chinese. A majority (60.7%) of the students who registered for this course were females. About 64.3% stated that it was their first preference to choose pharmacy as a profession. However, nearly 25.0% had a desire to choose medicine as a profession. Whilst questioning the motivation among the students to choose pharmacy as a profession, 53.6% stated that they wanted to serve the community, which was the reason they chose pharmacy as a profession. Details about the respondent's demographics and the factors which influenced their selection of pharmacy as profession are illustrated in [Table/Fig 1].

(Table/Fig 1)Demographic Details Of Students

Demographics	Frequency	%
Race		
Chinese	8	28.6
Malay	20	71.4
Age		
19 Years	20	71.4
20 Years	6	21.4
21 Years	1	3.6
22 Years	1	3.6
Gender		
Male	11	39.3
Female	17	60.7
First choice		
Pharmacy	18	64.3
Chemistry	2	7.1
Medicine	7	25.0
Engineering	1	3.6
Motivation		
Family influence	2	7.1
Want to help community	15	53.6
Earn money	3	10.7
Unable to get admission in medical college	7	25.0

Evaluation of the students for the prevalence of depression revealed that a majority suffers from two or more symptoms of depression. However, the incidence of depression was higher among female students in comparison to males, which was found to be significant (t=5.538, p=<0.001) and among all demographical factors, gender was found to significantly correlate with the incidence of the symptoms of depression (r=0.77, p=<0.001). Detailed responses about the

mood of the respondents are illustrated in [Table/Fig 2].

(Table/Fig 2)Prevalence Of Symptoms Of Depression Among Students

Symptoms	Race	Male	Female	N
Sad or Bad mood	Chinese	0	3	11
	Malay	1	7	(40.7%)
Changes in appetite pattern	Chinese	1	4	22
	Malay	6	11	(81.5%)
Lack of interest in routine life activities	Chinese	0	2	14
	Malay	2	10	(51.9%)
Fatigue and body aches. Feel tired and exhausted.	Chinese	1	4	22
	Malay	6	11	(81.5%)
Sleep disorders like lack of sleep or increase in duration of sleep.	Chinese	1	5	24
	Malay	7	11	(88.9%)
Lack of energy	Chinese	2	4	22
	Malay	5	11	(81.5%)
Irritating behaviour	Chinese	0	3	10
	Malay	1	6	(37.0%)
Reduced concentration and attention on a task	Chinese	0	3	15
	Malay	2	10	(55.6%)
Reduced Confidence and self-esteem	Chinese	0	2	10
	Malay	0	8	(37.0%)
Feel worried	Chinese	2	4	18
	Malay	2	10	(66.7%)
Suicidal or self harming thoughts	Not disclosed			

Furthermore, on the basis of the number of symptoms of depression, the depressive mood state of the respondents was further divided into minor, major and severe depression [Table/Fig3]. The respondents were further evaluated in order to identify the stressors responsible for their depression. A majority highlighted Assignments, Quizzes and Projects and work overload as the potential stressors for their depression [Table/Fig 4]. Further, to identify the stressors which were responsible for the depression among students, logistic regression modelling was done. The model was finalized after the stepwise separate analysis of the each predictor value and other independent variables. The lecturer's attitude and work over load were the two main stressors which were identified, that are significantly (F=12.736, df=25, p=<0.042) found to be associated with the prevalence of the symptoms of depression among the students. However, stepwise analyses revealed that the lecturer's attitude alone had a high impact on the mood of the students [Table/Fig 5].

Discussion

This was the first study ever conducted among pharmacy undergraduates in order to assess the prevalence of major depression among them. Overall, the findings demonstrated that Malay females were at a high risk of depression in comparison to others.

(Table/Fig 3)Classification Of Depression State According To The Number Of Symptoms

Score	Female	Male
0 (No depression)	0	1
2-4 (Minor depression)	0	6
5-6 (Major depression)	5	4
7 -11 (Severe depression)	12	0

About 64.3% of the students stated that pharmacy was their first choice as profession. However, the rest (35.7%) stated other carrier choices to choose as a profession, of whom a majority were willing to get medical education, but were unable to get admission to the medical college [3]. Among these, a majority 5(%) had a prevalence of more than five symptoms which were mentioned in the DSM IV TR criteria for major depression.

Overall, the findings revealed that female students had a higher prevalence of depression (Odd ratio=1.250, CI 0.688-2.271). However, on racial grounds, Malay students were found to be at a higher risk (Odd ratio=1.618, CI 0.378- 6.923) than that of their Chinese counterparts (Odd ratio=0.863, CI 0.570- 1.306. Surprisingly, only one male respondent was without the prevalence of any symptoms of depression. Of the eleven male respondents, six had minor depressive disorders with the prevalence of two to four symptoms of depression. Four students complied with the DSM IV criteria for major depression, with the prevalence of five to six symptoms of depression. However, of seventeen female students, five complied with the DSM IV criteria for major depression. The rest 12(%) suffered with severe depressive disorders, with the prevalence of more than seven symptoms of depression [1]. In other words, these findings revealed

a high incidence of depression among female students than male students. These findings confirmed the evidences provided, that reported a high prevalence of depression among female students who were undergoing their tertiary medical education [1],[14],[15],[16]. Previous Malaysian studies conducted among medical students revealed that first year medical students had a higher incidence of depression. Stiff competition to enter medical schools had been highlighted by Sherina at el, (2003) and Dahlin et al, (2005), which has also stated that the first year students also needed to face the process of adjusting themselves to the medical education setting [3],[10]. These factors might have contributed to the emotional disturbances among the first years students. As for the senior students, they face high expectations to become competent doctors and to acquire good academic results to enable them to obtain seats for postgraduate training [17]. Unlike the finding of Zaid et al (2007), this study provided a positive correlation of gender (r=0.77**, p=<0.001) with depression. Scoring was done on the basis of the number of symptoms which were present among the students.

Exploration of the stressors which were associated with the depressive state of the respondents revealed that academic factors particularly increased academic workload. Fear of failure is one of the sources of stress in a medical school [3]. In the present study, a majority [26 (96.2%)] stated that assignments, quizzes and projects were the main cause of their depressive state [Table/Fig 4], followed by work over load 22 (81.5%)]. 15 (55.6%) stated lecturer's attitude and 11 (40.7%) stated financial problems as the possible stressors leading to depression.
Zaid et al, (2007) provided the evidence of the possible association of a romantic relationship for depression among the students who were involved in tertiary medical education.

(Table/Fig 4)Stressors Reported By The Students

Stressors	Race	Male	Female	N (%)
Assignments , Quiz and Projects	Chinese	3	5	26
	Malay	7	11	(96.2%)
Miss Home	Chinese	2	0	5
	Malay	1	2	(18.5%)
Miss Boy/Girl friend	Chinese	0	1	3
	Malay	0	2	(11.1%)
Financial Problem	Chinese	0	2	11
	Malay	2	7	(40.7%)
Work over load	Chinese	1	6	22
	Malay	5	11	(81.5%)
Lecturer attitude	Chinese	0	4	15
	Malay	2	9	(55.6%)

However, the findings of the current study did not report some facts. Facts obtained through logistic regression revealed that the lecturer's attitude and work over load was the two common factors contributing to the depressive state of the respondents. Step wise modelling revealed that the lecturer's attitude had a major contribution in resulting depression among the students [Table/Fig 5] (p=<0.001).

(Table/Fig 5)Predictors For Depression

Model	R	R Square Change	R Square Adjusted	F	Sig. F Change
Lecturer attitude	0.643	0.414	0.391	18.334	<0.001 *
Lecturer attitude and Work over load	0.710	0.505	0.465	12.736	0.042 *

*** Significant,**

Conclusion:

Findings demonstrated that Malay female students were at a higher risk of depression. It was found that lecturer's attitude and work overload may the two main stressors associated with the depressive state of the students.

Recommendation

These findings are alarming for the college administration and these helped them to take some immediate steps to resolve the issues associated with the depressive state among first year pharmacy students. Seminars on stress and personal management techniques can be organised in order to improve the mood management skills of the students. Negligence in this regards not only affects the academic performance of the students but also puts

the students at a risk of suicide and further complications which are associated with depression.

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