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***Research paper***

# Prevalence and Socio-Demographic Association of Depression, Anxiety and Stress Among University Students

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## Abstract

Prevalence of Stress, anxiety and depression has been identified to be high among university students which may affect their social and professional lives. The study aims at assessing the prevalence of stress, anxiety and depression among university students and analyzes their association with gender, ethnicity and area of upbringing. The study also intends to identify their coping strategies. This was a cross sectional study utilizing validated questionnaires. It was conducted among a total of 143 university students in Johar bahru. The questionnaires used were the socio-demographic questionnaire, DAAS-21 questionnaire and Brief coping strategy Questionnaire. Data was analyzed using SPSS software. Descriptive statistics was used. The mean age of the students under the study was 25.02±8.6 years. Depression was seen in 62.2% of the students and anxiety and stress were seen in 78.3% and 55.9 % students respectively. Depression, anxiety and stress were found more in females than males. Anxiety was more in Malays and depression and stress was more among other ethnic groups. Anxiety and depression were seen more in students with a rural upbringing and stress in students with a urban upbringing. There was no significant association between depression, anxiety, stress and gender, ethnicity and area of upbringing. The mean score for the common coping strategies employed which was acceptance, positive reframing and self distraction were 2.8±0.9, 2.8±1.0, 2.8±1.0 respectively. Prevalence of anxiety was more compared to stress or depression. Students used active coping Strategies to cope with stress.

***Keywords***: *Anxiety; Depression; Stress; Coping Strategies*

## 1. Introduction

Academic performance among university students demands overall well being which includes physical social, emotional and psychological well-being (1).They need to adapt to various psychological changes besides coping up with the academic and social demands while preparing for their professional career (2). Increasing pressure and high expectations can lead to psychological disturbance among students . These psychological disturbances can affect their academic performance. The common psychological problems encountered among students are depression, anxiety and stress (3).These three problems are found to be interrelated to each other. These psychological problems not only affects their academic performance they can also lead to deterioration in relationships , marital problems and also affect their future employment (4).

Depression is the experience of unhappiness and it involves feeling of being sad, disappointed, frustrated, despairing, helpless and hopeless. Anxiety is a blend of thoughts and feelings characterized by a sense of uncontrollability and unpredictability over potentially adverse life events. Stress is said to be a state that results from a person's interaction with the environment that is perceived as too demanding and a threat to their well-being (5).Vulnerability of university students to these psychological problems is a major health concern. These psychological problems lead to an increasing incidence of suicide which is one of the major causes of mortality among university students.

Majority of the university students try to handle stress in a positive way. However they are some students who are not able to cope with the stress and hence adopt unhealthy ways to cope. The coping strategies of the students can be at an emotional, cognitive or social support seeking level(6).The coping style of each student can differ according to the situation and their age. The understanding on the strategies the students use to cope their stress can help us in planning interventional measures for these students.

The current study aims at assessing the prevalence of depression, anxiety and stress among university students and also analyzes the association of depression, anxiety and stress with gender, ethnicity and area of upbringing. This study also aims at finding the coping strategies of these students. We hypothesize that the depression, anxiety and stress are highly prevalent among university students .The results of this study would be helpful is developing interventional measures for a better student health care and in helping students to face the challenges of student life.

## 2. Materials and Methods

### 2.1. Sample:

This was a cross sectional study conducted on university students in Johar bahru.143 students participated in the study.

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## 2.2. Procedure:

Informed consent was obtained from all the students recruited under the study. The questionnaires used were the DAAS-21 and the brief coping strategies questionnaire. Questionnaire on demographic details were also distributed.

Inclusion criteria:

1. University students studying in Johor Bahru, Malaysia
2. The students who have signed the informed consent

Exclusion criteria:

1. Students with previous history of mental illness
2. Students not willing to sign the informed consent

## 2.3. Materials

The questionnaires used were the socio-demographic questionnaire, DAAS-21 questionnaire and the brief coping strategy questionnaire. The socio demographic questionnaire was used to obtain data regarding the age, gender, ethnicity and area of upbringing.

The English version of the DASS-21 questionnaire was used .This is the shorter version of the original DASS 42 questionnaire. The DASS-21 questionnaire is found to have better psychometric properties than the DASS-42 and it also takes shorter time to use(7), hence DASS-21 was used in our study. There are 21 items in this questionnaire with 7 items for each scale to identify depression, anxiety and stress respectively. The items in the depression scale focused on low mood, low self esteem and poor outlook for the future. The anxiety scale items focused on fear response and psychological arousal, while the stress subscale was on persistent arousal and tension (8).

The students were asked to rate the extent of their symptoms in the past one week Each item was scored on a four point Likert scale (0-did not apply to me at all, 1-applied to me to some degree or some of the time, 2-applied to me to a considerable degree or good part of time, 3- applied to me very much or most of the time). Sum of the scores of all the seven items for each scale was multiplied by two. Higher the score indicated greater level of problem. The scores of 9 and less than 9 , 7 and less than 7 , 14 and less than 14 was considered normal for depression, anxiety and stress scales respectively. The reliability scores of the scales in terms of cronbach's alpha scores rate the depression scale 0.91, anxiety scale 0.84 and the stress scale 0.90 in the normative sample(9).

The full cope is a 60 item instrument with 4 items for each scale. The brief COPE is taken from the full COPE where it consists of 28 items with 14 scales which includes acceptance , positive reframing, self distraction, planning, active coping ,religion, use of instrumental support ,use of emotional support ,self blame , venting of emotion, humor, denial, behavioral disengagement and substance abuse with 2 items for each scale. The responses were scored on a four point likert scale (1 = I haven't been doing this at all, 2 = I've been doing this a little bit , 3 = I've been doing this a medium amount , 4 = I've been doing this a lot). The scoring was done in terms of mean score for each scale(10).

## 2.4. Data analysis

Data analysis was carried out using IBM SPSS software. Cleaning of the data was done to detect any missing values or any illogical values. The analysis of variables such as age, gender, ethnicity and area of upbringing was expressed as percentage. The prevalence of depression, anxiety, stress was expressed in terms of percentage. The coping strategies were expressed in terms of mean score and standard deviation. The factors associated were analyzed using chi square test. P value < or = 0.05 was considered as a significant association between the variables.

# 3. RESULTS

The mean age of all the students under the study was 25.02±8.68 years.

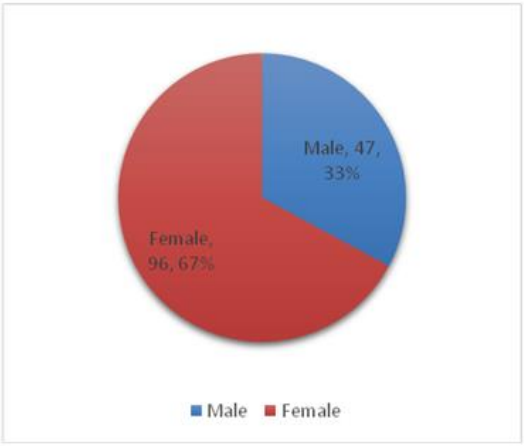



**Fig. 1:** Gender distribution

As shown in figure 1 there were more females than males in the study.

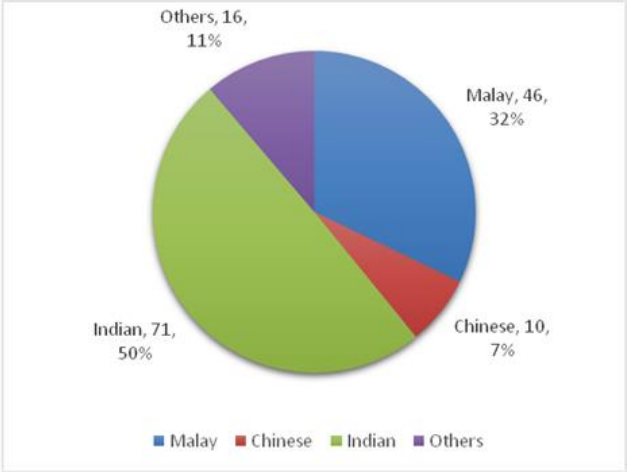



**Fig. 2:** Race distribution

As seen in figure 2 the sample consisted of more Indians followed by Malays.

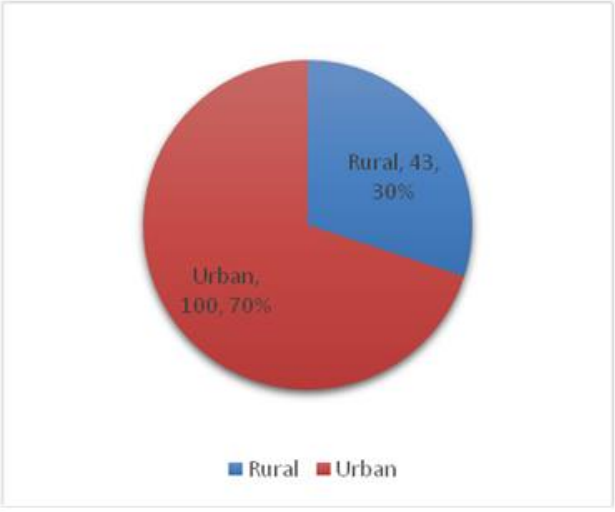



**Fig. 3:** Area of upbringing

Most of the students in the study were from the urban upbringing as shown in figure 3.

**Table 1:** Prevalence of depression, anxiety, stress

| | Stress | Anxiety | Depression |
|---|---|---|---|
| **Number of students** | 80 | 112 | 89 |
| **% of number of students** | 55.9% | 78.3% | 62.2% |

Anxiety was more prevalent among the students (78.3%) compared to stress and depression (Table 1).

**Table 2:** Association between gender and depression, anxiety, stress

| Gender | Stress | Anxiety | Depression |
|---|---|---|---|
| Male | 25 (53.2%) | 33 (70.2%) | 25 (53.2%) |
| Female | 55 (57.3%) | 79 (82.3%) | 64 (66.7%) |
| p-Value | 0.643 | 0.100 | 0.118 |

**Table 3:** Association between ethnicity and depression, anxiety, stress

| Race | Stress | Anxiety | Depression |
|---|---|---|---|
| Malay | 27 (58.7%) | 39 (84.8%) | 26 (56.5%) |
| Chinese | 4 (40.0%) | 7 (70%) | 4 (40%) |
| Indian | 39 (54.9%) | 53 (74.6%) | 45 (63.4%) |
| Others | 10 (62.5%) | 13 (81.3%) | 14 (87.5%) |
| p-Value | 0.687 | 0.535 | 0.068 |

**Table 4:** Association between area of upbringing and depression, anxiety, stress

| Area of upbringing | Stress | Anxiety | Depression |
|---|---|---|---|
| **Urban** | 59 (59%) | 78 (78%) | 61 (61%) |
| **Rural** | 21 (48.8%) | 34 (79.1%) | 28 (65.1%) |
| **p-Value** | 0.262 | 0.887 | 0.642 |

As shown in tables 2, 3 and 4 there is no significant association between depression, anxiety, stress and gender, ethnicity, and area of upbringing as the p value is more than 0.05.

**Table 5:** Coping strategies of the students

| Rank | Coping Strategies | Mean | SD |
|---|---|---|---|
| 1 | Acceptance | 2.8741 | 0.9205 |
| 2 | Positive reframing | 2.8357 | 1.0005 |
| 3 | Self-distraction | 2.8085 | 1.0047 |
| 4 | Planning | 2.7832 | 0.9451 |
| 5 | Active coping | 2.7168 | 0.9367 |
| 6 | Religion | 2.5874 | 1.1260 |
| 7 | Use of instrumental support | 2.5245 | 0.9935 |
| 8 | Use of emotional support | 2.4650 | 0.9861 |
| 9 | Self-blame | 2.2552 | 0.9918 |
| 10 | Venting of emotion | 2.2063 | 0.9676 |
| 11 | Humour | 2.0455 | 0.9990 |
| 12 | Denial | 1.8042 | 0.9423 |
| 13 | Behavioural disengagement | 1.7657 | 0.8692 |
| 14 | Substance use | 1.1434 | 0.5202 |

The coping strategy commonly adapted by the students was acceptance, positive reframing and self distraction (Table 5).

## 4. Discussion

The present study addresses the gap in the prevalence of depression, anxiety and stress among university students by addressing the associated factors and also looking at their coping strategies.

In this study the mean age of the students was 25.02±8.68 years which was higher from the study conducted by Bayram et al on university students in turkey (11). This could be because the students recruited under our study were all post graduate students and the Turkish study it was undergraduate students. There were more females than males in our study and most of the students were from the urban upbringing .This was in concurrence with the study conducted in Malaysia on university students (9). The frequently encountered ethnic group was Indian which was paradoxical to the study conducted in Malaysia were the common race was Malay(9).

We found that the prevalence of stress, anxiety and depression were 55.9%, 78.3% and 62.2% respectively. This showed a higher prevalence of anxiety followed by depression. This was in concurrence with the study conducted in Malaysia were the results were same as our study were anxiety was high followed by depression and then stress (9).This supports our hypothesis that the prevalence of stress ,anxiety and depression were high among university students . This could be due to their increased academic workload and also their future apprehension on the prospective employment opportunities.

In our study the prevalence of stress, anxiety and depression was more in females than in males which was in concurrence with the study conducted in Malaysia and turkey (9, 11). It is reported that social difficulties, physiological factors and stress caused by the environment are the major reasons for stress in females (12). However we did not find any significant association between stress, anxiety and depression and gender.

In spite of having more Indian students in the group, the prevalence of anxiety was more in Malays, depression and stress were more in other ethnicity. However the association between stress, anxiety and depression and ethnicity was not significant. Our study reported the same findings as in the study by Shamsuddin et al ,however there are also reports which suggested that there is no difference in the emotional distress among different races (9, 13). The increase in the emotional distress among Malays and other races could be attributed to the cultural differences and religious practices.

The area of upbringing also had no significant association with stress, anxiety and depression in our study. However we found that stress was more in students in urban areas and anxiety and depression in rural area. This was in concurrence with the study conducted in Malaysia (9). The psychological disturbance seen in students with the rural upbringing maybe due to their adjustment issues with the urban set up. It can also be attributed to their low socioeconomic status than their urban counterparts. It could also be due to their poor command over English which can lower their self esteem and morale.

Coping strategies is defined as how a person reacts or responds toward a stressor. Effective and appropriate coping strategies may minimize the impact of encountered stressful situations on one's well being(14). The common coping strategies adapted by the students were acceptance and positive reframing and self distraction. We noticed that the students used active coping strategies than avoidance strategies. This is concurrence with a study conducted in Malaysia on medical students (15).The reason for the students using active strategies could be because they are adult students and hence are mature enough to deal with adverse situations . The other reason could be the religious reasons which forbid them to use substance abuse and other forms of avoidance strategies.

There are a few limitations to this study which we felt was worth mentioning. The sample size was small hence it does not actually reflect the real prevalence of anxiety, depression and stress among university students. Hence a study with larger sample size would be beneficial. The sampling was not done by randomization hence there may be a bias in the sample selection.

## 5. Conclusion

The prevalence of anxiety is high followed by depression and stress. There was no association between depression, anxiety, stress and gender, ethnicity and area of upbringing. The common coping strategies adapted by the students were acceptance , positive reframing and self distraction.

There is an urgent need for health care professional and staff in the university to plan supportive measures to cater to students with psychological disturbances. Screening of all the students at regular intervals would be helpful to identify vulnerable students and plan necessary interventions.

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