Assessment of Mental Health Status of Allied Healthcare Professionals in Bangladesh

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Introduction

Mental health disorders are among the most important public health issues globally. Estimates of the global burden of disease place mental illness in the top three conditions in terms of years lost due to disability.[2,3] The problems that adolescents and young people encounter interfere with the way they think, feel, and act. Such problems cause distress and limit their academic achievements and ability to be economically productive. They can also lead to family conflicts, substance abuse, violence, eating disorders and sometimes suicide. Mental health problems are also expensive for families, communities, and healthcare and social systems.[3]

According to the definition by WHO, "Mental Health is a state of well being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community." Mental, neurological, and substance use disorders make a substantial contribution to the global burden of disease (GBD).[4] This is a global measure of so-called disability-adjusted life years (DALY's) assigned to a certain disease/disorder, which is a sum of the years lived with disability and years of life lost due to this disease within the total population. Neuropsychiatric conditions account for 14% of the global burden of disease. Among non-communicable diseases, they account for 28% of the DALY's — more than cardiovascular disease or cancer. However it is estimated that the real contribution of mental disorders to the global burden of disease is even higher, due to the complex interactions and co-morbidity of physical and mental illness. Around the world, almost one million people die due to suicide every year, and it is the third leading cause of death among young people.[5]

A health professional is an individual who provides preventive, curative, promotional or rehabilitative health care services in a systematic way to people, families or communities. A health professional (also known as a health worker) may operate within medicine, surgery, midwifery (obstetrics), dentistry, nursing, pharmacy, psychology or allied health professions.

Allied Health Professions are a distinct group of health professionals who apply their expertise to prevent disease transmission, diagnose, treat and rehabilitate people of all ages and all specialties. Together with a range of technical and support staff they may deliver direct patient care, rehabilitation, treatment, diagnostics and health improvement interventions to restore and maintain optimal physical, sensory, psychological, cognitive and social functions." Allied health professions are health care professions distinct from nursing, medicine and pharmacy.[1]Allied health

professionals include dental hygienists, diagnostic medical sonographers, dietitians, medical technologists, occupational therapists, physical therapists, radiographers, respiratory therapists, and speech language pathologists. Allied health professionals comprise nearly 60% of the healthcare workforce.[2]

The concept of stress has been widely discussed in relation to healthcare students and reports of high levels of perceived stress amongst these groups are common.[8,9,10]All students experience the demands of course work, a new environment and new people, and for those living away from home for the first time learning to manage financially, emotionally and socially by themselves. In addition, healthcare students, encounter other potential sources of stress such as the emotions involved in dealing with patients and the learning of applied clinical skills.[8,11] Too much stress can cause physical and mental health problems, reduce self-esteem and may affect student's academic achievement. Stress in healthcare students has been associated with increased levels of depression use of drugs and alcohol and increased anxiety and attrition.[12, 13]

The global prevalence and the explanation offered by the renowned experts often show that the estimate of prevalence of Mental Health Disorders is practically pretty high in reality. Currently there is no reliable data on the prevalence of mental illness in Bangladesh. It shows that this area is largely neglected, unexplored, underserved and underfinanced yet one of the most crucial sectors to be taken care of. The current situation of mental health facilities is pathetic compared to the disease burden to the community. The amount of money spent for mental health services by the government health department in 2005 was BDT 106,254, 224 which was less than 0.5% of health care expenditures by the government. No human rights review body exists in the country to oversee regular inspections in mental health facilities. There are 50 outpatient mental health facilities available in the country of which 4% are for children and adolescents only. These facilities treat about 26 users per 100,000 general populations. Of all users treated in mental health outpatient facilities, 44% are female and 7% are children or adolescents.[14]

There are 31 community psychiatric inpatient units available in the country for a total of 0.58 bed per 100,000 populations. Two percent of these beds in community based inpatient units are reserved for children and adolescents only. About 42% of patients are female and 12% are children/adolescents. There are 11 community residential facilities in the country and 55% of the beds in these facilities are

for children and adolescents and 81% of admitted patients are female and 73% of them are children. There is 1 mental hospital available in the country for a total of 0.4 beds per 100,000 populations. There is no bed (0%) in mental hospital reserved for children and adolescents only. While this is the current scenario of Bangladesh, it is virtually not possible for the health policy makers to go for a comprehensive plan to meet the unmet health care facilities in the context of mental health as there is no reliable data on the same in hand.

Justification of Study

Adolescents and young adults are widely considered by the psychological establishment to be prone to recklessness and risk taking behaviors which can lead to substance abuse, car accidents, unsafe sex and youth crime. No counseling center/ specific mental health service for health care professional students. Previously limited number of study was done to find out the health care professional student's mental health status.

Medical science courses are often stressful. This course demand continuous learning process. The whole course is full of tests/ exams, one after another. In medical studies, practical and oral examination is most stressful. Uncertainty always prevails in health care professional student's mind regarding 'Pass'or'Fail'. Once a student fails they have to wait 6 months for supplementary examination. Drop out, defaulter student are often seen in medical colleges. Students, who are staying at hostels or other places for the first time, take it as a stress being away from family life. Accommodation and food-habit creates problem among new comers. Students who are physically and mentally strong enough can adjust themselves in medical colleges and hostels. Those who are not like them become depressed easily.

Students are subjected to different kinds of stressors such as the pressure of academics with an obligation to succeed, an uncertain future and difficulties of integrating into the system. The students also face social, emotional, physical and family problems which may affect their learning ability and academic performance. Too much stress can cause physical and mental health problems, reduce self-esteem and may affect students' academic achievement.

In addition to educating in a professional course it is also important to take into account the quality of life of the students during the years of health care professional training. Delaying in minimizing

stressful life events is associated with more damage to the students. Keeping these considerations in view, the current study was undertaken to assess the mental health status among allied health care professional students of Bangladesh. As health care professional students will likely have influence on patient health outcomes in the future, the presence of mental health disorder may potentially affect the quality and type of care they provide to their patients. The researchers hope that a supervisory committee will conduct continuous study to find out the causes of stress and depression among health care professional students through longitudinal study, to bring out their actual physical and mental status.

Operational definitions

Mental Health:

- It is not just the absence of mental disorder
- A state of well-being in which every individual realizes his own potential
- Can cope with the normal stresses of life
- Can work productively as well as fruitfully
- Able to make a contribution to his community

3 domains of Mental Health

1. Sleeping pattern
2. Suicidal tendency
3. Depression

Mental illness:

It is defined as "collectively all diagnosable mental disorders" or "health conditions that are characterized by alterations in thinking, mood, or behavior (or some combination thereof) associated with distress and/or impaired functioning."

Allied health professionals:

They are health care practitioners with formal education and clinical training who are credentialed through certification, registration and/or licensure. They collaborate with physicians and other

members of the health care team to deliver high quality patient care services for the identification, prevention, and treatment of diseases, disabilities and disorders. Allied health professionals are expert in a multitude of therapeutic, diagnostic, and preventive health interventions and function in several diverse settings including disease prevention and control, dietary and nutritional services, mental and physical health promotion, rehabilitation, and health systems management.

The allied health professions fall into two broad categories: technicians (assistants) and therapists/technologists. Technicians are trained to perform procedures, and their education lasts less than two years. They are required to work under the supervision of technologists or therapists. This part of the allied health field includes physical therapy assistants, medical laboratory technicians, radiological technicians, occupational therapy assistants, recreation therapy assistants and respiratory therapy technicians.

Adolescence:

A phase which involves -

-Progression from appearance of secondary sexual characteristics (puberty) to sexual and reproductive maturity

-Development of adult mental process and identity

-Transition from total social-economic dependence to relative independence

-No longer a child but not yet an adult

WHO Defines-

- Adolescents- 10-19 years
- Youth - 15 – 24 Years
- Young People – 10 – 24 Years

PHQ-9:

The Patient Health Questionnaire (PHQ) is a multiple-choice self-report inventory copyrighted by Pfizer Inc, that is used as a screening and diagnostic tool for mental health disorders of depression, anxiety, alcohol, eating, and somatoform. The PHQ-9 is a multipurpose instrument for screening, diagnosing, monitoring and measuring the severity of depression. This is calculated by assigning scores of 0, 1, 2, and 3, to the response categories of "not at all," "several days," "more than half the

days," and nearly every day, respectively. PHQ-9 total score for the nine items ranges from 0 to 27.

PHQ-9 Scores and Proposed Treatment Actions:

PHQ-9 score	Depression Severity	Proposed Treatment Actions
0-4	None-minimal	None
5-9	Mild	Watchful waiting; repeat PHQ-9 at follow-up
10-14	Moderate	Treatment plan, considering counseling, follow-up and/or pharmacotherapy
15-19	Moderately severe	Active treatment with pharmacotherapy and/or psychotherapy
20-27	Severe	Immediate initiation of pharmacotherapy and, if severe impairment or poor response to therapy, expedited referral to a mental health specialist for psychotherapy and/or collaborative management

* From Kroenke K, Spitzer RL, Psychiatric Annals 2002;32:509-521

GHQ-12:

The General Health Questionnaire (GHQ) is a measure of current mental health and since its development by Goldberg in the 1970s it has been extensively used in different settings and different cultures. It has been used and validated extensively both in the UK and worldwide. The questionnaire was originally developed as a 60-item instrument but at present a range of shortened versions of the questionnaire including the GHQ-30, the GHQ-28, the GHQ-20, and the GHQ-12 is available. The scale asks whether the respondent has experienced a particular symptom or behavior recently. Each item is rated on a four-point scale (less than usual, no more than usual, rather more than usual, or much more than usual); and for example when using the GHQ-12 it gives a total score of 36 or 12 based on the selected scoring methods. The most common scoring methods are bi-modal (0-0-1-1) and Likert scoring styles (0-1-2-3). Since the GHQ-12 is a brief, simple, easy to complete, and its application in research settings as a screening tool is well documented; it was decided to translate the GHQ-12 into Bengali (the Bangladeshi language) and to examine the psychometric properties of the questionnaire in a sample of young Bangladeshi adolescents and young adults. There is evidence that

the GHQ-12 is a consistent and reliable instrument when used in general population samples.

As an indication of 'caseness', it is recommended that these scores are converted into a binary scores, such that 0 or 1 = 0, and 2 or 3 = 1, giving a maximum score of 12. A score of 4 or more has been used as a suitable cut-off point for caseness. Subjects scoring 4 points or higher were considered to have poor mental health status.

Substance abuse:

Substance abuse, also known as drug abuse and substance use disorder, is a patterned use of a drug in which the user consumes the substance in amounts or with methods which are harmful to themselves or others, and is a form of substance-related disorder. Drugs most often associated with this term include: alcohol, substituted amphetamines, barbiturates, benzodiazepines (particularly alprazolam, temazepam, diazepam and clonazepam), cocaine, methaqualone, cannabis and opioids.

Leisure Time:

Leisure, or free time, is time spent away from business, work, domestic chores and education. It also excludes time spent on necessary activities such as eating and sleeping.

Research Question:

What is the mental health status of allied health care students of Dhaka city?

Research Methodoloy
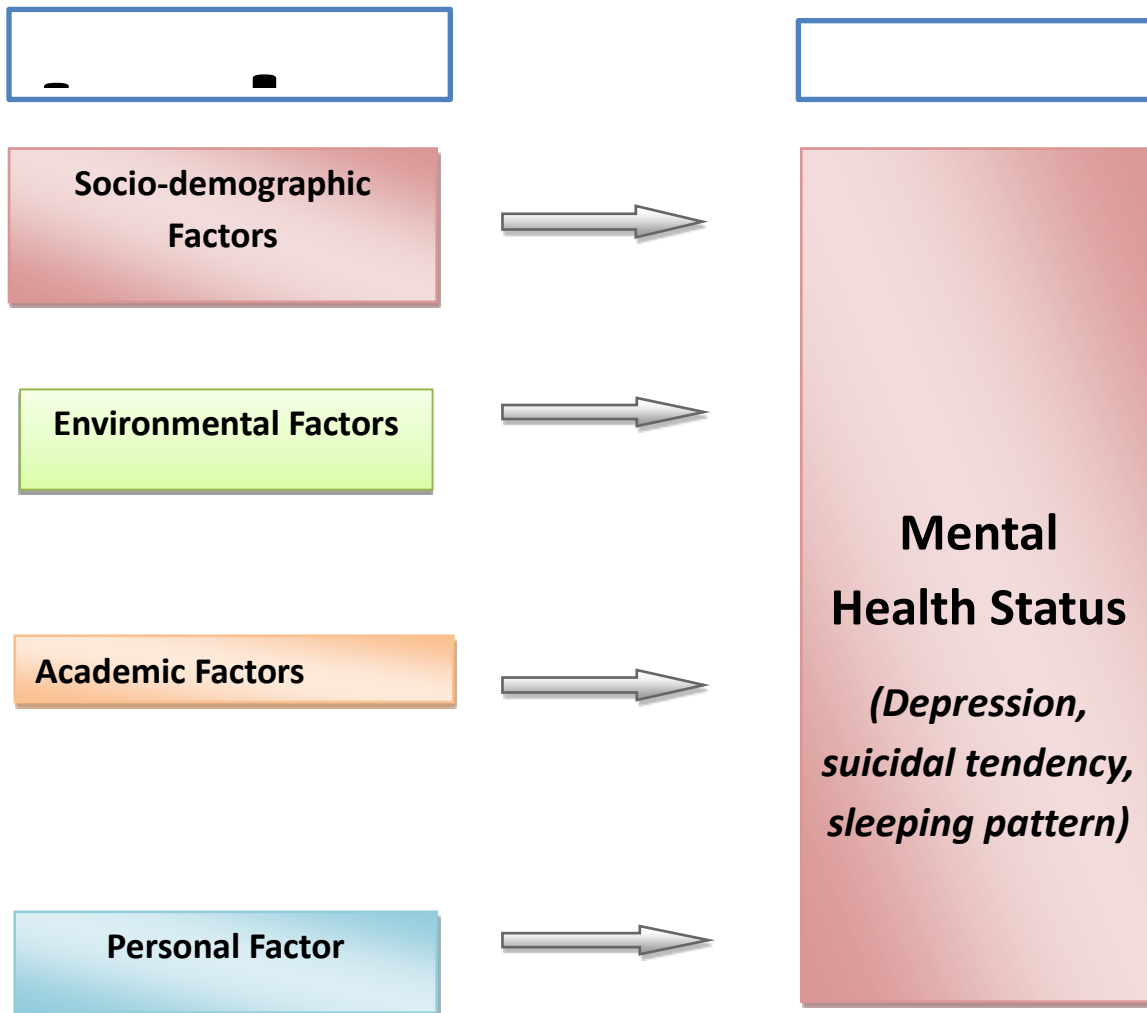
Study Objectives

General objective:

➢ To assess the mental health status of allied health care students of Dhaka city.
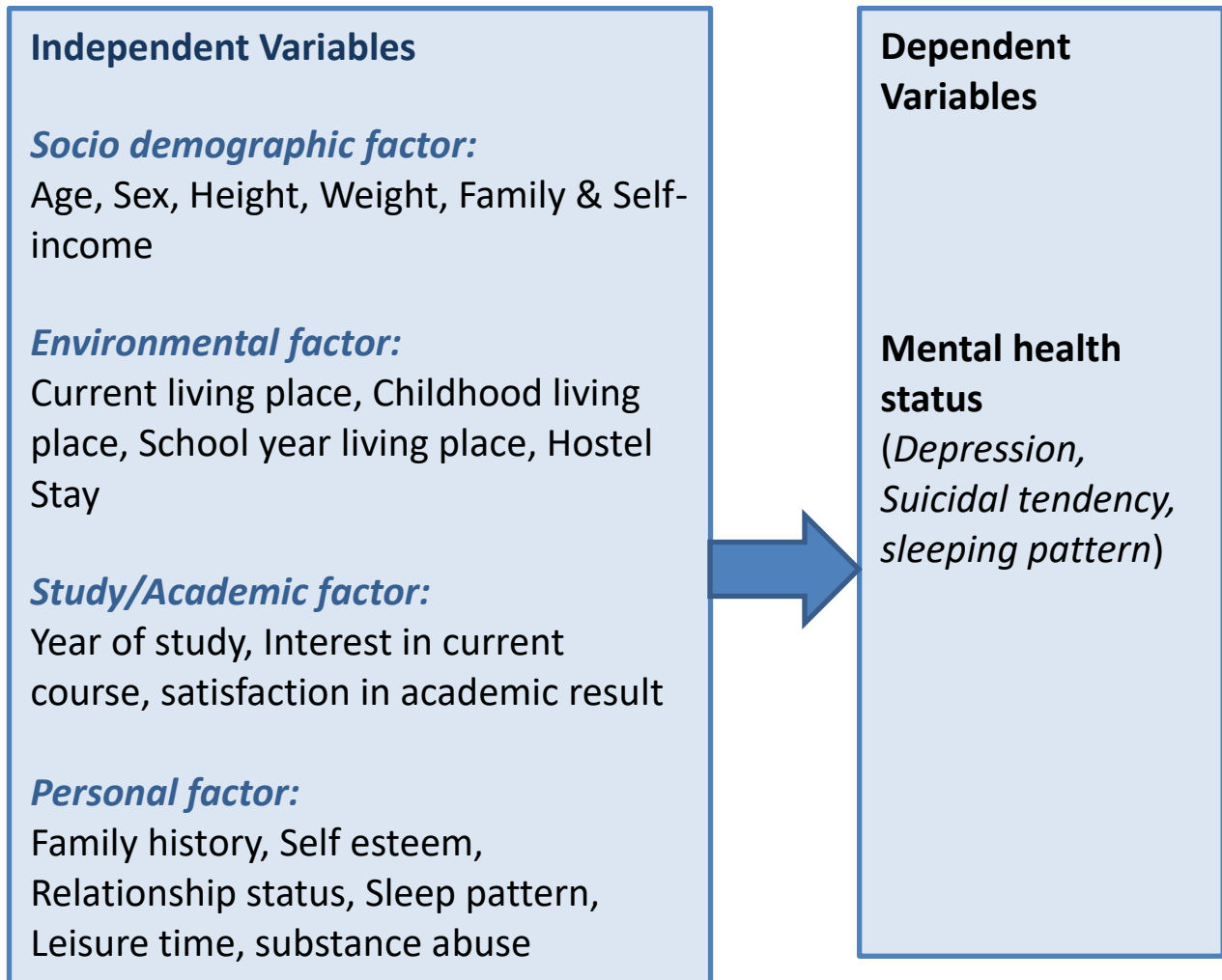
Specific Objectives:

➢ To identify different degree of depression among the allied health care students.

➢ To identify suicidal tendency of students.

➢ To find out the sleeping pattern of allied health care students.

➢ To relate the socio demographic characteristics & other relevant independent variables with MH status of allied health care students.

Conceptual Framework:

Socio-demographic Factors	⟹	Mental Health Status
Environmental Factors	⟹	*(Depression, suicidal tendency, sleeping pattern)*
Academic Factors	⟹	
Personal Factor	⟹	

List of Variables:

Independent Variables

Socio demographic factor:
Age, Sex, Height, Weight, Family & Self-income

Environmental factor:
Current living place, Childhood living place, School year living place, Hostel Stay

Study/Academic factor:
Year of study, Interest in current course, satisfaction in academic result

Personal factor:
Family history, Self esteem, Relationship status, Sleep pattern, Leisure time, substance abuse

Dependent Variables

Mental health status
(*Depression, Suicidal tendency, sleeping pattern*)

Study Design:

Descriptive Cross sectional study

Target Population and Sample Population

Students (Medical Assistant, Dental Assistant, Pharmacy Technology, Laboratory Technology) from first to third year of Medical Assistant Training School.

Study Site and Area

The Medical Assistant Training School (MATS)

Trauma Medical Assistant Training School

SAIC Medical Assistant Training School

Shemoli Medical Assistant Training School

Study Period

Study period will be from February 2015 to June 2015.

Sample Size

Sample size was calculated using the following formula

$n = z^2pq/d^2$

Here,

z =1.96 for 95% CI

p = anticipated proportion suffering from mental illness 50% or 0.50

q = proportion of person not suffering from mental illness 0.50

d = tolerable amount of error =5% =0.05

Since the value of P is not known in Bangladesh, so it is considered as 50% or 0.50

using this formula, here sample size **n = 384**.

Inclusion Criteria:

- Bangladeshi Medical Assistant students
- Willingly agree to answer the pre-formed questionnaire

Exclusion Criteria:

- Pregnant female student
- Physically/mentally not fit or disabilities
- Chronic illness
- Known alcohol/drug abuser

Sampling Technique

- 50 students from each Medical Assistant Training School are selected. Students from 4 Medical Assistant Training Schools are selected by Convenient sampling technique. All the available students who are willing to participate in the study will be interviewed.

Data Collection Tools

- A pre-tested structured questionnaire will be used to collect data.
- The questionnaire is prepared by following GHQ-12 to assess mental health status and PHQ-9 to assess depression with the help of mental health experts from National Institute of Mental Health (NIMH).
- It is prepared in English & translated to Bengali consisting of 51 questions.

Data Management and Analysis Plan

- Data will be collected by interviewer-administered questionnaire with the respondents by taking informed written consent.
- At the end of each day of data collection each questionnaire will be checked to see whether the questionnaire is filled completely and consistently. Then they will be stored after giving appropriate identification number. The data will be analyzed in computer with SPSS 19.0 version.

Quality Control and Quality Assurance

- Pre testing of questionnaire was made to assess the validity in out of the study area.
- On spot-check & review of the filled up questionnaires on daily basis to ensure completeness and consistency

Ethical Considerations

Ethical Approval was obtained from Research Committee of ICDDR'B, The Medical Assistant Training School (MATS), Trauma Medical Assistant Training School, SAIC Medical Assistant Training School, Shemoli Medical Assistant Training School

Informed written consent of the study subject will be obtained.

The information will be dealt with highest confidentiality and used only for this study.

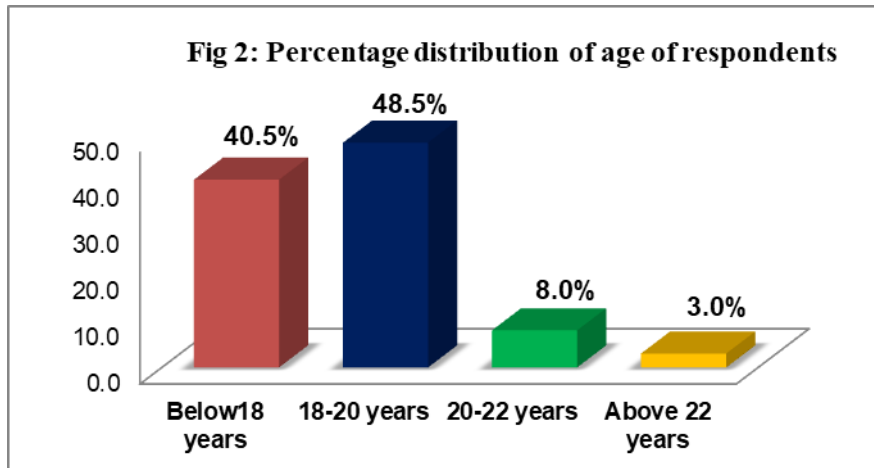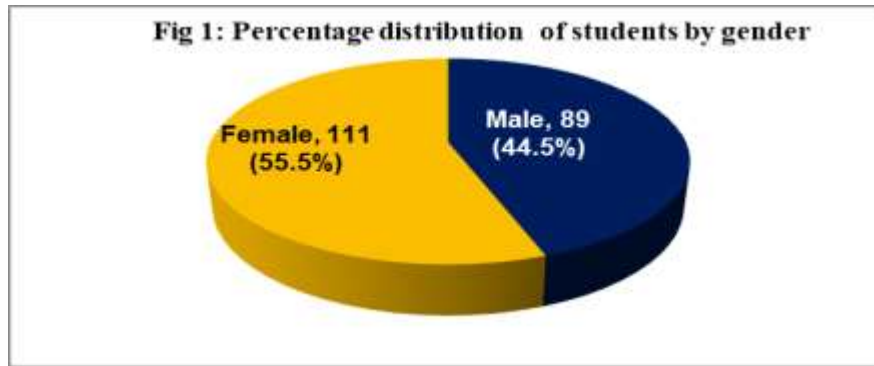Privacy of the respondents will be maintained.

Limitation of the study

At the time of conducting the study, some problems were experienced. The limitations of the study are given below:

➢ Sample size is too small to assess the mental health status of allied health care students of Dhaka city.

➢ Data collection procedure carried out in the class by gathering all students together at the same time while filling self administrated questionnaire, student's respond can be influenced by the others.

➢ The previous study about mental health status of allied health care students are not available so the findings couldnot compare with the national data or some other different depression measurement.

➢ Because of time and budget constrain, the study assessed 200 students out of 385 students and the study was conducted in one institute that cannot be representation of allied health care students of entire Dhaka city. A number of government medical assistant schools did not give permission for collection of data since none of the respective class teachers agreed to spare their scheduled classes for the purpose of data collection. Therefore, the investigator was unable to collect data from government medical assistant training schools.

Result

A cross sectional study was conducted among 200 allied health care students from 4 Medical Assistant Training School, to assess the mental health status by General Health Questionnaire (GHQ-12) and depression level by Patient Health Questionnaire (PHQ-9), followed by a semi-structured questionnaire. The questionnaires were distributed to 200 medical assistant students among which 89 (44.5%) students were male and 111 (55.5%) students were female. The collected data was analyzed using SPSS version 20.

Fig 1: Percentage distribution of students by gender

Fig 2: Percentage distribution of age of respondents

With regard to the age distribution of the participants, majority of student's (48.5%) age were between 18-20 years, 40.5% students were below 18 years of age and 3% were 22 years above. The mean and median age of the students was 18.97 ± 1.537 & 19 years respectively.
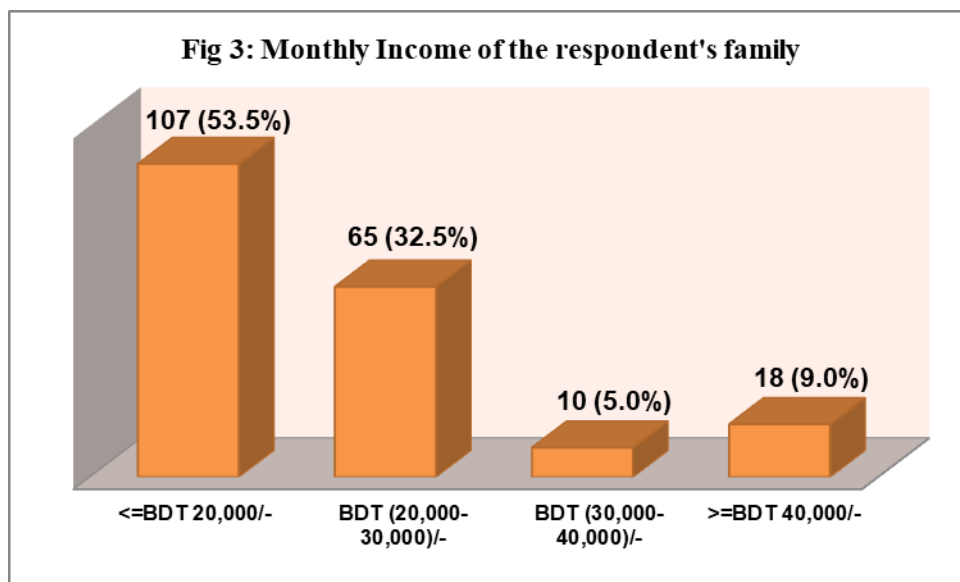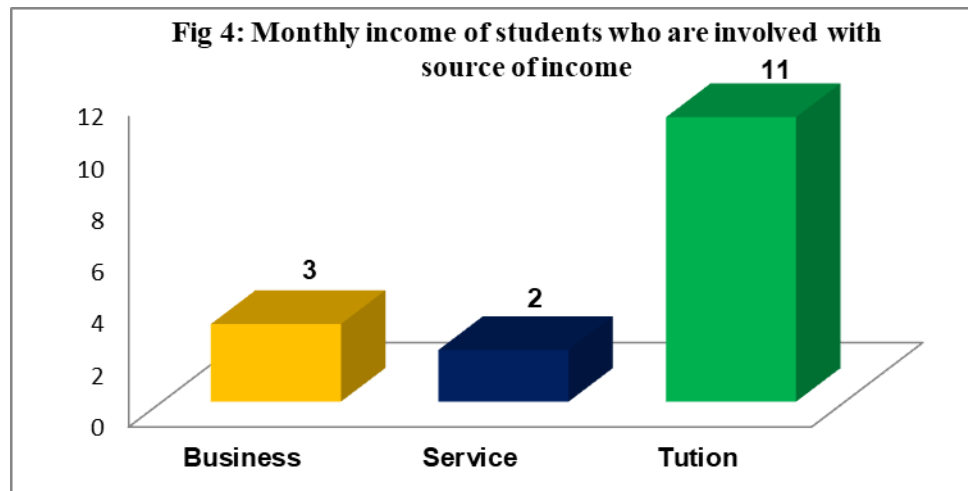

Fig 3: Monthly Income of the respondent's family

Figure 3 shows that 53.5% respondent's family monthly income were less than BDT 20,000 while only 9% had family income of more than BDT 40000. The mean and median income of the student's

families was BDT 21,784.25±14,301.39 & BDT 18,000/- respectively.

Fig 4: Monthly income of students who are involved with source of income

Out of 200 students, 16 students mentioned that they are personally involved with source of income. Among 16 students, 11 students earned by tuition, 3 students are engaged with business and 2 students are service holder.
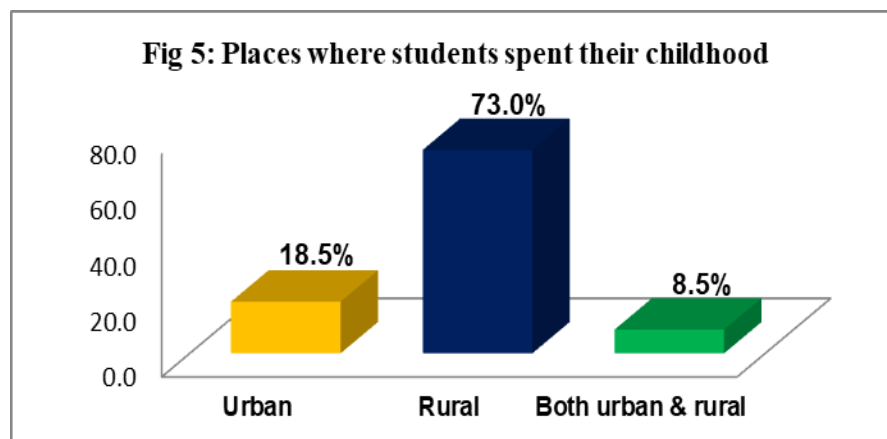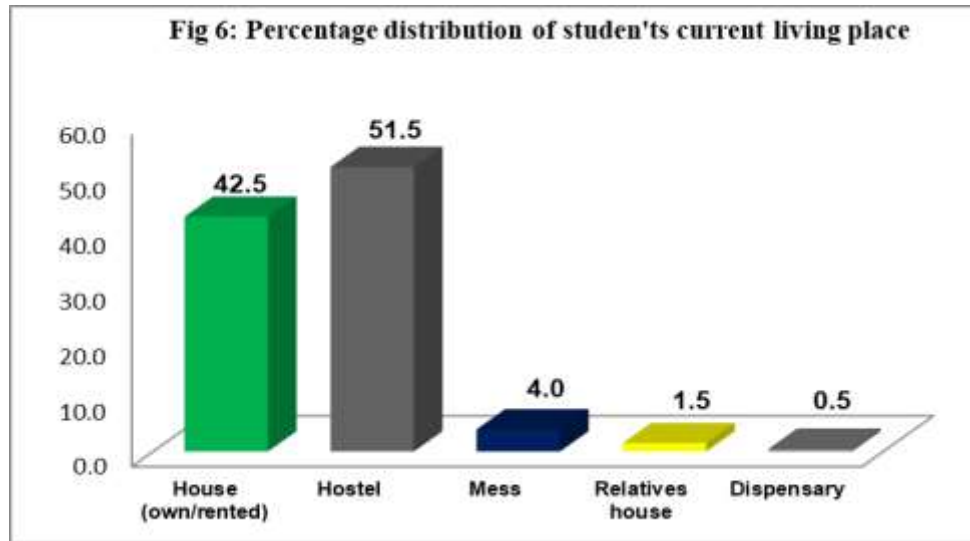
Fig 5: Places where students spent their childhood

Fig 5 shows that most students (73%) of this institute spent their childhood in rural areas whereas only 18.5% students lived in urban areas.

Fig 6: Percentage distribution of studen'ts current living place

From the above figure, we can see that more than 50% students currently live in hostel, 42.5% lives in own or rented house. 1 student reported that he had no place to live and therefore works and lives in a dispensary shop.

Background characteristic	Respondent	
	Percentage	Number
Which year are you studying?		
1st year	54.0	108
2nd year	26.5	53
3rd year	19.5	39
Is your study field related to your ambition or interest?		
Yes	89.5	179
No	10.5	21
Did you willingly come to this study?		
Yes	89.5	179
No	10.5	21
Are you satisfied with your last academic result?		
Yes	43.0	86
No	57.0	114
Total	*100.0*	*200*

Table 1: Distribution of students by year of studying, their field of interest and satisfaction with last academic result.

Above table shows the distribution of students by year of studying, whether this study field related to their ambition, willingly studying this subject and satisfied with last academic result. Out of 200 students, 54%, 26.5% & 19.5% students are studying in 1st year, 2nd year and 3rdyear respectively, according to background characteristics. Mostly 89.5% students interested to study in this field willingly came. Among the students, 86 students (43%) mentioned that they were satisfied with their last academic result and a majority portion 114 students (57%) were not satisfied with their result.
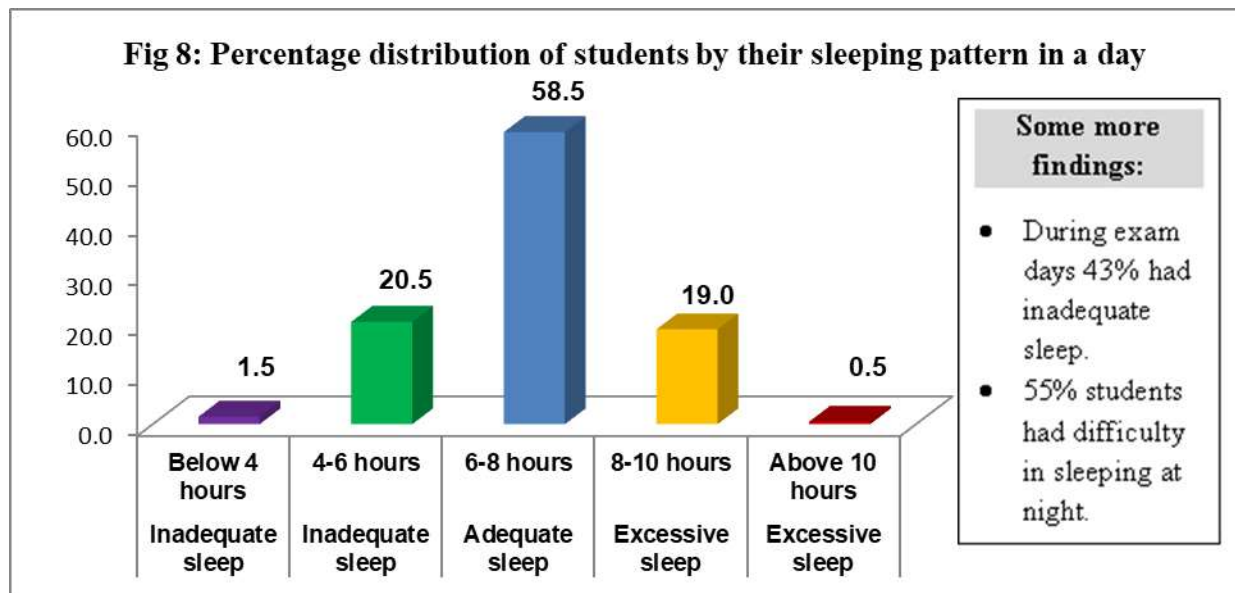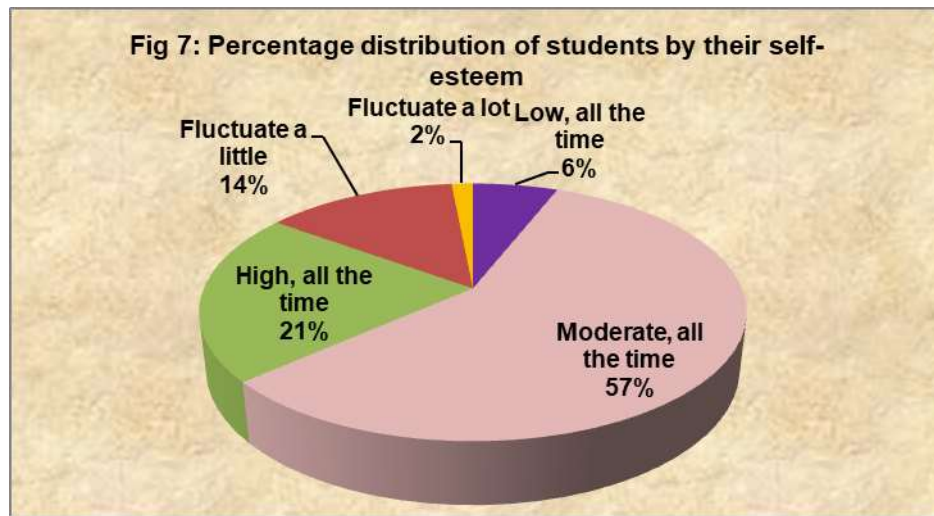

Fig 7: Percentage distribution of students by their self-esteem

Fig 8: Percentage distribution of students by their sleeping pattern in a day

Figure 8 illustrates percentage distribution of students' sleeping pattern in a day. We found that 58.5% students sleep 6-8 hours which indicates adequate sleep in a day i.e. within 24 hours. But 20.5%

students mentioned that they sleep only 4-6 hours indicates inadequate sleep and 1.5% students mentioned that they sleep only 1.5 hours which cannot be justified for a person's proper physical and mental health. On the other hand, 0.5% students mentioned sleeping for more than 10 hours which indicates excessive sleeping pattern.

Fig 9: Percentage distribution of respondents by diagnosed family history of depression
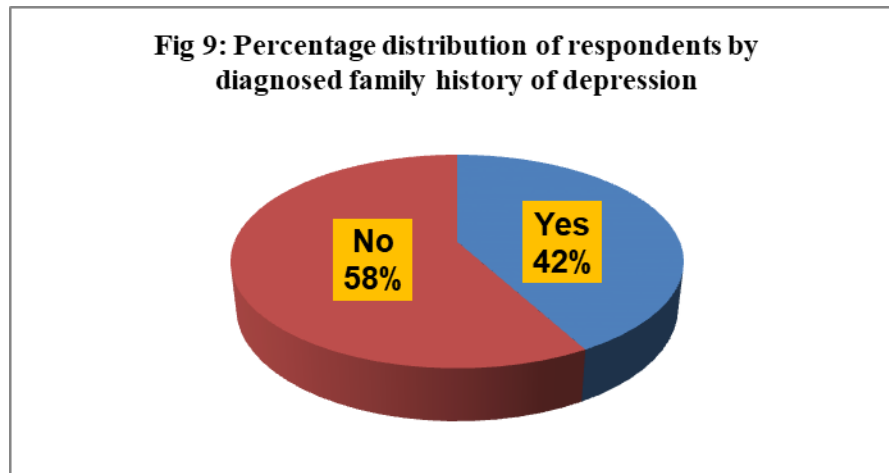
From the above figure, 42% students mentioned that they have family history of depression and 58% students mentioned that their family has no history of depression.

Background characteristic	Respondent	
	Percentage	**Number**
Do you often feel that life is not worth living?		
Yes	30.0	60
No	70.0	140
Do you ever think of harming yourself?		
Yes	9.5	19
No	90.5	181
Did you ever decide or tried to commit suicide?		
Yes	8.5	17
No	91.5	183
Total	*100.0*	*200*

Table 2: Distribution of students who thought of harming themselves and committing suicide

From the above table we found that out of 200 students, 30% students feel that life is not worth living and 19 students thought of harming themselves and 17 students mentioned that they decided or tried to commit suicide.

Fig 10: Distribution of students who thought of harming themselves
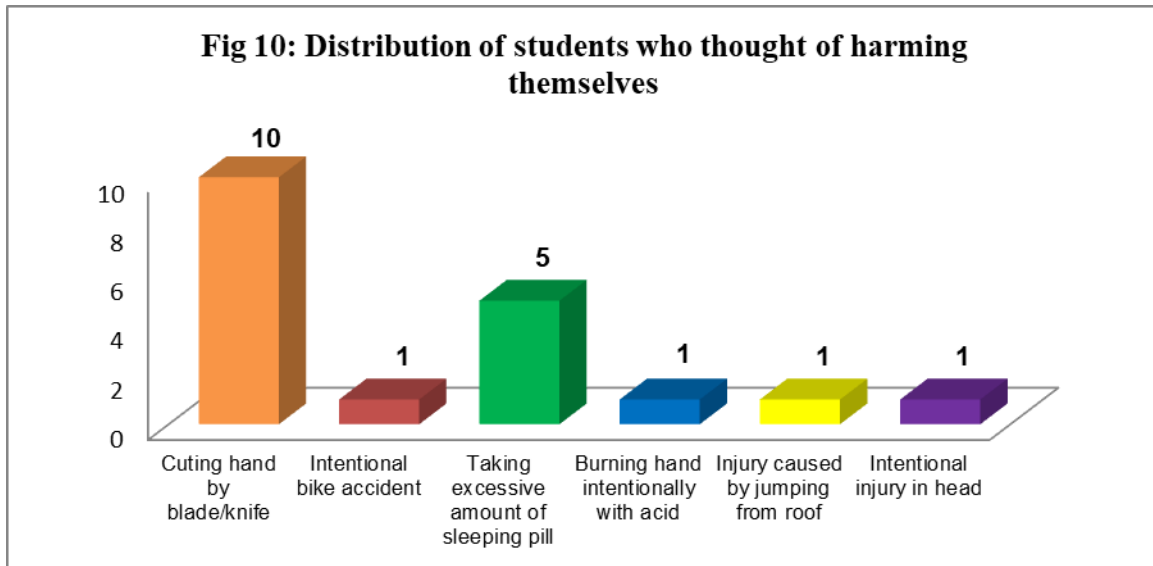
From the previous figure we found that 19 students thought of harming themselves and among them we can see that most wanted to cause self injury by cutting their hand, some wanted to harm themselves by taking excessive amount of sleeping pills, intentional bike accident, jumping from roof, burning hand with acid and intentional injury in head.

Fig 11: Percentage distribution of students having trouble concentrating
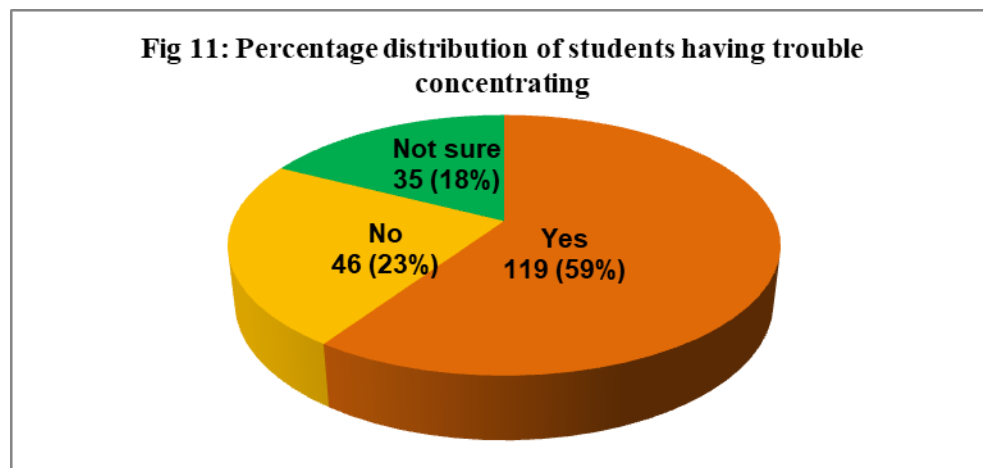
The above figure shows the percentage distribution of students having trouble concentration on any things. We found that 119 students (59%) faced problems to concentrate on any things whereas 46 students (23%) mentioned that they don't face this problem and 35 students mentioned that they are not sure whether they are facing this problem or not.

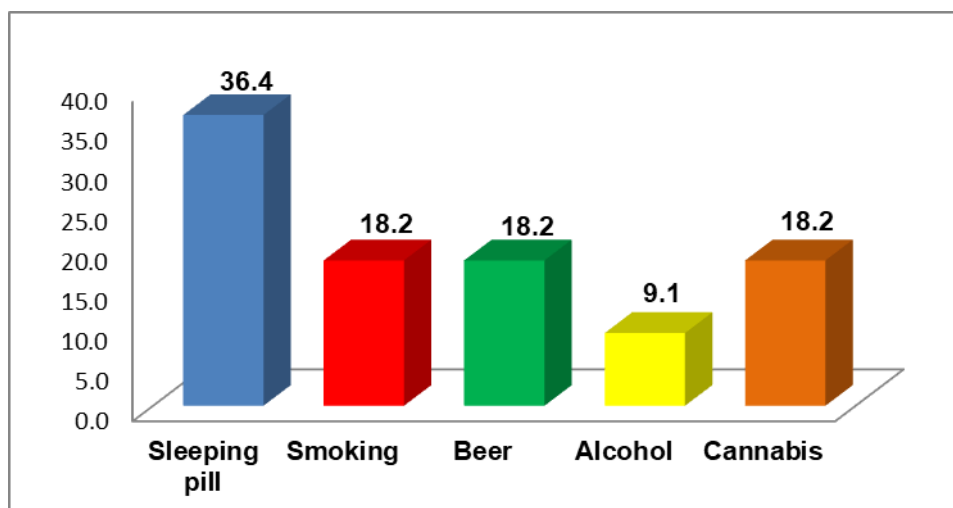| Are you addicted to alcohol or any kind of drugs that they don't feel good while don't take drugs?	Frequency	Percent
Yes, almost	2	1.0
Yes, occasionally	9	4.5
No	189	94.5
Total	**200**	**100.0**

Fig 12: Percentage distribution of students who are addicted

The students were asked if they are addicted to alcohol or any kind of drugs that they don't feel good when they don't take it. Out of 200 students, maximum students (94.5%) mentioned that they are not addicted. Only 11 students mentioned that they take drugs regularly or occasionally. Out of 11 students, 4 students (36.4%) reported being addicted to sleeping pills, 18.2% students mentioned smoking, beer and cannabis while 9.1% students mentioned addicted to alcohol.

What is your marital condition?	Frequency	Percent	Valid Percent	Cumulative Percent
Unmarried	185	92.5	92.5	92.5
Having relationship	6	3.0	3.0	95.5
Married	6	3.0	3.0	98.5
Divorced	3	1.5	1.5	100.0
Total	**200**	**100.0**	**100.0**	

Table 3: Distribution of students according to marital status

| Marital condition	If married or having relationship with others, then are you happy with your current relationship?					Total
	Highly satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Highly dissatisfied	
Unmarried	6	134	22	22	1	185
Having relationship	1	3	1	0	1	6
Married	2	2	1	1	0	6
Divorced	0	0	1	1	1	3
Total	9	139	25	24	3	200

Table 4: Distribution of students according to satisfaction with their relationship

| Marital condition	Did you break-up with someone before?		Total
	Yes	No	
Unmarried	31	154	185
Having relationship	1	5	6
Married	1	5	6
Divorced	2	1	3
Total	35	165	200

Table 5: Distribution of students according to previous history of breaking up with someone before

Table 3, 4, 5 represents the marital condition of the students, mental satisfaction of current relationships with others and whether they broke up with someone before or not. We found that most of the students (185 students) are unmarried, 6 students married, 6 students have relationship with others while 3 students are divorced. Among them, 148 students mentioned that they are satisfied or highly satisfied in relationship with others, 25 students mentioned that they neither satisfied nor dissatisfied and 27 students mentioned that they are dissatisfied or highly dissatisfied in relationship with others.
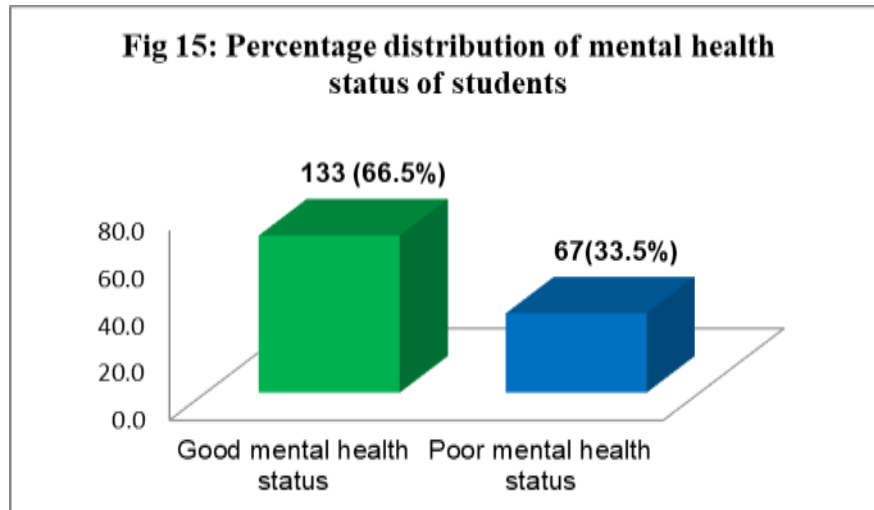
Out of 200 students, 165 students mentioned that they didn't break-up with anyone before but 35 students mentioned that they had relationships before.

Fig 13: Relationship of students with parents, siblings, other family members and friends
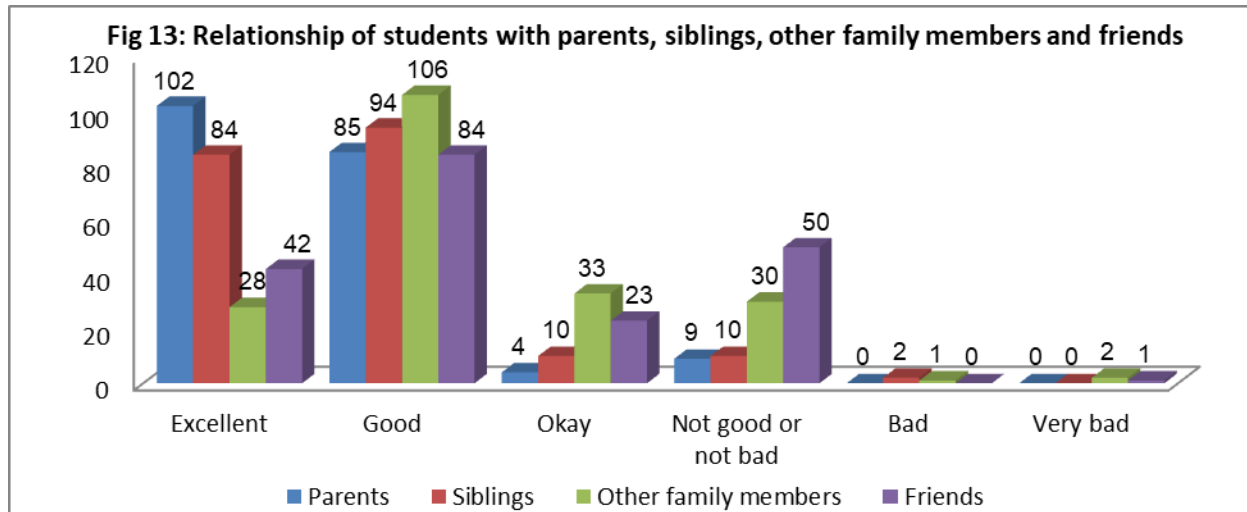
The students were asked about the relationship with their parents, siblings, other family members and friends. From the about figure we found that majority of the students relationship with all i.e. parents, siblings, other family members and friends are 'good' comparable to 'excellent' but very few student's relationship are 'okay' or 'not good or not bad'.

Fig 14: Percentage distribution of degree of depression of students
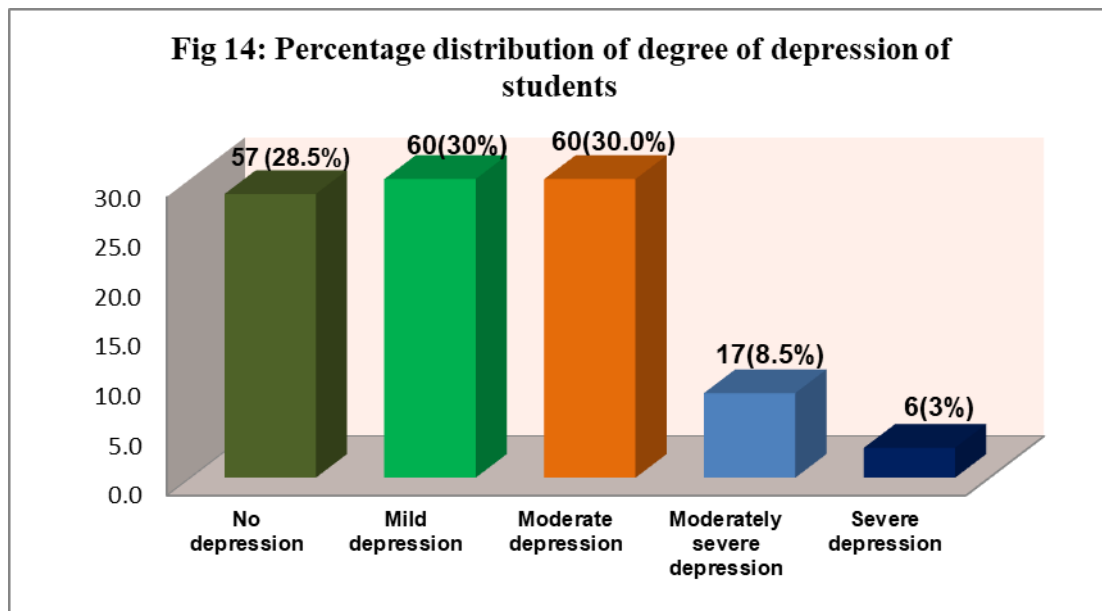
The student's severity of depression was assessed by Patient Health Questionnaire (9th Edition). From the above figure, we can see that 57 students have no depression at all, 60 students have mild depression, 60 students have moderate depression, 17 students are in moderately severe depression, and 6 students are suffering from severe depression. So a significant number of students are suffering from different degree of depression.

Fig 15: Percentage distribution of mental health status of students

The student's mental health status was assessed by General Health Questionnaire (GHQ-12). From the above figure, we can see that out of 200 students, 133 students have good mental health status and the rest (67 students) have poor mental health status.

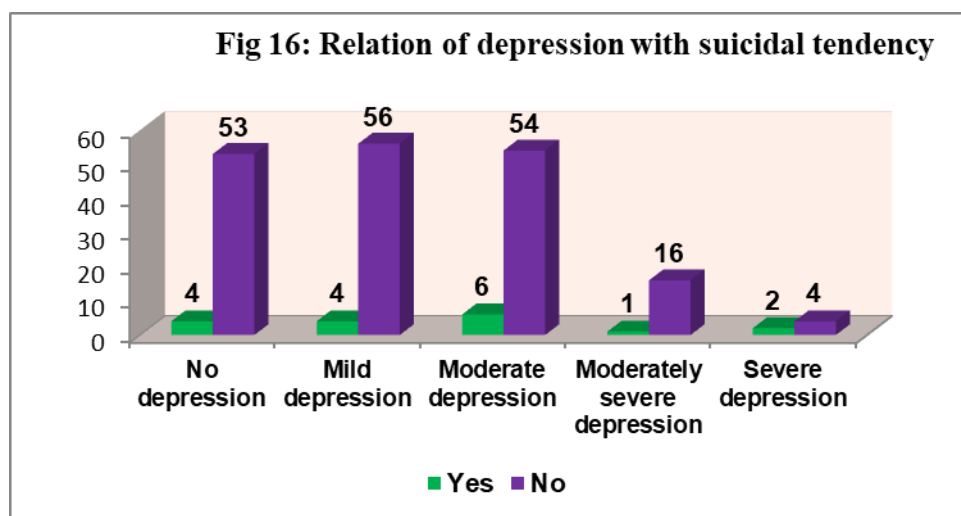**Fig 16: Relation of depression with suicidal tendency**

Fig 16 illustrates the relationship of depression with suicidal tendency. From the above figure, we found that in all stages of severity of depression and even those who are not suffering from depression, there is suicidal tendency among the students.

Sleeping time	No depression	Mild depression	Moderate depression	Moderately severe depression	Severe depression	Total	x^2Value	ρ-Value
Below 4 hours	0	2	0	0	1	3	27.158	0.040 Significant at p <0.05
4-6 hours	7	15	11	5	3	41		
6-8 hours	42	32	33	9	1	117		
8-10 hours	8	11	15	3	1	38		
Above 10 hours	0	0	1	0	0	1		
Total	57	60	60	17	6	200		

Table 6: Relationship of sleeping time with level of depression

From the above table we found that student's sleeping time in a day compared with severity of depression are statistically significant at 5% level of significance.

Sex	Good mental status	Poor mental status	Total
Male	58	31	89
Female	75	36	111
Total	133	67	200

Table 7: Relationship of gender with mental health status

From the above table we found that among the male students 58 students have good mental status and 31 students have poor mental status. Among the female students, 75 students have good mental status and 36 students have poor mental health status. More female students are suffering from poor mental health compared to male.

Academic year	Good mental status	Poor mental status	Total
1st year	76	32	108
2nd year	33	20	53
3rd year	24	15	39
Total	133	67	200

Table 8: Relationship of student's academic year with mental health status

Table 8 shows that students of 1st year have better mental health as well as poor mental health compared to 2nd and 3rd year students.

Living status	No depression	Mild depression	Moderate depression	Moderately severe depression	Total
Living in Hostel	25	41	29	8	103
Total	**25**	**41**	**29**	**8**	**103**

Table 9: Different degree of depression of students who are living in hostel

From the above table we can see that most students staying away from parents, living in hostel are suffering from different degrees of depression. Out of 103, 78 students living in hostel are suffering from mild, moderate and moderately severe depression.

Discussion

This study is the first attempt to assess mental health status of allied health care students of Bangladesh. The present study was designed to investigate the mental health status of allied health care students of Medical Assistant Training School. To assess the mental health status General Health Questionnaire (GHQ-12) was used while Patient Health Questionnaire (PHQ-9) was used to identify different degree of depression among the allied health care students. The questionnaires were distributed to 200 medical assistant students. The collected data was analyzed using SPSS version 20.

Among the students (44.5%) students were male and 111 (55.5%) students were female. In this study the prevalence of poor mental health status in male and female are 15.5% and 18%, respectively.[33] No significant gender differences in GHQ-12 and in the prevalence of poor mental health status among medical assistant students were observed. The results of the present study suggest that special attention must be paid to the mental health of both male and female students in Bangladesh as both gender had no significant differences in mental health status.

Previous studies in the UK, [5] Malaysia, [27] and Nigeria [31] found no gender differences. In contrast, previous studies in Iraq, [33] Iran, [34] and Serbia, [35] found that GHQ-12 scores were significantly higher for women than for men. In the study conducted by Iraq, they found that the prevalence of poor mental health status in men and women were 33.3% and 47.0% respectively. [33] Studies by Van Ommeren in 2000 and Cardozo et al. in 2004 have shown that girls tend to suffer from psychiatric

disorders more than their counterparts and their mental health is affected mostly. A study conducted by Islam (2010) has reported that there is gender disparity in mental health with girls showing significantly lower mental health than boys. This can be due to the fact that girls are emotionally less stable than boys, studies conducted by Aleem et al. (2005) and Visvanathan et al. (2011) on the college-going students have shown that the boys are emotionally more mature than girls.

Majority of student's age were between 18-20 years. The mean and median age of the students was 18.97±1.537 & 19 years respectively.

53.5% respondent's family monthly income were less than BDT 20,000. Out of 200 students, 16 students mentioned that they are personally involved with source of income. Because most students belong to low socioeconomic status, it becomes hard for the family to bear their study cost. This has a negative impact on the mind of the young adults as they are uncertain about their future, whether they will be able to study further.

Most students (73%) of this institute spent their childhood in rural areas whereas only 18.5% students lived in urban areas. Those who come from rural areas, it becomes difficult for them to adjust and integrate into the system. More than 50% students among them currently live in hostel. As a result they often suffer from depression because of staying away from family for the first time. In my study, I found out that out of 200 students, only 57 students do not suffer from depression whereas 143 students suffered from various degree of depression.

Out of 200 students, 21 students did not come willingly to this study and their interest is not related to their study field. It is seen that 114 students are not satisfied with their last academic result. Previous research[12] found that high academic pressure and recent poor academic performance were associated with higher levels of depressive symptoms.

Regarding their sleeping pattern of students, more than 50% students had adequate sleep in a normal day while rest of them are either insomniac or hypersomnia. 22% students have inadequate sleep in a day which is a major factor for suffering from depression. During exam, 43% had inadequate sleep and 55% students had difficulty sleeping at night.

42% students mentioned that they have family history of depression. 30% students think that life is not worth living. 19 students thought of harming themselves mostly by cutting their hands by knife/blade or taking excessive amounts of sleeping pills. 17 students decided or tried to commit suicide.

Poor mental health and depression often leads to drug addiction. In this study, it is seen that 11 students have addiction problem mostly sleeping pill. Without it they have difficulty sleeping at night.

PHQ-9 is widely used as a screening tool for mental health disorder of depression. Various studies conducted at different parts of world reported the prevalence of depression among medical students to be 15-65%.[5] In the present study the magnitude of depression among allied health care students was found to be 71.5%. In a study conducted by Thomas H et al among 3rd year medical students of University of Mississippi school of Medicine, United States and Marie Dahlia et al at Sweden, where prevalence was as low as 23% and 12. % respectively.[12] On the other hand Ganesh Kumar et al. reported the prevalence of depression using Beck depression inventory among medical students in Southern India, to be as high as 71.25%.[5] which is consistent with our study findings. This wide range in the magnitude of depression can be attributed to variations in the types of scales used in the screening and different socio-demographic, geographic backgrounds of students under study.

GHQ-12 has been used in studies of mental health in medical students in the UK,[5] Turkey, [6] Malaysia,[20] Nigeria,[31] Iraq,[33] Japan,[11] Iran,[34] and Serbia.[35] Of the 14 cross-sectional studies that remain after excluding 3 cohort studies, [23, 24, 26] the study with the largest number of participants (847) was conducted in Nigeria. [31] In the present study, general mental health status was found to be poor among 33.5% of the students. This is in line with the findings of M. Nojomi et al and Liselotte N. Dyrbye et al at Iran, using SCL-90-R questionnaire, where 19.4% and 25% of medical students were having poor mental health status respectively. [4]This is more than half of the burden that is reported by Rael D. Strous et al using DSM-IV criteria in Israel, where 55.5% of students had reported poor mental health status.[10] A study on three generations of Iranian medical students and doctors found that 44% of participants scored above the threshold of the GHQ-28 questionnaire, indicating probable psychiatric disorders.[11] There was a significant association between lower age as well as 1st year of MBBS with the poor mental health status. This is attributed to the higher academic and intellectual burden that is disproportionate to the age and capability of the student. The mental health status of

students in higher age group and studying in third term MBBS was better compared to their juniors as they would have already acclimatized to the academic and social environment of medical school. This implies that the stressors precipitating poor mental health status taper as the student accustoms himself to the environmental influences. These findings were similar to the observations made by Marie Dahlin et al where students in 1st year of Medicine had higher burden of stressors compared to those in later phases of curriculum.[12]

Among 200 students, 143 students are suffering from various degree of depression. 6 students are suffering from severe depression who needs immediate mental health counseling and treatment. Among them, 67 students have poor mental health status. It is seen that those suffering from depression have suicidal tendency as well. Sleeping time in a day is significantly associated with depression level ($p<0.05$). Out of 103 students who live in hostel, 78 students are suffering from various degree of depression. 1st year students seem to have poor mental health status more than 2nd or 3rd year students. Adjustment of coping with mental pressure over the years may be the cause.

These results suggest that attention must be devoted to the mental health of allied health care students, and that a system for providing mental health care for medical assistant students must be established based on the actual conditions at each institute.

Conclusion

In this study, poor mental health status was about 34 % and different level of depression was found about 72 % among allied health care students. Both poor mental health status and depression were associated with sleeping pattern, type of accommodation and year of the study. Since most students (73 %) came from rural areas, it becomes difficult for the students to adjust and integrate into the system. Depression and poor mental health induced 19 students to cause self injury. Among them, 17 students decided or tried to commit suicide. 11 students reported to take drugs e.g. alcohol, sleeping pills, cannabis etc.

The result reveals a clear picture of poor mental health status, prevalence of depression in junior medical assistant students marginally more in females & associated with academic year of the study. Students should be given the same care and support that we expect them while attending patients. So, medical assistant students should be given care and support in order to promote resilience and

personal fulfillment, and for enhancement of professionalism and patient care. This call for in house counseling services and mentorship program at medical assistant colleges for early detection and treatment of these problems so that allied health care students can concentrate on their studies resulting in better academic and curricular outcomes.

Recommendation

On the basis of findings of the study the following recommendations are put forward:

- In depth epidemiological study and extensive research should be carried out to explore the situation in detail.

- In house Counseling service: One-stop mental health crisis center (OMHCC)

- 24-hour MH call center (hot line service)

- Psychiatric information about adolescents in low- and middle-income countries is generally sparse, but a troubling picture of depression and high suicide rates has been highlighted. More comprehensive improvement and expansion of social services offered is necessary such as upgrading of mental health assessment tools, treatment in primary care, availability of medication, national mental health programs, and training of mental health care professionals

- In terms of depressive prevention, freshman students need to be orientated about learning skill, time management skill and communication skill in order to meet academic requirement, arrange their time effectively for learning and leisure activities, and overcome difficulties in working in new environment through foundation workshop at the beginning time of the first term or cooperate with the youth union activities. Moreover stress management information should be provided in high pressure environment in all medical assistant training school.

- Dormitory environment where more than 50% percent of students live should be improved in terms of friendly and neat environment.

- Better interaction with the faculty and proper guidance, advisory services and peer counseling at the campus could do a lot to reduce the stress. Need to bring about changes in the quality of teaching and evaluation system, to reduce examination fear.

- At the same time, adolescents tend to underutilize mental health services due to stigma and other priorities in life. Further studies are necessary to make mental health promotion more successful in low and middle-income countries, particularly within such vulnerable populations.

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