

Original Research Article

Mental Morbidity Prevalence, Stigma and health care seeking behaviors among Non-medical Students in University of Khartoum, Sudan March 2015

ABSTRACT

Background: Young adulthood is a critical period in which mental illnesses such as anxiety, mood disorders, and comorbidities such as substance use disorders often first emerge. Mental health problems may lead to disturbed behaviors and can seriously impair academic performance. Yet only one-third of young adults with mental disorders seek professional help.

Aims: To study the prevalence of mental health morbidity and the barriers for seeking mental health care among non-medical students in University of Khartoum.

Study design: Descriptive Cross-sectional facility-based study.

Place and Duration of Study: University of Khartoum Central campus, Agriculture and Veterinary campus, and Educational campus March 2015

Methodology: Study sample included Khartoum university non-medical students, selected using multistage sampling. Sample size 392. Data was collected by distributing self-administered questionnaire. Ethical consent from every participant was obtained. Dependent variables were measured using Standardized tools. Cronbach's alpha, univariate and bivariate analysis were used.

Results: Study revealed that 57% of students suffered from mild symptoms of depression, 13.7% moderate and 0.5% severe while 61.2% suffered from anxiety symptoms. 40% suffered from moderate to severe stigma. Females were 1.5 times suffering from depression symptoms higher than males OR = 3.4 CI (2.1-5.3) RR = 1.5 CI (1.2-1.7) Pearson Chi-Square = .000 Females were 1.3 times suffering from anxiety symptoms more than males OR = 1.8 CI (1.2-2.7) RR = 1.3 CI (1.1-1.5) Pearson Chi-Square = .008 Students. Depression symptoms are more likely associated with anxiety symptoms OR = 7.25 CI (4.4 to 11.91) RR = 1.8 CI (1.5 to 2.1) Pearson Chi-Square = 0.000

Conclusion: Majority of university students were found to be suffering from depression and anxiety symptoms, with depression being more prevalent than anxiety. Females were found to be more depressed and anxious than males but less stigmatized. Stigma was a major mental health barrier for seeking medical care.

1. INTRODUCTION

The World health organization defined mental health as not only the absence of mental disorder or infirmity but as a state of well-being in which every individual realizes his or her own potentials, cope with the normal stresses of life, work productively and fruitfully, and is able to make a contribution to her or his community.(1)

Young adulthood is a critical period for mental health, Mental illnesses such as anxiety disorders, mood disorders, and substance use disorders often first emerge during adolescence or young adulthood. (2) Knowing that the prevalence of mental disorders is greatest among younger people aged 16-24 years than at any other stage of the lifespan.(3)

Starting university can be a stressful experience. Especially among young adults who might suffer from many challenges such as complicated family dynamics, identity issues, and extreme pressure to succeed.(4) How to cope with such stresses is the key element to develop a health problem or not.(5) Such high susceptibility in adolescents and young adults to develop a mental disorder is coupled with a strong reluctance to seek professional help. Studies have found that approximately 18 to 34% of young people with high levels of depression or anxiety symptoms seek professional help.(3)

Internationally depression and anxiety are highly prevalent mental disorders with estimates indicating they affect up to almost one fifth of the population in high income countries worldwide. (3) According to WHO reports despite the availability of treatments, nearly two-thirds of people with a known mental disorder never seek help from a health professional. Stigma, discrimination and neglect were major barriers in addition to lack of mental health system policies as Currently, More than 40% of countries have no mental health policy and over 30% have no mental health programs. Around 25% of countries have no mental health legislation. (6)

According to Ahmed Okasha, cited in Abdelgadir E, mental health resources and budgets allocated for mental health services, in many Arab countries, are still insufficient. Out of the twenty two Arab countries, Sudan and six other Arab countries have less than 0.5 psychiatrists per 100,000 people. Two Arab countries do not have a mental health policy and six do not have any legislation.(7)

Nationally in Sudan according to the study done by Shaaban and Baasher (2003) on 1107 (12-19) years girls, a two stage epidemiologic survey for major depressive disorder. They found a 4.2% prevalence of major depressive disorder for the population. 11% of the girls reported severe depression. The depressive scores increased with age. None of the girls had sought treatment from health facilities.(8)

While according to a study done at 2014 by the national council for child and welfare about multiple indicators adolescents health survey (Khartoum 2014) by Prof Elnimeiri K. M. (9) concluded that 40% of the male and 63% of the female adolescents ever heard about mental health, and that 18% of the male and 12% of the female adolescents ever suffered from mental health problem .The results revealed that common mental health problems such as anxiety, depression and mood swinging were prevailing among adolescents especially males.

In Sudan the total number of human resources working in mental health facilities or private practice per 100,000 population is 0.92. The Ministry of Health expenditure represented 1.6 % of the country's budget in 2006 while the expenditure on mental health is unknown.(8)

This resulted in a background of high prevalence and unmet mental health needs in the extremely limited mental health care facilities in the country.(8)

Justifying the importance of this study was first to discover the diversity and magnitude of mental morbidity and the barriers to mental health care among university students with stigma and their help-seeking intentions. This will help the vulnerable students to improve their academic performance and lifestyle with guarantee for a successful future. Mainly targeting the young adult students, who are the most effective community potentials, will help to increase the community awareness about mental health, which will ultimately induce a huge conceptual and behavioral change in Sudan.

This will help formulate hypothesis for further researches in the field including intervention programs that may minimize the expected barriers and encourage them to utilize mental health services and will enable patients and their families to ask for help from the early stages of the illness before their conditions deteriorate.

Such researches and interventions, eventually will lead to successful control programs and ultimately patient and providers' satisfaction facilitating the expansion and integration of MH to PHC services.

The general objective was to study mental health morbidity, stigma and health care seeking behaviors among students of University of Khartoum. While the specific objectives were to determine the prevalence of depression symptoms among university students using the total score of CES-D (Center for Epidemiologic Studies Depression Scale) . To assess The prevalence of anxiety spectrum among university students using the total score of GAD-7 (Generalized Anxiety Disorder 7-item).To identify the help seeking intentions using the total score of GHSQ (General Help Seeking Questionnaire).To measure the actual help seeking behavior by identifying the proportion of students who wrote their phone number to check for their mental health status results. Finally to measure the association between public stigma and seeking formal psychological help.

2. MATERIAL AND METHODS

2.1 Study Design: This is a Descriptive Cross-sectional Institutional-based study

2.2 Study Area and setting: University of Khartoum is the oldest university established in Sudan in the year 1902. It was formerly called Gordon Memorial College until (1956) when Sudan gained independence it became University of Khartoum. University of Khartoum has been recognized as a top university and a high-ranked academic institution in Sudan and Africa.

The university has (37329) undergraduate students in 23 faculties, schools and graduate research institutes (2011-2012). Students of Bachelor degree constitute (21542), according to statistical report of the official site of the ministry of higher education for the scholastic year (2011-2012).(10)

There are four campuses:

- Central campus in central Khartoum, 11642 students.
- Medical campus south of central Khartoum, 5452 students.
- Agriculture and Veterinary campus at Shambat, Khartoum North. 3157 students.
- Education campus at Omdurman 15 km from central campus, 4183 students.

2.3 Study population: Students of University of Khartoum are mixture of different social and cultural backgrounds with diversity in economic statuses. A proportion come originally from rural areas, others come from abroad. Students as such are more or less representative for the general population setting.

2.3.1 Inclusion Criteria: Non-medical students from University of Khartoum who consented to participate in the study.

2.3.2 Exclusion criteria:

- Students who were absent .
- Students who refused to participate in the study.
- Medical students of University of Khartoum.

2.4 Sample Size:

The total sum of the students from the 3 selected campuses was 18982 students.(10)

The sample size will be calculated from this equation $n = N/1 + (Nd^2)$

Variables of equation:

n = sample size

N = Population size

d = precision

$n = 18982 / 1 + 18982 * (0.05)^2 = 392$

2.5 Sample Technique and Procedure Multistage sampling

The sample was collected from 3 campuses. Each campus had been divided into colleges. Participating colleges in the study were selected using simple random Sampling technique.(11,12)

The sample was distributed according to size.

2.5.1 Center campus: total number of students in campus= 11624

Calculated number of Students to participate in the study sample according to size = $(11624/18982) \times 392 = 240$ students

The faculty of arts was selected randomly from:

faculty of mathematical sciences, faculty of engineering, faculty of architecture, faculty of science, faculty of arts, faculty of law, faculty of economic and social studies, faculty of management studies, faculty of geographical and environmental sciences.

Faculty of arts was divided into 14 departments; **7 humanistic** (psychology, islamic studies, media, philosophy, archeology, history and information science) and **7 linguistic** (english, arabic, french, dutch, russian, chinese and linguistics). **history and arabic** departments were selected randomly respectively.

262 students were collected from the History and Arabic departments using total coverage.127 students were from **History department** and 135 students were from **Arabic department** who were available at the time of study.

2.5.2: Shambat Campus: Total students = 3157,

Calculated number of Students to participate in the study sample according to size = $(3157/18982) \times 392 = 65$ students

the faculty of Veterinary was selected randomly from:

Faculty of Veterinary, Faculty of Agriculture, Faculty of Animal Production and Faculty of Forests.

91 students were collected from the faculty of Veterinary who were available at the time of study by total coverage.

2.5.3 Education campus: Total students = 4183

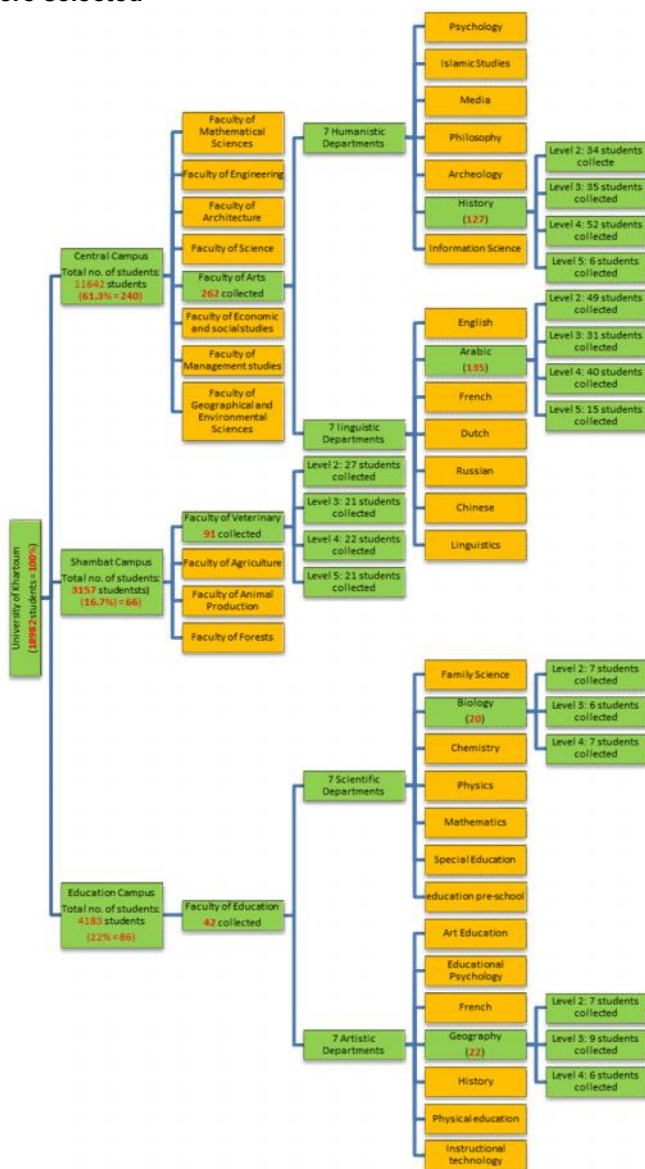
Calculated number of Students to participate in the study sample according to size = $(4183/18982) \times 392 = 86$ students.

There are 14 departments in the campus of Education; **7 scientific** (Family Science, Biology, Chemistry, Physics, Mathematics, Special Education and education pre-school) and **7 artistic** (Art Education, Educational Psychology, French language, Geography, History, Physical education and Instructional technology). Biology and Geography was selected randomly respectively. Biology and Geography departments were randomly selected.

42 students were collected using total coverage. 20 students were taken from Biology department and 22 students were taken from Geography department who were available at the time of study.

2.6 Sample Frame: Multistage sampling done by simple random sample to the level of classes. Then, at the class level, total coverage for students available at the time of study.

Figure.2.1 Shows the selected colleges by Simple random sampling technique. Green were selected



2.7 study limitation: Unavailability of students during data collection period in addition to limitations of time and resources.

2.8 Data collection tools and list of variables:

Demographic variables: Age, Gender, Residence.

Socio-economic variables: Living with parents. Monthly income , Source of income, Residence.

Background variables: Faculty, Level, Perceived academic performance.

Drug history: smoking, snuffing, alcohol, cannabis, drug abuse.

Perception of Mental disorder, type of the disorder.

2.8.1Center for Epidemiologic Studies Depression Scale as a Screening Instrument of Major Depressive Disorder (CED-D)(13)

The 20 items in CESDR scale measure symptoms of depression in the last week.

4 Likert scale was used to assess each item: Rarely or not at all = 0

Sometimes = 1, occasionally = 2, Most of the times = 3 Except for the items: 4,8,12 and 16; the scoring was inverted. Cut off for being symptomatic is 16 (16-60). Any value <16 (0-15) is considered as Normal.

2.8.2Generalized Anxiety Disorder (GAD-7) scale (screening tool)(14)

7 + 1 items scale to measure symptoms of anxiety in the last 2 weeks.

4 Likert scale was used to assess each item : Not at all = 0

Several days = 1, Over half the days = 2, Nearly every day = 3

Cutoffs of symptoms (Anxiety spectrum): Minimal = 0-4, Mild = 5-9

Moderate = 10-14, Severe = 15-24

Two categories were then Developed: Not Anxious = 0-4 Anxious = 5-24

2.8.3Stigma Scale for Receiving Psychological Help (SSRPH) (15)

To assess an individual's perception of how stigmatizing it is to receive psychological treatment. It consists of 5 items which are scored on a Likert-type scale: Strongly disagree = 0,Disagree = 1, Agree = 2 Strongly agree = 3

Cutoffs: Low stigma: 0-5, Moderate stigma: 6-10 ,High stigma: 11-15

Then cutoffs were re-categorized to: Not Stigmatized = 0-5 Stigmatized = 6-15

2.8.4General Help seeking questionnaire:

To assess individual's intentions of seeking professionals psychological help when experiencing emotional or personal problems. It consists of 10 items of 10 different people from whom the students will seek help, which are scored on 7 Likert-type scale: Extremely unlikely = 1 ,Unlikely = 2 ,Somewhat unlikely = 3 ,Neutral = 4

Somewhat likely = 5 ,Likely = 6 ,Extremely likely = 7

Cutoffs:1-3 = Unlikely 5-7= Likely

2 out of the 10 items were analyzed using crosstabs:

- intentions to seek help from Mental health professional = Formal Help.
- intentions to seek help or not.

Table 2.1: Reliability of scales used in the study.

≥ 0.9 Excellent, 0.7 - 0.9 Good, 0.6 - 0.7 Acceptable, 0.5 - 0.6 Poor and <0.5 is Unacceptable.

Scale	Number of Items	Cronbach's Alpha
Depression scale reliability	20	0.729
Generalized anxiety disorder (7 + 1) scale	7	0.841
Social Stigma of Receiving Psychological Help scale	5	0.646
General Help Seeking Questionnaire	10	0.632

2.9 Data collection method: Data was collected using Standardized Questionnaire which was translated to Arabic, by an expert Psychiatrist, and was retested before data collection.

2.10 Data analysis: Statistical Package for the Social Science and computer software programs were used in data analysis. Cronbach's alpha to test the internal consistency of the scales was used. Univariate, bivariate and measures of association by Pearson Chi-square with odds ratio and the test of significance were used.

2.11 Ethical consideration:

Ethical approval was obtained from the IRB (Institutional review board) University of Khartoum, and was obtained from the Faculty Registrars.

Ethical consent from each subject was obtained and was assured of privacy and confidentiality. Students were given the free voluntary choice to write their names in case they were interested to know their results.

3. RESULTS AND DISCUSSION

3.1 RESULTS:

TABLE (3.1): CHARACTERISTICS OF THE NON-MEDICAL KHARTOUM UNIVERSITY STUDENTS (MARCH 2015):

CHARACTERISTICS	PERCENTAGE	
SAMPLE SIZE	395	100%
AGE CATEGORIES:	17-19 years	25.6
	20-22 years	50.1
	23-25 years	14.5
	>25	9.8
	total	100
GENDER:	Male	33.2
	female	66.8
	Total	100
RESIDENCE	House	62.4
	Dormitory	37.6
	Total	100
LIVING WITH PARENTS:	With both	52.2
	With mother only	10.5
	With father only	1.5
	None of them	35.8
	Total	100
MONTHLY INCOME	<1000	16.9
	1000-5000	73.5
	>5000	9.6
	Total	100
SOURCE OF INCOME:	Self-occupied	10.8
	Parents	81.3
	Husband	5.0
	Brother	1.8
	Uncle	1.1
	Total	100
FACULTY:	Art : Arabic	34.2
	Arts :History	32.2
	Veterinary	23.0
	Education science	5.1
	Education geography	5.
	Total	100
LEVEL:	2nd year	31.6
	3rd year	26.0
	4th year	31.8
	5th year	10.6
	Total	100

TABLE (3.2): ACADEMIC PERFORMANCE, HABITS AND PERCEPTION OF MENTAL DISORDER AMONG NON-MEDICAL KHARTOUM UNIVERSITY STUDENTS' (MARCH 2015):

VARIABLE	Percentage%	
PERCEIVED ACADEMIC PERFORMANCE:	Yes	61.9
	No	38.1
	Total	100.
SMOKING	Yes	7.6
	No	92.4
	total	100
SNUFFING	Yes	4.5
	No	95.5
	Total	100

PERCEIVED HAVING MENTAL DISORDER:	Yes	10.5
	No	89.3
	Total	100
IF YES PLEASE IDENTIFY:	Fear	19.4
	Depression and anxiety	2.8
	Depression	16.7
	Anxiety	22.2
	Schizophrenia	38.6
	Total	100

Figure (3.1): Prevalence of Depression symptoms among Non-medical students of the University of Khartoum March 2015

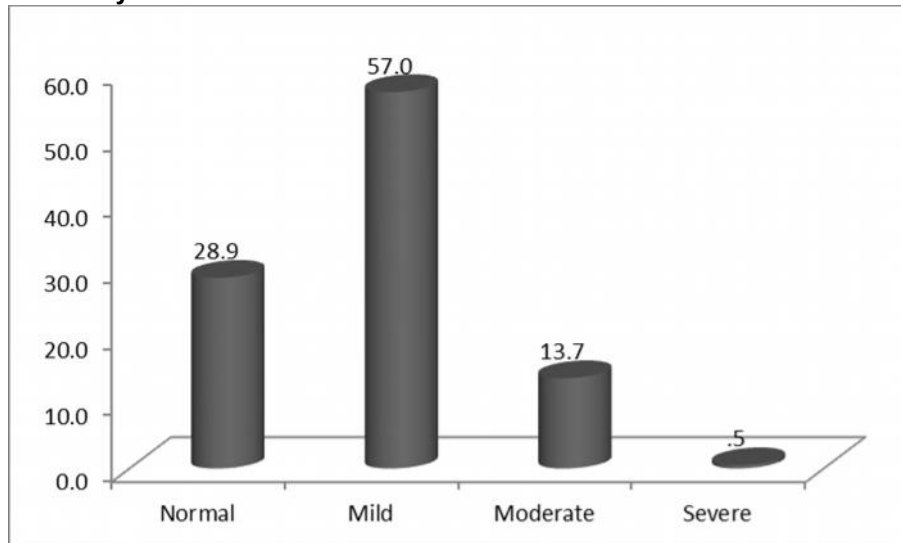


Figure (3.2): Anxiety spectrum among non-medical students of the University of Khartoum March 2015

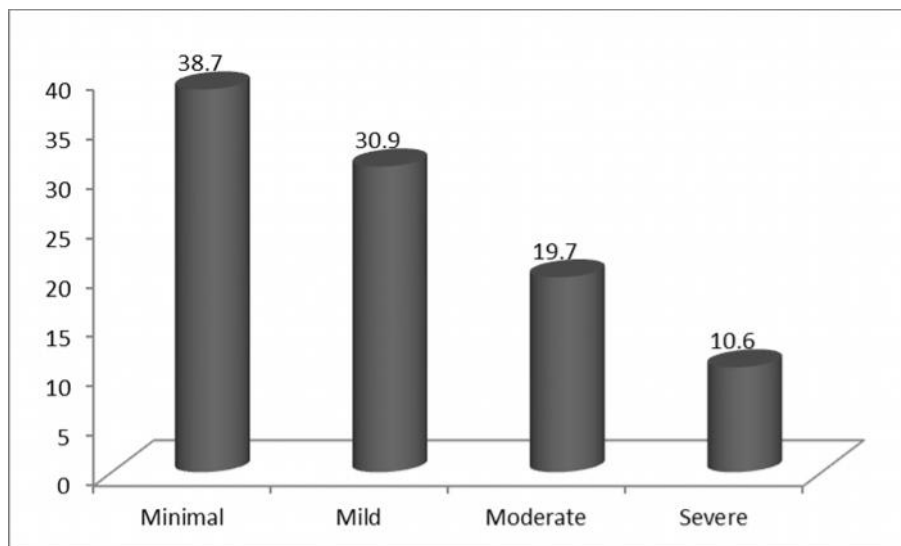


FIGURE (3.3): Social stigma spectrum among non-medical students of the University of Khartoum March 2015

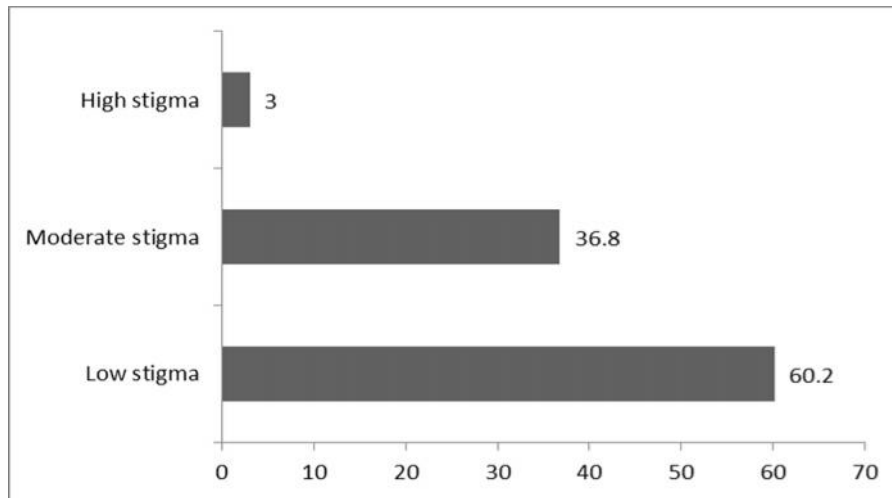


FIGURE (3.4): choice for seeking help for non-medical students of the University of Khartoum March 2015 (1-3 = unlikely, 5-7 = likely)

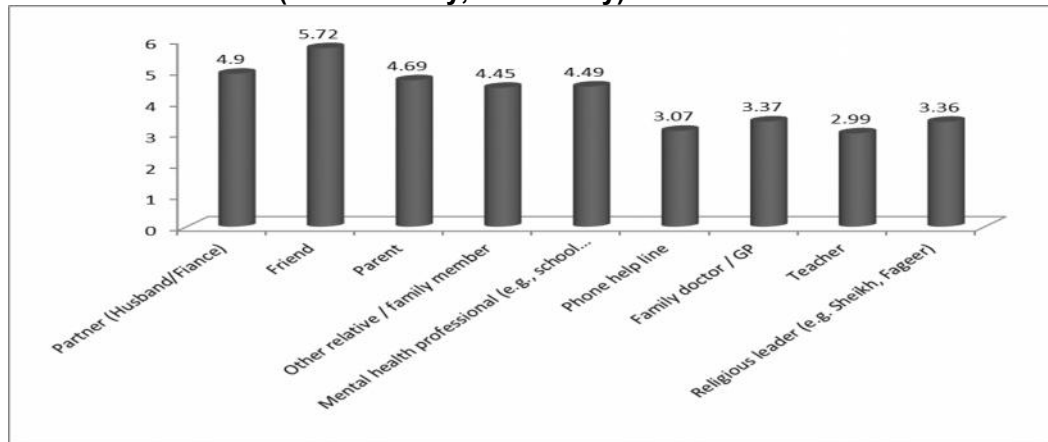


FIGURE (3.5): Non-medical students of the University of Khartoum March 2015 who has ever seen a mental health professional (e.g., school counselor, counselor, psychologist, and psychiatrist) to get help for personal problems.

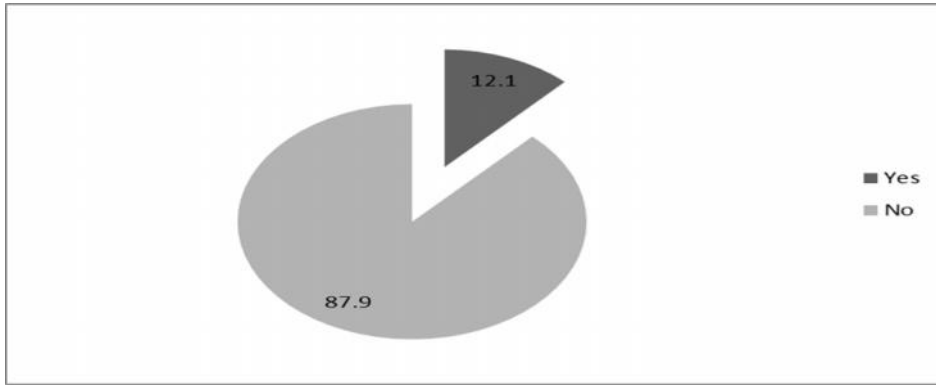


FIGURE (3.6): Types of mental health professionals met by non-medical students of the university of Khartoum March 2015 who has ever seen a mental health professional

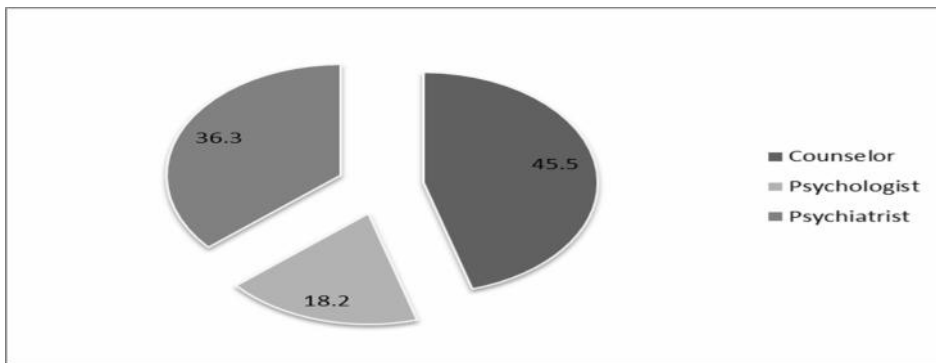
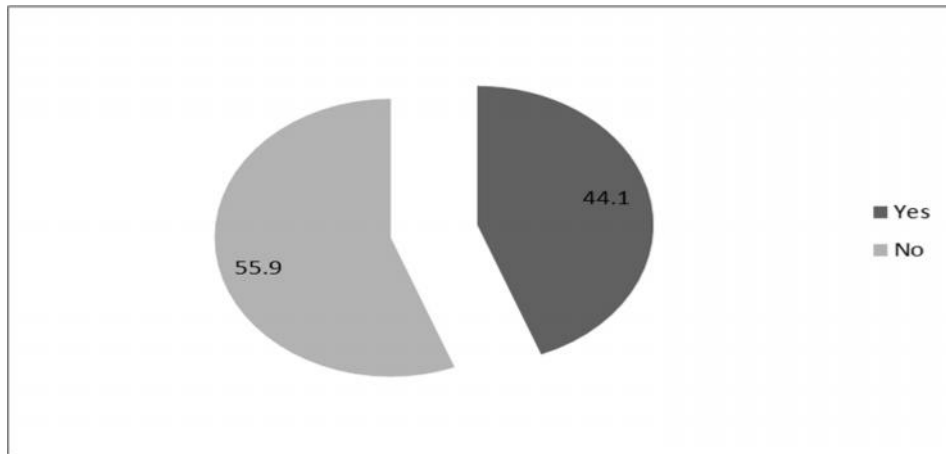


FIGURE (3.7): Proportion of non-medical khartoum university students (march 2015) who wrote their phone numbers to receive questionnaire results (actual help seeking behavior)



ASSOCIATIONS:

FIGURE (3.8): Gender and depression among non-medical Khartoum university students

(March 2015) Pearson chi-square = .000 (significant)

OR = 3.4 CI (2.1-5.3) RR = 1.5 CI (1.2-1.7) females are 1.5 times with depression symptoms than males

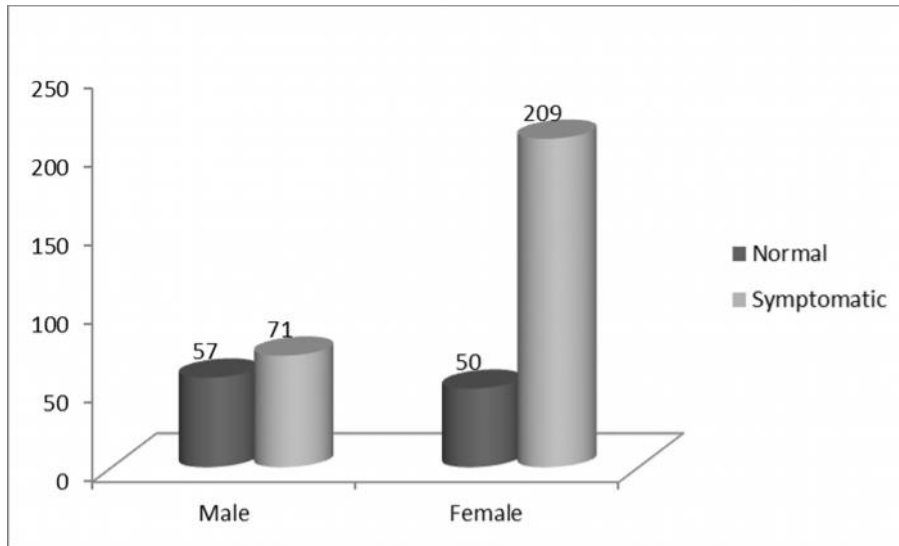


figure (3.9): Gender and anxiety among non-medical Khartoum university students (March 2015) Pearson chi-square = .008 (significant)

OR = 1.8 CI (1.2-2.7) RR = 1.3 CI (1.1-1.5) Females are 1.3 times suffering from anxiety symptoms more than males.

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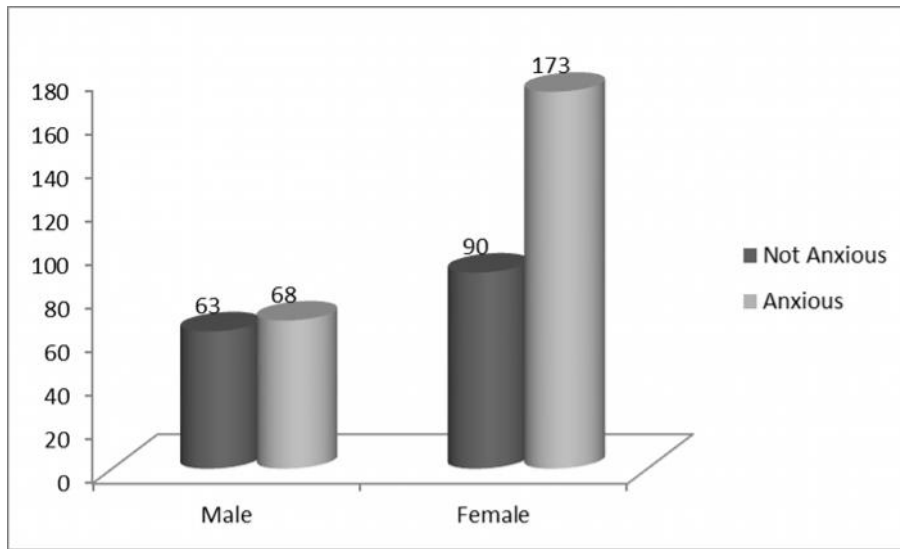


FIGURE (3.10): Gender and stigma among non-medical Khartoum university students (March 2015) Pearson chi-square = .000 (significant)

OR = 2.5 (1.6-3.8) RR = 1.5 (1.3-1.8) Females are 1.5 times less stigmatized than males

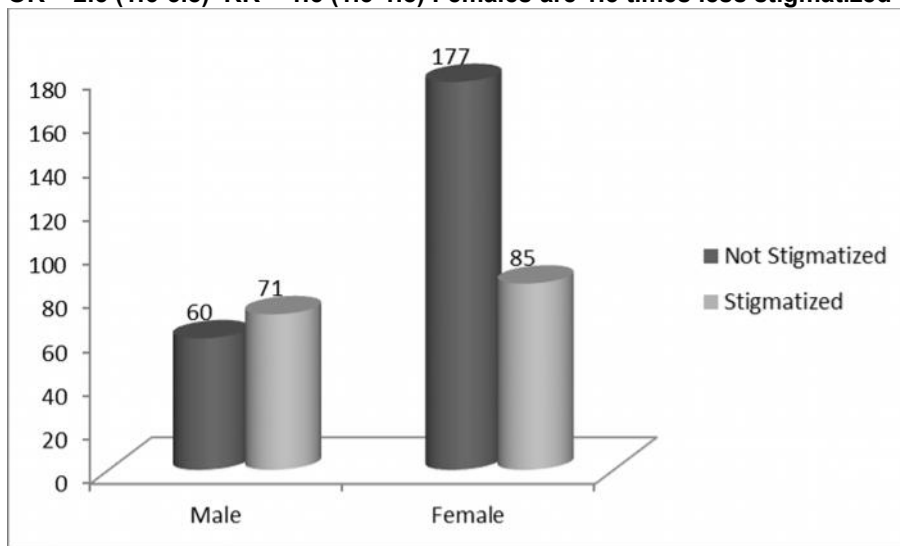


FIGURE (3.11): Academic deterioration and anxiety among non-medical Khartoum University students (March 2015) Pearson chi-square = .000 (significant)

OR = 2.1 (1.4 to 3.2) RR = 1.3 (1.1-1.6)

Performance deteriorating students are 1.3 times more suffering from anxiety symptoms

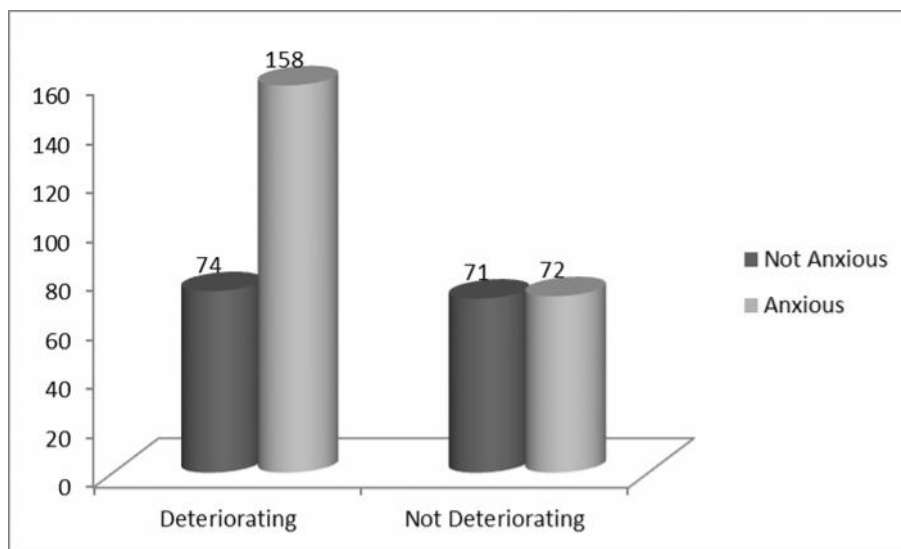


FIGURE (3.12): Smoking and depression among non-medical Khartoum University students (March 2015) Pearson chi-square = .037 (significant) OR = 0.44 (0.198 to 0.98) RR= 0.75 (0.5-1.05) Smokers showed less depressive symptoms in comparison to non-smokers (protective)

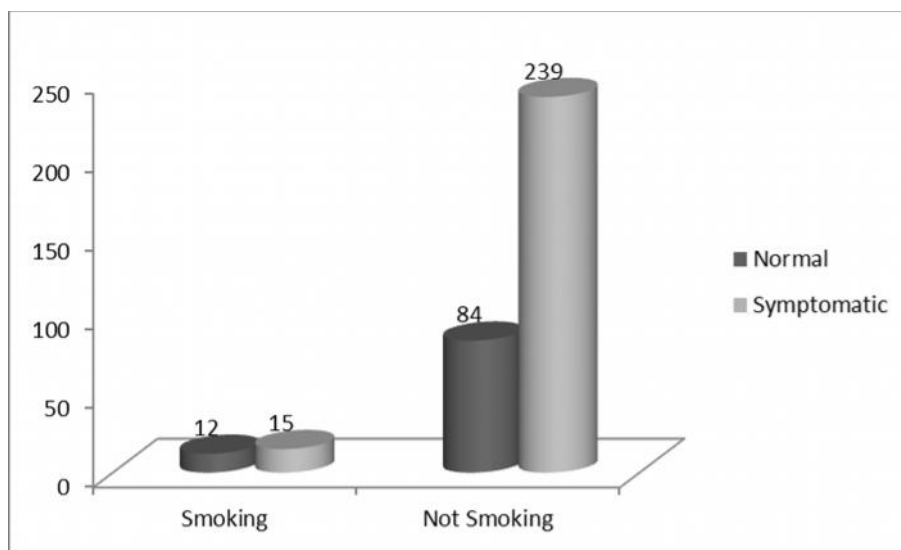


Figure (3.13): Depression symptoms and seeking formal help among non-medical Khartoum university students (march 2015) Pearson chi-square = 0.089 (not significant) OR= 1.53 CI(0.94 to 2.52)

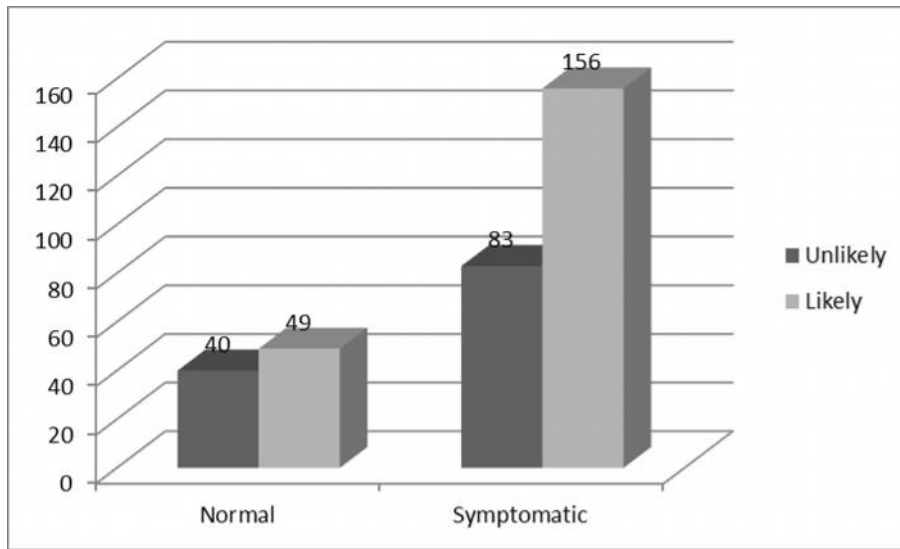


FIGURE (3.14): Anxiety symptoms and seeking formal help among non-medical Khartoum University Students (March 2015) Pearson chi-square = 0.052 (not significant) OR = 1.57 ci (0.99 to 2.45)

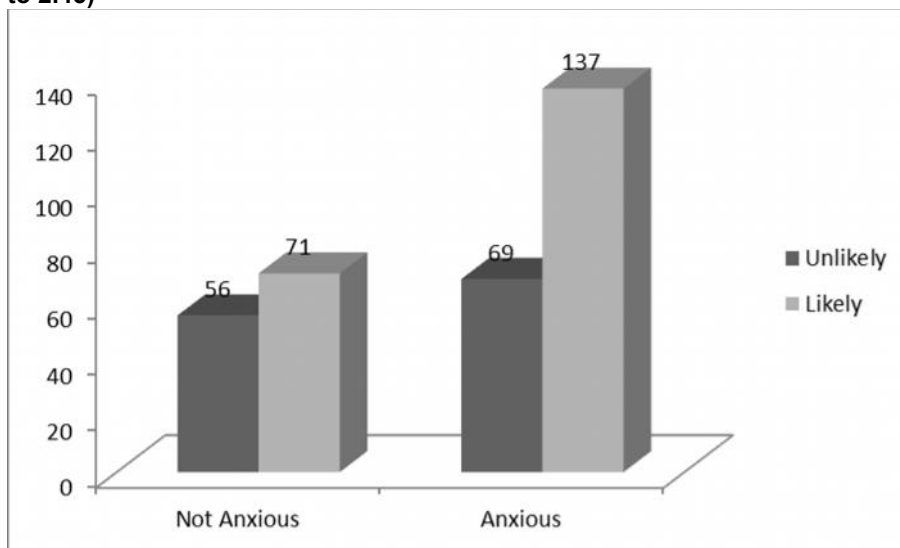


FIGURE (3.15): Depression symptoms and writing the phone number (actual behavior to seek help) among non-medical Khartoum university students (March 2015) Pearson chi-square = 0.000 (significant) OR= 7.25 CI (4.4 to 11.91) RR = 1.8 CI (1.5 to 2.1) students with depression symptoms are 1.8 times likely to actually seek help by writing their phone numbers

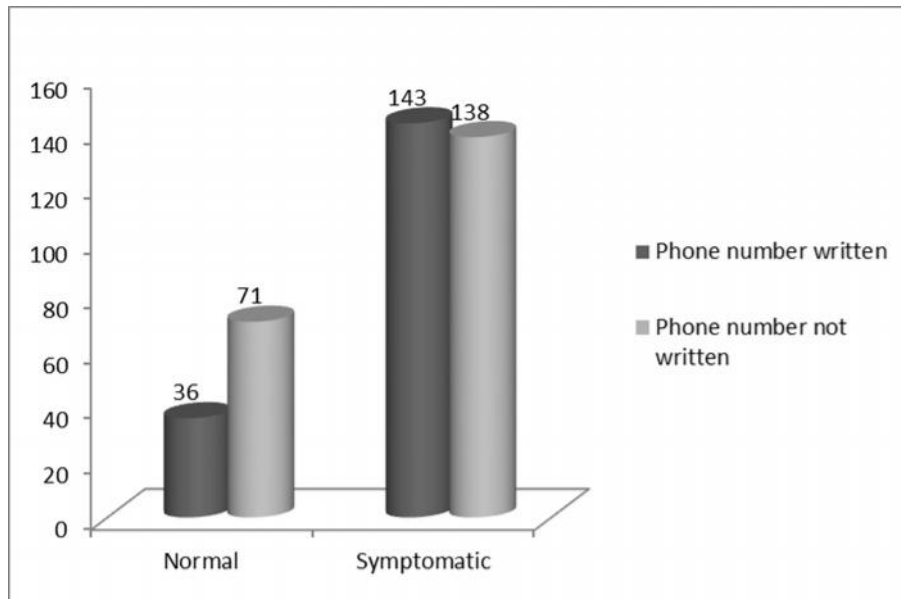


FIGURE (3.16): Anxiety symptoms and writing the phone number (actual behavior to seek help) among non-medical Khartoum University students (march 2015)
 Pearson chi-square = 0.01 (significant)
 OR = 1.7 CI (1.1 - 2.6) RR = 1.4CI (1.1 - 1.7) students with anxiety symptoms are 1.4 times likely to actually seek help by writing their phone numbers

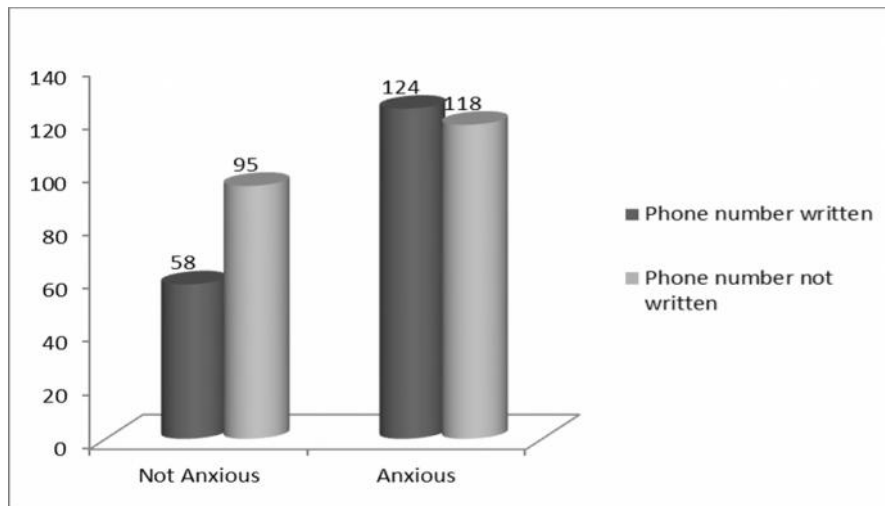
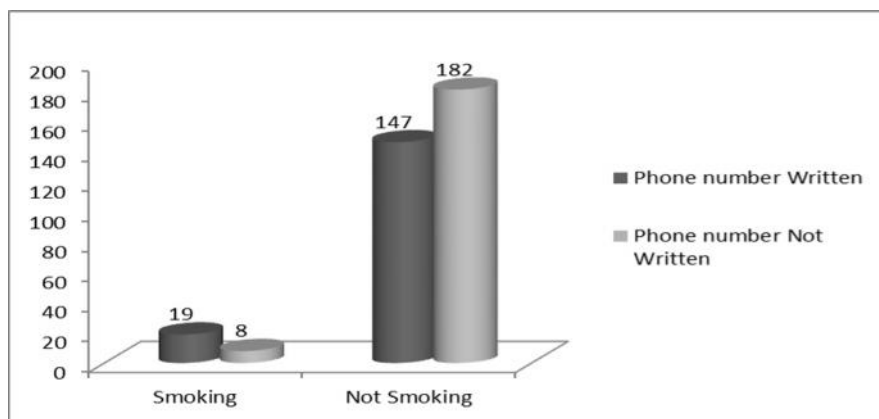


FIGURE (3.17): Smoking and writing the phone number among non-medical Khartoum university students (March 2015) Pearson chi-square = .009 (significant)
 OR = 2.94 (1.3 to 6.9) RR = 1.6 (1.2-2.1) smokers are 1.6 times more likely to actually seeking help by writing their phone numbers



3.2 Discussion:

This study was conducted during March 2015 in three campuses of University Of Khartoum. Total sample 395 non-medical students participated voluntarily in the study. The aim of this study was to screen for depression and anxiety and to discover the degree of stigma and health seeking intensions. The actual health seeking introduced when a considerable proportion of students left their phone numbers to check for their mental health statuses.

3.2.1 Reliability

Reliability of the scales was tested by Cronbach's alpha to check for internal consistency. results include ≥ 0.9 excellent, 0.7 - 0.9 good, 0.6 - 0.7 acceptable, 0.5 - 0.6 poor and < 0.5 is unacceptable.

the 20 items depression scale showed cronbach's alpha 0.73 and gad 7 + 1 items showed 0.84, both have good reliability. the 5 items stigma scale and the 10 items general help seeking questionnaire showed cronbach's alpha 0.65 and 0.63 respectively, both have acceptable reliability.

further reliability checked by associating the depression and anxiety symptoms together to produce significant relationship; those who are depressed are more likely to be anxious as proved by the literature. (3)(16)(17) stigma and formal help seeking intensions are also found to be significantly associated; those who are not stigmatized are more likely to seek formal help as it is plausible and consistent with the literature. (18)(19)(20)

3.2.2 background variables and its relation with the mental health morbidity, stigma and help seeking intensions:

Females who participated in the study comprised 66.8 % while males 33.2 % which reflects the real situation of the students in universities with a gender ratio of at least 2:1 in most colleges. Males usually prefer working at a younger age rather than studying, and they participate financially to provide the family. this can be due to the overall financial problems affecting the country. this ratio is not consistent with studies done in Zurich, Switzerland (2005) mental health literacy online survey among university students who showed no difference between male and female frequencies: 52% and 48% respectively.(21). another study done (2005) among college students in turkey also showed different male: female ratio.(22)

Females were found to be more depressed and anxious than males but less stigmatized. Despite this fact there was no significant association that they would seek help more than males. A possible explanation is that males are able to cope with their stresses in many different ways, which are very restricted to females due to eastern cultural backgrounds. Males are prone to engage in different behavioral deviations and drug abuse more likely than. This was consistent with a study conducted by E. Glogerstein in October 2005 among undergrad and postgrad students in Midwestern Public University which found that males were more stigmatized than females.(23) This can be attributed to the higher tendency of females to share their problems and secrets compared to males.

17 years old was the youngest age participated in the study while the eldest was 55 years. Median age found was 21 years old. Age was categorized into groups (17-19), (20-22) with highest percentage 50%, (23-25) and > 25 years only comprised 10% of the sample. Age was not found to be associated with any of the dependent variables. Stresses and consequently mental disabilities can be equally distributed throughout the age groups included in the sample.

One of the most important indicators of mental health disorders is the academic performance deterioration students. Yet other factors can contribute to this deterioration such as educational system methods .In this study, the deterioration was accompanied with objective results of the last

semester (year) and the semester of the year before. Thus the self-reported perception of academic deterioration was more likely to be just a comparison between the two close periods.

61% of the sampled students perceived self-reporting academic deterioration, Such very high proportion can be attributed to other different factors besides mental disability as mentioned. Self-reported deterioration was found to be significantly associated with anxiety and high stigma thus interprets the need of those students to seek mental help and solve their hidden problems. Unfortunately there was no significant association between the self-reported deterioration and intentions to seek help or the actual help seeking intentions.

These results were consistent with a previous study by M. Chapell et al. (2005) among 4000 undergraduate students and 1414 postgraduate students, where low-test-anxious female graduate students had significantly higher GPAs (graded point average) than high-test-anxious female graduate students.(24)

In this study Academic deterioration was not associated with depression in contrast to previous study by D. Eisenberg et al. (2009) which identified depression as an important predictor to academic performance.(50) Anxiety was more likely to be associated with academic deterioration than depression. Logically this can be explained that chronic depression (dysthymia) can keep the patient productive with minimal performances. Therefore a considerable proportion of the sampled students with symptomatic depression maybe suffered from dysthymia which rendered their performance to be stable for two years and thus not reporting any deterioration. (25)

Only 7.6% admitted to be smokers, who were all males except one was a female. According to the current study smokers showed less depressive symptoms than non-smokers but were associated with higher stigma which reflects using smoking to cope with their stresses rather than seeking help. Thus they were unlikely to seek formal help yet those who sought medical help wrote their phone numbers to receive their mental health situation results.

Drug and smoking abuse in the Sudanese culture are highly stigmatizing. Consequently people tend to deny the abuse of drugs. Only 1 student in the whole sample admitted to use drugs. the study done by R. Hussein (2013) among the rural students found that almost 20 % of the students were smokers.(26)

Small proportion of students perceived themselves as having a mental health disorder which was 10.5%. Of which more than one third (38.6%) reported schizophrenia as the most common mental disorder .Most probably they misunderstood the medical term as the Arabic meaning commonly used by lay people for Schizophrenia is hesitantive personality, low self-esteem, and double personalities instead of the scientific diagnostic meaning of schizophrenia as one of the psychotic spectrum. Almost 22% of the students reported anxiety as the 2nd most common problem. 20% stated fear as a third cause which has been a symptom of many mental disorders such as: phobias, panic attacks, obsessive compulsive disorder, even depression and anxiety etc. fear is very distressing and thus well perceived by the students. Fourthly depression represented 16.7% and only depression and anxiety combined represented 2.8%.

3.2.3 mental health morbidity among the non-students and its relation with stigma and help seeking intensions:

More than two thirds of the students suffered from various symptoms of depression. When categorized into 4 groups: normal 28.9% (0-15), mild depression 57% (16-30), moderate depression 13.7% (31-45) and severe depression 0.5% (46-60). This huge proportion of students suffered from symptoms that range from mild blues to dysthymia or chronic depression that continued for years.

Depression was found to be more prevalent than anxiety. Which can be explained by students ability to perceive anxiety symptoms more than depression symptoms. a systematic review of 24 studies by a Ibrahim (2013) estimated mean prevalence of depression among medical students is 30%.(27). Many studies were done among students screening for depression. a screening study done among Oman university (2011) students showed 28% symptomatic depression.(28). another study from Arabian setting among medical students in Riyadh, Saudi Arabia showed 48.2% were symptomatic.(29) prevalence of depressive symptoms among Turkish university students was found to be 48%.(30)

Regarding students who had anxiety symptoms for the last 2 weeks they were categorized according to the scoring system into 4 groups: minimal 38.7%, mild 30.9%, moderate 19.7 % and severe 10.6 %. In summary more than half of the students 61% had mild to severe symptoms which can also be attributed to acute stresses. These results were consistent with a study done among Turkish students

2008 which showed that 60% had anxiety symptoms.(30). systematic review done by J. Somers et al. included a total of 41 prevalence and 5 incidence studies about anxiety disorders found that 10-16 % was 1-year lifetime prevalence(31). Different methodological tools and different student's settings might have contributed to the differences in the results.

Extended likert scale from 1 (extremely unlikely) to 4 (neutral) to 7 (extremely likely) was used to measure the intentions to seek help due personal or emotional problem. Students were most likely to seek help from friends, followed by partner, then parents, and other relative or family member, 4th in order to friends, partner and parents. The students' were likely to seek formal mental health professional help, mean = 4.49.This demonstrates that non-formal help seeking is more common among students who seek help. Students were less likely to seek non formal non relative help such as from family doctors, religious leaders, phone help lines and teachers respectively .These results were closely consistent with a study done by B. Avanzo et al (2012) among Italian students who preferred to seek help mostly from friends, then parents, partners and professional help.(32). Alternating order in parents and partners was the only difference.

12% of students actually sought formal help previously. Nearly half of them of went to counselors, one third went to psychiatrists and the remaining went to psychologists. This can verify counseling and psychotherapy are very beneficial for coping with stresses among the students. The Proportion of students who actually sought help and wrote their phone number was 44.1 %. This proportion was significantly unassociated neither with stigma nor with formal help seeking intentions. Which reflect that there were no associations between mental health disability, stigma and formal help seeking.

Students with depression and anxiety symptoms were found to be more likely to have actual help seeking intentions; (RR= 1.8) and (RR = 1.4) respectively, but was not associated with intentions to seek formal psychological help. Which indicate that symptomatic students were ready to receive help, when a mental health service outreached them instead.

Public stigma has its strong impact on people of Sudan. The social power and effect has its fingerprints in every single aspect of the individual behaviors. Thus can direct and predict many behavioral aspects and may become barriers to others. In this study sample, students who were affected by such public stigma were unable to seek formal help. There was a significant association between anxiety and high stigma.

4. CONCLUSION

The majority of university students were found to be suffering from depression and anxiety symptoms, with depression being more prevalent than anxiety. Females were found to be more depressed and anxious than males but less stigmatized. Only few students perceived themselves as having mental disorder. Students were most likely to seek help from friends followed by partners, parents, and then a mental health professional. Only a small proportion of students actually sought formal help previously, half of them went to counselors. Almost half of the students were interested to know their mental health status by providing their phone numbers. Stigma and formal help seeking intentions were found to be significantly associated; those who were not stigmatized were more likely to seek formal help, making stigma a major mental health barrier.

It is strongly recommended to increase the public perception about mental health status, indicators, causes of deterioration and the different methods of help seeking and stress coping mechanisms through educational media programs, lectures and seminars.

Further studies are needed to significantly determine the real burden of mental health disability using diagnostic techniques, in addition to the risk factors that participated in provoking stresses, specifically among females and to identify other barriers to mental health services.

Further evaluation studies are needed to assess risky behaviors used by students to cope with their stresses as well as Suicidal evaluation

It is also preferred to encourage students to change their behavior towards seeking professional psychological help, thus the availability of well-trained counselor or psychotherapist is vital in colleges since Psychotherapy is the most commonly preferred technique by students.

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DEFINITIONS, ACRONYMS, ABBREVIATIONS

List of abbreviations

CES-D	Center for Epidemiologic Studies Depression Scale
GAD	Generalized anxiety disorder
GAD-7	Generalized Anxiety Disorder 7-item
GHSQ	General Help Seeking Questionnaire
HAM-A	Hamilton Anxiety Scale
IQR	Inter quartile range
MH	Mental Health
MRI	Magnetic resonance imaging
NIMH	National institute of mental health

OCD	Obsessive-compulsive disorder
PTSD	Post-traumatic stress disorder
SSRPH	Stigma Scale for Receiving Psychological Help
SPSS	Statistical Package for the Social Science
WHO	World health organization
WHO-DAS	World Health Organization Disability assessment Scale

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