

# Depression and Associated Factors among Students of Bachelor of Clinical Medicine and Surgery at Kampala International University Western Campus, Ishaka-Bushenyi

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## ABSTRACT

Out of the 300 million people suffering from depression globally, 85% live in low- and middle-income countries and Uganda is ranked among top six countries in Africa with the highest cases of mental disorders. According to the latest WHO report, 4.6% Ugandans suffer from depressive disorders. There was scarcity of data in Uganda and worse still in Kampala International University Western Campus (KIU-WC) on depression and its associated factors among clinical medicine students. Thus, this study sought to find out the local burden of depression and its risk factors among clinical medicine students at KIU-WC. A descriptive cross-sectional study design among 209 BMS students in KIU-WC was carried out between the months of NOV to April 2022. A pretested questionnaire was used to collect background data while Beck's Depression Inventory was used to assess for the levels of depression among 209 BMS students in KIU-WC. Data was entered and analyzed using SPSS version 25. The participants' ages ranged from 19 to 28 years with a mean of  $21.8 \pm 2.2$  years and majority (60.3%) were males. The overall prevalence of depression was 39.7% (moderate depression 34.4%, severe depression 5.3%). Factors associated with depression were; female sex ( $X^2=133.81$ ;  $p<0.001$ ), age more than 26 years ( $X^2=60.72$ ;  $p<0.001$ ), final year of study ( $X^2=94.66$ ;  $p<0.001$ ), more than 100,00/= monthly upkeep ( $X^2=103.07$ ;  $p<0.001$ ), retakes ( $X^2=116.93$ ;  $p<0.001$ ), relationship ( $X^2=68.87$ ;  $p<0.001$ ) and alcohol consumption ( $X^2=28.31$ ;  $p<0.001$ ).

Depression among BMS students in KIU western campus is high and is associated with female sex, old age, advanced year of study, monthly upkeep, retakes, relationships and alcohol consumption. The study recommends the creation of support groups with counseling facilities within KIU and all medical schools in Uganda.

**Keywords:** depression, associated factors, students

## INTRODUCTION

Depression is a common mental disorder characterized by depressed mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep and/or appetite, and poor concentration [1-5]. It is a significant contributor to the global burden of disease and affects people in all countries across the world with a global prevalence of depressive episodes of 3.2% [6]. Out of the 300 million people suffering from depression globally, 85% live in low- and middle-income countries. Moreover, Uganda has been ranked among top six countries in Africa with the highest cases of mental disorders. According to the latest WHO report, 4.6% Ugandans suffer from depressive disorders [6]. Depressive disorders often start at a young age and often are recurrent throughout life. For these reasons, depression is the leading cause of disability worldwide in terms of total years lost due to disability. The demand for curbing depression and other mental health conditions is thus on the rise globally [6]. Worldwide, it has been demonstrated that 25–90% of medical students are stressed, leading to a higher prevalence

of depression among medical students than general population [7-12]. Several factors, including daily life stressors and stressors specific to the tedious learning environment may account for this fact [13-17]. The potential negative effects of emotional distress on medical students include impairment of functioning in classroom and clinical practice, stress-induced disorders and deteriorating performance [18-22]. Depression is also associated with higher suicide rates [23-24]. Thus there is need to determine the prevalence of mental health problems especially depression among clinical medicine students and associated factors.

## METHODOLOGY

### Study design

The study employed a descriptive cross-sectional institution-based study design to obtain both qualitative and quantitative data.

### Study area

The study was carried out at Kampala International University Western Campus, a Private International University located in Ishaka Town, Bushenyi district, Western Uganda

### Study population

The study involved Students doing Bachelors of Clinical Medicine and Surgery (BMS) at Kampala International University Western Campus Ishaka-Bushenyi, South-western Uganda who meet the inclusion criteria.

### Selection Criteria

#### Inclusion criteria

- Only BMS students from third year to finalists who consented were included in the study.

#### Exclusion criteria

- Known depressed BMS students on treatment and any other severely ill student were excluded.

### Sample size determination

This was determined using Kish's formula (Li, Su, & Shyr, 2013) which states that,

$$N = \frac{z^2(p(100-p))}{\epsilon^2}$$

Where;

N = the required sample size

p= Prevalence of depression (16.2%) as per a study done at Makerere University [25].

$\epsilon$  = margin of error on p (set at 5%)

z= standard normal deviate corresponding to 95% confidence level (=1.96)

$$N = \frac{1.96^2(0.162(1-0.162))}{0.05^2}$$

$$N=208.60809984$$

N will approximately be 209 students.

### Sampling technique

The study employed systemic random sampling technique using clusters from the different BMS classes whereby the number of participants from each class depended on the number of students in that class.

### Data collection methods

#### Data collection tools

A questionnaire written in English was used to collect necessary associated factors from the respondents and data concerning their demographics.

In addition, Beck's Depression Inventory was used to assess the levels of depression or symptoms of depression.

### Data collection procedure

Administrative clearances and permission from the faculty for approval was sought after which research assistants were thoroughly trained and recruited. After comprehensively explaining the purpose of the study to the participants, they consented in writing and then the questionnaire and BDI were administered. Respondents were thanked for their time and insight. Filled questionnaires were counted and confirmed their code. After achieving the sample size, questionnaires were entered in computer for analysis.

### Data Processing and analysis

Collected data was entered and analyzed using IBM SPSS version 25 software. Categorical variables were presented in a table of frequencies for descriptive statistics. A Bivariate regression analysis with Chi-square test was then computed to test for the risk factors of depression and a p value  $\leq 0.05$  was considered significant.

### Ethical considerations

Ethical approval was sought from Kampala international university western campus Faculty of clinical medicine & surgery in form of introduction letter after approval of the proposal by supervisor. A written and verbal consent was sought from the students before they participated in the study. Participants were assured of confidentiality (names were not used at any point of the study) and were informed of a right to quit the exercise at any point during process if at all they changed their mind. There was no physical harm on the study participants and those who were found with depression were referred to a qualified psychiatrist for further management. The results were used for the purpose of this study only and data was stored in a password protected folder.

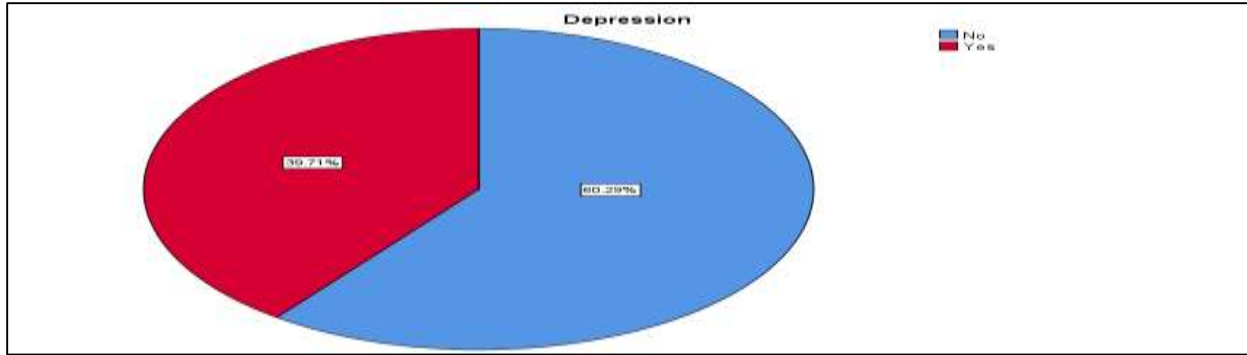
### RESULTS

Data was collected from 209 participants. The participants' ages ranged from 19 to 28 years with a mean of  $21.8 \pm 2.2$  years. Majority of the study participants consisted of males (60.3%). Results further show that majority (98.6%) of the participants were nonsmokers, while 70.8% had never got retakes. Half of the students were getting a monthly upkeep of less than 100,000/= Uganda shillings. A few (41.6%) were taking alcohol as shown in Table 1 below.

**TABLE 1: CHARACTERISTICS OF STUDY PARTICIPANTS**

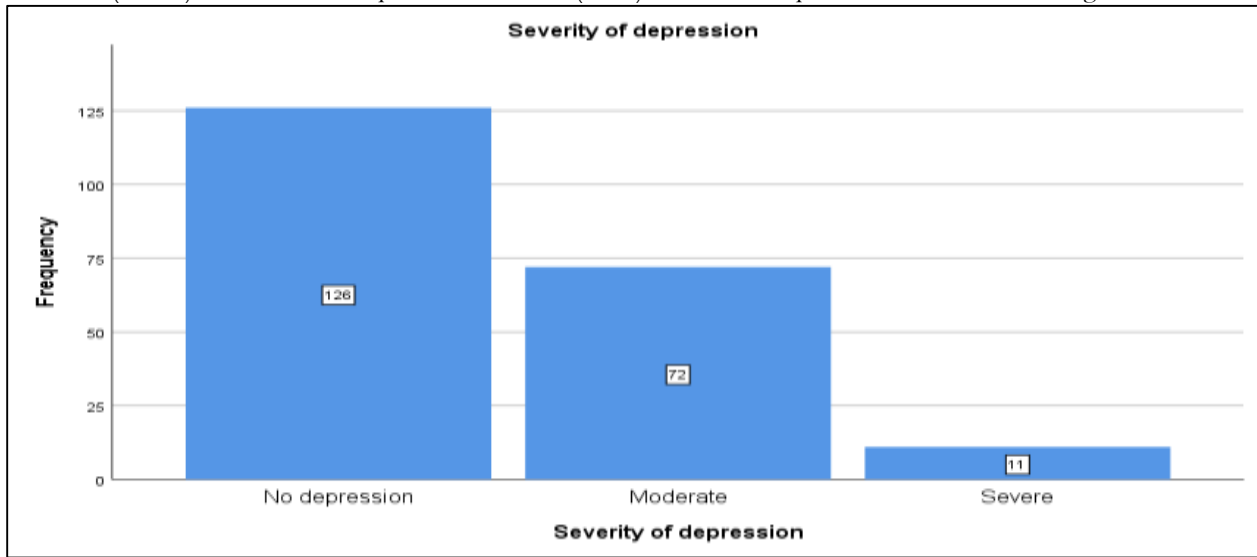
Characteristics	Frequency	Percent
<b>Sex</b>		
Male	126	60.3
Female	83	39.7
<b>Age</b>		
≤20	70	33.5
21-25	132	63.2
≥26	7	3.3
<b>Year of study</b>		
1 <sup>st</sup>	63	30.1
2 <sup>nd</sup>	61	29.2
3 <sup>rd</sup>	40	19.1
4 <sup>th</sup>	45	21.5
<b>Monthly upkeep</b>		
<100,000/=	106	50.7
≥100,000/=	103	49.3
<b>Pays tuition on time</b>		
Yes	123	58.9
No	86	41.1
<b>Got retakes</b>		
Yes	61	29.2
No	148	70.8
<b>In a relationship</b>		
Yes	45	21.5
No	164	78.5
<b>Alcohol consumption</b>		
Yes	87	41.6
No	122	58.4
<b>Tobacco use</b>		
Yes	3	1.4
No	206	98.6
<b>Chronic disease</b>		
Yes	22	10.5
No	187	89.5

The study shows that the overall prevalence of depression was 39.7% compared to majority (61.3%) who had no symptoms of depression.



**FIGURE 1: PREVALENCE OF DEPRESSION**

About 72 (34.4%) had moderate depression while 11 (5.3%) had severe depression as shown in the figure below.



**FIGURE 2: SEVERITY OF DEPRESSION**

Results from analysis of factors associated with depression are shown in table 2 below. Significant factors were: sex; females reporting depression compared to males ( $p < 0.001$ ), age; older above 26 years having depression symptoms compared to younger age ( $p < 0.001$ ), year of study; more in those in the final year than those of lower years of study ( $p < 0.001$ ), monthly upkeep; more in those who get less than 100,00/= ( $p < 0.001$ ), retakes ( $p < 0.001$ ), relationship ( $p < 0.001$ ) and alcohol consumption ( $p < 0.001$ ). Quantitatively, depression was common among females (88%), age above 26 years (100%), 4<sup>th</sup> year of study (91.1%), those with retakes (96.7%) and ones in a relationship (93.3%).

**TABLE 2: FACTORS ASSOCIATED WITH DEPRESSION AMONG PARTICIPANTS**

Variables	Depression		Chi square (X <sup>2</sup> )	P value
	No	Yes		
<b>Sex</b>			133.81	<0.001*
Male	116 (92.1%)	10 (7.9%)		
Female	10 (12%)	73 (88%)		
<b>Age</b>			60.72	<0.001*
≤20	67 (95.7%)	3 (4.3%)		
21-25	59 (44.7%)	73 (55.3%)		
≥26	0 (0%)	7 (100%)		
<b>Year of study</b>			94.66	<0.001*
1 <sup>st</sup>	62 (89.4%)	1 (1.6%)		
2 <sup>nd</sup>	30 (49.2%)	31 (50.8%)		
3 <sup>rd</sup>	30 (75%)	10 (25%)		
4 <sup>th</sup>	4 (8.9%)	41 (91.1%)		
<b>Monthly upkeep</b>			103.07	<0.001*
<100,000/=	28 (26.4%)	78 (73.6%)		
≥100,000/=	98 (95.1%)	5 (4.9%)		
<b>pays tuition on time</b>			3.12	0.086
Yes	68 (55.3%)	55 (44.7%)		
No	58 (67.4%)	28 (32.6%)		
<b>Got retakes</b>			116.93	<0.001*
Yes	2 (3.3%)	59 (96.7%)		
No	124 (83.8%)	24 (16.2%)		
<b>In a relationship</b>			68.87	<0.001*
Yes	3 (6.7%)	42 (93.3%)		
No	123 (75%)	41 (25%)		
<b>Alcohol consumption</b>			28.31	<0.001*
Yes	71 (81.6%)	16 (18.4%)		
No	55 (45.1%)	67 (54.9%)		
<b>Tobacco use</b>			0.92	0.562
Yes	1 (33.3%)	2 (66.7%)		
No	125 (60.7%)	81 (39.3%)		
<b>Chronic disease</b>			1.09	0.359
Yes	11 (50%)	11 (50%)		
No	115 (61.5%)	72 (38.5%)		

\*Significant factor.

**DISCUSSION**

The findings indicate that depressive symptoms are common and affect 39.7% of the BMS students. This rate is comparable to results from other studies among students in Saudi Arabia [26-34] but higher than the global estimated rate of 4% and that reported in Uganda. The high rates of depression are also reported in a systematic review study among university students [27-34]. The higher results could be due to the fact that this is a private institution and the medical course having a long duration of four years compared to other non- medical undergraduate courses. Despite this variation in prevalence of depression around the world, studies have

consistently showed high prevalence of depression in medical students. Several factors can be advanced for this variation. In this study, majority of students presented with moderate depression (34.4%) while few presented with severe depression (5.3%). A higher proportion of females had depression than males and this was statistically significant. This concurs with findings of other studies which have shown that there are more females who suffer from depression than males. A study by Blanco *et al.* [27] in USA found that, compared to males, females were significantly more likely to have depression. Depression prevalence was observed to increase with age which was found significant in this study ( $X^2=60.72$ ;  $p<0.001$ ). Furthermore, depression was significantly associated with the monthly upkeep. Students who reported an upkeep of  $<100,000/=$  presented a higher prevalence of depression. This fact is supported in a China study by Zhong *et al.* [28]. Having less money for upkeep creates a kind of financial insecurity on the students who is not sure of the next meal or accommodation. This study also found a significant association of having retakes and depression. Other studies have also reported similar findings [29]. This could be explained by the fact that students with depressive symptoms have reduced concentration span and are less motivated to study or retakes themselves stress the students which ultimately leads to poor performance.

### CONCLUSION

Depression among BCM students in KIU western campus is high and is associated with female gender, old age, final year of study, reduced monthly upkeep, retakes, being in a relationship and alcohol consumption.

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