



**St. Paul's Hospital
Millennium Medical College**
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**ST. PAUL'S HOSPITAL MILLENNIUM MEDICAL COLLEGE
SCHOOL OF PUBLIC HEALTH**

**Assessment of Mental Health Status and Associated factors among Interns at
Saint Paul Hospital Millennium Medical College**

By – Kaleab Solomon (Medical Intern)

February 2025,
Addis Ababa, Ethiopia



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By – Kaleab Solomon (Medical Intern)

Advisors Mrs. Hanna Feleke (BSc, MPH)

Dr. Asrat Habtegiorgis (MD, Assistant professor in Psychiatry)

**A STUDENT THESIS TO BE SUBMITTED TO THE
SCHOOL OF PUBLIC HEALTH, SPHMMC, IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF MEDICINE**


February 2025,

Addis Ababa, Ethiopia

Declaration

I, the undersigned student, declare that this research project is my original work in partial fulfillment of the requirement for the **Degree of Doctor in Medicine**, MD. I also declare that it has never been presented in this or any other higher institution and that all resources and materials used in the research work have been duly acknowledged.

Name of the student: _____Kaleab Solomon (Medical Intern) _____

Signature: __________

Date: _____ March 4, 2025 _____

Approval of Advisors

This research work has been submitted for examination with my approval.

Name of Public Health advisor: _____ Mrs. Hanna Feleke (BSc, MPH) _____

Signature: __________

Date: _____ March 4, 2025 _____

Name of Clinical Advisor: _ Dr. Asrat Habtegiorgis (MD, Assistant professor in Psychiatry) _____

Signature: __________

Date: _____ March 4, 2025 _____

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Acronyms and Abbreviation

CI: Confidence interval

GC: Gregorian calendar

SPHMMC: Saint Paul Hospital Millennium Medical College

USA: United states of America

PMTs: Postgraduate medical trainees

SPSS: Statistical Package for the Social Sciences

ABSTRACT

Background: Mental health is a critical component of overall well-being, particularly among medical professionals who face unique stressors and challenges in their work environment. Internship, being a critical phase in medical education, poses significant challenges to interns' mental health due to high workload, demanding schedules, and intense emotional experiences. Understanding the mental well-being of interns is crucial for identifying potential issues and implementing effective support systems.

Objectives: To assess the mental health status of Interns at Saint Paul Millennium Medical College including psychological distress and associated factors among interns at Saint Paul Millennium Medical College.

Methods: A cross-sectional study was conducted in Saint Paul Millennium Medical College with all Interns taken with universal sampling method. Mental health status was assessed using the general health questionnaire-12. The questionnaire was done through online google form and results were analyzed using Descriptive analysis as well as by chi-square, binomial and multinomial logistic regression analysis and associations noted.

Results: Among the participants most 61(67%) were found to have good mental health while 30(33%) were found to have poor mental health. This study reveals that family history of mental illness, sleep deprivation and work load are significantly associated with poor mental health status among interns of St. Paul's Hospital Millennium Medical Collage.

Conclusions: Having no family history of mental illness, proper management of workload and time at work, having adequate amount of sleep was found to be protective factors against having mental health issues.

Recommendations: There should be set rulers that protect the mental health of interns like ensuring adequate sleep time & have mental health services available for Interns and medical students.

Keywords: Mental health Status of interns in Saint Paul Millennium Medical College

1. Introduction

1.1. Background

The WHO defines mental health as a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community. Mental health is more than the absence of mental disorders. (1)

A mental disorder is characterized by a clinically significant disturbance in an individual's cognition, emotional regulation, or behaviour. It is usually associated with distress or impairment in important areas of functioning. Mental disorders may also be referred to as mental health conditions. The latter is a broader term covering mental disorders, psychosocial disabilities and (other) mental states associated with significant distress, impairment in functioning, or risk of self-harm. (2)

In 2019, 970 million people globally were living with a mental disorder, with anxiety and depression the most common. 14.3% of deaths worldwide, or approximately 8 million deaths each year, are attributable to mental disorders. The prevalence of all mental disorders increased by 50% worldwide from 416 million to 615 million between 1990 and 2013. (3)

Risks can manifest themselves at all stages of life, but those that occur during developmentally sensitive periods, especially early childhood, are particularly detrimental. For example, harsh parenting and physical punishment is known to undermine child health and bullying is a leading risk factor for mental health conditions. Protective factors similarly occur throughout our lives and serve to strengthen resilience. They include our individual social and emotional skills and attributes as well as positive social interactions, quality education, decent work, safe neighborhoods and community cohesion, among others. (1)

Medical intern in our countries set up is a medical student who is on his last year of medical school and practicing medicine under supervision of senior doctors and residents. In other set ups an intern is a medical school graduate who is in their first year of residency training at a clinic or hospital under supervision.

Medical students' common mental health challenges include: anxiety, Depression, burnout. (4)

A global meta-analysis from 2019 found that about 1 in 3 medical students has anxiety (33.8%), which is higher than the general population.(5)

Though not as high as anxiety, a 2016 study found that the global prevalence of depression among medical students is 28%, meaning more than 1 in every 4 med students has depression.(6)

A 2016 narrative review suggests a higher prevalence of burnout among medical trainees than the general population.(7)

Medical students report higher levels of psychological distress than their same-age peers, despite having similar or healthier profiles than peers at the outset of medical school. This suggests that medical education itself contributes to student distress. Studies have indeed documented that stress levels increase over the course of medical school, peaking either in the second year or when students enter the medical wards. (8)

While some stress may enhance academic performance, high levels of stress among medical students are associated with depression, burnout, and somatic complaints. Anxiety and depression have been linked to medical students' vulnerability to stress, and higher levels of psychological distress have been linked to decreases in empathy, serious thoughts about dropping out of medical school, suicidal ideation, and poor academic performance. (8)

There is a research gap on mental health status of interns in Ethiopia as not many researches were done on interns. Most of the research were done on university students and on medical professionals in general, without specific emphasis on medical students or medical Interns.

1.2. Statement of problem

Interns in our country, Ethiopia's, setting are students as well as part of the work force.

According to a report from the Council on Medical Education, stress, burnout, and depression are risk factors for medical students, with severe consequences. The council reports that medical students are three times more likely to die by suicide than the general public. (4)

One of the most significant barriers for medical students — and why they may not seek help — is stigma, or “a fear of compromising career progression and the pressures of medical training,” according to 2020 research. (9)

If this problem isn't addressed this will impact the quality of patient care now as well as in the long run. Ethiopia as a country will lose medical professionals as most want to change profession or leave the country, due to burnout and stress as medical interns. In a study done in SPHMMC on medical interns 69% wanted to leave the country while 43% wanted to change their profession. This shows us that unless we make improvements in the current state of the medical system Ethiopia is going to be losing medical professional and the quality of care for patients is also going to decline.(10)

In regard to the quality of care for patients, working under stress, understaffed, underpaid and over worked and little rest, recovery time and leisure time; it is easy to overlook things, make a mistake, be negligent, or unmotivated to work, which will impact patient care. The patient will also have to suffer a long waiting time to be attended to because off being understaffed.

The challenges faced by interns include but not limited to long working hours, disturbances in sleep-wake cycles, excessive workload and having multiple responsibilities, which occur with significant lack of social support and uncertain future. (11,12)

With this research I plan to fill the other mental wellbeing aspects that haven't been assessed well in the previous study in SPHMMC. Like mental health in relation to anxiety and associated factors in medical Interns.

1.3. Significance of the Study

This research is important as it involves the mental health of interns who are an integral part of the medical system. Stress, anxiety, depression, burnout, unfavorable working conditions, undefined roles, affect both the mental health of the intern as well as the quality of care received by the patient. So, this is not only interns' problem. Interns' dissatisfaction with their work environment or stress has adverse effects on the quality of care the patient and the community receives. This makes it not only the intern's problem but also the communities as well as the government's

problem as they will need to make extra payment for treatment of patients who come complicated and not properly managed the first time.

In some cases, mental health challenges cause med students to consider dropping out of school.
(4)

It will help them to be more aware of their mental health and better take care of themselves and avoid harming their mental health and themselves.

This study can hopefully make changes in the working environment, salary, defining a role for interns, rest days as well as making police changes needed to improve mental health of interns as well as other medical professionals.

2. Literature Review

2.1. Magnitude of the problem

The prevalence of burn out around the world shows north America at 51.2%, south America at 39.6%, Europe at 30.8%, Asia 48.8%, Australia & New Zealand 43.0 %, Africa at 69.5% & Middle East at 67.4%. this was done on 12,782 postgraduate medical trainees (PMTs) in 24 studies in Europe. On 86 PMTs in 2 studies in Africa, on 914 PMTs in 8 studies in Asia, 1563 PMTs in 6 studies in Australia and New Zealand, on 1250 PMTs in 10 studies in middle east and north Africa, in 957 PMTs in 8 studies in south America, in 14004 PMTs in 60 in North America. (13)

As limited data were available for other regions, stronger conclusions where be made only about burnout among North American and European residents; the prevalence of burnout among European PMTs (postgraduate medical trainees) was 30.8% versus 51.2% in North America. (13)

In a study done in Hong Kong on psychological health of interns on what causes them stress and what helps them. The percentages of respondents with abnormal levels of depression, anxiety and stress were 35.8%, 35.4% and 29.2%, respectively. Frequent calls during night shift, long working hours and heavy workload constituted the most significant stressors. Holidays, peers and sleep offered the most significant relief. (14)

On research done in Ireland on burnout and stress amongst interns in Irish hospitals: contributing factors and potential solutions. There results showed that 37% of interns met the criteria for psychological distress, high levels of emotional exhaustion, high depersonalization and a low sense of personal accomplishment were reported in 55.4, 51.5 and 41.6%, respectively. Inadequate preparation for practice, financial worries, poor role definition and sleep deprivation were reported as significant stressors. Most were unaware of available support services and expressed interest in leaving Ireland after internship. (15)

In a study done in Nigeria on medical students. psychological distress was present in 25.2% of the students, perceived stress in 60.5%, depression in 33.5% and anxiety in 28.8%. (16)

In a study done here in SPHMMC in 2020. A high level of burnout was reported by the participants. High emotional exhaustion, high depersonalization, and highly reduced sense of personal

accomplishment were seen in 69.4%, 41.7%, and 44.4% of participants respectively. High level of stress was seen in 37% of the participants.(10)

2.2. Factors affecting mental health among interns

There are multiple factors affecting the mental health of interns and can be categorized into individual factors, job related factors, Environment related factors, social factors.

2.2.1. Individual factors

According to the WHO socioeconomic status, family history mental illness, personal history substance abuse have negative impact on mental health (1) Good Coping mechanisms and stress management have a good impact on mental health.(1)

A recent review described six major themes associated with medical students mental distress two of which are Adjustment and personal life events. (8)

The odds of mental distress by respondents who had family history of mental illness were 2.12 times higher as compared with those who have not which is in line with study in Adama, Ethiopia (17) . This could be explained by genetic predisposition and living conditions within the families. In addition, caring for the mentally ill family member may also be an additional stress that contributes to a higher prevalence of mental distress.(18)

Financial hardship was independently associated with mental distress This finding is supported by studies in Australia, United States of America and Nigeria. The rising cost of stationary materials and photocopy services may create stressful situation in students. Moreover, students with financial difficulty experience anxiety, frustration, and sense of helplessness and trouble of sleeping which may further lead students mentally distressed.(18)

On the other hand, students who ever had conflict with their room mates were mentally distressed. This finding is consistent with a study in Adama University(17) . This might be due to the fact that, campus life where students live together in a group; conflicts may break social ties and might result in a stressful situation. (18)

Having interest towards the field of study was an important factor of mental distress. Students who were not interested in their field of study were two times more likely to experience mental

distress as compared with those who were interested with their department. A study among students in Adama University also came up with the same finding (17). (18)

Students who were involved in religious program, irrespective of their religion, were less likely to be mentally distressed. This finding is supported by the other studies done in Ethiopia (17). This could be due to the fact that religious teaching helps in stress management. Furthermore, it facilitates the development of adaptive behaviors. (18)

Sex is one of the factors affecting Mental health as research on university students in Gonder showed Relatively high prevalence of mental distress was found among female students as compared to males The finding is consistent with other studies in Australia, France, Norway and Turkey . The affective nature of their response to stressors, domestic violence, and hormonal changes during menstruation could be the possible causes for the higher prevalence of mental distress among female students. (18)

In addition, ever use of khat was found to be a significant factor of mental distress. Students who ever use khat were 1.7 times more likely to have mental distress as compared to students who never use khat. This finding is in line with other studies in Ethiopia (17,19) and Sao Paulo, Southeastern Brazil. This may be due to the fact that substance use leads to inefficiency in life function, impaired relationship and sleep difficulty. Furthermore, substance use is associated with increased absenteeism from class and poor academic performance which can further lead to mental distress in students. (18)

2.2.2. social factors

social support was also found to be another determinant factor for mental distress in students. Having high level of social support from significant others were negatively associated with mental distress. In this study, students with low social support were more than two times more likely to have mental distress as compared to those students with high social support. This finding is also supported by other studies. This could be due to its effect on hypothalamic pituitary adrenocortical (HPA) system in reducing genetic and environmental vulnerabilities. Furthermore, it is also important for maintaining good physical and mental health. (18)

2.2.3. job related factors

Academic factors were found to be other factors associated with mental distress. Students whose grade was lower than anticipated were two times more likely to have mental distress than their counter parts. (8,18,20,21)

Some factors affecting mental health in Interns include lack of sleep, long work hours (duty), time pressure, and excessive workload, negative work–home interference (22)

several studies have documented major stressors for medical students including lack of balance, relationships, poor student guidance/support, volume of information, finances, uncertainty of the future , lack of time to oneself , time and responsibility , and the need to succeed . In addition, a recent review described some major themes associated with student distress, ethical concerns, exposure to patient death and suffering, student mistreatment, and educational debt. (8)

Some factors associated with job stress include quantitative job overload (refers to as having too much work to do in the time available), qualitative job overload (refers to the skill level of the employee required), physical demands, job control or autonomy, skill (under)utilization, interpersonal conflict, suitable jobs, and intrinsic rewards. supervisor and coworker support as well as support from family and friends. (23)

2.3. Conceptual framework

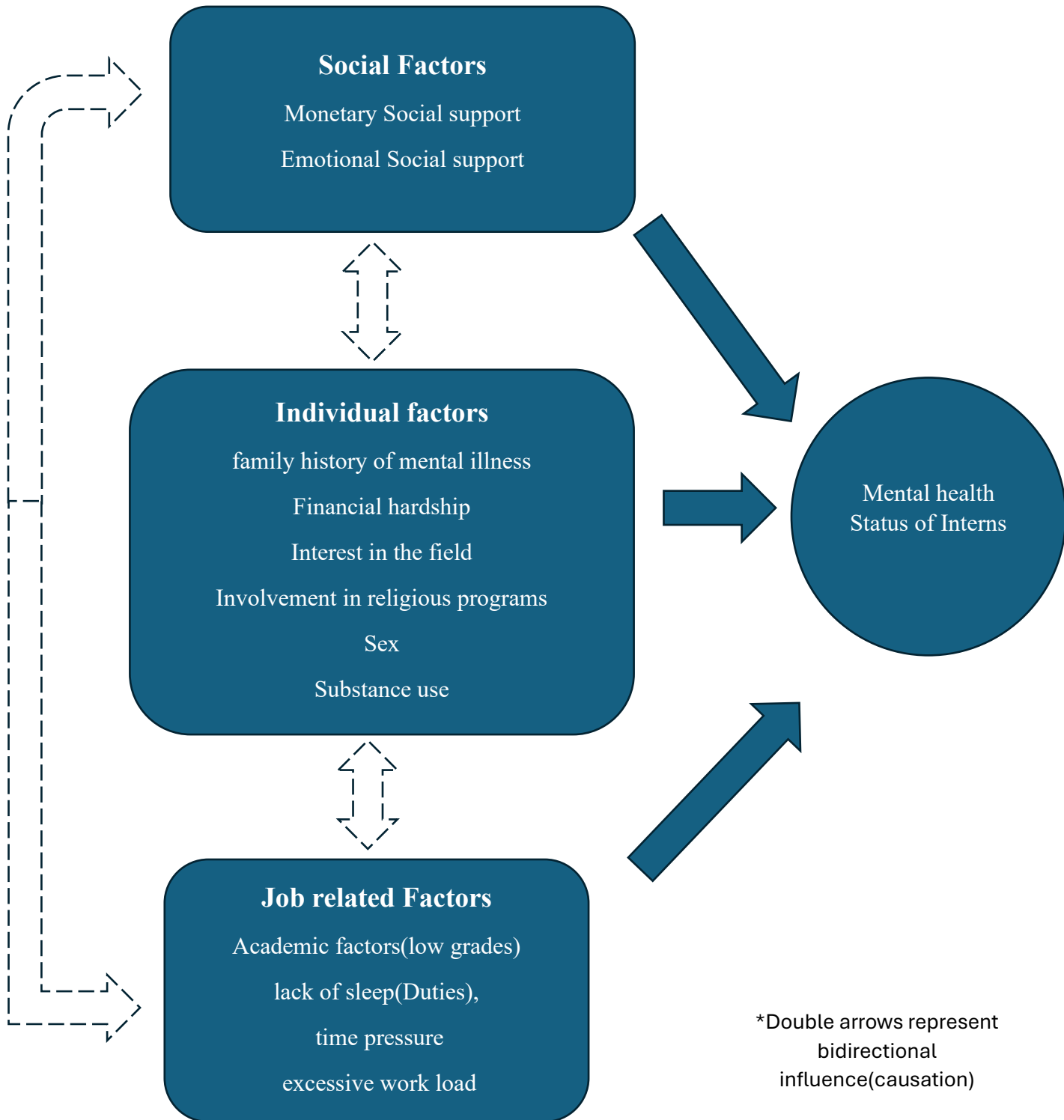


Figure 1: conceptual framework of mental health status of interns and associated factors

3. Objectives

3.1. General Objective:

To assess Mental Health Status and Associated factors among of Interns at Saint Paul Hospital Millennium Medical College in 2024.

3.2. Specific objectives:

- To assess Mental Health Status of Interns at Saint Paul Hospital Millennium Medical College in 2024.
- To assess Associated factors of Mental Health Status among Interns at Saint Paul Hospital Millennium Medical College in 2024.

4. Methods

4.1. Study Area

This facility-based cross-sectional study was conducted at St. Paul through online google form. Saint Paul's Hospital Millennium Medical College (SPHMMC) was established at the center of the country, Addis Ababa, through a decree of the Council of Ministers in 2010, although the medical school was opened in 2007. And the hospital was established in 1968 by the late Emperor Haile Selassie. It is governed by a board under the Federal Ministry of Health. (24)

The College initiated Ethiopia's first integrated modular and hybrid problem-based curriculum for its undergraduate medical education and is currently expanding to postgraduate programs and diversifying its undergraduate program offerings. The inpatient capacity is more than 700 beds, The College sees an average of 1200 emergency and outpatient clients daily.(24)

St. Paul's Hospital Millennium Medical College provides healthcare and training to its students through its different biomedical and clinical departments. The current number of interns is 100, while the number of clinical year 2 students is 101, clinical year 1 is 91, pre-clinical year 2 is 90, pre-clinical year 1 is 70, premed is 60.(24)

4.2. Study Period

The study was conducted in the time period of October 13 – November 29, 2024

4.3. Study Design

A cross-sectional study was conducted.

4.4. Population

4.4.1. Source population

All medical interns in SPHMMC attaching in 2024.

4.4.2. Study Population

All medical interns in SPHMMC attaching in 2024.

4.4.3. Sampling Procedure

Interns currently undergoing training at SPHMMC were invited to participate voluntarily through google-form questionnaire sent through telegram. As the total number of interns is 100. I took all the available interns and an online google form questioner was sent for all the interns of SPHMMC through telegram private message or group chats and the resulting data was collected and analyzed using spss 27 software and put into graphs and tables and interpreted.

4.5. Inclusion and exclusion criteria

4.5.1. Inclusion Criteria

All interns of SPHMMC of current year.

4.5.2. Exclusion Criteria

- Interns not from SPHMMC
- Interns not from the current year.

4.6. Measurement

4.6.1. Measurement of dependent and independent variable

The WHO defines mental health as a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community. Mental health is more than the absence of mental disorders. (1)

A mental disorder is characterized by a clinically significant disturbance in an individual's cognition, emotional regulation, or behaviour. It is usually associated with distress or impairment in important areas of functioning. Mental disorders may also be referred to as mental health conditions. The latter is a broader term covering mental disorders, psychosocial disabilities and (other) mental states associated with significant distress, impairment in functioning, or risk of self-harm. (2)

The **12-Item General Health Questionnaire (GHQ-12)** consists of 12 items, each one assessing the severity of a mental problem over the past few weeks using a 4-point Likert-type scale (from

0 to 3). The score was used to generate a total score ranging from 0 to 36. The positive items were corrected from 0 (always) to 3 (never) and the negative ones from 3 (always) to 0 (never). High scores indicate worse health. Greater than 14 is a clinical case. (25–27)

Reduced mental status is defined as high score in the general health questionnaire (GHQ-12) indicating worse health. Greater than 14 is a clinical case of reduced mental health. (25–27)

4.7. Study variables

4.7.1. Dependent variables

Mental health status

4.7.2. Independent Variable

Sex, social support from family or others, financial stability, substance abuse, family history of mental illness, anxiety, depression, interest in the field of medicine, religious practice, quantitative and qualitative job load, sufficient amount of leisure time and physically demanding nature of the job.

4.8. Data collection Procedures

Interns currently undergoing training at SPHMMC were invited to participate voluntarily through google-form questionnaire sent through telegram. The questionnaire was sent out to every intern.

The questionnaire contains General Health Questionnaire-12 to assess psychological distress as well as demographic data and associated factors. The questionnaire was prepared in English language and Amharic.

4.9. Operational definitions of variables

An intern is a medical school graduate who is in their first year of residency training at a clinic or hospital in the United States of America and other counties while in Ethiopia it refers to the final year undergraduate medical students in training. (28,29)

Reduced mental status is defined as high score in the general health questionnaire (GHQ-12) indicating worse health. Greater than 14 is a clinical case of reduced mental health. (25–27)

Social support is monetary and emotional support from friends, family or colleagues. The monetary support can be of any amount but what matters is if there is someone supporting the individual or not.

Financial hardship is inability to pay for basic necessities required for smooth and Hassel free Internship experience. Like Soap, exercise books, pen and pencil, cloth and shoes, food and other like these. (18)

Interest in the field of medicine is defined as having enthusiasm and eagerness to learn about the field and it doesn't directly mean having better grade or performance in the field.

Substance use is defined as having ever used any substances like Khat, marijuana, cocaine, and other abuseable drugs.(18)

Adequate sleep is defined as least seven hours or more of sleep each night. On the flip side, more sleep isn't always better, For adults, if they are sleeping more than nine hours a night and still don't feel refreshed, there may be some underlying medical issue that needs investigating. (30)

Physical demanding job is a job that requires you to move, push things, standing for long periods of time, engaging in repetitive manual tasks, or the strenuous work of patient care in hospitals and clinics.(31)

Quantitative job overload refers to as having too much work to do in the time available (time pressure), is when an individual has far too much work to handle on their own and not enough time to accomplish the task.(32)

Qualitative job overload refers to the skill level of the employee required to do the job.(23)

The volume of information you need to cover as medical student (Intern) is the level of expertise and knowledge one should have or learn in order to be a competent medical intern and future doctor.

4.10. Data Analysis Procedure

Data was checked for completeness and then it was transferred into SPSS version 27. Categorization of continuous variables was done before any analysis was commenced. Every data was checked by frequency and cross tabulation before any analysis was started. A descriptive statistics and frequencies and percentage was used.

Descriptive statistics was used to examine frequency distributions, and the overall distribution of the independent variables.

After which cross tab, as well as chi square and Fisher's exact test were used to find significant variables.

Binomial logistic regression analysis was performed on those variables which were significant. Variables that showed an association with the outcome variable in the binomial analysis with a p-value of less than 0.05 were included in the multinomial logistic models. Adjusted odds ratios with 95% confidence intervals (CI) was used to assess the strength of associations. Findings were summarized through tables and figures. Continuous variables were presented with mean, and range values, while categorical variables are shown as frequencies.

After analyzing the data appropriately. The result were presented by using tables and texts.

4.11. Data Quality Management

The quality of the data shall be ensured. The gathered data has undergone thorough validation, purification, and quality assessment prior to analysis. Each data entry was seen and checked to meet the required quality.

4.12. Ethical consideration

The study ensured that all participants were provided with informed consent after understanding the study's purpose, procedures and potential risks and benefits. The confidentiality of participant information was maintained by anonymizing data and securely storing records. This study was approved by the Institutional Review board of St. Paul Millennium Medical College before it began to conduct data collection.

4.13. Dissemination of the result

The results will be presented to the public health department. The copies of final results will be submitted to St. Paul millennium medical college and will be distributed to library, to undergraduate office and St Paul Hospital administration office and Federal Ministry of Health. Lastly it could be presented on workshops and seminars and will be sent for publication in international journal.

5. Results

5.1. Sociodemographic characteristics

A total of 91 participants participated in the study making the response rate 91%. Among them 39(42.9%) were female while 42(57.1%) were male. The age of respondents ranged from 24 to 30 with most being 25 or 26 years old, 76(83.5%). Regarding marital status majority 87(95.6%) were single and only 4(4.4%) were married. In regards to housing 78(85.7%) of the respondents live in the dormitory while only 21(23.1%) live with their family.

Table 1: Socio-demographic characteristics of study participants at St. Paul Hospital Millennium Medical College, 2025

Variables		Frequency	Percentage
Sex	Male	52	57.1%
	Female	39	42.9%
Age	24-27	84	92.3%
	28-30	7	7.69%
Marital Status	Single	87	95.6%
	Married	4	4.4%
Housing	Dormitory	78	85.7%
	Family home	21	23.1%
	Others	4	4.4%
	Both Dormitory & Family home	11	12.1%
Current attachment	Obstetrics and Gynecology	24	26.4%
	Emergency	19	20.9%
	Internal Medicine	14	15.4%
	Surgery	14	15.4%

	Minor attachments	12	13.2%
	Pediatrics	8	8.8%

5.2. Mental health status

Among the participants most 61(67%) were found to have good mental health while 30(33%) were found to have poor mental health using the GHQ-12.

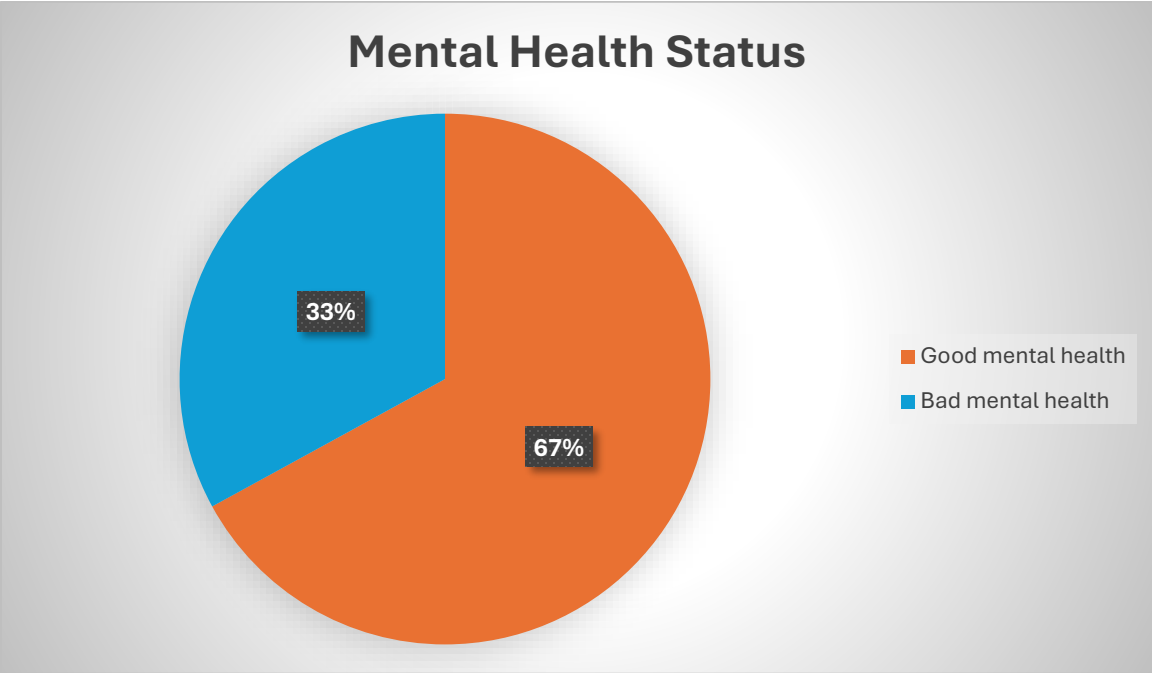


Figure 2: Mental health status of Interns at St. Paul Hospital Millennium Medical Collage, 2025

5.3. Factor Associated with Mental Health Status of Interns

5.3.1. Personal Factors

In regards to joining medicine with interest 36(39.6%), 37(40.7%) & 18(19.8%) of study participant joined medical school with interest, with mild interest and no interest at all in medicine respectively.

In relation to active involvement in religious activity majority 76(83.6%) says they attend religious activity in churches or mosques, while 15(16.5%) didn't attend religious activities. Out of the ones who do attend 36(39.6%) said they attend most of the times while 40(44%) said they only attend sometimes.

Table 2: Factors associated with mental health status of interns St. Paul Hospital Millennium Medical Collage, 2025

Variables		Frequency	Percentage
Joining medicine with interest	Yes	73	80.2%
	No	18	19.8%
Involvement in Religious activities	Yes	76	83.5%
	No	15	16.5%
Khat	Don't use Khat	90	98.9%
	Uses Khat	1	1.1%
Feeling Like they have an excessive workload	Yes	66	72.5%
	Moderate amount	25	27.5%
Average Sleep	< 7 hours	75	82.4%
	7 – 9 hours	16	17.6%
Course Load needed to cover	Excessive	78	85.7%
	Adequate	13	14.3%
Physical demand of Job	Demanding	81	89%
	Not as Demanding	10	11%
Access to support	Has support	85	93.4%

	Doesn't have support	6	6.6%
Family History of mental illness	Yes	18	19.8%
	No	73	80.2%

5.4. Risky Behavioral Factors

Most participants 89(97.8%) have never used Khat in there lives. There was 1(1.1%) currently using Khat and 1(1.1%) who used to use Khat but quit and doesn't use currently.

5.5. Work Factors

The participants feeling related to work load was assessed with most 66(72.5%) feeling like they are overwhelmed with the work load they have and 3(3.3%) feel like they are less overwhelmed with the work load. None of the participants thought the workload or burden wasn't a lot so none of them said no 0(0%).

In regard to the average number of sleep the respondents get 75(82.4%) get below 7 hours of sleep and only 16(17.6%) get 7 to 9 hours of sleep.

Most participants 78(85.7%) of respondents feel like the course load they need to cover as a medical student is excessive, 8(8.8%) think it is adequate while 5(5.5%) think it is small. Most of the participants 81(89%) of respondents believe their job is physically demanding, while 9(9.9%) deem their job as somewhat demanding and 1(1.1%) think their job isn't demanding.

5.6. Family Factors

Most of the participants 76(83.5%) receive financially support from their families. While 85(93.6%) have someone to support them emotionally and financially.

Among the participants 18(19.8%) have family history of mental illness such as, anxiety and depression.

5.7. Factor associated with mental health status of interns

Table 3 shows the association between mental health status of intern and its associated factors.

Based on the finding housing status, workload, sleep duration and family history of mental health was significantly associated with mental health status. A behavioral factor such as khat use was not associated with mental health status.

Table 3: Chi square value & Fisher's exact test of Factors associated with mental health status of interns St. Paul Hospital Millennium Medical Collage, 2025

Variables		Good Mental Health	Bad mental Health	Chi square value
Sex	Male	39	13	0.062
	Female	22	17	
Age	24-27	54	30	0.054*
	28-30	7	0	
Marital Status	Single	58	29	0.599*
	Married	3	1	
Housing	Dormitory	49	18	0.039
	Others	12	12	
Current attachment	Obstetrics and Gynecology	16	8	0.256
	Emergency	14	5	
	Internal Medicine	9	5	
	Surgery	8	6	
	Minor attachments	6	6	

	Pediatrics	8	0	
Joining medicine with interest	Yes	52	21	0.086
	No	9	9	
Involvement in Religious activities	Yes	55	21	0.015
	No	6	9	
Khat	Don't use Khat	60	29	0.553*
	Uses Khat	1	1	
Feeling Like they have an excessive workload	Yes	38	28	0.001*
	Moderate amount	23	2	
Average Sleep on duties	< 7 hours	46	29	0.009*
	7 – 9 hours	15	1	
Course Load needed to cover	Excessive	50	28	0.126*
	Adequate	11	2	
Physical demand of Job	Demanding	60	30	0.670*
	Not as Demanding	1	0	
Access to support	Has support	56	29	0.351*
	Doesn't have support	5	1	
Family History of mental illness	Yes	8	10	0.023
	No	53	20	

* Fisher's Exact Test

5.8. Multi variable analysis of mental health and predictor variables

In this study the different risk factors seen in different other studies as risk factors were included but not all of them were found to be associated with mental health.

Those which were significant were put in binomial and multinomial regression and this where the results.

In binomial logistic regression all 5 of the significant variables were found to be significant.

The factors associated with Mental health in this study after multinomial logistic regression were: family history of mental illness, feeling like there is an excessive amount of workload and average amount of sleep when on duty. Interns with no family history of mental illness were 80.3% less likely to develop mental health problem. Those who feel like there is moderate amount of workload are 90.9% less likely to have mental health problems. Those who sleep between 7hrs – 9hrs are 94.1% less likely to have mental health problems compared to those who sleep below 7hrs.

Table 4: Binomial & Multinomial logistic regression of Associated Factors of study participants at SPHMMC, 2024

Variables(In Binomial logistic regression)		Mental health status		COR(95%CI)	AOR(95%CI)	P value
		Good	Bad			
where do you live?	Dormitory	49	18	2.722(1.037-7.148)	3.262(0.973-10.933)	0.55
	Others	12	12			
Family history of mental illness, anxiety and depression?	Yes	8	10	0.302(0.104-0.874)	0.197(0.051-0.762)	0.019
	No	53	20			
do you attend church or mosques?	Yes	55	21	3.929(1.245-12.393)	3.238(0.778-13.475)	0.106
	No	6	9			

Do you feel like there is an excessive amount of workload and a time constraint to do the work?	Yes	38	28	0.118(0.026-0.542)	0.091(0.016-0.528)	0.008
	Moderate amount	23	2			
How much sleep do you get on average when you are on duty?	Below 7hrs	46	29	0.106(0.013-0.844)	0.059(0.005-0.665)	0.022
	Between 7 – 9hrs	15	1			

6. Discussion

The main objective of this research is to assess Mental Health Status and Associated factors among of Interns at Saint Paul Hospital Millennium Medical College in 2024. Likewise, the standard GHQ-12 questioner was used to determine mental health status of interns. This study reveals that most 61(67%) participants were found to have good mental health while 30(33%) were found to have poor mental health.

This study reveals that family history of mental illness, sleep deprivation and work load are significantly associated with poor mental health status among interns of St. Paul's Hospital Millennium Medical Collage.

Those with no family history of mental illness are 80.3% less likely to have mental health problems compared to those who have family history of mental illness.

Those who feel like there is a moderate amount of workload and a time constraint to do the work are 90.9% less likely to have mental health problems compared to those who feel it is excessive amount of workload or time constraint.

Those who sleep between 7hrs – 9hrs are 94.1% less likely to have mental health problems compared to those who sleep below 7hrs.

Sex is not significantly associated with mental health status in this study. A study done in Gonder university showed relatively high prevalence of mental distress was found among female students as compared to males. The discrepancy might be due to the heterogeneity of study participants in Gonder University compare to our collage. The affective nature of their response to stressors, domestic violence, and hormonal changes during menstruation could be the possible causes for the higher prevalence of mental distress among female students. (18,33)

Housing was not significantly associated with in this study in contrast to other studies which showed living in the dormitory increased the chances of having a mental problem by 2.48 times. Due to the higher prevalence of mental health disorders among medical students compared to the general population.(34)

Having interest when Joining medicine was an important factor of mental distress. Students who were not interested in their field of study were two times more likely to experience mental

distress as compared with those who were interested with their department. A study among students in Adama University also came up with the same finding (17). (18) But on the contrary this study didn't find any association between mental health status and interest towards the field.

Students who were involved in religious program, irrespective of their religion, were less likely to be mentally distressed. This finding is supported by the other studies done in Ethiopia (17). This could be due to the fact that religious teaching helps in stress management. Furthermore, it facilitates the development of adaptive behaviors. (18) Although this variable was significant in this study it didn't make it past the multinomial regression failing to show any associations.

In addition, ever use of khat was found to be a significant factor of mental distress. Students who ever use khat were 1.7 times more likely to have mental distress as compared to students who never use khat. This finding is in line with other studies in Ethiopia (17,19) and Sao Paulo, Southeastern Brazil. This may be due to the fact that substance use leads to inefficiency in life function, impaired relationship and sleep difficulty. Furthermore, substance use is associated with increased absenteeism from class and poor cadmic performance which can further lead to mental distress in students. (18) This factor was also not shown to have any association with mental health status of interns.

When compared to other studies done on interns it does confirm that lack of sleep, long work hours (duty), time pressure, and excessive workload are among some of the factors affecting mental health of Interns (22)

According to the WHO family history mental illness has a negative impact on mental health (1). The odds of mental distress by respondents who had family history of mental illness were 2.12 times higher as compared with those who have not which is in line with study in Adama, Ethiopia (17) . Which is in line with finding of this study. This could be explained by genetic predisposition and living conditions within the families. In addition, caring for the mentally ill family member may also be an additional stress that contributes to a higher prevalence of mental distress.(18)

In contrast having high level of social support from significant others were negatively associated with mental distress in other studies. Students with low social support were more than two times more likely to have mental distress as compared to those students with high social support.

(18,33). Financial hardship was independently associated with mental distress This finding is supported by studies in Australia, United States of America and Nigeria. The rising cost of stationary materials and photocopy services may create stressful situation in students. Moreover, students with financial difficulty experience anxiety, frustration, and sense of helplessness and trouble of sleeping which may further lead students mentally distressed.(18) This factors however were not found to be significant or associated in this study.

7. Limitations and strength

Limitation: Responses might not have been genuine due to social desirability bias.

Strength:

- The sampling technique included all interns so it representative of interns at saint Paul.
- All objectives were met.

8. Conclusion and recommendations

Conclusions

Having no family history of mental illness, proper management of workload and time at work, having adequate amount of sleep was found to be protective factors against having mental health issues.

On the contrary having history mental illness, poor management of workload and time at work as well as inadequate amount of sleep predisposes to poor mental health outcome.

Recommendations

For students

Medical Interns should take charge of their own health. This should give healthy diets and physical activity as these are paramount to improving mental and physical health.

If they need additional help, they should also consider visiting a mental health professional as needed.

Those with family history of mental illness, anxiety and depression should be aware of the risk they have and take extra care in taking care of their mental health.

For the college administration

As sleep is an essential part of maintaining good mental health, the college's administration should set rules that protect the mental health of interns like ensuring adequate sleep on duties. Failure to do so will have adverse outcomes on the mental health of Interns.

The workload and adequate leisure time should be designed with the mental health of the interns in mind.

Medical schools should also have mental health services available for Interns and medical students.

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10. Annexes

Information sheet

TITLE OF THE RESEARCH PROJECT: Assessment of Mental Health Status and Associated factors among Interns at Saint Paul Hospital Millennium Medical College

REFERENCE NUMBER:

PRINCIPAL INVESTIGATOR: Kaleab Solomon Tesfaye

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CONTACT NUMBER: +251922468472

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is entirely voluntary, and you are free to decline to participate. If you say no this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

The research study will be conducted at St. Paul's hospital millennium medical college. The purpose of the research study is to assess the Mental Health Status of Interns at Saint Paul Hospital Millennium Medical College

Your input in this study is essential as it will enable the researcher to gather information that will benefit both Health care professionals and patients.

The information that will be collected will be treated as confidential and protected. The identity of the participants will remain anonymous. Only the researcher will have access to the information.

Disclosure or Declaration of Potential Conflicts-None

Consent form

Declaration by participant

By ticking in the box below

I agree to take part in a research study entitled: Assessment of Mental Health Status and Associated factors among Interns at Saint Paul Hospital Millennium Medical College

I declare that:

- I have read this information and consent form, and it is written in the language with which I understand.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is voluntary and I have not been pressurized to take part.
- I may choose to leave the study at any time and will not be penalized or prejudiced in any way.

Consent box.

Questionnaire

Questionnaire In English

Section I:- Demographic data

1. Sex	1 Male 2 Female
2. Age	_____
3. Marital Status	1 single 2 Married 3 Divorced 4 Widowed
4. where do you live?	1 the dormitory 2 family home 3 rented home 4 others
5. does family help you financially?	1 yes 2 no
6. does family support you emotionally?	1 yes 2 no
7. do you have someone to support you financially and emotionally?	1 yes 2 no
8. have you ever used Khat?	1 yes currently using. 2 quit. 3 never used
9. family history of mental illness, anxiety, depression	1 yes 2 no

10. current attachment	1. Obstetrics and gynecology 2. Pediatrics 3. Surgery 4. Medicine 5. Emergency 6. Minor attachments
11. are you interested in the field of medicine?	1 yes am interested. 2 somewhat interested 3 No I am not interested
12. do you attend church or mosques	1 yes most of the times 2 sometimes 3 no
13. do you feel like there is an excessive amount of workload and a time constraint to do the work?	1 Yes 2 moderate amount 3 mild amount 4 no
14. How much sleep do you get on average when you are on duty?	1 below 7hrs 2 about 7 to 9 hrs 3 more than 9 hrs
15. do you feel like the volume of information you need to cover as medical student is _____?	1 excessive 2 adequate 3 small
16. is your job physically demanding? Involving long periods of standing and strenuous work of patient care?	1 yes 2 somewhat demanding 3 no

Section 2: 12-Item General Health Questionnaire (GHQ-12)

	0(always)	1(Occasionally)	2(Rarely)	3(Never)
1. Able to concentrate				
2. Playing a useful part				
3. Capable of making decisions				
4. Able to enjoy day to day activities				
5. Able to face problems				
6. Feeling reasonably happy				

	0(Never)	1 (Rarely)	2(Occasionally)	3(Always)
7. Loss of sleep over worry				
8. Felt constantly under strain				
9. Couldn't overcome difficulties				
10. Feeling unhappy and depressed				
11. Losing confidence				
12. Thinking of self as worthless				

የመረጃ ወረቀት

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የዕውቂያ ቁጥር፡ 251922468472

በምርምር ፕሮጀክት ላይ እንድትሳተፉ ተጋብዘዋል። እባክዎን የዚህን ፕሮጀክት ዝርዝር ሁኔታ የሚያብራራውን እዚህ የቀረበውን መረጃ ለማንበብ የተወሰነ ጊዜ ይውሰዱ። እባክዎን ሙሉ በሙሉ ያልተረዱትን የዚህ ፕሮጀክት አካል ይጠይቁ። ይህ ጥናት ምን እንደሚያካትት እና እርስዎ እንዴት መሳተፍ እንደሚችሉ በግልፅ እንደተረዱ ማረጋገጥ እፈልጋለሁ። እንዲሁም፣ የእርስዎ ተሳትፎ ሙሉ በሙሉ በፈቃደኝነት ነው እና እርስዎ ለመሳተፍ ፈቃደኛ አለመሆን ይችላሉ። አይሆንም ካልው ይህ በምንም መልኩ በአንተ/ቺ ላይ አሉታዊ ተጽዕኖ አያሳድርም። ምንም እንኳን ለመሳተፍ ቢስማሙም በማንኛውም ጊዜ ከጥናቱ ለመውጣት ነፃ ነዎት።

የምርምር ጥናቱ የሚካሄደው በቅዱስ ጳውሎስ ሆስፒታል ሚሊኒየም ሜዲካል ኮሌጅ ነው። የጥናቱ ዓላማ በቅዱስ ጳውሎስ ሆስፒታል ሚሊኒየም ሜዲካል ኮሌጅ የኢንተርንዎችን የአእምሮ ጤና ሁኔታ ለመገምገም ነው።

በዚህ ጥናት ውስጥ የቀረቡትን ጥያቄዎች መመለስ ለተመራማሪውና ለጤና ባለሙያዎች እና ታካሚዎችን የሚጠቅሙ መረጃዎችን እንዲሰበሰቡ ስለሚያስችል አስፈላጊ ነው።

የሚሰበሰበው መረጃ ሚስጥራዊ እና የተጠበቀ ይሆናል። የተሳታፊዎቹ ማንነት ሳይታወቅ ይቀራል። መረጃውን ማግኘት የሚችለው ተመራማሪው ብቻ ነው።

መግለጫ ሊከሰቱ የሚችሉ ግጭቶችን ይፋ ማድረግያ- ምንም

የፍቃድ ቅፅ

በተሳታፊ የተሰጠ መግለጫ

ከታች ባለው ሳጥን ውስጥ ምልክት በማድረግ

በቅዱስ ጳውሎስ ሆስፒታል ሚሊኒየም ሜዲካል ኮሌጅ የኢንተርንሽንል የአዕምሮ ጤና ሁኔታን መገምገም በሚል ርዕስ በተደረገው የምርምር ጥናት ላይ ለመሳተፍ ተስማምቻለሁ።

ይህን አውጃለሁ፡-

- ይህንን መረጃ እና የፍቃድ ቅጽ አንብቤያለሁ እና እኔ በምረዳበት ቋንቋ ተጽፏል።
- ጥያቄዎችን ለመጠየቅ እድል አግኝቻለሁ እናም ለጥያቄዎቼ ሁሉ በቂ ምላሽ አግኝተዋል።
- በዚህ ጥናት ውስጥ መሳተፍ በፈቃደኝነት እንደሆነ ተረድቻለሁ እናም እና እንድሳተፍ ግፊት አልተደረገብኝም።
- በማንኛውም ጊዜ ጥናቱን ለመተው መምረጥ እችላለሁ እና በምንም መልኩ ቅጣት ወይም ጭፍን ጥላቻ አይደርስብኝም።

የፍቃድ ሳጥን

መጠይቅ

ክፍል I: - የሰነድ ማረጃ

1. ፆታ	1.1 ወንድ 1.2 ሴት
2. እድሜ	_____
3. ጋብቻ ሁኔታ	3.1 ያላገባ/ች 3.2 ያገባ/ች 3.3 ይተፋታ/ች 3.4 ባለቤት ይሞተበት/ባት
4. ይት ነው ይምትኖረው/ሪው?	4.1 ዶርም 4.2 ከቤተሰብ ጋር
5. ቤተሰብ በገንዘብ ያገዙሃለ/ሻል	5.1 አዎ 5.2 አይ
6. ቤተሰብ የሰነድ ድጋፍ ይሰጡሃለ/ሻል ወይ?	6.1 አዎ 6.2 አይ
7. በገንዘብ ሆነ በሰነድ ድጋፍ የሚያገዝህ/ሽ ሰው አለ?	7.1 አዎ 7.2 አይ
8. ጭንቀት ተጠቅመህ/ሽ ታውቃለህ/ቁያለሽ?	8.1 አዎ አሁንም እጠቀማለሁ 8.2 አቁሜያለሁ 8.2 ተጠቅሜ አላወቅም
9. በቤተሰብ/ሽ ውስጥ የአእምሮ ህመም፣ ጭንቀት ወይም ድብርት ያልዉ ሰው አለ?	9.1 አዎ 9.2 አይ

10. አሁን ምንድን እየትማርክ/ሽ ንዉ?	1. ማህፀን እና ፅንሰ ህክምና 2. የልጅ ህክምና 3. የቀድ ህክምና 4. የዉስጥ ደዌ ህክምና
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	5. የድንገተኛ ህክምና 6. ሌሎች(ይአምሮ፣የቆዳ፣ካንገት በላይ፣ይጥርሰ፣...)
11. የህክምና ትምህርትን በፍቅር ወይም በፍላጎት ውይም በተመስጦ ነው የምትማረጡ/ረጡ?	11.1 አዎ በተመስጦ ነው ምማረጡ 11.2 አይ በተመስጦ አይደለም የምማረጡ
12. የቤተክርስቲያን ወይም የመስኪድ ፕሮግራም ላይ ትሳተፋለህ/ሽ?	12.1 አዎ ብዙ ጊዜ 12.2 አንዳንዴ 12.3 አይ
13. ይሚሰራው ስራ ብዙ ሆኖ ወይም ስራውን ለመስራት ይለው ጊዜ ትንሽ መስሎ ይታይህል/ሻል?	13.1 አዎ 13.2 የተወሰነ ጊዜ 13.3 ትንሽ ጊዜ 13.4 አይ
14. ዲውቲ ሆነህ/ሽ ምን ያህል እንቅልፍ ታገያለህ/ሽ?	14.1 ከ 7 ስኦት በታች 14.2 ከ 7 እስከ 9 ስኦት 14.3 ከ 9 ስኦት በላይ
15. እንደ ህክምና ተማሪ ማንበብ ያለብህን/ሽን መጠን እንዲት ትገልጹለህ/ሁለሁልሽ _____?	15.1 ብዙ 15.2 መጠነኛ 15.3 ትንሽ
16. ስራህ/ሽ ብዙ አካላዊ እንቅስቃሴን ይጠይቃል? ብዙ ስኦት መቆም እና ረዝም የታካሚ እንክብካቤ ይጠይቃል?	16.1 አዎ 16.2 የተወሰነ ይጠይቃል 16.3 አይ

ክፍል 2: 12-ዕቃ አጠቃላይ የጤና መጠይቅ (GHQ-12)

	0(ሁሌ)	1(አንዳንዴ)	2 (ከስንት አንዴ)	3(መቼም)
1. ትኩረት መስጠት ትችላለህ/ሽ				
2. ጠቃሚ ሚና እይተቻውትኩ ነው ብለህ/ሽ ታስባለህ/ቢያለሽ				
3. በራሴ ውሳኔ መወሰን እችላለሁ				
4. ቀን ከቀን ያሉ ስራዎችን ደስብሎኝ እሰራለሁ				

5. ችግርን መወጣት ትችላለህ/ሽ				
6. በመጠኑ ደስታ ይሰማሃል/ሻል				

	0(Never)	1 (ከስንት አንዴ)	2(አንዳንዴ)	3(ሁሌ)
7. በሃሳብ ብዛት አማካኝነት እንቅልፍ ማጣት				
8. ሁሌ ጫና ውስጥ ያለው ይመስለኛል				
9. ተግዳሮትን መወጣት አልችልም				
10. ደስታን ማጣት ወይም ድብርት ይሰማኛል				
11. በራስ መተማመን ማጣት				
12. እራስን እንደማይረባ ሰው ማሰብ				