



(RESEARCH ARTICLE)



## Mental health knowledge among undergraduate university students in the northern region of Ghana

Emmanuel Asante <sup>1,\*</sup>, Paulina Bavirewo Wekem <sup>2</sup>, Joyce Wepiah Achana <sup>3</sup>, Felix Amanatey <sup>2</sup>, Yakubu Amin Abukari <sup>4</sup> and Gladys Appiah <sup>5</sup>

<sup>1</sup> Department of Allied Health Sciences, School of Nursing, Ghana Baptist University College, Abuakwa, Ashanti.

<sup>2</sup> Department of Midwifery, Nursing and Midwifery Training College, Gushegu-Northern Region.

<sup>3</sup> Department of Nursing, Nursing and Midwifery Training College, Tumu-Upper West Region.

<sup>4</sup> Department of Social and Behavioural Change, School of Public Health, University for Development Studies, Tamale-Northern Region.

<sup>5</sup> Department of Midwifery, School of Nursing and Midwifery, Wisconsin International University College, Kumasi-Ghana.

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### Abstract

**Introduction:** Particularly in educational environments, mental health concerns, and health-related issues, are more focused on youth. One of the most significant phases in one's life is the university period. The massive shift from the social system of school and the pressures of academia, along with the autonomy, influence an individual's mental health. The issue of mental health is crucial to understand in order to support young people in improving their health and well-being, and the empirical research in this area is particularly scarce for the undergraduate university students in the Northern Region of Ghana. Therefore, this study purposed to evaluate and assess the mental health knowledge of undergraduate university students in Northern Region of Ghana.

**Method:** This institution-based study was carried out among university students in the Northern Region of Ghana. A cross-sectional design using a quantitative approach was adopted to gather data from 422 participants. The design helped to perform systematic and objective assessment of university students' knowledge on mental health. The use of a quantitative approach enabled the application of descriptive statistics, which facilitated the synthesis of responses and provided a clearer understanding of knowledge levels. A simple random sampling technique was employed to select the study respondents.

**Results:** Almost half (49.1%) of the respondents demonstrated adequate knowledge of mental health. However, a greater proportion (83.4%) of respondents viewed admission to a mental hospital as a failure in life. Additionally, 42.9% believed mental illness is caused by lack of moral strength or willpower. It was reported by 57.1% of the respondents that it is not easy to identify someone with mental illness. Furthermore, 41.6% disagreed that medication is the best treatment, suggesting uncertainty about treatment options.

**Conclusion:** The study highlights several important challenges related to mental health knowledge and perceptions among the respondents. These challenges include confusion between biological, psychological, and social causes of mental illness; deep-rooted stigma and social exclusion; limited mental health literacy and awareness of symptoms; and gaps in knowledge about effective treatment methods. To address these issues, universities should integrate comprehensive mental health education into their curricula to improve students' understanding of the causes, symptoms, and treatment of mental illness.

\* Corresponding author: Emmanuel Asante

**Keywords:** Mental illness; Mental health knowledge; Risk factors; Stigma; University students

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## 1. Introduction

Mental health is an essential part of the general health and well-being that determines cognition, emotional control, behaviour, and productivity (1). Mental health has been a growing global public health issue among young adults with university students being the most affected (2). University life is a very important stage of development with transitions which include increased autonomy, academic challenges, financial issues and social adaptations (3). Such changes tend to subject students to high levels of psychological pressure, and thus they are more susceptible to psychological difficulties.

Mental health disorders are a significant burden of disease with an estimated 13 percent of the global disease burden (4). Mental health issues are primarily common among university students, where it has been shown that approximately 35 percent of students in the global context report having mental health problems, and in most universities, more than 30 percent report having a common mental disorder in the course of a 12-month span (5,6). The most prevalent ones are anxiety, depression, and stress, which have adverse impacts on academic performance, social functioning, and quality of life (7). Moreover, research indicates that 12-50 percent of university students have at some point in their academic life encountered at least one mental health problem highlighting the prevalence of the issue (6). In spite of this huge burden, there are still significant gaps in treatment with only a low percentage of infected students utilizing professional mental health services.

The same case is alarming in Africa as there is mounting evidence on the significant prevalence of mental health issues amongst university students. One of the recent systematic reviews indicated that about 64.7% of university students in Africa are subjected to perceived stress which means that a high rate of psychological distress is present in this group of people (8). Further, research in sub-Saharan Africa has shown that mental health conditions like anxiety and depression are normal with prevalence rates of over a third of university students in certain environments (9-11). This burden is also demonstrated by country-specific studies; in South Africa, a study of university students revealed that more than 28.9 percent of students have mental disorders, with high rates of other mental health issues (12). Such results are a product of academic stress, socio-economic issues, lack of mental health support, and cultural stigma about mental illness in the continent (10,11).

The problem of mental health among university students in Ghana is becoming a major public health concern, but empirical evidence is still rather scarce. Evidence that is available suggests that psychological distress and its consequences are common among Ghanaian students. As an illustration, a survey conducted on college students showed that suicidal ideation was 19 percent, plan (22 percent), and suicide attempts were 25 percent among this group, which is a very high level of mental health issues in this group (13). These results indicate that mental health issues in Ghanaian students are widespread and potentially dangerous unless they are properly managed. The situation is further complicated by cultural beliefs, stigma, and lack of access to mental health services and commonly results in underreporting and delayed help-seeking (8-11).

Although mental health issues are of high prevalence in the global and regional context, mental health literacy, often termed as knowledge of mental health is poor among students of universities (14). The mental health knowledge involves the capacity to identify mental health conditions, their causes and risk factors, as well as the right help-seeking alternatives (15). The early detection, prevention, and effective management of mental conditions require adequate knowledge. Nevertheless, mental health literacy is still hampered by the lack of knowledge, misconceptions, and stigma especially in low- and middle-income nations (9-11).

Universities can be of significant importance in terms of disseminating mental health knowledge, but mental health education is not fully incorporated into academic programs. Consequently, a significant number of students do not possess the required knowledge on how to recognize the symptoms, find healthy coping mechanisms, and address professional assistance in a timely manner (16,17). This knowledge gap is a contributing factor to poor mental health outcomes and stigma and discrimination against persons with mental health conditions.

The University of Development Studies (UDS) campus of Tamale offers a good background to the study of knowledge of mental health among students. The university is located in Northern Ghana and has a diverse student body with diverse socio-cultural and economic factors that can potentially influence their perception of mental health. Although the importance of mental health is gaining a growing momentum as a health concern of the population, little is known about the mental health knowledge among the students of this institution.

Thus, the research aims at evaluating the understanding of mental health among students of the University of Development Studies in Tamale, Ghana. Creating context-sensitive evidence on mental health knowledge will be vital in informing the targeted interventions, improving mental health literacy, alleviating stigma, and encouraging early help-seeking behaviours among university students. Finally, enhancing mental health literacy is an important measure to engage in positive academic culture and improve student health.

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## 2. Study and methodology

This institutional-based study was conducted among undergraduate students of University for Development Studies on Tamale campus, located in the Tamale Metropolis of Northern Region of Ghana. Tamale is located in the central part of the Region and shares boundaries with the Sagnarigu District to the west and north, Mion District to the east, East Gonja to the south and Central Gonja to the south-west (18). Undergraduate university students were appropriate for this study because joining university comes with numerous challenges that may impact negatively on ones' mental health. These issues are living alone for the first time, financial issues, making new friends, and academic stress. University attendance can provoke several mental disorders and can also worsen existing conditions of mental health.

### 2.1. Study design and methods

The research used a cross-sectional design with a quantitative approach to collect and analyse data. Undergraduate students who were on campus during the period of the study were eligible to participate in the study. Informed consent was obtained from the university authorities and verbal consent obtained from the students. The study used Cochran's formula to estimate the sample size. The formula is expressed as:  $n = \frac{Z^2 pq}{d^2}$ , where: **Z** = z-value (1.96 for a 95% confidence level), **p** = proportion of the population that possesses the desired characteristics (knowledge level of undergraduate students on mental health), expressed as a decimal, and **C** = Confidence interval stated in decimal notation (0.05 = ±5 percentage points).

The sample size was calculated using the above parameters: 
$$= \frac{(1.96)^2(0.5)(0.5)}{(0.05)^2} = \frac{3.8416(0.25)}{0.0025} = \frac{0.9604}{0.0025} = 384.16 \approx 384$$

The study had 384 at a 95% confidence level with an extra 38 respondents (10%) were added to the sample to address non-response and related issues, making a total sample size of 422. Students were selected through simple random sampling technique. The students were chosen by drawing folded "Yes" or "No" papers from a box, giving all present students an equal opportunity for selection. Students who picked a paper labelled "Yes" were included until each department quota was achieved. A structured questionnaire was used to gather data following a comprehensive investigation based on the study's objectives. The data was analysed using Statistical Package for Social Sciences (SPSS) version 27. In this study, students' knowledge on mental health were measured using 28 positively scored items, with one point awarded for each correct response. Scores were grouped as inadequate (0-14 points) or adequate (15-28 points).

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## 3. Results

### 3.1. Socio-demographic characteristics of the students

The study sampled 422 undergraduate students to respond to the survey. The study had 100% response rate. It was revealed that 50.9% of the respondents were female. The majority (93.4%) of the respondents were aged 17 to 25 years. The average age of the respondents was 21.6 years with a standard deviation of 2.5 years. A good proportion (44.8%) of the respondents were in Level 100. Meanwhile, 63.7% of the respondents were Christianity. It was showed that 82.9% of the respondents were unmarried. Table 1 contains more data.

**Table 1** Socio-demographic characteristics of the students

| Variable       | Frequency (n)            | Percentage (%) |
|----------------|--------------------------|----------------|
| Sex            |                          |                |
| Male           | 207                      | 49.1           |
| Female         | 215                      | 50.9           |
| Age            | Mean = 21.55, SD = 2.531 |                |
| 17 - 25        | 394                      | 93.4           |
| 26 - 30        | 28                       | 6.6            |
| Level of study |                          |                |
| 100            | 189                      | 44.8           |
| 200            | 96                       | 22.7           |
| 300            | 54                       | 12.8           |
| 400            | 83                       | 19.7           |
| Religion       |                          |                |
| Christianity   | 269                      | 63.7           |
| Muslim         | 149                      | 35.3           |
| Traditionalist | 4                        | 0.9            |
| Marital status |                          |                |
| Unmarried      | 350                      | 82.9           |
| Married        | 72                       | 17.1           |

### 3.2. Knowledge of students on mental health

Table 2 provides more information on respondents' knowledge of mental health. The study showed that 65.6% of the respondents disagreed that people should work out their own mental health problems. Most respondents (84.4%) disagreed with the statement that once a person has a mental illness, they have it for life. Additionally, 41.0% of the respondents agreed that females are more likely to have mental illness than males. Furthermore, 47.6% of the respondents disagreed that medication is the best treatment for mental illness, while 46.4% disagreed that people with mental illness are generally violent and dangerous.

It was further observed that 51.2% of the respondents agreed that adults are more likely to have mental health problems. Also, 57.1% of the respondents disagreed that it is easy to identify someone with mental illness. Meanwhile, 50.7% disagreed that it is easy to recognize someone who once had a serious mental illness. In addition, 55.5% of the respondents disagreed that people with mental illness are generally shy and quiet. The majority (84.6%) of the respondents agreed that mental illness can happen to anyone.

Interestingly, 53.6% of the respondents disagreed that mental illness can be cured simply by praying more. Similarly, 79.6% disagreed that people with mental health problems are criminals. However, 42.7% of the respondents agreed that people with mental illness are intellectually disabled. The study also revealed that 59.7% of the respondents agreed that people without mental illness do not know how to work with those who have mental illness. Additionally, 46.4% agreed that nervous breakdowns usually occur when one works too hard, while 48.1% agreed that mental illness is like any other disease.

The study further found that 71.1% of the respondents agreed that patients discharged from mental hospitals may appear well but should not be allowed to marry. Also, 45.5% agreed that people who were once patients in mental hospitals are no more dangerous than average citizens. Moreover, 46.9% of the respondents agreed that if parents loved their children more, there would be less mental illness.

It was also revealed that 46.9% of the respondents agreed that people who are successful in their work seldom become mentally ill. The majority (83.4%) agreed that becoming a patient in a mental hospital is equivalent to failure in life. Meanwhile, 71.6% of the respondents disagreed that children of mentally healthy parents would likely become mentally ill if raised by mentally ill parents. In addition, 54.5% agreed that people who are unable to work due to mental illness should receive financial support for living expenses. The study also showed that 56.6% of the respondents agreed that mental illness is usually caused by diseases of the nervous system.

Furthermore, 41.0% of the respondents disagreed that many people who have never been admitted to a mental hospital are more mentally ill than hospitalized patients. A good proportion (42.9%) agreed that one of the main causes of mental illness is a lack of moral strength or willpower. Also, 59.7% of the respondents disagreed that little can be done for patients in mental hospitals except to keep them comfortable and well-fed. Similarly, 53.6% disagreed that all patients in mental hospitals should be prevented from having children through a painless operation. Overall, the study revealed that 49.1% (95% CI: 44.3%–54.0%) of the respondents had adequate knowledge of mental health (Figure 1).

**Table 2** Knowledge of students on mental health

| Statements   | Agree (%) | Disagree  | Not sure |
|--|-----------|-----------|----------|
|  | n (%)     | n (%)     | n (%)    |
| People should work out their own mental health problems  | 121(28.7) | 227(65.6) | 24(5.7)  |
| Once you have mental illness, you have it for life   | 45(10.7)  | 356(84.4) | 21(5.0)  |
| Females are more likely to have mental health illness than males   | 173(41.0) | 162(38.4) | 87(20.6) |
| Medication is the best treatment for mental illness  | 156(37.0) | 201(47.6) | 65(15.4) |
| People with mental health illness are generally violent and dangerous  | 199(47.2) | 196(46.4) | 27(6.4)  |
| Adults are more likely to have mental health problems  | 216(51.2) | 152(36.0) | 54(12.8) |
| You can tell by looking at someone whether they have a mental health illness   | 134(31.8) | 241(57.1) | 47(11.2) |
| It is easy to recognize someone who once had a serious mental illness  | 131(31.0) | 214(50.7) | 77(18.2) |
| People with mental health illness are generally shy and quiet  | 110(26.1) | 234(55.5) | 78(18.4) |
| Mental illness can happen to anyone  | 357(84.6) | 43(10.2)  | 22(5.2)  |
| If one prays more, mental illness can be cured   | 117(27.7) | 226(53.6) | 79(18.7) |
| People who have mental problems are criminals  | 72(17.1)  | 335(79.4) | 15(3.6)  |
| People with mental illness are retarded  | 180(42.7) | 170(40.3) | 72(17.1) |
| Normal people do not know how to work with people having mental illness  | 252(59.7) | 124(29.4) | 46(10.9) |
| Nervous breakdowns usually occur when one works too hard   | 196(46.4) | 134(31.8) | 92(21.8) |
| Mental illness is like any other disease   | 203(48.1) | 163(38.6) | 56(13.3) |
| Even though patients released from psychiatric facilities may seem fine, they should not be permitted to get married.  | 71(16.8)  | 300(71.1) | 51(12.1) |
| Individuals who have previously been admitted to psychiatric hospitals pose no greater threat than the general public. | 192(45.5) | 136(32.2) | 94(22.3) |
| There would be less mental illness if parents showed their kids more affection.  | 198(46.9) | 156(31.0) | 68(16.1) |
| Successful professionals rarely develop mental illnesses.  | 97(46.9)  | 156(37.0) | 68(16.1) |
| Being admitted to a mental health facility equates to being a failure in life.   | 41(9.7)   | 352(83.4) | 29(6.9)  |
| Children of normal parents would most likely develop mental illness if they were reared by mentally ill parents.       | 72(17.1)  | 302(71.6) | 48(11.4) |

|   |           |           |          |
|---|-----------|-----------|----------|
| Money for living needs should be given to those who are unable to work due to mental illness.   | 230(54.5) | 107(25.4) | 85(20.1) |
| Nervous system diseases are typically the cause of mental disorders.  | 239(56.6) | 91(21.6)  | 92(21.8) |
| Compared to many hospitalized mental patients, many individuals who have never been admitted to a mental hospital are more mentally sick. | 165(39.1) | 173(41.0) | 84(19.9) |
| Lack of moral fortitude or willpower is one of the primary causes of mental illness.  | 181(42.9) | 155(36.7) | 86(20.4) |
| Making sure patients in psychiatric hospitals are comfortable and fed is the only thing that can be done for them.                        | 122(28.9) | 252(59.7) | 48(11.4) |
| A painless procedure should be used to prevent all people in psychiatric institutes from becoming parents.                                | 113(26.8) | 226(53.6) | 83(19.7) |

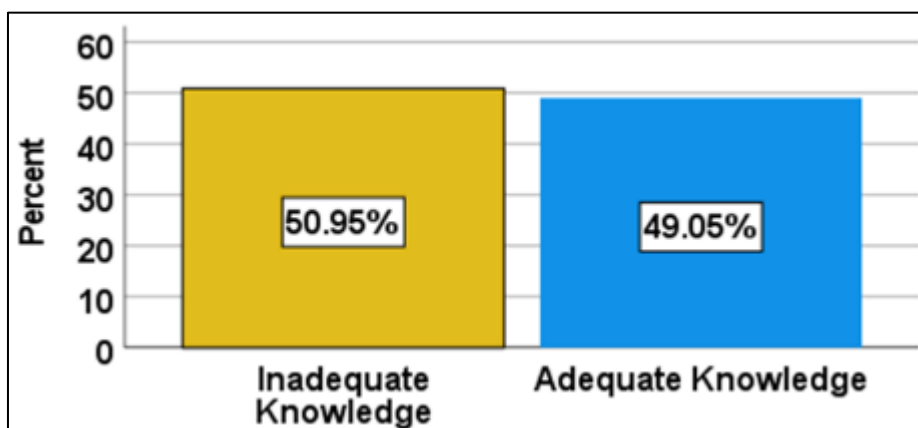


Figure 1 Knowledge level of students on mental health

#### 4. Discussions

The findings of the present study indicate a generally moderate level of mental health knowledge (49.1%) alongside the persistence of several misconceptions and stigmatizing beliefs. When discussed in relation to recent literature, the results reflect both convergence with global trends and context-specific divergences shaped by sociocultural, educational, and health system factors.

Relative to the beliefs regarding individual responsibility in mental health, the result that 65.6 percent of the respondents did not agree that people should work out their own mental health issues agree with that of the developed nations like the United Kingdom and Australia. In particular, Reavley et al. (2018) and Henderson et al. (2020) found growing societal support of professional help-seeking and the acknowledgment of mental health as a need that should be supported by a clinical professional (19,20). This resemblance can be explained by the global mental health advocacy campaigns and enhanced mental health literacy via media and online. Likewise, in the developing world, including Nigeria and South Africa, Atilola (2021) and Koen et al. (2021) discovered a rising acceptance of formal care (21,22). The study of Osei et al. (2023) in Ghana in the Greater Accra Region demonstrated a tendency toward professional intervention as well (23). The interpretation of this result suggests a positive shift toward biomedical and psychosocial models of care, which is critical for early treatment-seeking behaviour.

The finding of 84.4% of the respondents who disagreed that mental illness is lifelong is also consistent with the results in developed economies, e.g., Canada and Germany, where the perspectives related to recovery are becoming more prevalent (24,25). The same results have been reported in Kenya and Ethiopia, which points to the increased awareness of the effectiveness of treatment (25,26). Similar optimism concerning recovery was found in a study in Kumasi, Ghana, by Appiah-Poku et al. (2022) (27). This resemblance could be the consequence of more exposure to mental health education and visible recovery stories. The meaning in this context is that the respondents are showing that they understand mental illness is something to be treated, which makes fatality and stigma less.

Nonetheless, the result that 41.0% of respondents believed females to be more prone to mental illness is somewhat consistent with findings of developed nations where women tend to experience some forms of depression more prevalently (19). The same perception was observed in South Africa (28). Conversely, other African studies such as Uganda show less gendered perceptions (29). In Ghana, Tamale study revealed ambivalent opinions (30). The similarity can be attributed to the epidemiological trends that are reported around the world and the differences may occur due to the cultural interpretations of gender roles and emotional expression. This suggests partial awareness but also potential stereotyping.

The 47.6% disagreement that medication is the most appropriate treatment indicates that it is not aligned with the research conducted in developed nations, including the United States, where pharmacological treatment is highly understood (31). The same skepticism has, however, been reported in developing nations, such as Kenya, and in Ghana (26,32,33). This disparity can be attributed to fears of side effects, lack of access to psychiatric drugs, as well as a high cultural dependence on psychosocial or spiritual treatment. This interpretation implies that alternative or combined therapy methods are more likely to be preferred over strictly biomedical ones.

The observation that 46.4% of the respondents disagreed that mentally ill people are violent is in line with the reports in developed nations like the United Kingdom that demonstrate the declining support of stereotypes of dangerousness (34). The same pattern can be observed in South Africa (21). In Ghana, a study in the Accra Metropolis also showed less linkage between mental illness and violence (35). This resemblance could be caused by anti-stigma campaigns and public education. The interpretation reflects positively on the attitudes even though some stigma is left.

However, the conclusion that 42.7 percent of the population agreed that mentally ill people are retarded is in contrast to developed countries, including Australia where such negative beliefs have dropped considerably (19). Nonetheless, these mistaken beliefs still exist in some African regions, such as Ethiopia and Nigeria (22,36). A similar set of stigmatizing beliefs has been reported in Ghana, rural Northern Ghana (30). This disparity could be because of a lack of mental health education and confusion of intellectual disability and mental illness. The interpretation suggests the persistence of deep-rooted stigma requiring targeted educational interventions.

The high level of agreement (84.6%) that the mental illness could affect anyone agrees with the results of developed countries, such as Germany and the United Kingdom, and even with the African countries, including Kenya (20,25,26). Accra in Ghana recorded the same (Quarshie et al., 2021). This universal consensus is probably a very good indicator of an effective mental health awareness communication across the world. The interpretation shows that there is good general awareness of universal susceptibility to mental illness.

The denial of spiritual causation, 53.6% opposing that mental illness can be cured by prayer alone, is in contrast to a number of African studies. Spiritual explanations are still predominant in Nigeria and Ethiopia (36,37). A study conducted in the Ashanti Region in Ghana found that the support of spiritual healing was stronger (27). The variance in the present study can be attributed to urbanization, education, and exposure to biomedical view. The meaning indicates the development of the concept of a transitioning of strictly spiritualistic explanations to more integrative ones.

The result that 71.1% of the patients did not support the idea of marrying discharged patients indicates that there is still stigma and is consistent with the results in developing nations like Uganda and Nigeria (22,29). Nevertheless, it is the opposite of developed nations such as Sweden and Canada, where social inclusion is highly encouraged (24). In Ghana, restrictive attitudes were also found in rural regions of the Volta Region (35). This disparity might be motivated by the fear of relapse, familial ideologies, and the issue of reputation. The interpretation shows that there is a high level of social stigma which influences reintegration.

The fact that 83.4 percent of the respondents think that hospitalization is an indicator of failure is a sharp contrast to the results in developed nations, where mental health care is normalized (20). But these perceptions are also described in Africa, such as South Africa and Ghana (21,33). Such similarity in the developing settings can be an expression of stigma related to psychiatric institutions and a lack of mental health facilities. The interpretation focuses on a critical impediment to the help-seeking behaviour.

Lastly, the average general level of knowledge (49.1%) is consistent with the research in developing nations like Ethiopia and Nigeria, which indicate the same levels of mental health literacy (22,36). On the contrary, developed nations like Australia and Canada have much higher literacy rates (19,24). In Ghana, the results are also moderate in knowledge in studies conducted in Kumasi and Accra (Appiah-Poku et al., 2020; Quarshie et al., 2026). Such differences can be explained by the differences in education systems, investing in public health, and promoting mental health. The meaning is that although there is awareness, there is still a lack of understanding.

## 5. Conclusion

The study has been able to determine the knowledge level of undergraduate students on mental health. Almost half of the students showed adequate knowledge on mental health, however, notable misconceptions and stigma were evident among the respondents. These mixed findings suggest that while general awareness is improving, deeper understanding remains limited, especially in areas influenced by cultural beliefs and stigma. The study recommends that the university should introduce and implement comprehensive mental health education programme which targets misconceptions and stigma by providing evidence-based knowledge about causes and treatment of mental illness to all students.

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## Compliance with ethical standards

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### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

### *Statement of ethical approval*

Permission for the study was obtained from the university authorities. Ethical approval was provided by Kwame Nkrumah University of Science and Technology Ethical Review Board (CHRPE/019/22).

### *Statement of informed consent*

Verbal consent was obtained from all respondents before including them in the study.

### *Authors' contributions*

EA, PBW, FA, YAA, GA, and JWA worked together to identify the research problem, completed the literature review, design the data collection instruments, and oversee the data collection and analysis. Each author contributed to the manuscript's initial draft, co-wrote the text, performed statistical analysis, interpreted findings, and participated in the paper's discussion, reviewing and approving it collectively.

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### *Data availability*

This publication contains all of the data created or analysed for this work, which is available upon reasonable request from the corresponding author.

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