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Population-level mental health literacy: A vignette-based study on prejudice, sexism, and recognition in prevention strategies for social anxiety in Ghana

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ABSTRACT

Objective: Mental Health Literacy (MHL) evidence on promoting mental health prevention at the population level in Ghana is limited. We explored factors, including, sociodemographic variables, prejudice, sexist attitudes, and previous experience of mental disorders, related to the endorsement of prevention strategies for social anxiety in Ghana.

Methods: A total of 601 individuals participated in an online vignette-based experimental study. Participants were randomly assigned to read two clinical vignettes, each presenting symptoms of social anxiety for a hypothetical person, one being male and the other female. Participants provided their impressions of the hypothetical person and completed self-reported measures, encompassing assessments related to ambivalent sexism, MHL, prejudice, and demographic factors.

Results: We found that recognition of the social anxiety in the vignettes directly associated with psychotherapeutic prevention strategies and indirectly predicted substance-related prevention strategies for social anxiety among the participants. Prejudice towards social anxiety was linked to increased recommendation of substance-related prevention strategies for social anxiety and less frequent endorsement of psychotherapeutic prevention strategies. Benevolence towards women was positively associated with stress-reduction preventive strategies for social anxiety, while benevolence towards men negatively impacted such strategies.

Conclusion: Findings underscore the significant role of Western views of mental health, and the harmful impact of prejudice on mental health, including the potential impact of cultural and contextual elements in shaping preventive approaches to mental disorders. Efforts to enhance MHL aimed at improving population-level mental health outcomes should prioritize the development of compassionate and culturally inclusive responses to mental health distress while also working to reduce stigma.

1. Introduction

Mental health literacy (MHL) has played an essential role in improving mental health outcomes worldwide (Jorm et al., 1997; Sequeira et al., 2022). For example, recognizing the symptoms of depression and social anxiety has been linked to a higher likelihood of seeking professional help for these disorders (Waldmann et al., 2019). MHL includes individuals' knowledge regarding recognition, causes, risk factors, prevention, help-seeking, self-help interventions, and information-seeking for mental health issues (Jorm et al., 1997).This concept is primarily consistent with the Western approach to nosology (American Psychiatric Association & Task, 2013). The mental health prevention literature indicates that individuals support a range of preventive methods. These methods include seeking online information and self-help books, relying on strong social support, engaging in regular exercise, abstaining from drugs, practicing relaxation techniques, and

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avoiding stressful situations (Jorm, 2012; Loureiro et al., 2014).

Various factors, such as educational levels and previous experience with mental health issues, have consistently been shown to influence individuals' ability to recognize mental disorders and their preferences for seeking help (Hadjimina & Furnham, 2017; Hurley et al., 2020). Previous experience can facilitate experiential learning, improving one's ability to evaluate and choose from different prevention strategies (Gulliver et al., 2012). As such, we expected that prior experience with social anxiety will be positively associated with the endorsement of evidence-based prevention strategies. Additionally, mental illness prejudice has been linked to poorer mental health outcomes, while higher educational levels have consistently been associated with better health outcomes (Adu et al., 2024a; Ma et al., 2023). These findings suggest the potential role of these variables in shaping attitudes toward mental health care.

The literature has also indicated that females and older individuals tend to have more positive attitudes toward MHL, including seeking professional help and recognizing conditions such as depression and social anxiety disorder (Addis & Mahalik, 2003; Adu et al., 2024b; Mackenzie et al., 2006). Such demographic disparities in MHL can be attributed to cultural and contextual factors, including traditional sex role ideologies, which often contribute to men's negative attitudes toward seeking mental health help across various cultures (Staiger et al., 2020). These ideologies often align with ambivalent sexism, a theoretical framework that captures the coexistence of two related forms of sexism: Hostile Sexism (HS), which reflects negative attitudes, and Benevolent Sexism (BS), which expresses seemingly positive but patronizing views toward a particular sex (Glick & Fiske, 1996).

In Ghana, traditional ideologies often promote BS toward men, emphasizing emotional control and stoicism, which reinforces the belief that "real men" should be self-reliant and not seek help. HS often manifests in demeaning attitudes toward men who do not adhere to traditional ideals, labeling them as "weak" or "effeminate" (Glick & Fiske, 2001b). Both Hostile and Benevolent sexism can perpetuate non-evidence-based prevention strategies, such as "toughing it out" and excessive substance use, rather than seeking professional help for mental disorders (Luginaah & Dakubo, 2003). In Ghana, substance-related behaviors are less common among women, as these actions are not culturally prescribed for them and are highly stigmatized if they engage in such behaviors (Anyinzaam-Adolipore & Alhassan, 2020). Additionally, men are more frequently featured in television advertisements for alcoholic beverages, potentially normalizing these behaviors (Akesse-Brempong & Cudjoe, 2023).

BS toward women in Ghana often portrays them as dependent and fragile, leading to paternalistic behavior and the endorsement of evidence-based prevention strategies for social anxiety out of a perceived need to protect and support women. In contrast, HS involves negative stereotypes that demean women, viewing them as inferior and unfit for leadership (Glick & Fiske, 1996). Ironically, women in this context who challenge these norms are often mocked as "*female roosters.*" This may also result in the endorsement of evidence-based prevention strategies, driven by the belief that women require stricter guidance, including for mental health. Thus, ambivalent sexism may unexpectedly support evidence-based approaches for social anxiety prevention despite differing motivations.

The evidence on MHL has largely focused on recognition and help-seeking, particularly regarding depression, with limited exploration of the psychosocial and cultural factors, like sexist attitudes impacting prevention strategies for mental disorders. Social anxiety, characterized by persistent anxiety in social situations due to fear of criticism (American Psychiatric Association & Task, 2013), is a burdensome condition associated with economic and educational disruptions and has not been extensively studied in the literature (Vilaplana-Pérez et al., 2021). Although a Western nosological category, social anxiety has been observed in Africa; for instance, the lifetime prevalence of social anxiety among adolescents in Ethiopia was 40.2 % (Nakie et al., 2022). Studies have mainly offered descriptive and interventional insights into mental health prevention strategies (Hare et al., 2023).

Consequently, we aimed to answer the question: How do sociodemographic factors such as education, prejudice towards social anxiety, recognition of social anxiety, personal experience with social anxiety, and sexist attitudes influence the endorsement of prevention strategies for the Western concept of social anxiety among the general population of Ghana? Three prevention strategies were selected: stress reduction, psychotherapy, and substance-related approaches. The first two were chosen for their evidence-based effectiveness in preventing mental health issues (Rosendahl et al., 2021; Wang et al., 2023). While substance use often exacerbates mental health problems, it is commonly used with the intent to alleviate them (Thornton et al., 2012), making it important to understand the factors influencing such behaviors to promote better mental health outcomes. Fig. 1 presents a theoretical model of the study, visually illustrating the expected relations and interactions.

2. Method

2.1. Sampling and data collection procedure

The current study collected data from a total of 601 respondents conveniently drawn from the general population in Ghana. Participants received no incentives for participating in our study. The age of the participants ranged from 18 to 64 years (M_{age}=28.50; SD_{age}=5.40). Table 1 provides detailed information on the demographic characteristics of participants. This study was approved by the authors' Human Research Ethics Committee board (#74), and the study was in line with the Declaration of Helsinki principles for human health research (World Medical Association, 2013). All participants provided informed consent before completing the survey. The experimental study design was conducted using a cross-sectional survey approach for data collection. The aim was to manipulate the gender of the vignettes. We generated a single survey link that automatically and randomly assigned participants to either female or male conditions (vignette). Various social media platforms such as Facebook, WhatsApp, Email, Instagram, and Twitter were used for data collection. While online data collection methods have some limitations, such as sampling bias, this method tends to be cost-effective, and it has the potential to reach a larger and geographically diverse population faster (Lefever et al., 2007).

The questionnaires were presented in English, the official language of Ghana. Individuals and organizations known to the principal author (PA) in Ghana were approached to participate in this anonymous study. Respondents were asked to forward the survey link to others they knew. The survey included questions about participants' beliefs and attitudes toward the hypothetical person described in the vignette, and included personal demographics such as sex, age, educational qualifications, and religious affiliation. Participation in the study was voluntary, and participants took approximately 15 min to complete the questions. The current data represents a subset of a large MHL dataset in Ghana. A previously published article using a section of this data provided a detailed account of the influential factors related to a key MHL component, the recognition of social anxiety, including differences in recognition based on sex and the gendered vignettes (e.g., Adu et al., 2024a).

2.2. Power analysis

An a priori power analysis using G*Power 3.10 was conducted to determine the required sample size for regression analysis with 10 predictors, an effect size of 0.15, α error probability of 0.05, and anticipated power of 0.80, which yielded a required sample size of n = 118 for these parameters (Faul et al., 2007). The larger sample size in the current dataset enhances statistical power.

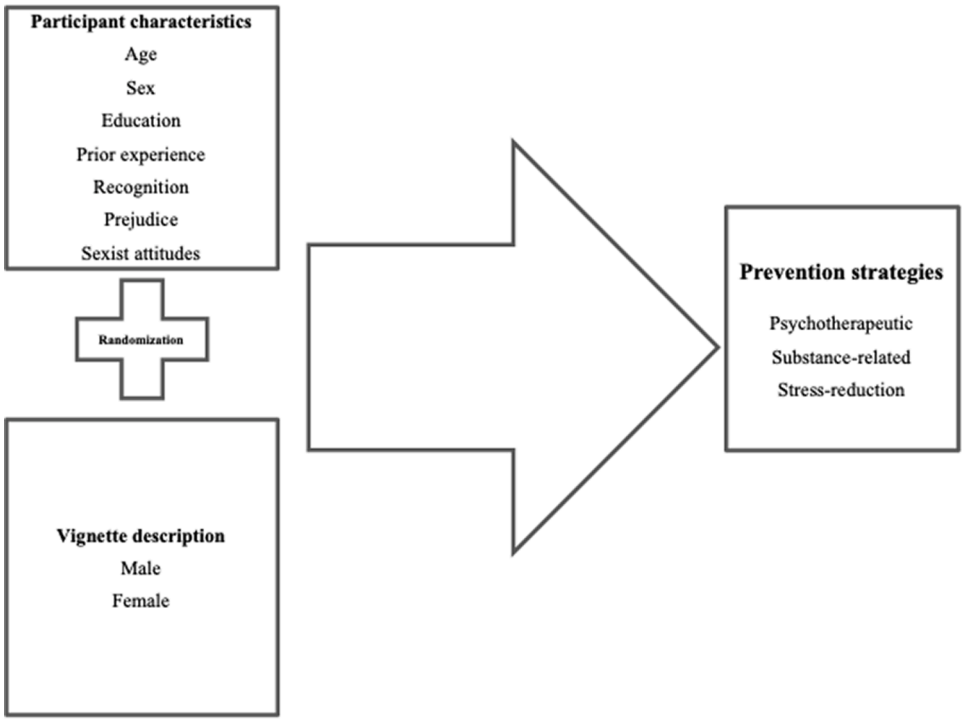

Fig. 1. Theoretical model of the links between sociodemographics, prejudice, recognition ability, sexist attitudes, and prevention strategies for social anxiety.
Note. Participants are randomly assigned to either male or female vignettes. Their personal characteristics, including recognition ability, age, sex, prior experience, sexist attitudes, and prejudice, interact with the vignette's gender to predict a prevention strategy.

Table 1
Sociodemographic characteristics for participants (N = 601).

Variables	Number (n)	Percentage (%)
Random Assignment		
Condition 1 (female vignette)	297	49
Condition 2 (male vignette)	304	51
Sex		
Men	401	67
Women	200	33
Educational Qualification		
Bachelor's degree	327	54.41
Diploma	133	22.13
Senior high school leavers	64	10.65
Master's degree	62	10.32
PhD	8	1.33
Basic school certificate	2	0.33
Not specified	5	0.83
Religious Affiliation		
Christian	583	96.50
Muslim	17	2.80
Traditionalist	4	0.70

2.3. Measures

Recognition rates and previous experiences: We employed the Computer-Assisted-Telephone-Interview scale (CATI; Reavley & Jorm, 2011) to assess participants' recognition ability of the symptoms of social anxiety, prevention strategies, and prior experience relating to social anxiety. We adapted this interview scale for online use, transforming it into an internet-based survey via *SelectSurvey.net*. The survey involves the presentation of a vignette illustrating symptoms of social anxiety in an individual. Participants were prompted to identify the specific mental disorder portrayed in the vignette. We selected the names "John" for the male condition and "Mary" for the female condition. These names are commonly used in Ghana and are culturally neutral. For instance, in the male social anxiety vignette, we presented a vignette that begins like this: "John is a 25-year-old who resides with his parents. Since beginning his new University last year, he has become even more reserved than before and has managed to make only one friend…" (see Appendix A for full vignettes). Following this vignette, participants were asked a question: "What, if anything, do you think is wrong with this person?" Participants were asked to provide their impressions of the hypothetical person through open-ended responses. Afterwards, participants indicated whether they or anyone within their social circle had previously encountered a similar condition, providing insights into their experiences with mental disorders.

Participants were further presented with a set of strategies aimed at preventing the development of social anxiety in the hypothetical person. These strategies were organized into three distinct categories or subscales: psychotherapeutic (counseling, cognitive behavior therapy, group therapy, and local mental health services), substance-related strategies (smoking, alcohol, and marijuana), and stress-reduction strategies (meditation, massage, relaxation, physical activities, exposure to sunlight, and acupuncture). Responses were rated on a 5-point Likert scale from 0= "*strongly disagree*" to 4= "*strongly agree*"). The internal consistency of these subscales using Cronbach's alpha (α) was found to range from acceptable to excellent: psychotherapeutic (α=0.67; M = 2.74, SD=0.75), substance-related strategies (α=0.94; M = 0.31, SD=0.68), and stress-reduction strategies (α=0.79; M = 1.81, SD=0.73).

Sexist attitudes. The Ambivalent Sexism Inventory toward women (ASI; Glick & Fiske, 2001a) and the Ambivalence toward Men Inventory (AMI; Glick & Fiske, 2001b) were employed to measure sexist attitudes in our study. A sample item on this scale is 'Many women have a quality of purity that few men possess' Responses were rated on a 6-point scale from 1= "*strongly disagree*" to 6= "*strongly agree*". The internal consistency of all the sub-scales were considered acceptable, exhibiting α of 0.74 (M = 3.25, SD=1.15) for benevolent towards men, α=0.71 (M = 3.27, SD=1.06) for benevolence towards women, α=0.76 (M = 2.58, SD=1.16) for hostility towards women, and α=0.68 (M = 2.76, SD=1.09) for hostility towards men.

Prejudice. We measured prejudice towards social anxiety with the feeling thermometer scale (De Tezanos-Pinto et al., 2010; Iyengar &

Krupenkin, 2018). The scale allows participants to specify their feelings (i.e., positive or negative) towards the hypothetical person on a scale (feeling thermometer) of 0 to 100. Responses are categorized into warm feelings (0–50), neutral feelings (50), and cold feelings (50–100). We reverse-coded this scale for analysis, ensuring that higher values represented the most extreme expression of prejudice (i.e., recoding from 0=warm feeling to 100=cold feeling; M=52.33, SD=24.12). All instruments were combined to form a single questionnaire in this current study.

2.4. Data analysis

The data analysis was conducted using Statistical Package for Social Sciences (SPSS) version 28. The dataset was imported from the online survey platform into SPSS, and we checked for missing values using Little's Missing Completely at Random test (MCAR), which indicated that the missing data were not entirely random ($p > .05$) (Little, 1988). Consequently, we employed the Expectation Maximization (EM) algorithm for data imputation, recognized for its effectiveness in estimating parameters for missing data (Dempster et al., 1977). Our examination of skewness and kurtosis revealed values within the range of −3 to 3, which supports the use of parametric statistical methods (Tabachnick & Fidell, 2018). Subsequently, we computed descriptive statistics for demographic variables and subscale scores, followed by a reliability analysis for all non-binary scales and subscales. We then conducted Pearson's correlation coefficients to explore the relations among the variables of interest. Finally, we conducted linear regression analyses to test all hypotheses. Of note, to clarify the results and minimize the potential for confounding ambivalent sexism with vignette gender effects, we opted to segregate and report the findings pertaining to the hypotheses based on participant sex.

3. Results

Results from Table 2 indicated that psychotherapeutic preventive strategies for social anxiety correlated positively with education, age, personal exposure to social anxiety, benevolence toward men, benevolence toward women, and recognition of social anxiety, with correlation coefficients (r) ranging from 0.10 to 0.19. However, prejudice related negatively to psychotherapeutic prevention strategies for social anxiety (r=−0.19) and associated positively with substance-related preventive strategies for social anxiety ($r = 0.23$). Benevolence toward women and men, personal exposure to social anxiety related negatively to substance-related preventive strategies for social anxiety, r ranging from −0.13 to −0.16. Stress-reduction strategies for social anxiety correlated positively with benevolence toward men and hostility toward women and men (r = 0.09–0.10).

Results from the linear regression (Table 3) showed that age positively associated with substance-related prevention strategies for social anxiety among women in the male condition. Personal exposure to social anxiety was related to psychotherapeutic and stress-reduction prevention strategies for social anxiety among men in the female condition; and further predicted psychotherapeutic prevention strategies among women in the male condition. Previous experience with others with social anxiety negatively related to stress-reduction prevention strategies for social anxiety among women in the female condition. Recognition of social anxiety was positively linked to psychotherapeutic prevention strategies for social anxiety among men in the male condition and women in the female condition. However, this prevention strategy negatively related to substance-related preventive strategies for social anxiety among women assigned to the female condition.

Further, prejudice positively predicted substance-related preventive strategies for social anxiety among men in both the female and male conditions and women in the female condition, but it negatively impacted psychotherapeutic prevention strategies for social anxiety among women in both the male and female conditions, including men in the female condition. Whereas benevolence toward women positively associated with psychotherapeutic and stress-reduction prevention strategies for social anxiety among women in the female condition, it negatively related to substance-related preventive strategies for social anxiety among women in the same condition. Benevolence towards men was negatively associated with substance-related preventive strategies for social anxiety among men in the male condition. Hostile attitudes towards men positively linked to both substance-related and stress-reduction strategies for social anxiety among men in the male condition.

Table 2
Bivariate Correlations Matrix between Mental Health Prevention Strategies for Social Anxiety, Ambivalent Sexism, Exposure to Social Anxiety, Prejudice, and Sociodemographic Variables in Ghana (N = 601).

Variables	Outcome variables		
	Psychotherapeutic strategies	Substance-related strategies	Stress-reduction strategies
Ambivalent Sexism			
Benevolence toward women	0.15**	−0.16**	0.07
Hostility toward women	−0.01	−0.01	0.09*
Benevolence toward men	0.10*	−0.16**	0.09*
Hostility toward men	0.08	−0.04	0.10*
Attitudes			
Recognition	0.16**	−0.02	0.02
Prejudice/stigma	−0.19**	0.23**	−0.01
Exposure			
Exposure to others	0.06	−0.07	0.03
Exposure to self	0.12**	−0.13**	0.08
Sociodemographic variables			
Age	0.10*	0.06	0.03
Sex (1 = woman, 0 = man)	0.04	−0.12**	0.01
Education	0.14**	−0.01	0.01

Note.
*$p < .05$,.
**$p < .01$. Education represents the number of years of schooling; age was measured continuously from youngest to oldest; Prejudices refers to feelings of warmth or coldness towards social anxiety; recognition is the ability to identify social axiety; previous exposure is a categorical measure based on self or others' encounters with social anxiety; and ambivalent sexism was a Likert scale assessment of positive and negative attitudes toward each sex.

4. Discussion

We have investigated the relations between sexist attitudes, sociodemographic variables, prejudice towards social anxiety, prior experience, recognition ability, and the endorsement of prevention strategies for social anxiety, including substance-related and evidence-based approaches like psychotherapy and stress-reduction. We found that the endorsement of psychotherapeutic prevention strategies decreased with higher prejudice towards social anxiety, while prejudice was linked to greater support for substance-related strategies (refer to Table 2). The negative relation between psychotherapeutic strategies and prejudice was notably significant among men and women assigned to the male condition but men assigned to the female condition did not show this bias against this therapy (refer to Table 3). Remarkably, both women and men high on prejudice tended to also endorse substance use strategies for their respective same sex vignette counterparts.

Our results may reflect cultural norms emphasizing male stoicism in the Ghanaian context. Men are often expected to appear emotionally strong and composed. As a result, men may turn to substances like alcohol to boost confidence and manage social interactions (Luginaah & Dakubo, 2003), instead of seeking evidence-based methods, such as

Table 3
Linear Regressions for Mental Health Prevention Strategies for Social Anxiety, Ambivalent Sexism, Exposure to Social Anxiety, Prejudice, and Sociodemographic Variables in Ghana ($N = 601$).

Variables	Men						Women					
	Female vignette			Male vignette			Female vignette			Male vignette		
	Psychotherapeutic strategies	Substance-related strategies	Stress-reduction strategies	Psychotherapeutic strategies	Stress-reduction strategies	Substance-related strategies	Psychotherapeutic strategies	Stress-reduction strategies	Substance-related strategies	Psychotherapeutic strategies	Stress-reduction strategies	Substance-related strategies
Sociodemographic variables												
Age	0.04	−0.06	0.08	0.05	0.15*	0.02	0.16	0.08	−0.08	0.15	0.12	0.23*
Education	0.16	0.04	−0.01	0.05	−0.09	−0.08	0.18	0.13	−0.02	0.04	−0.04	−0.19
Exposure												
Self (1 = yes)	0.27**	0.16*	−0.05	−0.13	−0.08	−0.07	0.05	0.14	−0.12	0.28*	0.16	−0.24
Others (1 = yes)	−0.10	−0.01	−0.11	0.10	−0.01	0.04	0.05	−0.21*	−0.01	0.04	0.17	0.01
Attitudes												
Recognition	−0.03	−0.06	0.12	0.19**	0.03	−0.01	0.22*	0.03	−0.22*	0.16	−0.06	−0.11
Prejudice/stigma	−0.08	0.05	0.24*	−0.19**	−0.03	0.16*	−0.19*	−0.01	0.26*	−0.38**	−0.14	0.13
Ambivalent Sexism												
Benevolence toward women	0.07	−0.14	−0.08				0.43**	0.23*	−0.23*			
Hostility toward women	−0.04	0.15	−0.04				−0.13	−0.12	−0.03			
Benevolence toward men				0.08	−0.01	−0.30**				0.01	−0.01	0.19
Hostility toward men				0.06	0.28**	0.22**				−0.01	−0.08	0.06
R^2	0.11	0.05	0.11	0.12	0.11	0.11	0.31	0.11	0.20	0.31	0.10	0.22

Note.
* $p < .05$,.
** $p < .01$. Education represents the number of years of schooling; age was measured continuously from youngest to oldest; Prejudices refers to feelings of warmth or coldness towards social anxiety; recognition is the ability to identify social axiety; previous exposure is a categorical measure based on self or others' encounters with social anxiety; and ambivalent sexism was a Likert scale assessment of positive and negative attitudes toward each sex.

psychotherapy or stress-reduction techniques, to address social anxiety (Ampim et al., 2020). These findings underscore how cultural belief systems and resistance to evidence-based approaches influence mental health strategies. In other words, individuals with negative attitudes towards social anxiety may reject evidence-based prevention strategies in favor of maladaptive behavors. Our findings highlight the potential influence of prejudice on health outcomes and resistance to evidence-based solutions (Adu et al., 2021b).

Recognition of social anxiety symptoms was positively associated with psychotherapeutic prevention strategies (refer to Table 2), aligning with previous findings linking recognition of the Western mental health concepts to Western help-seeking models (Goldney et al., 2005; Picco et al., 2018). This study extends the evidence for other MHL components related to social anxiety, with significant associations observations among women in female conditions and men in the male condition (refer to Table 3). Moreover, women showed lower endorsement of substance-related prevention strategies (refer to Table 2). These observations suggest that substance-related behaviors are less commonly associated with womenin Ghana, as are culturally viewed as more masculine, with women facing greater stigmatization if they engage in them (Anyinzaam-Adolipore & Alhassan, 2020). The recognition of social anxiety symptoms plays a central role in promoting better mental health outcomes across both sexes and conditions (e.g., Adu et al., 2021a).

Our study adds to the burgeoning literature which shows positive effects between education and health outcomes (Araya et al., 2003). Education was directly linked to psychotherapeutic strategies (refer to Table 2). Higher education levels are consistently associated with better health outcomes and greater recognition of mental disorders like depression and schizophrenia in Ghana (Adu et al., 2021a; Adu et al., 2023). These findings combined with earlier studies imply that the Western education in Ghana may promote evidence-based mental health paradigms, particularly in prevention, help-seeking, and disorder recognition (Adu et al., 2021a; 2023). We found that individuals with personal experience of social anxiety were more likely to endorse psychotherapeutic prevention strategies over substance-related ones (refer to Table 2). This trend was especially strong among women in the male condition and men in the female condition (refer to Table 3). Previous research suggests that individuals with prior mental health issues or who have used mental health services tend to have better outcomes in the future, possibly due to prior positive experiences with evidence-based treatments (Gorczynski et al., 2017).

Additionally, BS towards women and men was positively linked to endorsing psychotherapeutic prevention strategies for social anxiety and negatively to substance-related strategies (Table 2). Furthermore, among women in the female condition, BS was significantly associated with psychotherapeutic and stress reduction strategies (Table 3). This finding may reflect the belief that women need more structured guidance (in this case, by women themselves), as they are seen as less capable of managing mental health independently (Sikweyiya et al., 2020). Overall, our findings align with research showing that BS is linked to better health outcomes (Sutton et al., 2011).

Increased HS towards men was linked to a higher endorsement of stress-reduction strategies and substance use. This pattern may reflect cultural expectations of Ghanaian men to handle emotional issues independently, aligning with hegemonic masculinity and emotional stoicism (Vickery, 2021). As a result, some men may turn to substance-related behaviors for coping (Luginaah & Dakubo, 2003), explaining the greater endorsement of such strategies for the hypothetical male counterpart.

4.1. Strengths and limitations

We are the first to explore the concept of sexist attitudes and MHL in the extant literature. To our knowledge, no study in Ghana has investigated varibales related to help-seeking strategies for social anxiety. Our study also provides a novel insight into MHL literature regarding the influence of sexism in MHL. The current sample size was relatively large, which increases statistical power by improving estimate precision and enhancing the likelihood of detecting true effects. Our study also makes a theoretical and practical contribution by providing a better understanding of the role of strategies to better mental health, especially from a sub-Saharan cultural perspective. Particularly, the findings shed light on the implicit belief systems of individuals and reveal relations to Western perspectives on the prevention and treatment of social anxiety. Our study demonstrates the potential benefit of the integration of idioms of distress in mental health related interventions (Cohen, 2023). For instance, while the traditional Western concept of health places less emphasis on spirituality, Adu et al. (2023) reported a positive link between spiritual help-seeking preferences regarding depression and schizophrenia and spiritual causal beliefs regarding these disorders. The study uses an innovative methodology to assess population-level sexist attitudes toward mental health prevention strategies. This approach could be applied in other countries to better understand the interplay between mental health and cultural issues.

The limitations of the current study include the use of a cross-sectional correlational study design, which means that causal inferences cannot be made. The sample was unrepresentative of the larger Ghanaian population. The use of online study implies that the results may mirror the segment of the population that uses the internet. A greater percentage of the sample was educated, and about 60 % were males, which introduced some level of bias to our sample. Therefore, caution should be exercised when interpreting these results, as they may reflect the more educated segment of the general population in Ghana. Results generated from hypothetical situations (i.e., the use of vignettes) may not reflect real-world situations. In other words, the study may lack ecological validity. Note, the use of Western-based vignettes imposes limitations on capturing the culturally specific symptoms and expressions of mental disorders (Backe et al., 2021). This approach risks imposing a forced framework onto a culture, disregarding how individuals within that culture naturally describe and understand their illnesses. Such practices may stem from the historical dominance of Western perspectives globally, which has shaped the education systems and knowledge frameworks introduced to diverse populations. This dominance often marginalizes local understandings and perpetuates a one-size-fits-all approach that fails to account for cultural nuances in mental health (Agbaje, 2021).

4.2. Implications and future research

Mental health campaigns could focus on peoples' ability to recognize the Western concepts of social anxiety, which has the potential to result in recommending evidenced-based prevention strategies for social anxiety. At the population level, education on the concept of social anxiety may help deepen individuals' abilities to identify social anxiety, which in turn could facilitate the endorsement of evidence-based prevention strategies. Alternatively, introducing mental health education in the general education system in Ghana could benefit population outcomes, including the ability to recognize the Western concepts of mental disorders-, help-seeking preferences, and prevention strategies (Adu et al., 2021; Adu et al., 2023). Such education programs can potentially provide individuals with evidence-based perspectives of social anxiety and could result in the reduction of prejudice towards social anxiety to promote better outcomes for those grappling with the disorder (Adu et al., 2021b). Finally, our results in relation to ambivalent sexism inform mental health stakeholders of the need to consider cultural and contextual elements in efforts towards promoting mental disorders. Public health interventions can focus on challenging sex-based stereotypes and biases through educational campaigns and community engagement. These efforts should aim to reduce hostile sexism and prejudice towards social anxiety, further promoting the endorsement of efficacious mental health practices.

Future intervention studies are needed to better understand how to reduce ambivalent sexism, especially HS towards men to improve the utilization of evidence-based prevention strategies for social anxiety. Our constellation of variables should be studied longitudinally in the real world to provide relatively robust insights into the current evidence. Qualitative studies in this regard are needed in Ghana to expand our understanding of these variables, including insights into how social anxiety is understood from a local and contextual perspective. The present demographic and atttitudinal variables and additional components of MHL (e.g., first aid strategies for mental disorders) should be examined across sub-groups and the less formally educated in Ghana. For instance, studies can broadly compare the culturally diverse northern and southern sectors of Ghana in relation to various components of MHL. Researchers could include variables like socio-economic status to explore its impact MHL. Social class differences may further inform the development of culturally sensitive policies and interventions to better local mental health outcomes.

5. Conclusion

We investigated the association between sexist attitudes, sociodemographic variables, prejudice towards social anxiety, previous experience, recognition ability, and prevention strategies for social anxiety. Results showed that negative attitudes towards social anxiety increased the endorsement of substance-related prevention strategies, while higher education, and the Western perspective of social anxiety recognition promoted evidence-based prevention strategies. Women with BS towards women endorsed evidence-based strategies for their female counterparts, while men with HS towards men favored substance-related strategies for their male counterparts. The findings indicate that while MHL, framed within the Western perspective, can enhance the endorsement of evidence-based strategies, it is important to prioritize the development of compassionate and culturally inclusive responses to mental health distress in MHL initiatives. This approach is essential for improving population-level mental health outcomes. Efforts to reduce prejudice towards social anxiety should also be included to further enhance better mental well-being. This study contributes to the limited MHL literature in Ghana and Sub-Saharan Africa. Future research in naturalistic settings is recommended to improve mental health outcomes.

Data availability

Study participants did not consent to having their data shared publicly. The deidentified participant dataset generated during the current study can be made available to researchers with relevant permissions upon a reasonable request to the corresponding author.

Ethics statement

The study received ethical approval from the authors' institutional Human Research Ethics Committee (#74). The study was in line with the Declaration of Helsinki, which outlines fundamental ethical principles for health research involving the use of human participants (World Medical Association, 2001).

CRediT authorship contribution statement

Peter Adu: Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Dmitry Grigoryev:** Writing – review & editing, Validation, Supervision, Funding acquisition, Formal analysis, Conceptualization. **Rita Holm Adzovie:** Writing – review & editing. **James Mbinta:** Writing – review & editing, Writing – original draft, Formal analysis. **G. Eric Jarvis:** Writing – review & editing. **Tomas Jurcik:** Writing – original draft, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A

Male vignette

John is a 25-year-old living at home with his parents. Since starting his new University last year, he has become even more shy than usual and has made only one friend. He would really like to make more friends but is scared that he'll do or say something embarrassing when he's around others. Although John's work is OK he rarely says a word in class and becomes incredibly nervous, trembles, blushes and seems like he might vomit if he has to answer a question or speak in front of the class. At home, John is quite talkative with his family, but becomes quiet if anyone he doesn't know well comes over. He never answers the phone, and he refuses to attend social gatherings. He knows his fears are unreasonable, but he can't seem to control them, and this really upsets him.

Female vignette

Mary is a 25-year-old living at home with her parents. Since starting her new University last year she has become even more shy than usual and has made only one friend. She would really like to make more friends but is scared that she'll do or say something embarrassing when she's around others. Although Mary's work is OK she rarely says a word in class and becomes incredibly nervous, trembles, blushes, and seems like she might vomit if she has to answer a question or speak in front of the class. At home, Mary is quite talkative with her family, but becomes quiet if anyone she doesn't know well comes over. She never answers the phone, and she refuses to attend social gatherings. She knows her fears are unreasonable, but she can't seem to control them, and this really upsets her.

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