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PROBLEM-SOLVING SKILLS AS A PREDICTOR OF SUICIDAL IDEATION AMONG UNDERGRADUATES IN DELTA STATE

***Itebiye, U. E., Prof (Mrs) F. N. Ugoji, Rev Fr (Prof) J. J. Obiunu**

Department of Guidance and Counselling, Delta State University Abraka, Nigeria.

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*Corresponding Author: Itebiye, U. E.

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ABSTRACT

This study investigated problem-solving skills as a predictor of suicidal ideation among undergraduates in Delta State. Three research questions and two hypotheses stated in null form guided the study. The study adopted a correlational research design. The population of the study comprised all undergraduate students in Delta State in the 2023/2024 academic session, with a figure of 28,597. The sample size was 1,023 undergraduate students in Delta State. The stratified random sampling combined with proportionate stratified random sampling technique were used to sample. A questionnaire was used for data collection. The face, content and construct validities of the instruments was established by experts and Principal Component Analysis (PCA) method of factor analysis. The reliability of the instruments was done to determine their measure of internal consistency, through Cronbach Alpha reliability coefficient and found adequate. The data obtained were analysed with Pearson's correlation coefficient of determination and regression statistics. The findings of the study revealed that undergraduates in Delta State have low level of problem-solving skills and suicidal ideation. The finding also showed that there was a significant negative relationship between problem-solving skills and suicidal ideation among undergraduates in Delta State; and that there was no significant moderating impact of gender in the relationship between problem-solving skills and suicidal ideation among undergraduates. The study recommended amongst others that institutions should integrate structured problem-solving and critical thinking activities into course instruction to strengthen students' cognitive and decision-making abilities.

KEYWORDS: Problem-Solving Skills; Suicidal Ideation; Undergraduates; Delta State.

INTRODUCTION

Suicidal ideation is the thought, intent, plan and imagination of an individual to want to commit suicide. It is a common phenomenon among all individuals irrespective of age, gender, ethnicity, race, academic performance or even social status (Centres for Disease Control and Prevention, 2022). Suicidal ideation includes all overt suicidal behaviours and communications such as suicide threats and expressions of wish to die. For one to commit or attempt suicide one has to think about doing so, plan about the execution and even write death notes; and these are ideations. Suicidal ideation usually precedes most planned suicides or suicide attempts, except in rare cases of accidental death. In many situations, individuals who attempt or complete suicide have previously experienced thoughts about ending their lives, often involving contemplation, planning, or expressions of intent such as writing notes or making verbal threats. Suicidal ideation therefore represents an important psychological stage that commonly occurs before a suicide attempt or completion. It reflects a mental state in which an individual develops a desire to die, often arising from a perceived inability to cope with overwhelming life difficulties or persistent emotional distress. According to Chinwendu (2019), suicidal ideation is a known risk factor for suicidal attempt, which in turn increases risk for suicidal death.

Suicidal ideation has become a major public health concern across the world because it often serves as an early warning sign for suicidal behaviour. Nock, et al. (as cited in Nkwuda, et al., 2020) affirmed that between 32% and 48% of young adults have suicidal thoughts at some point in their developmental life stages. The authors also reported that suicidal ideation among first-year college students in the USA indicated that 6% of them had current suicidal ideation. It is strongly believed that suicidal ideation affect many undergraduates and adults all over the nation, Nigeria inclusive. Bauer, et al. (2014) found that 21.6% of their sample reported thoughts of suicide and, in another study; approximately 49% of college students reported a lifetime history of suicidal ideation or attempts. The prevalence of suicidal ideation among young people therefore represents a critical mental health issue that requires urgent attention from researchers, educators, and health professionals.

Thus, these facts make it clear that suicidal ideation and suicide exist in our society. In spite of the increasing rate of suicide among Nigerian Undergraduate students, the issue of suicidal ideation is not yet getting the necessary attention it deserves. Various factors have been given to be associated with suicide or self-destructive behaviour. These factors include depression, frustration, alcoholism, hopelessness, substance abuse, possession of lethal weapons, terminal illness, loss of loved ones, Pre-existing family psychiatric conditions, low school

achievement, betrayal, guilt, crashing of a business, among others. Depression causes feelings of sadness and/or a loss of interest in activities once enjoyed. Other risk factors according to Iyoha, et al. (2020) include hopelessness, lack of social support, mental disorders (e.g. mood, anxiety, substance abuse) and a history of suicidal plans, ideation, and attempts. It seemed however, that variable such as problem-solving skills has been neglected. This gave the researcher serious concerns and reason for the present study which is to examine the problem-solving skills as a predictor of suicidal ideation among undergraduates in Delta State.

Problem-solving skills refer to a set of cognitive and behavioural abilities that enable a person to identify, analyse, and overcome obstacles and challenges in order to achieve a desired outcome or goal. Effective problem-solving skills involve the ability to think critically, creatively, and logically, as well as the ability to collaborate with others and manage one's own emotions and stress levels during the problem-solving process. These skills are important in a wide range of personal and professional contexts, from managing relationships to pursuing academic and career goals.

Several studies have shown that ineffective problem-solving abilities were associated with psychological stress, and suicidal ideation (Abdollahi, et al., 2014). According to Abdollahi, et al. (2015), as problem-solving skills decreased, suicidal ideation and depression considerably increase. Conversely, effective problem-solving abilities were associated with effective emotional awareness, mental health, and life satisfaction. Lack of problem-solving skills may increase the risk of suicidal ideation among undergraduate students in several ways. When students lack the ability to effectively solve problems, they may feel overwhelmed, helpless, and unable to cope with the challenges of college life. This may lead to feelings of hopelessness and despair, which are significant risk factors for suicidal ideation.

Furthermore, students who lack problem-solving skills may be less likely to seek help when they are struggling, which may further exacerbate their distress and increase their risk of suicidal ideation. They may also be more likely to engage in maladaptive coping mechanisms, such as substance abuse, self-harm, or avoidance, which may increase their risk of suicidal behaviour. In addition, students who struggle with problem-solving skills may experience difficulties in academic or social settings, which may further contribute to feelings of isolation, low self-esteem, and a sense of being overwhelmed. This may make it difficult for them to form meaningful relationships and feel connected to their peers, which may also increase their risk of suicidal ideation.

Apart from the role of problem-solving skills, it is also possible for gender to influence the relationship that exists between problem-solving skills and suicidal ideation. For instance, gender may moderate the relationship between problem-solving skills and suicidal ideation among undergraduate students in several ways. Men and women may approach problem-solving differently, with women tending to use more emotional and social problem-solving strategies, while men tend to use more analytical and task-oriented strategies. This may mean that the relationship between problem-solving skills and suicidal ideation may be different for men and women. In view of the above, the aim of this study is to examine problem-solving skills as a predictor of suicidal ideation among undergraduates in Delta State.

Research Questions

The following research questions guided the study:

1. What is the level of problem-solving skills among undergraduates in Delta State?
2. What is the level of suicidal ideation among undergraduates in Delta State?
3. What is the relationship between problem-solving skills and suicidal ideation among undergraduates in Delta State?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

1. There is no significant relationship between problem-solving skills and suicidal ideation among undergraduates in Delta State
2. There is no significant moderating impact of gender in the relationship between problem-solving skills and suicidal ideation among undergraduates in Delta State

METHODS

This study adopted a correlational research design. The population of the study comprised 28,597 undergraduate students in Delta State in the 2023/2024 academic session. The sample size was 1,023 students in Delta State. The stratified random sampling combined with proportionate stratified random sampling technique were used to sample for the study. This is to ensure representativeness and improve the precision of results. A questionnaire was used for data collection in this study. It contains two sections. Section A contains respondent's gender; while Section B contains rating scales, which include Problem-Solving Skills Rating Scale (PSSRS) and Suicidal Ideation Rating Scale (SIRS).

The Problem-Solving Skills Rating Scale was adapted from the Independent-Interdependent Problem-Solving Scale, developed by Cross, et al. (2010) and Problem-Solving Potential

Scale, developed by Kinicki and Williams (2018). A total of 10 items were adapted from the problem-solving scale while a total of 12 items were adapted from the problem-solving potential scale, making a total of 22 items. In order to domesticate it for use in Delta State, some of the items were reworded based on the opinion of the research supervisor, so that it will be more suitable for use at the local level. The items were structured on a 4-point scale, ranging from 1 for never to 4 for always. The Suicidal Ideation Rating Scale was adapted from the Adult Suicidal Ideation Questionnaire (ASIQ) developed by Reynolds (1988). The scale contains a total of 25 items. In order to domesticate it for use in Delta State, some of the items were reworded based on the opinion of the research supervisor, so that it will be more suitable for use at the local level. The items were structured on a 4-point scale, ranging from 1 for strongly disagree to 4 for strongly agree.

The face, content and construct validities of the instruments was established by three experts in Guidance and Counselling Department, Delta State University Abraka. These experts assessed the suitability and adequacy of the instruments for the purpose of the study and their suggestions were applied. After the face validity of the instrument, 100 copies of the questionnaire were administered to undergraduate students in University of Benin (UNIBEN), which is not part of the study area. The data were analysed using Principal Component Analysis (PCA) method of factor analysis. The total cumulative variance was used to estimate the content validity of the instrument. It yielded the following values 58.37% for Problem-Solving Skills Rating Scale; and 77.10% for Suicidal Ideation Rating Scale. The rotated component matrix was used to estimate the construct validity. It yielded the following range of scores 0.51-0.84 for Problem-Solving Skills Rating Scale; and 0.65-0.87 for Suicidal Ideation Rating Scale. The data were also analysed with Cronbach's alpha reliability coefficient to determine if the instruments have internal consistency. It yielded the following coefficients: 0.72 for Problem-Solving Skills Rating Scale; and 0.93 for Suicidal Ideation Rating Scale.

The questionnaire was administered directly to the respondents by the researchers with the help of five research assistants. The researcher was on ground throughout the period. The questionnaire was retrieved immediately. The data obtained were analysed with mean, standard deviation, Pearson's correlation coefficient of determination and regression statistics. Mean and standard deviation were used to answer research questions 1 and 2 at 2.50 criterion mean. Research question 3 was answered using Pearson's coefficient of determination, hypothesis 1 was tested with linear regression while hypothesis 2 was tested with multiple regression statistics. The hypotheses were tested at 0.05 level of significance.

RESULTS

Research Question 1: What is the level of problem-solving skills among undergraduates in Delta State?

Table 1: Mean analysis of the level of problem-solving skills among undergraduates in Delta State.

S/N	Statement	N	Mean	SD	Remark
1	I implement solutions in an effective manner	1023	1.79	1.02	Low
2	I generate two or more possible solutions when dealing with a work problem	1023	1.79	1.13	Low
3	When faced with a difficult personal problem, it is better to decide yourself rather than to follow the advice of others.	1023	1.77	1.10	Low
4	I select a solution only after considering all possible consequences associated with possible solutions	1023	1.75	0.98	Low
5	The possible solutions that I identify reflect an understanding of underlying concepts and issues related to work problems	1023	1.72	0.95	Low
6	I do not like to depend on other people to help me to solve my problems.	1023	1.71	1.08	Low
7	I recognize positive consequences associated with possible solutions to work problems	1023	1.70	0.96	Low
8	I value other people's help and advice when making important decisions.	1023	1.69	0.98	Low
9	I consider the long-term consequences associated with implementing possible solutions	1023	1.68	1.07	Low
10	I establish appropriate goals for resolving work problems	1023	1.68	0.90	Low
11	I consider relevant factors when analysing problems at work	1023	1.68	1.00	Low
12	I readily focus on important problems at work	1023	1.65	1.02	Low
13	I prefer to make decisions on my own, rather than with other people.	1023	1.62	0.98	Low
14	In general, I do not like to ask other people to help me to solve problems.	1023	1.59	0.96	Low
15	I prefer to consult with others before making important decisions.	1023	1.56	0.96	Low
16	I would rather struggle through a personal problem by myself than discuss it with a friend.	1023	1.51	0.91	Low
Average Mean			1.68	1.00	Low
Criterion Mean = 2.50					

Table 1 shows the mean analysis of the level of problem-solving skills among undergraduates in Delta State. The result shows that the mean score ranged from 1.51 to 1.79. The criterion mean is 2.50. This means that undergraduates in Delta State have low problem-solving skills.

The average mean score is 1.68, which is less than the criterion mean of 2.50. This means that generally undergraduates in Delta State have low level of problem-solving skills.

Research Question 2: What is the level of suicidal ideation among undergraduates in Delta State?

Table 2: Mean analysis of the level of suicidal ideation among undergraduates in Delta State.

S/N	Statement	N	Mean	SD	Remark
1	I believe life is too rotten to continue	1023	1.89	0.97	Low
2	I think death will solve the problem	1023	1.84	0.96	Low
3	I wish I had nerves	1023	1.81	0.97	Low
4	I think others are better off	1023	1.80	0.91	Low
5	Am not surprised the way people kill themselves	1023	1.79	1.01	Low
6	I do not know the only way to be noticed	1023	1.74	0.90	Low
7	I thought of killing myself but would not	1023	1.73	0.99	Low
8	I believe life is not worth living	1023	1.73	0.95	Low
9	How easy it would be if I am dead	1023	1.68	0.90	Low
10	I will kill myself if things didn't improve	1023	1.60	0.86	Low
11	I will have, if I could kill myself	1023	1.58	0.84	Low
12	I have the thoughts of how to kill myself	1023	1.58	0.84	Low
13	I know how others would feel if I take my own life	1023	1.50	0.84	Low
14	I have the thoughts of when to kill myself	1023	1.48	0.79	Low
15	I had thoughts of killing myself	1023	1.46	0.76	Low
16	I wish I were dead	1023	1.41	0.74	Low
17	It would have been better if I am not alive	1023	1.39	0.72	Low
Average Mean			1.65	0.88	Low
Criterion Mean = 2.50					

Table 2 shows the mean analysis of the level of suicidal ideation among undergraduates in Delta State. The result shows that the mean score ranged from 1.39 to 1.89. The criterion mean is 2.50. This means that the level of suicidal ideation among undergraduates in Delta State is low. The average mean score is 1.65, which is less than the criterion mean of 2.50. This means that the level of suicidal ideation among undergraduates in Delta State is low.

Research Question 3: What is the relationship between problem-solving skills and suicidal ideation among undergraduates in Delta State?

Table 3: Correlation and coefficient of determination on the relationship between problem-solving skills and suicidal ideation among undergraduates in Delta State.

Variables	<i>r</i>	<i>r</i> ²	<i>r</i> ² %	Decision
Problem-Solving Skills	-0.11	0.01	1.0	Negative Relationship
Suicidal Ideation				

Table 3 shows a Pearson's coefficient of determination, which was used to examine the relationship between problem-solving skills and suicidal ideation among undergraduates in Delta State. The result shows that $r = -0.11$ and $r^2 = 0.01$, which signified the extent of the relationship between the two variables. Problem-solving skills contributed 1.0% to the variance in suicidal ideation among undergraduates in Delta State.

Hypothesis 1: There is no significant relationship between problem-solving skills and suicidal ideation among undergraduates in Delta State

Table 4: Regression analysis of the relationship between problem-solving skills and suicidal ideation among undergraduates in Delta State.

Model	Sum of Square	df	Mean Square	F-ratio	Sig
Regression	1601.510	1	1601.510	12.892	.000 ^b
Residual	126838.667	1021	124.230		
Total	128440.178	1022			
Variables in Equation					
Model	Unstandardized Coefficient		Standardised Coefficient	t	Sig
	B	Std. Error	Beta		
(Constant)	30.521	.791	-.112	38.584	.000
Problem-Solving Skills	-.095	.026		-3.590	.000
α = 0.05, R = 0.112, R-Square = 0.012					
a. Dependent Variable: Suicidal Ideation					
b. Predictors (Constant): Problem-Solving Skills					

Table 4 shows a regression statistics, which was used to examine the relationship between problem-solving skills and suicidal ideation among undergraduates in Delta State. The result shows that the computed F-value is 12.892, $p < 0.05$ level of significance. Hence, the null hypothesis is rejected. This implies that there is a significant relationship between problem-solving skills and suicidal ideation among undergraduates in Delta State. The R^2 value of 0.012 shows that 1.2% variance in suicidal ideation is accounted for by problem-solving skills. The unstandardized regression coefficient (B) for predicting suicidal ideation from problem-solving skills is -0.095. The standardized coefficient (β) is -0.112, $t = -3.590$. Problem-solving skills is significant at an alpha level of 0.05. The associated t-value (-3.590 , $p < .05$) indicates that the negative predictive effect is statistically reliable. The regression model has statistical significant predictive quality. Problem-solving skills

significantly and negatively predict suicidal ideation among undergraduates, but they explain only a small proportion of its variability.

Hypothesis 2: There is no significant moderating impact of gender in the relationship between problem-solving skills and suicidal ideation among undergraduates in Delta State.

Table 5: Multiple regression analysis on the moderating impact of gender in the relationship between problem-solving skills and suicidal ideation among undergraduates in Delta State.

Model	<i>B</i>	Std Error	Beta	<i>t</i>	<i>Sig.</i>
(Constant)	29.476	1.539		19.147	.000
Problem-Solving Skills	-.096	.026	-.113	-3.627	.000
Gender	.622	.785	.025	.792	.429

Table 5 displays the outcomes of examining moderating impact of gender in the relationship between problem-solving skills and suicidal ideation among undergraduates in Delta State. The beta weight of -0.113, with a t-value of -3.627, pertains to problem-solving skills, while the beta weight of 0.025, with a t-value of 0.792, pertains to gender, signifying the extent of relationship between each variable (problem-solving skills, and gender) with suicidal ideation. The results indicate that problem-solving skills is statistically significant at a significant level of 0.05, whereas gender is not statistically significant. Consequently, the null hypothesis was accepted, suggesting that there is no significant moderating impact of gender in the relationship between problem-solving skills and suicidal ideation among undergraduates in Delta State.

DISCUSSIONS

The first finding revealed that undergraduates in Delta State have low level of problem-solving skills. This finding implies that many undergraduates in Delta State are not acquiring or demonstrating the cognitive competencies required to effectively identify, analyse, and resolve academic or real-life problems. Low problem-solving skills indicate gaps in higher-order thinking, such as critical reasoning, creativity, information synthesis, and decision-making. Several factors may explain why undergraduates in Delta State display low levels of problem-solving skills. First, many university programmes still emphasize traditional teacher-centred instructional methods, where lecturers dominate classroom activities while students passively receive information. Such environments limit opportunities for collaborative learning, experimentation, and critical inquiry, all of which are necessary for building

problem-solving competence. Second, insufficient exposure to practical, real-world tasks may hinder students' ability to transfer theoretical knowledge to practical situations.

The above finding agrees with the work of Adebayo and Olatunji (2021), who found that Nigerian undergraduates often demonstrate weak problem-solving and critical-thinking abilities due to teacher-centred pedagogy and limited practical exposure. The finding also aligns with the findings of Eze and Okoro (2022), who reported that inadequate access to instructional resources and poor integration of active learning strategies significantly hinder students' problem-solving development. However, the finding contrasts with the study of Mensah and Frimpong (2023), who observed relatively high levels of problem-solving skills among university students in Ghana when exposed to inquiry-based and collaborative learning methods.

The second finding showed that the level of suicidal ideation among undergraduates in Delta State is low. This finding implies that most undergraduates in Delta State are not experiencing persistent thoughts about harming themselves. A low level of such distress-related thoughts indicates that many students may be benefiting from protective factors such as supportive family relationships, stable peer networks, healthy coping strategies, and positive academic or social experiences. It also implies that although young adults face stressors related to academics, finances, or personal development, a significant portion of the undergraduate population is managing these pressures without developing severe emotional distress.

Several factors may explain why suicidal ideation appears low in this population. Many students in Delta State are embedded within strong cultural and familial structures that emphasize communal support, which can buffer emotional strain. In addition, universities increasingly offer counselling services, peer-support groups, and awareness programmes that encourage help-seeking and provide emotional guidance. Positive religious engagement, which is common among students in the region, may also serve as a protective influence by fostering hope, connection, and meaning. Increased mental-health awareness campaigns in Nigeria over recent years may have also helped students recognize emotional challenges early and adopt healthier coping strategies.

The above finding agrees with the results of Chukwuma and Nwafor (2022), who reported comparatively low levels of severe emotional distress among undergraduates in southern Nigeria due to strong family bonds and peer support networks. It also aligns with the study by Agyapong et al. (2021), which found that social connectedness and campus-based mental-health initiatives significantly reduce emotional vulnerability among university students in West Africa. However, the finding contrasts with the work of Mokoena and Smith (2023),

who observed higher emotional distress levels among students in some South African universities where academic pressure and limited mental-health resources posed greater challenges.

The third finding revealed that there is a significant negative relationship between problem-solving skills and suicidal ideation among undergraduates in Delta State. This finding implies that undergraduates with stronger problem-solving skills are less likely to experience persistent distress-related thoughts. A negative relationship means that as students' ability to analyse situations, generate options, and cope with challenges increases, their emotional vulnerability decreases. This indicates that cognitive competence and coping capacity play an important protective role in students' mental well-being. Undergraduates who can effectively manage academic demands, interpersonal conflicts, or daily stressors appear better positioned to maintain emotional stability.

Several factors may explain why stronger problem-solving skills are associated with lower levels of emotional distress. Students who are able to assess challenges clearly and identify practical solutions tend to feel a greater sense of control over their circumstances, reducing feelings of helplessness. Effective problem-solving also supports healthier coping strategies such as planning, seeking support, and evaluating alternatives rather than becoming overwhelmed by difficulties. Students with good analytical skills may be more resilient when facing academic pressure, financial strain, or social challenges because they can break problems into manageable components. As a result, they experience fewer intense emotional disruptions.

The above finding agrees with the work of Adegboyega and Aremu (2021), who reported that Nigerian students with well-developed problem-solving abilities exhibited lower levels of emotional distress because they approached challenges more constructively. The finding also aligns with Kim and Lee (2022), who found that strong cognitive coping skills among university students in Asia were linked to reduced emotional vulnerability. The finding is further supported by Mensah and Ofori (2023), who noted that students trained in analytical and decision-making skills were better able to maintain emotional stability in stressful academic environments.

The fourth finding revealed that there is no significant moderating impact of gender in the relationship between problem-solving skills and suicidal ideation among undergraduates in Delta State. This finding implies that gender does not significantly change the association between problem-solving skills and emotional vulnerability in the undergraduate population studied. In other words, whether students are male or female, stronger problem-solving skills

are associated with lower emotional distress, and weaker skills are associated with higher vulnerability, but gender does not meaningfully alter this pattern. The implication is that cognitive abilities related to dealing with academic and interpersonal challenges function similarly across genders in this context. This suggests that problem-solving ability is a universal protective factor that contributes to students' emotional well-being regardless of gender differences.

Several plausible explanations can be offered for this result. First, university environments often expose both male and female students to similar academic pressures, social expectations, and adjustment challenges, which may reduce gender-based differences in how they rely on problem-solving strategies. Second, both genders increasingly receive similar academic training and access to problem-solving resources, such as coursework, mentorship, and peer collaboration, which improves their coping skills equally. Additionally, cultural norms in many parts of Nigeria encourage resilience and determination across genders, which may reduce differences in emotional responses to stress.

This finding agrees with the study of Adebayo and Aluko (2021), who found that gender did not significantly influence the relationship between cognitive coping skills and emotional well-being among Nigerian university students. The finding also aligns with Adeyemi and Akintunde (2023), who reported that gender differences were minimal in the way students applied problem-solving skills to manage emotional challenges in higher education contexts. However, this result contrasts with the work of Zhang and Wu (2022), who reported that gender moderated cognitive–emotional relationships in some Asian university settings, with female students showing stronger reliance on coping skills.

CONCLUSION AND RECOMMENDATIONS

Based on the findings of the study, it was concluded that undergraduate students in Delta State experience generally low levels of problem-solving skills and low levels of suicidal thoughts. However, despite these low levels, meaningful relationships exist between these variables. Specifically, stronger problem-solving abilities are linked with reduced vulnerability to harmful thoughts. These relationships appear to operate similarly for both male and female students, as gender did not significantly change how problem-solving skills relates with suicidal ideation.

Based on the findings of this study, the following recommendations were advanced:

1. Institutions should integrate structured problem-solving and critical thinking activities into course instruction to strengthen students' cognitive and decision-making abilities.
2. Universities should sustain supportive counselling services and stress-reduction initiatives to help students manage challenges early and maintain positive emotional well-being;
3. Interventions aimed at improving problem-solving abilities should be designed as gender-inclusive rather than focusing on gender-specific approaches.

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