

Exploring Sociodemographic Predictors of Suicide Ideation and Attempts: Insights from a Mental Health Emergency Hotline Data

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Abstract

Background: Despite its classification as a pressing public health concern, suicide prevention has not garnered the necessary attention in Nigeria. An important step towards achieving this is to identify groups that are at risk.

Objective: This study examines the sociodemographic predictors of suicide ideation and attempts among callers of mental health emergency hotlines in Nigeria from March 2022 to September 2023.

Methods: The study combines retrospective cohort and cross-sectional research designs. Data were gathered from callers to the emergency hotline system, with information recorded in an Excel spreadsheet and subsequently exported to SPSS for analysis. The analysis involved a chi-square test and binary logistic regression.

Findings: Out of the 717 calls received, 512 were connected to mental health care. Out of these mental health-related calls, 43% reported suicide ideation, while 11.7% reported suicide attempts. The chi-square test showed an association between marital status and suicide ideation ($\chi^2 = 9.990$; p -value = .007) and between religious affiliation and suicide attempts ($\chi^2 = 7.573$; p -value = .006). However, the combination of sociodemographic variables like gender, age, marital status, religious affiliation, employment status and region of residence showed that age and marital status were predictors of suicide ideation. Specifically, those aged between 20 – 29 years (AOR = .530, p = .047), 30 – 39 (AOR = .036, p = .036) and 40 – 49 years (AOR = .391, p = .058) were less likely to think about suicide compared to those aged 19 and below. Compared to single people, those who are separated or divorced are less likely to think about suicide (AOR = .302, p = .001). Predictors of suicide attempts included marital status and religious affiliation. Specifically, those who are married are less likely to have attempted suicide compared to those who are single (AOR = .351, p = .024). Christians are less likely to have attempted suicide compared to those who identify as Muslims (AOR = .421, p = .004).

Conclusion: As authorities grapple with the public health challenge of suicide, this research calls for targeted interventions and support mechanisms to address the unique needs of at-risk populations.

Unique contribution: This study has offered empirical evidence for understanding the contributing role of sociodemographic factors on suicide ideation and attempts. This information could be useful to health education experts who seek to plan campaigns to control suicide in developing countries like Nigeria.

Key recommendations: The study recommends more investment in suicide prevention in Nigeria, especially ones targeting vulnerable groups such as adolescents, singles and those who are unemployed. Furthermore, it suggests suicide prevention interventions should incorporate culturally sensitive spiritual or religious components to enhance their effectiveness.

Keywords: Emergency hotline; Mental health; Ideation; Suicide attempt; sociodemographics

Introduction

Globally, mental illness is a challenge to vulnerable populations, and access to treatment continues to be low (Moitra et al., 2023). The illness presents an even greater challenge in low-income

countries due to social factors like poverty and limited access to healthcare providers (Rathod et al., 2017).

Nigeria, a populous and culturally diverse country in West Africa, faces a complex challenge of mental illness. With over 200 million people from six geopolitical zones, broadly divided between north and south, one in every four Nigerians is reported to have one or more mental illnesses (Soroye et al., 2021; Wang et al., 2007). The country grapples with the intersection of traditional beliefs, urbanisation, and the influence of modern lifestyles on mental well-being. The stigma surrounding mental health issues persists, contributing to underreporting and limited access to mental health services. To this end, mental health remains a critical public health concern in Nigeria, with a rising awareness of the need for comprehensive strategies to address the diverse mental health needs of its population (Agency Report, 2022).

Although depression and anxiety are some of the most prevalent mental illnesses in Nigeria, suicide presents a significant impact because of its lethality and intersection with other mental illnesses. The suicide rate in Nigeria stood at 17.3 per 100,000, surpassing the global estimate of 10.5 per 100,000 and Africa's estimate of 12.0 per 100,000 (World Health Organization, 2019). Yet, this may have been underreported due to non-adherence to WHO suicide reporting guidelines, including among media houses (Onoja et al., 2023; Oyetunji et al., 2021). There are many reasons for the poor reporting of suicide, including fear of stigmatisation, cultural and religious sentiments (Ohayi, 2019), and the lack of dedicated suicide toll-free numbers for reporting suicide cases, including suicide ideation and attempts.

There are many reports of factors influencing suicide ideation and attempt, including drug and alcohol use/abuse, psychiatric disorders, physical health problems and socioeconomic problems (Fadele et al., 2024; Oyetunji et al., 2021). Recent evidence suggests that sociodemographic factors such as unemployment status, gender, and marital status act as risks of mental illness (Alegría et al., 2018; Santamaría-García et al., 2020).

Sociodemographic factors play crucial roles in shaping mental health outcomes, including suicide. To that effect, there are calls for clinicians to pay more attention to sociodemographic factors when conducting risk assessments among suicidal patients (Lewitzka et al., 2017). Some of these factors are significantly associated with disability in individuals with psychiatric disorders (Cybulski et al., 2024; Sadath et al., 2017). Therefore, there is a need to consider sociodemographic factors when examining suicide ideation and attempts.

In Nigeria, the youthful population, with a significant proportion falling below 30 years, underscores the importance of understanding the mental health dynamics of this demographic group (Akinyemi, 2023). Urbanisation, migration, and rapid social changes contribute to the challenges faced by young Nigerians, impacting their mental health in unique ways (Demehin, 2022). Urbanization and migration are linked to increased unemployment rates, elevating stress levels among young individuals (Aliyu & Amadu, 2017). Furthermore, religious diversity further adds complexity to Nigeria's mental health landscape (Dowd, 2014). Given the country's religious diversity, understanding the nuanced relationships between various religious beliefs and mental

health outcomes is essential for developing culturally sensitive and inclusive mental health interventions.

The broader socioeconomic context, marked by disparities in access to education, healthcare, and economic opportunities, contributes to mental health inequalities in Nigeria. In other words, people who are uneducated, unemployed, and lack access to health care are more likely to experience poor mental health, leading to mental health inequalities across different groups (Jidong et al., 2021).

Limited mental health infrastructure poses challenges to effective prevention and treatment efforts. At the moment, Nigeria relies on only nine federal neuropsychiatric hospitals to meet the mental health needs of its vast populace (Mbamalu, 2019). Moreover, about 300 psychiatrists, primarily situated in urban areas, attend to the millions of individuals grappling with mental health issues (Ugochukwu et al., 2020). The implications of this are that suicide ideation and attempts must be contextualised within these broader societal challenges.

In navigating these complexities, Nigeria's mental health landscape calls for evidence-based, culturally sensitive interventions that consider the multifaceted nature of mental health outcomes. One such is the mental health emergency hotline, which was implemented by the Suicide Research and Prevention Initiative (SURPIN). The emergency hotline had callers from diverse backgrounds across the 6 geopolitical zones in Nigeria (Mba-Oduwusi et al., 2024). However, the use of this hotline by diverse groups has not been properly examined.

Therefore, there is a need to examine the uses of the hotline, especially concerning the reporting of suicide. Examining the reporting of suicide by different sociodemographic groups can provide insights into which groups are most at risk. This is important because this knowledge can help target interventions for the group at risk. Moreover, it can inform the training and resources available to hotline staff who require the right information to handle suicide cases. Ultimately, this can lead to the development of more robust strategies to prevent suicide and support individuals in crisis (Ogbolu et al., 2020). Addressing suicide through the knowledge of the sociodemographic predictors are crucial step toward suicide prevention that caters to the diverse needs of Nigeria's population. Understanding these intricate connections is paramount for designing targeted interventions and support systems.

Objective

The objective of the study is to examine the influence of sociodemographic factors on suicide ideation and attempts. This involves examining how various sociodemographic characteristics such as age, gender, marital status, religion, unemployment status and region of residence influence the likelihood of reporting suicidal thoughts and attempts.

Methodology

Study Design and Setting

The study employs a combination of retrospective cohort and cross-sectional research designs. These methods have been utilised by other hotline studies (Hoffberg et al., 2020). The retrospective cohort study design relies on data collected from records (Setia, 2016). This study utilises data from a mental health emergency hotline in Nigeria. The hotline was managed by SURPIN, which was established to offer mental health services across all states in Nigeria, including the federal capital territory. To ensure the services are accessible, the hotline operates on a toll-free system with a dashboard for comprehensive call monitoring and analysis. The service providers include MTN and 9mobile. The cross-sectional research design indicates that the data are gathered from many individuals at a single time. In other words, the data from each caller were recorded only once. This research design is also suitable when the aim is to describe the characteristics of the population, such as sociodemographic characteristics.

The emergency hotline has nationwide coverage across all states and regions of Nigeria. SURPIN employed numerous strategies to ensure that people in Nigeria were aware of the hotline. The strategy included consultation with community stakeholders and awareness creation in the media. There was also community sensitisation through social media like Facebook, Twitter, Instagram, and LinkedIn. In traditional media, technical programmes were created on radio to sensitise the public about the awareness of the phone numbers to reach out. Moreover, these activities were done consistently to ensure that community members recalled the number to call.

Study Population

All residents of Nigeria who contacted the mental health emergency hotline during the study period were included in the study. In other words, there were no exclusion criteria since the hotline was open to all individuals in Nigeria, irrespective of age, gender, or geographic location.

Sample Size Determination

The sample size is based on the total number of individuals who contacted the hotline during the study period. However, only those whose calls are connected to mental health services were included in this study. The calls were received from March 2022 to September 2023.

Data Collection

The calls were received by four counsellors who were trained to address mental health concerns during calls. For more intricate cases, these counsellors refer individuals to mental health professionals associated with SURPIN in various states. With guidance from the hotline manager and mental health experts, these professionals ensure that patients receive appropriate care.

In instances where calls are missed due to high demand or other system-related issues, the counsellors make effort to return calls promptly, prioritizing the mental health needs of the

individuals involved. As part of their commitment, these professionals conduct follow-up calls, providing patients with feedback on the care received and outcomes from different care institutions.

The counsellors were provided with a guide to record the data of callers. The data recorded included sociodemographic information like age, gender, marital status, occupation status, religious affiliation and geopolitical zone of residence were collected. Also, callers were assessed for suicide ideation and suicide attempts using a standard checklist.

Ethical Considerations

The SURPIN project ensured that all ethical guidelines for dealing with human subjects were adhered to. For example, callers were treated with respect and courtesy and their details were handled with confidentiality and anonymity. The callers were asked if they were willing for their details to be used for research purposes. Having been informed that the details to be used would not be linked to them, they permitted the counsellors to make use of their details.

Description of Variables

Outcome variables

Two outcome variables were included in the study they are suicide ideation and attempt. Broadly, suicide ideation is used to describe contemplations, wishes, and preoccupations with death and suicide (Harmer et al., 2023). A series of questions related to suicide thoughts, wishes and desires were developed. The counsellors made judgements based on the developed indicators on whether suicide ideation was present or absent in the callers. Samples of the questions were, "Have you been having thoughts of hurting yourself or ending your own life?" "Have there been specific events or situations recently that have been particularly difficult for you to cope with?" etc. The scores were categorised into No and Yes. Suicide attempt was also measured with 'Yes' or 'No' dichotomous questions, where callers were asked if they had ever attempted suicide before. It is important to note that no gold standard approach was known for the study of suicide ideation and attempts (Ghasemi et al., 2015).

Independent variables

The independent variables include age, gender, religious affiliation, occupation status, region of residence and marital status.

Data Analysis

The data was collected using an Excel version of the 2016 checklist, and it was imported into Statistical Package Social Sciences (SPSS) version 25. The analysis involved descriptive and inferential statistics at a p-value of .05. The descriptive Statistics was the initial analysis involving the summary of sociodemographic and suicide characteristics. This was followed with a chi-square test of significance to assess the relationship between sociodemographic factors and suicide behaviours (suicide ideation and attempts). A binary logistic regression analysis was performed to explore associations between demographic factors (age, marital status, religious affiliation, region,

occupation, and gender) and binary outcomes (presence/absence of suicide ideation and suicide attempt).

Findings

Sociodemographic and suicide characteristics

A total of 717 calls were made to the emergency hotline and out of the sum, 512 were made in connection to mental health services. The other calls were removed because they were only confirming whether the number was functional or for enquiries unconnected to mental health. The counsellors received an average of 2 calls daily.

Table 1 shows the sociodemographic characteristics and suicide behaviour of callers of mental health emergency hotlines. In terms of gender distribution, the population comprises 43.9% females and 56.1% males. The majority of individuals fall within the age groups 20 - 29 (54.5%) and 30 – 39 (21.7%). The distribution across other age groups is as follows: 13 – 19 (9.8%), 40 – 49 (6.3%), 50 - 59 (3.7%), and 60 - above (4.1%). The largest proportion of the sample is single (72.9%), followed by married individuals (17.0%) and those separated or divorced (10.2%).

Table 1: Sociodemographic characteristics and suicide behaviour of participants

s/n	Variable	Frequency (N - 512)	Percentage (100)
1	Gender		
	Female	225	43.9
	Male	287	56.1
2	Age		
	19 and below	50	9.8
	20 - 29	279	54.5
	30 – 39	111	21.7
	40 – 49	32	6.3
	50 - 59	19	3.7
	60 - above	21	4.1
3	Marital status		
	Single	373	72.9
	Married	87	17.0
	Separated/Divorced	52	10.2
4	Religious affiliation		
	Islam	156	30.5
	Christians	356	69.5
5	Employment status		
	Unemployed	297	58.0
	Employed	215	42.0
6	Region		
	South	400	78.1
	North	112	21.9
7	Suicide ideation		
	No	292	57.0

	Yes	220	43.0
8	Suicide attempt		
	No	452	88.3
	Yes	60	11.7

The religious distribution of callers indicates that 30.5% identify with Islam and 69.5% with Christianity. The economic landscape is discerned through employment status, revealing that 58.0% of the population is unemployed, while 42.0% are employed. Geographical dispersion is also represented, with 78.1% calling from the Southern part of Nigeria and 21.9% in the Northern part of Nigeria.

On the two factors used to measure suicide behaviour, suicidal ideation is reported by 43.0% of respondents, indicating a notable prevalence. Suicide attempts, on the other hand, are acknowledged by 11.7%, with 88.3% reporting no such attempts.

Table 2: Chi-Square Analysis of Sociodemographic Characteristics, Suicide Ideation, and Attempt

s/n	Variable	Suicide ideation		Suicide attempt	
		Yes	Chi-square	Yes	Chi-square
1	Gender				
	Female	40.5	$\chi^2 = 1.668$	50.0	$\chi^2 = .753$
	Male	59.5	p-value = .197	50.0	P-value = .386
2	Age				
	19 and below	12.7	$\chi^2 = 4.988$	10.0	$\chi^2 = 5.411$
	20 - 29	54.5	p-value = .417	41.7	p-value = .368
	30 – 39	20.5		28.3	
	40 – 49	5.0		10.0	
	50 - 59	3.2		5.0	
	60 - above	4.1		5.0	
3	Marital status				
	Single	78.2	$\chi^2 = 9.990$	80.0	$\chi^2 = 1.833$
	Married	16.4	p-value = .007	11.7	p-value = .400
	Separated/Divorced	5.5		8.3	
4	Religious affiliation				
	Islam	28.2	$\chi^2 = .772$	46.7	$\chi^2 = 7.573$
	Christian	71.8	p-value = .379	53.3	p-value = .006
5	Employment status				
	Unemployed	57.3	$\chi^2 = .041$	58.3	$\chi^2 = .000$
	Employed	42.7	p-value = .840	41.7	p-value = 1.000
6	Region				
	South	77.7	$\chi^2 = .007$	76.7	$\chi^2 = .016$
	North	22.3	p-value = .935	23.3	p-value = .901

Table 2 presents the results of chi-square tests investigating the association between sociodemographic factors and both suicide ideation and attempts. Regarding suicide ideation, a higher proportion of males (59.5%) reported suicidal thoughts compared to females (40.5%), although this difference was not statistically significant ($\chi^2 = 1.668$; $p = .197$). The age group with the highest reported suicide ideation was 20-29 (54.5%), followed by 30-39 (20.5%), and 19 years and below (12.7%), with no significant association found between age and suicide ideation ($\chi^2 = 4.988$; $p = .417$). However, a statistically significant association was observed between marital status and suicide ideation, with more single individuals (78.2%) reporting suicidal thoughts than married or separated/divorced individuals ($\chi^2 = 9.990$; $p = .007$). Religious affiliation did not show a significant association with suicide ideation ($\chi^2 = .772$; $p = .379$), nor did employment status ($\chi^2 = .041$; $p = .840$) or region of residence ($\chi^2 = .007$; $p = .935$).

For suicide attempts, there was no statistical difference between males and females (50%) reporting attempts ($\chi^2 = .753$; $p = .386$). The age group 20-29 had the highest proportion reporting attempts, followed by 30-39, although no significant association was found between age and suicide attempts ($\chi^2 = 5.411$; $p = .368$). Similarly, marital status showed no significant association with suicide attempts ($\chi^2 = 1.833$; $p = .400$), although a significant association was observed for religious affiliation ($\chi^2 = 7.573$; $p = .006$), with a slightly higher proportion of Christians reporting attempts. Employment status and region did not show significant associations with suicide attempts ($\chi^2 = .000$; $p = 1.000$ and $\chi^2 = .016$; $p = .901$, respectively). Nonetheless, a higher proportion of unemployed individuals (58.3%) and those residing in the southern region (76.7%) reported suicide attempts compared to employed individuals and those in the northern region.

Table 3: Sociodemographic determinants of Suicide ideation and suicide attempt

Variables	Suicide Ideation			Suicide attempt		
	AOR	P. Value	CI	AOR	P. Value	CI
Gender						
Female	1	-	-	1	-	-
Male	1.314	.146	.909 - 1.897	.661	.154	.375 - 1.168
Age						
19 and below	1	.333	-	1	.126	-
20 - 29	.530	.047	.284 - .991	.781	.614	.298 - 2.046
30 - 39	.466	.036	.228 - .953	1.928	.214	.684 - 5.437
40 - 49	.391	.058	.148 - 1.032	2.496	.170	.676 - 9.217
50 - 59	.569	.334	.182 - 1.785	1.964	.403	.404 - 9.551
60 - above	.684	.499	.227 - 2.060	1.640	.542	.335 - 8.036
Region						
South	1	-	-	1	-	-
North	1.096	.680	.707 - 1.699	.991	.978	.507 - 1.935
Marital status						
Single	1	.006	-	1	.042	-
Married	.842	.527	.494 - 1.435	.351	.024	.141 - .871
Separated/Divorced	.302	.001	.145 - .629	.422	.123	.141 - 1.263
Religion						

Islam	1	-	-	1	-	-
Christianity	1.184	.421	.785 - 1.785	.421	.004	.233 - .760
Occupation status						
Unemployed	1	-	-	1	-	-
Employed	1.323	.166	.890 - 1.965	.889	.709	.480 - 1.649

In the logistic regression analysis presented in Table 3, the objective is to examine the interplay between different sociodemographic factors and their combined impact on suicide ideation and attempts. On suicide ideation, it is noted that individuals aged 20-29 demonstrated a significant reduction in the odds of experiencing suicide ideation compared to the reference group of 19 years and below (AOR = 0.530, $p = 0.047$, 95% CI = 0.284 - 0.991). Similarly, the age groups 30-39 and 40-49 also exhibited a significant decrease in the odds of suicide ideation, compared to those aged 19 years and below (AOR = 0.466, $p = 0.036$, 95% CI = 0.228 - 0.953; AOR = 0.391, $p = 0.058$, 95% CI = 0.148 - 1.032, respectively). However, no statistically significant associations were observed for other age groups.

Additionally, marital status had a statistically significant relationship with suicide ideation. Married individuals did not show a statistically significant association with suicide ideation. In contrast, those who were separated or divorced are less likely to experience suicide ideation (AOR = 0.302, $p = 0.001$, 95% CI = 0.145 - 0.629) compared to those who are single.

Gender did not exhibit significant associations with suicide ideation. Specifically, males had a non-significant increase in the odds of suicide ideation compared to females (AOR = 1.314, $p = 0.146$, 95% CI = 0.909 - 1.897). Similarly, there were no discernible differences in the odds of suicide ideation based on the region of residence, religious affiliation, or employment status.

On suicidal attempts, it is notable that the age groups 20 - 29, 30 - 39, 40 - 49, 50 - 59, and 60 - above did not exhibit significant relationships with suicide attempts when compared to the reference category of those aged 19 and below. However, it is important to note that while no statistical significance was reached, the odds ratios and confidence intervals (CIs) for these age groups varied, suggesting potential trends that merit further exploration.

Concerning gender, the analysis revealed that males had a lower odds ratio of suicide attempts compared to females (AOR = 0.661, $p = 0.154$, 95% CI [0.375 - 1.168]), although statistical significance was not achieved. In terms of region, no significant differences were identified between individuals residing in the North and those in the South, with an AOR of 0.991, $p = 0.978$, and a 95% CI of [0.507 - 1.935].

Marital status emerged as a significant predictor, indicating that married individuals are less likely to have attempted suicide compared to singles (AOR = 0.351, $p = 0.024$, 95% CI [0.141 - 0.871]). Similarly, those separated or divorced showed a trend toward lower odds, although statistical significance was not reached (AOR = 0.422, $p = 0.123$, 95% CI [0.141 - 1.263]).

Religion proved to be a significant factor, with Christians demonstrating a markedly lower likelihood of suicide attempts in comparison to their Muslim counterparts (AOR = 0.421, $p =$

0.004, 95% CI [0.233 - 0.760]). Finally, no statistically significant difference was found in the likelihood of suicide attempts between employed and unemployed individuals, with an AOR of 0.889, $p = 0.709$, and a 95% CI of [0.480 – 1.649].

Discussion

This study offers insights into the factors associated with suicide ideation and attempts. Based on the findings, nearly half (43%) of the callers are experiencing suicide ideation, but only about one-tenth (11.7%) have attempted suicide. Higher rates have been reported in other studies. For example, 65.6% and 18.4% for suicide ideation and attempt, respectively, were reported in a study of adolescents in Chile (Veloso-Besio et al., 2023). While this shows that most people who thought about suicide never actually go through with it (Shola & Peace, 2022), it also suggests that the number of persons at risk may be high. Moreover, it also shows that the use of emergency hotlines has an important role in the effort to reduce the rate of suicide in Nigeria (Ogbolu et al., 2020).

In the present study, the analysis initially revealed significant associations between marital status and suicide ideation and between religious affiliation and suicide attempts. However, the findings slightly changed when considering the combined influence of multiple sociodemographic variables in a logistic regression analysis. Thus, age and marital status showed a statistically significant association with suicide ideation, while marital status and religious affiliation became significantly associated with suicide attempts. This suggests that even though individual sociodemographic factors are important, combining them captures more of the complexity of real-world relationships and, as such, an improved understanding of the risk factors (Hubbard et al., 2021).

The age-related patterns in suicide ideation reveal a noteworthy protective effect for individuals between 20 – 49 years. Contrastingly, a study reported that age has no statistically significant association with suicide ideation (Cheng et al., 2020). In this study, however, the statistically significant decrease in the odds of suicide ideation in these age groups implies a potential resilience or mitigating factor present during these life stages. However, the findings contrast with that of another study on prison inmates which showed that as age increases, so does suicide ideation (Okeke et al., 2020).

In this study, adolescents were more susceptible to suicide ideation than older adults. The risk among adolescents prompts further exploration into the specific contributing factors. This relates to the findings reported in another study conducted in Nigeria, where suicide activity was more likely for those who are younger (Musa et al., 2021). In another study on Suicide reporting in Nigeria, it was shown that 30.1% of the persons who reported suicide ideation were between 18 and 29 years of age (Olibamoyo et al., 2021). Therefore, investigating the factors that contribute to the increased likelihood of suicide ideation among adolescents could provide valuable insights into how to address this problem.

The findings on marital status and suicidal thoughts provide a deeper understanding of how relationship status can affect mental health. Being married does not seem to be linked to suicidal ideation. In another study, individuals who have never been married are at increased risk of suicide

(McLaren et al., 2015). The result of this study indicates that the influence of marital status on suicidal thoughts may differ based on personal circumstances and the dynamics of relationships. In another study, it was similarly found that being single as well as being separated/divorced increases the risks of suicide ideation (Omary, 2021). Our study provides important insights, but it's crucial to understand that the connection between marital status and mental health outcomes is complex. Factors like relationship quality and social support networks, including a sense of belonging, can have a significant impact (McLaren et al., 2015).

Furthermore, marital status emerges as a significant factor associated with suicide attempts. The finding that married individuals exhibit lower odds of suicide attempts compared to singles suggests a potential protective effect linked to relationships. Marriages are often deeply rooted in cultural and religious traditions and are a pertinent demographic factor influencing social structures and support systems in Nigeria (Soulsby & Bennett, 2015). In a similar study, it was found that being married showed a positive correlation with perceived social support among individuals, regardless of whether they had mental disorders or not (Vaingankar et al., 2020). The findings from this study suggest a potential protective effect associated with marriages, prompting further exploration into the role of familial and spousal relationships in mitigating suicide attempts. At the same time, the elevated suicide risk among singles underscores the need for targeted interventions catering to the mental health needs of this specific demographic.

Religious affiliation also plays a significant role, with Christians showing lower odds of suicide attempts compared to Muslims. This finding adds to the growing body of research highlighting the potential protective influence of religious beliefs on mental health outcomes. In another study, being affiliated with a religious body influenced suicide attempts (Lawrence et al., 2016). Lower odds of suicide among Christians may be connected to the belief that suicide is a sin and a secular crime (Potter, 2021). Understanding how religious practices and beliefs contribute to mental health resilience can have implications for both clinical and community-based interventions.

Implications of the findings

The observed protective effects among individuals aged 20 – 49 suggest a promising avenue for targeted mental health interventions tailored to this age group. By understanding the factors contributing to resilience within these demographics, preventive measures and support systems can be developed to address their specific needs effectively.

Likewise, investigating the presence of co-occurring disorders among single individuals could inform tailored preventive strategies and support services. Conversely, the lower odds of suicide attempts among individuals who are married highlight the potential protective effect of social support within intimate relationships. Integrating relationship support components into mental health programs could enhance protective factors associated with being ever-married, particularly benefiting singles who are at high risk of suicide.

Furthermore, recognising the lower odds of suicide attempts among individuals with a Christian religious affiliation emphasises the potential role of spiritual and religious beliefs in mental health. Culturally sensitive spiritual or religious components could be incorporated into mental health

interventions and support programs to address diverse beliefs and practices, potentially influencing mental health outcomes positively (Gopalkrishnan, 2018).

These findings showcase the complexity of suicide research and call for a more comprehensive, multidimensional approach to suicide prevention. While sociodemographic factors are crucial, suicide prevention strategies should also consider individual differences, life experiences, and the dynamic interplay of biological, psychological, and social influences. Continued investment in research is essential to further understand the underlying mechanisms of observed associations and identify emerging trends and evolving risk factors.

Moreover, these discoveries highlight the importance of examining various factors concurrently to better comprehend the risk of suicide and identify potential intervention strategies. Future studies should aim to elucidate the reasons behind these connections and explore additional factors contributing to suicidal ideation and actions. By acknowledging and addressing the complex interactions between sociodemographic factors and mental health outcomes, interventions and preventive measures can be tailored effectively to mitigate suicide risks and promote overall well-being within diverse populations.

Study Limitations

The study is reliant on self-reported data during hotline calls, which may be subject to recall bias or underreporting. Secondly, the study is confined to individuals who reached out to the mental health emergency hotline and may not capture those who did not seek help. Future studies may target populations in remote areas who could not access the hotlines.

Conclusion

The results of this research provide insights into the sociodemographic factors predicting suicide ideation and attempts. The study highlights the protective effects seen in specific age groups, as well as the impact of marital status and religious affiliation. These findings offer important considerations for mental health support and interventions. Future studies can further explore the reasons behind these connections to develop more precise and successful approaches to preventing suicide. Mental health emergency hotline implementers may be able to improve the delivery of mental health care through the findings of this study.

Conflict of interest

The authors declare that they have no conflict of interest.

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