

Psychological autopsy in community

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Abstract: *Suicide remains a critical public health issue globally, with significant implications in Uganda, particularly among youth. This study investigates the incidence of suicide and suicidal tendencies within the community, focusing on individuals in security forces who died by suicide over the past year. Utilizing psychological autopsy methodologies, we explore the relationship between mental health disorders and suicide, alongside the social implications of these tragedies. Data collected from interviews with next-of-kin of suicide victims reveal that mental health issues such as schizophrenia, bipolar disorder, and PTSD are significant risk factors. Findings indicate that individuals with these disorders have notably higher suicide rates, while depression and anxiety show less correlation. The emotional impact of suicide extends beyond the individual, affecting family and community dynamics, often leading to collective grief and stigma. This study highlights the urgent need for targeted mental health interventions and policy reform in Uganda to address the rising rates of suicide and improve community awareness. By bridging gaps in existing research, particularly in low-resource settings, the findings aim to inform evidence-based strategies for suicide prevention and mental health care prioritization.*

Key words: Psychological autopsy and community

1.0 Introduction

Suicide is a leading cause of death worldwide and the situation is becoming clear amongst the various categories of the population. As such, there is an urgent need to advance our understanding of suicide among the members of the population.

1.1 Background to the study

Death via self-harm with the intention of dying is known as suicide yet when someone hurts oneself with the intention of ending their life but does not pass away as a result of their acts, it is called a suicide attempt. Numerous factors can either raise or lower the risk of suicide. Violence and other types of harm are linked to suicide. For instance, those who have been victims of violence—such as sexual assault, child abuse, or bullying—are more likely to commit suicide. Suicidal ideation and actions can be reduced by having easy access to healthcare and a network of family and community support.

Suicide was ranked as the 15th biggest cause of years of life lost (YLLs) in 2019 by the Global Burden of Disease Study (GBD), up from the 18th position in 2010 (Vos et al., 2020). With about 800,000 suicide deaths worldwide, suicide is a serious public health issue (Ferrari et al., 2014). It also impacts people of all ages, including kids, teens, and senior citizens. 58% of all suicide fatalities take place in people between the ages of 15 and 49, highlighting the significant number of years of potentially productive life lost (Vos et al., 2020).

Significant life events and difficult life changes might be triggers for suicide in later life. Suicide fatality rates are significantly higher in older age groups than in younger ones, according to GBD 2019 statistics (24.53 per 100,000 for those over 70 and 14.25 per 100,000 for those between 50 and 69 years vs. 11.19 per 100,000 for those between 15 and 49 years). Men's suicide mortality rate has been steadily higher than women's over time (13.5 per 100,000 males vs. 6.1 females in 2019), indicating sex-specific disparities in mortality from suicide as well (Vos et al., 2020).

Along with clearly prevalent suicide techniques like intoxication, hanging, and burning themselves, India and China continue to report the highest rates of suicide deaths worldwide (Jena et al., 2024). After Europe and South-East Asia, the African region has the third-highest suicide rate, with 12.0 suicides per 100,000, higher than the global average of 10.5 suicides per 100,000. In 2018, there were 4.6 suicides for every 100,000 individuals in Uganda. Sadly, no extensive research has been done to establish the prevalence of suicide, its risk factors, or ways to prevent it.

1.2 Statement of the problem

Although suicide rates in Uganda decreased from 15.91 per 100 000 population in 2000 to 9.9 per 100 000 in 2017, Kaggwa et al. (2021) note that the rates remained highest among the youth and based on their analysis, the failure to have a sound policy on this issue means that it is meant to escalate further. Even with reports indicating a higher prevalence of suicide amongst the youths, it is not documented whether there are differences in gender, social economic status, education level and residence. Secondly, whereas the effects of suicide are communitywide, there exists limited empirical evidence on the same in Uganda as a large share of the studies are based on meta-analyses of other scholars' qualitative researches about the same. This creates a gap that limits the success of the existing policies to minimize the prevalence of suicide in Uganda. The need to resolve the issue calls for the need to conduct psychological autopsy with individuals of the security forces. Psychological Autopsy (PA) has become widespread to the point of being applied in many diverse fields yet it is difficult to identify a standard model. In this systematic study, we will focus on PA studies assessing the major risk factors for suicide in the community.

1.3 Objectives

- i. To investigate the incidence of suicide and suicidal tendencies amongst members of the community
- ii. To investigate the relationship between mental health illness and suicide and suicidal ideations in the community

- iii. To examine the effects of suicide and suicidal ideation amongst members of the community

Justification

In Uganda, suicidal tendencies are on the increase and the rate of suicide related mortality is higher than most diseases. Secondly, there has not been deliberate policy emphasis to increase awareness about suicide because of the fact that little has been done to study suicide in detail which creates funding and knowledge gaps. Carrying out psychological autopsies will improve the knowledge base.

Incidence of suicide in the community

According to the World Health Organization (WHO), approximately 700,000 people die by suicide each year, making it one of the leading causes of death worldwide. The global suicide rate is estimated at 9.0 per 100,000 population annually (WHO, 2024). However, this rate varies significantly by region, country, and demographic factors such as age, gender, and socioeconomic status. While African countries generally have lower suicide rates compared to regions like Eastern Europe or Asia, suicide still remains a significant public health issue. The WHO estimates that in Africa, suicide rates range from 2 to 5 per 100,000 people, significantly lower than the global average of 9 per 100,000. Based on WHO (2024) estimates, Lesotho, Eswatini and South Africa are among the countries with the highest rates of suicide in the communities.

Suicide rates in East Africa tend to be lower than the global average, which is approximately 9 per 100,000. In East African countries, the rates generally range from 2 to 7 per 100,000 population annually (WHO, 2024). However, the rates are underreported in many countries due to stigma, lack of mental health awareness, and cultural factors surrounding suicide.

The suicide rate in Uganda is estimated at 7–10 per 100,000 people annually, although it is likely higher due to significant underreporting. Suicide rates in Uganda have been rising, particularly among adolescents and young adults (WHO, 2024; MOH, 2024). In some reports, the rate is higher in urban areas compared to rural ones, reflecting the pressures faced by young people in cities, such as economic hardship, academic stress, and social isolation.

The vast majority of suicide risk research has been conducted in Western, high-income countries. There is a need for more research on how cultural norms, beliefs, and religious factors impact suicide risk in different populations. Secondly, while suicide rates tend to be higher in rural areas, there is limited research on why this is the case. In rural areas, factors such as limited access to mental health services, social isolation, and cultural attitudes toward mental health may play a more significant role.

Risk factors for suicide in the community

Mental Health issues have been mooted and empirically validated as the key risk factor for suicide in the community (Baglioni et al., 2016). Research has indicated that people with depression may feel hopeless or trapped and could develop suicidal ideations. In addition, chronic anxiety can lead to feelings of overwhelming distress and suicide in some cases (Kulak-Bejda et al., 2021). Further, research has showed that extreme mood swings of bipolar disorder can increase vulnerability to suicidal thoughts, especially during depressive episodes (Hofstra et al., 2020; Dunkley et al., 2018). Relatedly, studies have indicated that people with schizophrenia may experience paranoia, delusions, or a disconnection from reality, which can increase the risk of suicide (Hofstra et al., 2020; Dunkley et al., 2018).

Lastly, a number of research articles have proved that the Individuals who have experienced trauma may struggle with emotional regulation and may contemplate suicide (Baglioni et al., 2016). Related with mental health is social isolation as people who feel isolated or disconnected from family, friends, or their community are at higher risk and without strong social networks, individuals may feel like they have no one to turn to when struggling emotionally (Zeppegno et al., 2019). Whereas mental health issues and isolation have been documented to be a crucial risk factor for suicide, the existing research has not showed whether there are age specific differences in suicide by the various mental disorders, creating a gap the current study seeks to bridge.

Other scholars have indicated that substance abuse often co-occurs with mental health disorders and can lower inhibitions, making suicidal behavior more likely (Calati et al., 2019). They add that excessive alcohol consumption can amplify feelings of hopelessness and impulsivity, increasing suicide risk (Zatti et al., 2017). Another different factor for suicide is family history increases the risk in subsequent generations especially with cases of abuse or neglect. Relatedly, a history of suicide attempts is one of the strongest predictors of future suicide and based on this view, a person may be struggling with ongoing emotional pain (Torok et al., 2020). In some communities, the suicide of one individual may lead to others attempting or completing suicide, especially in tightly-knit communities or among people who share similar life experiences.

Age has also been included as one of the drivers of suicide because the teenagers face unique pressures, including bullying, academic stress, and family conflict, which can increase their risk of suicide. On the other hand, older adults, especially those who are socially isolated, have chronic health problems, or experience the loss of loved ones, may be at higher risk (Steeg et al., 2020).

While numerous risk factors have been identified in various studies, there remain significant gaps in understanding how these factors operate in different communities, populations, and contexts. Much of the existing research on suicide risk factors is drawn from Western, high-income countries. There is limited research on how suicide risk factors manifest in non-Western or low-income settings such as rural Uganda, particularly in communities with unique cultural attitudes toward mental health and suicide.

Effects of suicide and suicidal ideation

The emotional impact of suicide on loved ones is immense and negative. The loss of a loved one to suicide can leave family and friends devastated. The grieving process may be complicated by feelings of guilt, anger, confusion, and a sense of shock, especially

if the person did not show signs of distress (Mackin et al., 2017). Family members and close friends often wrestle with feelings of guilt, thinking they could have prevented the suicide or wondering if they missed signs of distress. The stigma around suicide can make it even more difficult for survivors to grieve openly or seek support. In some cultures or communities, suicide is highly stigmatized, leading to social isolation for those left behind. Research (Calati et al., 2019; Baglioni et al., 2016) has also showed that loved ones may feel anger, especially if they feel that the person was not open about their struggles (Leigh-Hunt et al., 2017). There can also be frustration over not knowing how to help or being unable to prevent the tragedy. Suicide can lead to traumatic experiences for family members and friends. Survivors may suffer from post-traumatic stress disorder (PTSD), experiencing flashbacks, nightmares, and extreme emotional distress after the death.

Those who survive the loss of a loved one to suicide are at higher risk for developing depression, anxiety, and even suicidal ideation themselves and the emotional impact can lead to long-term mental health challenges (Jorm et al., 2018). Suicide contagion can occur, especially in communities where suicide is perceived as a way of dealing with emotional pain. Survivors of suicide loss, particularly those with pre-existing mental health issues, are at a higher risk of suicidal thoughts or attempts.

Suicide can create a sense of collective grief and trauma in the community, particularly if the individual was well-known or if the death occurred in a close-knit group (Hofstra et al., 2020; Dunkley et al., 2018). The stigma surrounding suicide may prevent open discussion in communities, leading to a culture of silence. This can make it harder for others to seek help or talk openly about their own mental health struggles (Haesebaert et al., 2020). If suicide occurs in a school setting, it can have a particularly damaging effect on students, potentially leading to increased rates of self-harm, suicidal ideation, and emotional distress. Schools and communities may need to focus on mental health education and trauma recovery.

While there are many cross-sectional studies on the immediate impact of suicide, there is a lack of long-term, longitudinal research that tracks the mental, emotional, and social outcomes of suicide survivors over the years. While there is evidence of suicide clusters (groups of suicides that occur in close succession or in the same community), the underlying psychological and social mechanisms that drive this contagion effect are still not well understood.

METHODS

Cases of suicide were individuals in the security forces who died by suicide in the last 12 months and the population included the relatives of those that committed suicide in the stated period. We interviewed next-of-kin (e.g. close family member) for the eligible suicides during this period. To this end, the population was >10,000 per category and hence the sample was at least 50 per category (Krejcie & Morgan, 1970) and hence a target of at least 50 respondents.

Given that the purpose of psychological autopsy studies is to identify psychological and contextual risk factors beyond those easily identified via administrative/health records, a first set of controls was selected to match suicide decedents on a wide range of known socio-demographic and other history variables using propensity score matching (Rosenbaum & Rubin, 1983).

We developed a structured psychological autopsy interview using a measure-development procedure that involved:

- (a) Extensive literature reviews of prior autopsy studies,
- (b) Review of measures used in these prior studies,
- (c) Following recent consensus statements regarding interview content and procedures for autopsy studies and,
- (d) To the extent possible, mirroring the questions asked of family members to facilitate comparisons across informants.

As is the case in psychological autopsy studies, informants were interviewed about either the deceased (cases) or living (controls) next of kins identified for this study. In total, the interview included 6 sections that assessed a broad range of potential risk and protective factors for suicide (e.g. injuries, life stressors, social/unit support). Finally, the data collected was based on binary Face to face interviews were conducted by a trained interviewer who were experienced quantitative investigators. The desirable professional interviewer has gone through a series of General Interviewer Training courses as well as refresher courses in different time intervals.

The sample was weighted to adjust for selection bias. Cases were adjusted to match the population of all deaths in the security forces whereas controls were adjusted to match the general security forces population. Because controls were selected using two different criteria: 12 months ideation or propensity score, weights were separately calculated for method of selection.

The steps involved in creating post-stratification weights included:

- 1) Using demographic related variables in a forward stepwise regression model to choose important variables predicting participation in the study,
- 2) Modifying weights to reflect the population distribution on the regression variables,
- 3) Trimming large weights, and
- 4) Normalizing the weights to reflect original sample size counts.

We compared cases and controls on socio-demographic and forces history variables using Wald χ^2 -tests. Odds Ratios (ORs) and 95% confidence intervals were also be estimated. All significant socio-demographic variables were included as covariates in all subsequent analyses. We used multivariate logistic regression analyses to predict suicide case status (no/yes) entering all mental disorders, and number of disorders present, simultaneously. These analyses were completed separately for lifetime and 30-day diagnoses. Finally, the study examine differences between case and controls on prior history of suicidal thoughts and behaviors in a separate series of logistic regression analyses. Coefficients were exponentiated in logistic models to create ORs with 95% confidence intervals. The study hence reported findings separately for next-of-kin and supervisor informants because they have access to

information about different types of risk factors (e.g. next-of-kin about lifetime risk factors and supervisors about past 30 days) and because of the differing clinical implications of knowledge about risk factors that were identified by next-of-kin.

RESULTS

Based on the methods adopted above, it was evident that for a sample of 74 respondents (38 next of kin) and 36 other individuals on 12 suicide cases, the following quantitative results were obtained.

Table 1 Mental health issues as risk factors for suicide

		B	S.E.	Wald	df	Sig.	Exp(B)
Mental health issues	DEPRESSION	0.328	0.719	0.324	1	0.617	0.221
	BIPOLAR	1.228	0.344	12.744	1	0.000	0.293
	ANXIETY	0.432	0.653	0.434	1	0.51	0.651
	SCHIZOPHRENIA	1.174	0.363	10.465	1	0.001	3.236
	PTSD	2.068	0.299	47.877	1	0.000	7.906
	PERDISORDER	1.694	0.334	25.698	1	0.000	0.184
	Constant	0.673	0.225	8.962	1	0.003	1.961

a. Variable(s) entered on step 1: depression, bipolar, anxiety, Schizophrenia, Psychosis, Personality Disorder

From the table above, it is evident that four of the six mental health issues were responsible for suicide cases in Uganda. First, depression and anxiety were insignificant predictors. It is revealed that even when it is a significant variable ($p < 0.05$), those with bipolar disorders were 29.3% more likely to commit suicide than those without. However, the results posit that schizophrenia (3.236; $p < 0.05$), PTSD (7.906; $p < 0.05$), Personality disorders (0.184; $p < 0.05$) were 3.23 times, 7.9 times and 18.4% times most likely to commit suicide respectively.

Schizophrenia

From the key informants, it was described that most of the deceased always experienced cases of hallucinations, delusions, and disorganized thinking. From a professional point of view, suicide from schizophrenia occurred because these individuals could have experienced a host of depressive episodes or dysphoria, which created feelings of hopelessness and helplessness. This sense of despair, combined with the cognitive distortions caused by schizophrenia, could have led to long-term suicidal thoughts and behaviors and finally the act. Based on one of the Next of kin (NOKs), the deceased "...would always talk alone...sometimes they would think of how good it would be if they were goats or even being a sack on a weighing scale...". The NOK however noted that they failed to decode the message until it was too late. This highlights the fact that these mental illnesses are evident in society but lack of awareness drives suicidal ideation and cases to unmanageable levels.

Bipolar Disorder

From the key informants, it was described that most of the deceased always experienced periods of intense energy, impulsivity, and elevated mood (mania or hypomania) to episodes of deep sadness, hopelessness, and low energy (depression) and this description matched one of Bipolar disorders. Based on professional evidence, bipolar disorders can be a risk factor in a number of ways as described. First, during depressive episodes, individuals with bipolar disorder could have experienced extreme feelings of hopelessness, helplessness, and worthlessness which could have led the suicide victims to believe that their situation is unbearable and that there is no way out except through suicide.

In manic states however, the victims could have had grandiose delusions (e.g., believing they have special powers or abilities) that could have led them to feel invulnerable or even immune to consequences. On the other hand, paranoid delusions or feelings of persecution during mania could have lead them to consider suicide as a way to escape perceived threats or insurmountable pressures. Based on one of the Next of kin (NOKs), the deceased "...would be very happy and active now and in the next five minutes...especially when one tells them to calm down, they suddenly become sad and feel dejected...". The NOK however noted that the thought it was normal and could not report the case as it had been the case for more than 10 years.

PTSD

From the key informants, two cases of suicide were related to traumatic events one being a teenager beaten and stripped naked for getting pregnant while in school and the other being a man whose wife was raped and killed in his presence. The emotional pain caused by reliving the trauma, especially when it feels like there is no escape, could have led the suicide victims to feel overwhelmed and trapped and this sense of being stuck in the past could have made it difficult for them to imagine a better future, contributing to feelings of hopelessness (a major predictor of suicidal ideation and suicide). Based on one of the NOKs, the deceased "...always felt being at fault for the event... every time, he would blame himself...". Whereas NOKs realized that something was wrong, they could not seek help because they did not know where to seek help from and the nearest mental clinic was over 100km away.

DISCUSSION AND CONCLUSION

Our findings support the notion that MDs are significant suicide risk factors. Even after controlling for methodological variables, this connection persisted. Our findings showed that PTSD, schizophrenia and personality disorders were significantly associated with suicide risk. In line with meta-analytic findings from earlier research examining suicide mortality caused by MDs, the selection of illnesses achieving statistical significance was made (Baxter et al., n.d.; Chesney et al., 2014; Darvishi et al., 2015; Hawton et al.,

2013). Anxiety disorders were not found to be a significant predictor of suicide mortality in a previous review on anxiety as a risk factor for suicide (Bentley et al., 2016). This might have resulted from the inclusion of research that evaluated anxiety disorders using symptom scales, which are more appropriate for screening or symptomatic assessment than for making a clinical diagnosis. Second, the combined risk of suicide might have been reduced by include each specific anxiety condition. Additionally, reviews might exclusively address particular illnesses (da Silva Costa et al., 2015). They do not include mental comorbidity, which is a significant contributor to and maybe a catalyst for suicide risk, even though they offer a useful profile of disorder-specific suicide risk. For information from samples with mental problems, reviews may also consult national treatment registers (San Too et al., 2019).

Conclusively, physicians are linked to a higher incidence of suicide. The degree of study-reported risk may differ according on the illnesses studied and the study technique, as this synthesis analysis demonstrates. Therefore, in public reports on aggregated evidence, it is crucial to take study quality and methodological choices into account. To more accurately measure the evidence for MD burden and suicide risk in low- and middle-income environments, more research is required. These initiatives will help legislators formulate evidence-based suicide prevention plans and elevate mental health care to a high priority on their agendas.

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