

Suicide among Older Adults in Gunungkidul, Indonesia

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Abstract

Background: Older adults are vulnerable to suicidal crises due to decreased cognitive, health and psychosocial functions. Gunungkidul is a regency in Indonesia that has a demographic structure with an increasing older population and a high prevalence of suicide. This study aimed to determine the characteristics of suicide among older adults in Gunungkidul, Indonesia, from 2012 to 2022.

Methods: This was a retrospective analytical descriptive study examining forensic reports of suicide from the Gunungkidul Resort Police, Indonesia, from 2012 to 2022. A total of 388 suicide reports were included, with 186 of them pertaining to older adult suicides. Demographic data and suicide methods were collected using descriptive statistics, and Chi-square analysis was performed to examine any associations or differences in the data.

Results: Suicide cases in older adults were more dominant (55.03%) in all suicide cases in Gunungkidul. Hanging was the most prevalent method of suicide (96.2%) among older adults, and there was no difference in suicide methods between males and females ($p=0.35$). Furthermore, the older adults consisting of males ($n=120$) were more dominant than females ($n=66$), however, there was no significant difference across the age group in the youngest-old (60–69 years), the middle-old (70–79 years), and the oldest-old (≥ 80 years) age group ($p>0.01$).

Conclusions: The prevalence of suicide in older adults in Gunungkidul exceeds other productive age groups, mostly males, and hanging is the most predominant method. Addressing suicide among older adults in Gunungkidul requires a holistic approach by considering individual and societal factors, which necessitates immediate attention to their health, psychological, and socio-economic needs through targeted interventions.

Keywords: Older adults, Gunungkidul, suicide

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Introduction

Suicide among older adults is a catastrophic health and social crisis in the world. Despite comprising only 12% of the world's population, older adults account for 18% of all suicides.¹ There is a correlation between increasing age and the risk of suicide; this trend even increases rapidly at the age of 60 years and reaches its highest level after 75 years.² The correlation between increasing age and suicide susceptibility peaks at age 94 for males and 89 for females.³ It is not surprising that the World Health Organization (WHO) predicts

that nearly half (42%) of global suicides are committed by the older adult population.⁴

However, despite these concerning statistics, research and discourse surrounding suicide tend to prioritize younger demographics,⁵ leading to a dearth of attention to the unique challenges faced by older adults. Compared to youths, information about older adult suicides is still limited. Older adults are generally more susceptible to various health and psychosocial problems related to declining health and physiological functioning, psychological capacity, and social life.⁶ Older adults are also prone to experiencing social

exclusion and loneliness, which can predispose them to mental health problems and suicidal tendencies.⁷ Several studies have identified various risk factors for suicide in older adults, including loss of a spouse or loved ones, loneliness, family ties and religious group affiliation, loss of economic and social status, as well as physical and mental illness.^{2,8}

Gunungkidul is a regency in Indonesia which has hilly and karst topography, located in the Province of the *Daerah Istimewa* Yogyakarta, Indonesia. The administrative centre is the town of Wonosari. In 2022, the population of Gunungkidul is predicted to reach 770,883 people with a population density of 519.0 people/km².⁹ Gunungkidul has a higher proportion of older adults compared to the national average. This is evident from the people aged 60 years and over which is more than 21.2%, higher than the national average of only 10.2%.¹⁰ With the increasing aging population, the phenomenon of suicide in older adults has become an imperative thing to observe to anticipate and address potential mental health challenges. The increase in the number of older adults in Gunungkidul is considered to have two sides, as a sign of increasing welfare and as an alert to ensure the fulfillment of older adults' rights to access health and social security services.

Although significant public attention to suicide, there remains a crucial gap in understanding and addressing the specific

risks faced by older adults. In Indonesia, many studies have overlooked the vulnerability of older adults to suicide, resulting in a scarcity of evidence on this critical issue. Suicide among older adults can manifest in various ways, influenced by factors such as age, gender, and socio-cultural context. Therefore, this study aimed to shed light on the characteristics of older adult suicide in Gunungkidul, Indonesia, by examining data from police reports. Insights gained from this analysis are expected to help inform targeted support strategies for this vulnerable demographic group.

Methods

This was a retrospective analytical descriptive study conducted in April 2023 using secondary data in the form of suicide case reports in 2012–2012 obtained from the Gunungkidul Police Resort, Indonesia. A total sampling method was employed. This study only focused on suicides committed by older adults, excluding any analysis of suicide attempts.

Data on suicide, encompassing demographic data, methods employed, and initial reason was analyzed by ensuring the confidentiality of sensitive information. The data collection acquired was gender, age, and specific methods used in each suicide case. The older adult population was divided into three distinct groups, namely the youngest-old (60–69 years), the middle-old (70–79 years),

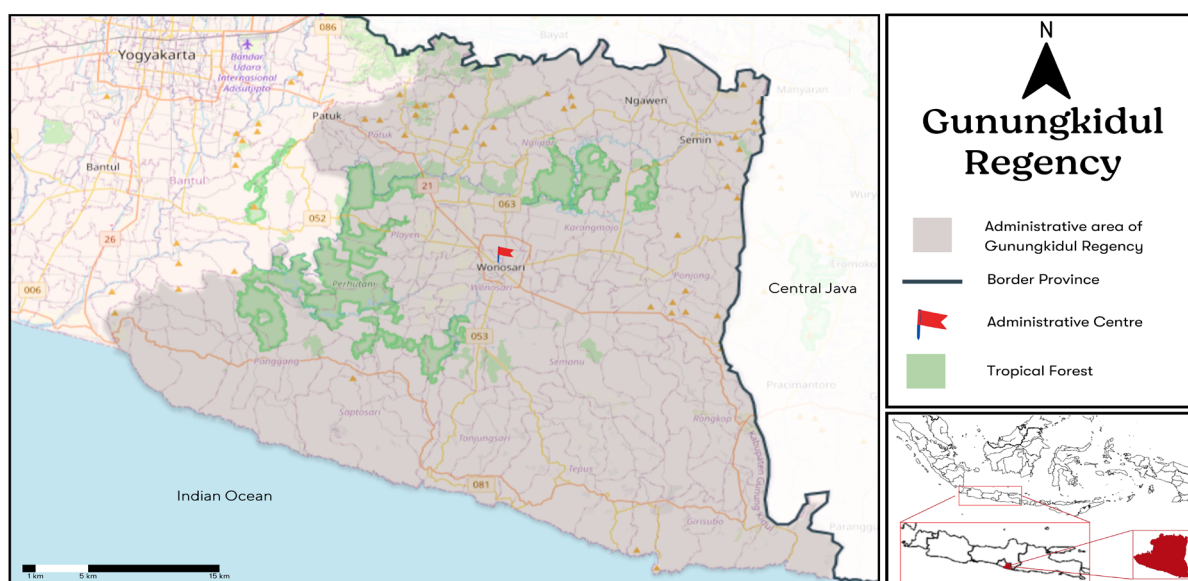


Figure 1 Map of Gunungkidul Regency, Indonesia

Table 1 Suicide Characteristics in Gunungkidul from 2012 to 2022

Characteristics	n	%
Age		
Adolescent (14–19 years)	5	1.5
Early adulthood (20–35 years)	39	11.5
Adulthood (36–59 years)	108	32.0
Older adults (≥60 years)*	186	55.0
Gender		
Male*	225	66.6
Female	113	33.4
Suicide methods		
Hanging*	322	95.3
Jumping	8	2.4
Poisoning	8	2.4

Note: * Most frequency

and the oldest-old (≥80 years).¹⁰

Premature reasons for suicide, such as debt, chronic illness, being alone, and bereavement were excluded due to the lack of robust psychological autopsy evidence. This study has obtained approval from the Gunungkidul Police and followed the principles of research ethics in the Declaration of Helsinki and its addendum. This study protocol was approved by the Medical and Health Research Ethics Committee, Gadjah Mada University-Dr. Sardjito Hospital (No. KE-FK-0546-EC-2023).

Data analysis and presentation were conducted using Microsoft Excel 2016 and Jeffreys's Amazing Statistics Program (JASP) 0.12.2.0. Descriptive statistics, including distribution, frequency, and percentage, were employed to analyze descriptive data, such as gender and age. Additionally, a Chi-square test was performed to further analyze the data.

Results

From 2012 to 2022, there were a total of 340 cases of suicide in Gunungkidul Regency.

However, two cases were excluded due to incomplete information, leaving a total of 338 recorded cases, comprising 225 males (66.6%) and 113 females (33.4%), resulting in a gender ratio of 2:1 for male: female, respectively. The mean age of suicide incidence was 60.7 years old (SD 18.9 years), ranging from 14 to 100 years.

The most prevalent suicide was in the older adult group (n=186; 55%), followed sequentially by adulthood (n=108; 32%). The majority of suicides were committed by the hanging method (n=322; 95.3%) (Table 1).

Interestingly, suicide in older adults increased gradually over the ten years, with the year 2021 recording the highest frequency of suicides (n=39 cases), while the lowest frequency was observed in 2014 (n=20 cases) (data not shown).

As depicted in Table 1, the data frequency distribution also showed that all age categories tended to use hanging as the primary method for suicide. Subsequent analysis indicated variations in suicide method preferences among different age groups including

Table 2 Gender and Suicide Methods among the Older Adults in Gunungkidul

Ages	Gender		Total	p*	Methods			Total	p*
	Male	Female			Hanging	Jumping	Poisoning		
Youngest-old (60–69 years)	28	19	47		43	1	3	47	
Middle-old (70–79 years)	46	22	68	0.67	66	1	1	68	0.32
Oldest-old (≥80 years)	46	25	71		70	0	1	71	

Note: Chi-square test, significant if p<0.01

adolescent, early adulthood, adulthood, older adult ($p < 0.01$), particularly with the older adult category showing a tendency towards utilizing hanging as the chosen method. However, there were no discernible differences in suicide methods between males and females ($p = 0.35$).

Further analysis revealed no significant differences in the older adult age category between males and females who committed suicide ($p > 0.67$). Additionally, there were no variations within the older adult age categories concerning the method employed ($p > 0.32$) (Table 2).

Among the older adults, the highest incidence of suicide occurred in the oldest-old group (38.2%, $n = 71$), followed by the middle-old group (36.5%, $n = 68$), and the youngest-old group (25.3%, $n = 47$). Although males dominated the number of suicides in each older adult group, however, there was no significant difference in suicide rates between genders within each older adult group.

Hanging was the predominant method in all three groups, accounting for 96.2% (179 cases) of older adult suicides; whereas poisoning and jumping, in contrast, were less frequently chosen alternatives.

Discussion

This study revealed a persistent increase in suicides rate among older adults compared to other age groups. This finding aligns with previous data stating that Gunungkidul is one of the areas in Indonesia with a high suicide rate, and for decades has shown no signs of diminishing from year to year.¹¹ Although poverty and geographic isolation are often implicated as contributing factors to this high suicide rate, we argue that attributing it solely to these factors is premature. Therefore, it is crucial to include discussions of both individual (micro) and societal (macro) needs when evaluating why older adults are more prone to suicide.

Contrary to the global trend reported by the WHO, where most suicides occur in individuals under 45 years old,⁴ our result reveals a different pattern in Gunungkidul. It was found that 55% of suicides were committed by older adults, highlighting their significant prevalence in suicide cases over the past decade. Previous studies have suggested various factors contributing to older adult suicide, including feelings of loneliness, poverty, health issues, psychiatric conditions, and barriers to accessing healthcare services.^{12,13} Additionally, societal pressures

and obligations exacerbate distress among the older adult population.¹⁴ In the rural Javanese culture prevalent in Gunungkidul, there is a strong aspiration among older adults not to burden their families and relatives, which paradoxically hampers the provision of assistance during times of crisis.¹⁵ Once again, it is evident that males and older adults constitute the two most vulnerable groups to commit suicide in Gunungkidul.¹¹

The majority of older adult suicides in Gunungkidul are male, aligning with broader trends where males exhibit a more significant susceptibility to suicide in both older adults and general populations. This increased risk among males can be attributed to several factors.² Male older adults are more prone to experiencing loneliness stemming from loss of social relationships and solitude, as well as a decline in social status associated with traditional gender roles.¹⁶ Additionally, they may be more likely to contend with chronic diseases, further exacerbating feelings of despair.^{3,12} Males also have more guts to end their lives by fatal methods.¹³ Conversely, older women tend to have stronger relational ties within family and community settings, leading to reduced feelings of loneliness and isolation compared to their male counterparts.¹⁴

Various methods are used to commit suicide, including firearms, hanging, jumping from a height, poisoning, drowning, suffocation, and accidents.¹⁷ However, the results of our study highlight hanging as a popular method of suicide for older adults in Gunungkidul, apart from other methods such as jumping and poisoning. A similar trend has been observed in a study from South Korea, where hanging was on the rise while other methods declined.¹⁶ The ease and accessibility of lethal means greatly influence the choice of hanging as a method of suicide.¹⁸ According to police records, older adults often used simple tools accessible in their surroundings to hang themselves, such as cloth, livestock rope, or raffia. Suicide incidents commonly occurred in locations that were easily accessible and close to daily activities, such as houses, cattle barns, or yards with trees or wells. Furthermore, the prevalence of hanging was positively correlated with the overall suicide rate.¹⁹ Suicide prevention strategies in older adults should include increased surveillance whilst considering limiting access to suicide tools, especially for hanging.

Suicide must be approached by considering contextual factors, including socio-economic conditions, changes in social relationships, and

economic crises. In Gunungkidul, suicide is intertwined with social disintegration and the collective inability to prevent such tragedies.²⁰ It also signifies the community's failure to address the challenges of its members in coping with the complexities and pressures of modern life. Social relationships often entail obligations, leading to integration difficulties and heightened social costs.²¹

Cultural beliefs also have a role in the suicide phenomenon in Gunungkidul, for example the myth of *pulung gantung*, a flying fireball which as a sign of death due to suicide. *Pulung gantung* serves as a form of legitimization of death due to suicide, with the community affirming suicide through the narratives of *pulung gantung*.²² People who commit suicide are often perceived to be following a predetermined destiny, so it is considered a collective denial in acknowledging the underlying causes and risk factors for suicide.

Suicide in older adults is related to mental disorders, particularly depression. In addition, other risk factors include experiences of loss and abandonment, decline in physical function and health, loss of status, and loneliness.¹ The literature highlights that cognitive impairment, including dementia and cognitive deficits, is a diathesis of suicidal behavior later in life,²³ such impairments can lead to an inability to solve problems, exacerbating feelings of hopelessness and suicidal ideation. Moreover, chronic illness, economic hardships, and family problems are also recognized as essential factors contributing to suicide in older adults.^{24,25} They also tend to experience loneliness triggered by relational dissatisfaction, living alone, and being disconnected from their social world; they are vulnerable to experiencing empty nest syndrome, characterized by feelings of loneliness and emptiness as a result of their children leaving home and living independently.²⁶

Most people have not received mental health services, considering that mental health issues have not been a priority in most primary health services in Indonesia.²⁷ Even though the Gunungkidul government has developed an older adult community-based health service, namely community elder care for noncommunicable diseases (*Pos pembinaan terpadu penyakit tidak menular*, Posbindu PTM), which primarily focuses on physical health assessments. However, this program remains less effective in addressing the psychosocial needs of older adults, so there is still a significant gap in the

comprehensive care approach. On the other hand, this program has limited infrastructure and resources, considering that service providers are ordinary people with minimal skills to conduct suicide risk assessments in older adults.²⁸

The older adult population in Gunungkidul has reached 20.4%,⁹ but they contribute to 55% of all suicide cases. This disparity is concerning, especially considering that older adults still dominate the demographic structure in Gunungkidul. Strategic measures are urgently needed to address this issue by prioritizing older adults' health and social security needs. The health and social security systems need to be re-evaluated better to meet the needs of this vulnerable population group and prevent further increases in suicide cases. Assessment of the potential and risk of suicide, as well as the development of treatment plans, should be conducted at the primary healthcare level. Promotional efforts can involve the community and strengthen the older adult community-based groups such as Posbindu and religious groups. Providing assistance to older adult cadres also needs to be done to identify older adults' needs and build networks with relevant authorities.

This study is limited by the lack of data explaining the causes of suicide in older adults. The data obtained from the police investigation was not accompanied by a psychological autopsy, which could provide insight into the reasons behind the suicides. Further studies are recommended to identify specific risk factors among older adults, as well as conducting psychological autopsies to gain a deeper understanding of suicide in Gunungkidul.

In conclusion, the prevalence of older adult suicide in Gunungkidul surpasses other productive age groups, where there are more males than females, and hanging is the predominant method. These findings underscore the multifaceted nature of suicide in older adults, reflecting underlying health, social, and economic challenges faced by the older adults in Gunungkidul.

Addressing the issue of older adult suicide in Gunungkidul requires a comprehensive approach that considers both individual factors, such as health concerns, loneliness, and depression as well as societal factors including poverty, social change, cultural influences, and public policy. Immediate attention should be focused on identifying and addressing older adults' health, psychological, and socio-economic needs. This includes implementing

targeted interventions to provide necessary support and assistance. Promoting healthy lifestyles from a young age is crucial. Early mental health education should promote resilience and coping skills while fostering strong social connections, which can help reduce isolation later in life.

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