



## Gender, Anxiety, and Depression in Connection to Hikikomori

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### ABSTRACT

Hikikomori is a mental health condition characterized by social withdrawal, causing distress for both the affected individuals and those around them. While factors such as gender, anxiety, and depression have been linked to hikikomori, research on this condition in Indonesia remains limited. This study investigated the association between gender, depression, and anxiety with the risk of hikikomori in West Lombok, Indonesia. A cross-sectional study was conducted at Hospital X in West Lombok, Indonesia, involving 60 patients with depression attending the Mental Health Polyclinic. The respondent ages ranged from 20 to 79 years. Data on gender, depression, anxiety, and hikikomori were collected using self-rated questionnaires and analysed with the Chi-square test. The results showed that patients with moderate-severe anxiety had a fivefold increased risk of hikikomori (OR=5.00; 95% CI=1.42-17.57; p=0.009). Female patients were 2.5 times more likely to be at risk compared with male patients, while those with moderate-severe depression had a 2.83 times higher risk. However, this association was not statistically significant. The study concluded that anxiety is a significant risk factor for hikikomori, whereas the association between gender and depression requires further investigation. Understanding these relationships is crucial for developing targeted mental health interventions and improving support for individuals at risk of hikikomori in Indonesia.

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## INTRODUCTION

Hikikomori is a mental health disorder where an individual withdraws from social life. This condition causes stress for the individual and the people around them. This term was first used in Japan in the 1990s to describe an individual who withdrew from society for a prolonged period of more than 6 months.<sup>1-3</sup> Hikikomori behavior includes conditions that include bio-psycho-person who experiences Hikikomori can withdraw from society to the point of not going to school and not working. There are two types of Hikikomori, namely, 1) Primary Hikikomori is an individual who does not have a comorbid psychiatric disorder that causes withdrawal from society, and 2) Secondary Hikikomori is an individual who withdraws from society and is related to certain psychiatric disorders.<sup>4</sup> The prevalence of Hikikomori in Japan reaches 1.2%, which is more common among men in their 20s.<sup>5</sup> Another study states that women experience more Hikikomori behavior than men.<sup>6</sup>

The prevalence of Hikikomori in Indonesia has not been widely reported however, a study in Bandung stated that Hikikomori cases in high school students reached 40%.<sup>7</sup> Hikikomori like behavior has also been reported in European countries such as Italy.<sup>8</sup> The prevalence of Hikikomori in East Asia is starting to be widely reported, but the term used is slightly different, namely "hidden youth" is the term used in China, Hong Kong and Singapore. South Korea calls Hikikomori behavior "socially withdrawn youth".<sup>3</sup>

Psychiatric disorders that are often associated with Hikikomori are depression and anxiety. Depressive conditions can give rise to a state of withdrawal from society that resembles Hikikomori. Meanwhile, anxiety conditions during social interactions can be a predisposing factor for the occurrence of Hikikomori.<sup>9-11</sup> Most patients with Hikikomori behavior come to health facilities diagnosed as mood disorders, anxiety disorders, progressive developmental disorders (autism), personality disorders, sleep disorders, or schizophrenia. About 18-19% of generalized anxiety disorder patients experience Hikikomori symptoms. However, the specific form of Hikikomori cannot yet be explained in detail, so Hikikomori is not yet included in the DSM-5.<sup>12</sup> At the East Asian regional symposium, it was reported that one

form of Hikikomori is often isolating oneself from the social life of society, resulting in comorbidities in the form of depression and anxiety.<sup>3</sup>

There are four factors that cause Hikikomori behavior such as school environmental factors, family factors, social environmental factors, and individual factors. For example, in Japanese culture, if someone cannot blend in with their coworkers, that person will be ostracized. They will come under pressure from their colleagues and superiors. This condition causes the individual want to stay at home for a long time.<sup>13</sup> Individuals who withdraw from society are 6 times more likely to experience mood disorders. This behavior also has a risk of 1.85 times increasing the risk of committing suicide. Psychiatry in Japan also called Hikikomori Modern Type Depression (MTR). MTR is a syndrome of individuals experiencing depression and withdrawing from social society.<sup>14</sup>

Hikikomori conditions are closely related to the culture found in place. Tracing the incidence and risk factors of Hikikomori requires informants from the sufferer's family and relatives. The prevalence of Hikikomori can also provide an explanation of how much influence individuals want or are at risk of withdrawing from society. Hikikomori risk factors reflect the culture of marginalization as a precursor to the withdrawal that occurs in Japan.<sup>2,14,15</sup> These cultural specifics only predict Hikikomori behavior in certain contexts in Japan and are not known in other contexts such as Indonesia. The prevalence and risk factors for Hikikomori have not been widely reported in Indonesia. Therefore, it is necessary to examine the risk factors for Hikikomori in Indonesia, especially in Lombok. Based on this, the aim is to study a deeper understanding of Hikikomori in Lombok, Indonesia, through the relationship of Hikikomori risk factors with gender, depression, and anxiety status among mental health patients.

## MATERIAL AND METHOD

This was a cross-sectional study conducted at Hospital X, West Lombok, West Nusa Tenggara Province, Indonesia. The respondents who participated in this study were 60 patients who visited the Mental Health Polyclinic with depression using convenience sampling method.

The respondents ages ranged from 20 to 79 years. Respondents were explained about the study and asked to sign an informed consent form if they were willing to be involved in this study. Self-rated questionnaires were carried out to collect the data including: (1) Nine questions of the Patient Health Questionnaire-9 (PHQ-9) to examine the depression status (Depression severity was categorized as follows: 0–4: Minimal or no depression, 5–9: Mild depression, 10–14: Moderate depression, 15–19: Moderately severe depression, and 20–27: Severe depression); (2) Seven questions of the Generalized Anxiety Disorder 7 (GAD-7) to examine the anxiety status; and (3) Twenty-five questions of the one-month version of Hikikomori Questionnaire (HQ-25M), consisting of 25 items rated on a Likert scale from 0 (strongly disagree) to 4 (strongly agree), producing a total score ranging from 0 to 100. According to Teo et al. (2018), a cut-off score of  $\geq 42$  on the HQ-25M indicates a risk of Hikikomori. The total time spent by one patient was approximately 20 to 30 minutes. The data were analyzed using Chi-square and carried out by SPSS software.

Since this study involved patients as human subjects, ethical approval for the study was required, and it was obtained from the Research Ethics Committee of the Faculty of Medicine, Universitas Islam Al-Azhar, with approval number 15/EC-03/FK-06/UNIZAR/II/2023.

Strict ethical guidelines were always followed during the study procedure to guarantee a scientific methodology and to protect study participants. Protocols were put in place to protect participant anonymity and integrity throughout the entire process, from developing proposals and gathering data to sharing the findings.

## RESULTS

From a total at 60 patients of RS X, West Lombok, West Nusa Tenggara Province, Indonesia, it is known that the majority of patients are mostly female (73.30%). The average body weight of depressed patients was 57.45 kg, and their average height was 159.75 cm. Drug prescriptions in depressed patients were mostly Maprotiline (38.3%), Escitalopar (26.7%), Setraline (20%), Fluoxetine (10%),

Fluvoxamine (2.2%), and Ethoperidone (1.7%) (Table 1).

Table 2 show the results of depression status, anxiety status, and the risk of hikikomori among the patients. PHQ-9 questioners results showed that most patients were in mild depression (48.3%), followed by minimal depression (28.3%), moderate depression (18.3%), and severe depression (5%).

GAD-7 questioners results showed that most fell into the categories of minimal anxiety (36.7%), mild anxiety (26.7%), moderate anxiety (23.3%), and severe anxiety (13.3%). The hikikomori behavior of isolation from the outside world/social society assessed by the HQ-25 questionnaire shows that most patients have no risk for hikikomori (Table 2).

**Table 1. Continuous Data Characteristics of Patients**

Variables	Min.	Max.	Mean	Std.
Age	20	79	47.83	12.49
Weight	41	86	57.45	10.84
Height	150	177	159.75	5.33
Depression Score	0	23	9.02	6.01
Anxiety Score	0	21	7.48	5.57
Hikikomori Score	39	70	49.65	7.69

Source: Primary Data, 2023

**Table 2. Characteristics of Patients**

Variables	n = 60	%
<b>Age</b>		
Elderly ( $\geq 65$ )	9	15
Middle Age (45-64)	51	85
<b>Gender</b>		
Male	16	26.70
Female	44	73.30
<b>Depression Status</b>		
Minimal Depression	17	28.33
Mild Depression	29	48.33
Moderate Depression	11	18.33
Severe Depression	3	5
<b>Anxiety Status</b>		
Minimal Anxiety	22	36.67
Mild Anxiety	16	26.67
Moderate Anxiety	14	23.33
Severe Anxiety	8	13.33
<b>Hikikomori</b>		
Not at Risk	36	60
At Risk	24	40

Source: Primary Data, 2023

Depressed patients mostly reported that patients experienced continuous sadness or bad mood (76.70%), loss of interest/pleasure (60%), fatigue/low energy (83.30%), disturbed sleep (78.30%), poor concentration (66.70%), decreased self-confidence (60%), abnormal appetite (58.30%), no suicidal thoughts (76.70%), no agitation or slowdown of motion (91.70%), and no guilt or self-blame (51.70%) (Table 3).

The bivariate analysis reported only one relationship was statistically significant, it was the relationship between anxiety and the risk of hikikomori. Patients with moderate-severe anxiety status were 5.00 times more likely to have the risk of hikikomori when compared with patients with minimal-mild anxiety status (OR = 5.00; 95%CI = 1.42-17.57; p = 0.009), it was statistically significant. In another case, female patients were 2.50 times more likely to have the risk of hikikomori than male patients (OR= 2.50; 95%CI=0.70-8.97; p=0.153), but it was not statistically significant. Patients with moderate-severe depression status were 2.83 times more likely to have the risk of hikikomori when compared with patients with minimal-mild depression status (OR=2.83; 95%CI=0.79-10.07; p=0.102), and it was not statistically significant (Table 4).

## DISCUSSION

Previous studies suggest that both psychosocial and psychopathological factors play a crucial role in the emergence of the Hikikomori phenomenon. Specifically, primary Hikikomori is often linked to underlying psychosocial issues, while secondary Hikikomori is associated with psychiatric conditions such as depression, anxiety, and stress. Previous study has suggested that psychosocial and psycho-pathological issues (i.e., primary Hikikomori) and depression, anxiety, and stress (i.e., secondary Hikikomori) could be associated with Hikikomori phenomenon.<sup>16</sup>

### Gender

This study reported that female patients were 2.50 times more likely to have the risk of hikikomori than male patients. It means that females tend to do isolation from the outside world/ social society. Supporting this, research conducted in Hong Kong found that the prevalence of severe social withdrawal is comparable to that in Japan, where Hikikomori is reportedly

more common among women. Previous study found that the prevalence of severe social withdrawal in Hong Kong is comparable to that in Japan, where it is more common among women.<sup>15</sup>

Another study also reported that hikikomori is more prevalent in men. The phenomenon of hikikomori, characterized by social withdrawal and reclusiveness, is predominantly associated with young males, although a significant number of females are also affected.<sup>17</sup> However, the exact reasons for these gender differences are not fully understood.<sup>6,18</sup>

Furthermore, a study by Yong et al. stated that a hikikomori woman was associated with being a homemaker and lacking social support, whereas a hikikomori man was associated with being unemployed and experiencing fewer outdoor activities.<sup>19</sup>

**Table 3. Symptoms of Depression Among Patients**

Variables	n = 60	%
<b>Persistent Sadness or Bad Mood</b>		
No	14	23.30
Yes	46	76.70
<b>Loss of Interest or Pleasure</b>		
No	24	40
Yes	36	60
<b>Fatigue or Low Energy</b>		
No	10	16.70
Yes	50	83.30
<b>Disturbed Sleep</b>		
No	13	21.70
Yes	47	78.30
<b>Poor Concentration or Indecisiveness</b>		
No	20	33.30
Yes	40	66.70
<b>Low self-Confidence</b>		
No	24	40
Yes	36	60
<b>Decreased or Increased Appetite</b>		
No	25	41.70
Yes	35	58.30
<b>Suicidal Thoughts or Actions</b>		
No	46	76.70
Yes	14	23.30
<b>Agitation or Slowing of Movements</b>		
No	55	91.70
Yes	5	8.30
<b>Feelings of Guilt or Self-Blame</b>		
No	31	51.70
Yes	29	48.30

Source: Primary Data, 2023

**Table 4. The Relationship of Gender, Depression, and Anxiety to Hikikomori in Patients**

Variables	Hikikomori				p-value	OR Value (95%CI)
	At Risk		Not at Risk			
	n	%	n	%		
<b>Gender</b>						
Female	20	45.50	24	54.50	0.153	2.500 (0.78-0.97)
Male	4	25.00	12	75.00		
<b>Depression status</b>						
Moderate-Severe	20	46.51	23	53.49	0.102	2.826 (0.79-10.07)
Minimal-Mild	4	23.53	13	76.47		
<b>Anxiety Status</b>						
Moderate-Severe	20	52.63	18	47.37	0.009	5.000 (1.42-17.57)
Minimal-Mild	4	18.18	18	81.82		

Source: Primary Data, 2023

### Depression and Hikikomori

Patients with moderate-severe depression status were 2.83 times more likely to have the risk of hikikomori when compared with patients with minimal-mild depression status, but it was not statistically significant. This results association is further supported by a case report of a patient with bipolar disorder and hikikomori, whose social withdrawal occurred exclusively during major depressive episodes. Studies reported that patients with Major Depressive Disorder (MDD) are more likely to exhibit hikikomori.<sup>10,11,20</sup>

Orsolini proposed a culturally adapted diagnostic flow-chart for hikikomori in Italy, suggesting a link between hikikomori and modern-type depression.<sup>8</sup> Hikikomori identified as being associated with interpersonal relationships and suicide risks, which are often linked to depression. But another study found a correlation between empathy and relaxation in hikikomori individuals, but not with depression.<sup>21</sup>

Hikikomori is linked to major depressive disorder, interpersonal issues, and suicide risk. Given its complex relationship with mental health, a culturally adapted diagnostic approach is essential for better identification and intervention.

### Anxiety and Hikikomori

Patients with moderate-severe anxiety status were 5.00 times more likely to have the risk of hikikomori when compared with patients with minimal-mild anxiety status, and it was statistically significant. Study has shown that hikikomori, a severe form of social withdrawal, is often associated with psychiatric disorders, particularly Social Anxiety Disorder (SAD).<sup>5,22</sup> Additionally, hikikomori has been linked to severe social anxiety disorder.<sup>22</sup>

The condition is also linked to interpersonal relationship issues and suicide risks.<sup>18</sup> Furthermore, individuals with hikikomori tend to express emotions indirectly and have difficulty becoming emotionally independent.<sup>23</sup> These findings suggest that patients with moderate-severe anxiety status may indeed be more likely to have the risk of hikikomori.

Two variables (gender and depression) in this study reported that it statistically was not linked to hikikomori. But it should be noted that the misinterpretation of non-statistically significant results is a common issue in study, often leading to the incorrect conclusion that there is no effect or difference.<sup>24,25</sup> This problem is exacerbated by the reliance on p-values, which can be misleading, and the failure to consider effect sizes and confidence intervals.<sup>26</sup> Therefore, it is crucial to report and discuss nonsignificant results, as they can still provide valuable information.<sup>26</sup>

Another reason why hikikomori is linked to anxiety in this study but not depression is that anxiety symptoms, like excessive worry, social fear, and avoidance behaviors, might be more directly responsible for initiating and sustaining social disengagement. People who suffer from anxiety frequently isolate themselves as a coping strategy because they are more sensitive to social criticism and dread being negatively assessed. While social disengagement is a feature of depression as well, anhedonia and low motivation are more frequently the driving forces than anxiety. In this research cohort, anxiety may therefore be a more direct predictor of hikikomori behavior.

We humbly address limitations in this study. The small number of samples of this study may restrict the statistical ability to identify smaller

impact sizes. In order to minimize arbitrary exclusion, participants were sourced consecutively from Hospital X's Mental Health Polyclinic. However, because the sample includes those who are currently pursuing treatment, the results might not accurately reflect the entire West Lombok community, which includes people with untreated or subclinical depression. Results should be interpreted in light of variations in the severity of symptoms, socioeconomic characteristics, or help-seeking behaviors between clinic participants and the general community. Despite these drawbacks, the study offers insightful information about the features of depression in clinical settings, laying the groundwork for bigger, more varied samples in future community-based or multi-center studies.

## CONCLUSION AND RECOMMENDATION

Patients with moderate-severe anxiety status are more likely to have the risk of hikikomori. Female patients and patients with moderate-severe depression are more likely to have the risk of hikikomori but need to be studied further. These findings suggest that hikikomori is a complex phenomenon with various psychological and social factors at play.

These studies highlight the need for further study to fully understand the relationship between gender, anxiety, depression, and hikikomori. It is crucial for researchers to carefully consider the implications of non-statistically significant results and avoid making unwarranted conclusions. Therefore, this study reported that gender and depression status have a chance to the risk of hikikomori but need to do more examination because of the data show that they were statistically not significant.

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## AUTHOR CONTRIBUTIONS

DNA developed, conceived, and gathered the data for the study and authorized the completed publication. To create the manuscript, AA and THD gathered, examined, and interpreted the data. The manuscript was written with assistance from FA. The discussion manuscript is evaluated and enhance by CKY. DNA = Danang Nur Adiwibawa; AA = Ayu Anulus; THD = Trisakti Halimah Delimasari; FA = Fahriana Azmi; CKY = Chee Kok Yoon.

## CONFLICTS OF INTEREST

The authors declare no conflict of interest in this study.

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