

# Comparative Study on Suicidal Ideation Factors between the Elderlies Living Alone and the Elderlies Cohabiting

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## 독거노인과 비독거노인의 자살생각 영향 요인 비교

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**Abstract** The purpose of this study is to identify factors influencing suicidal ideation for the elderly living alone. Utilizing the identified factors as the base data, the study aims to develop community programs for suicide prevention. This research is a secondary analysis of the 2017 national survey, 'Survey on the Elderly,' conducting logistics regression analysis on the data collected on 10,299 elderly aged 65 or older living in 17 general residential facilities as of 2017. The analysis reveals that 10.5% of the elderly living alone have contemplated suicide. The frequency of suicidal ideation was attributed to such factors as gender, age, chronic disease, depression and experiences of abuse and discrimination. To prevent suicide among the elderly, therefore, active management from both public and private sectors are needed for early detection of chronic diseases and depression.

**Key Words** : The elderly living alone, Suicidal Ideation, Chronic Illness, Depression, Discrimination

**요약** 본 연구의 목적은 독거노인의 자살생각에 영향을 주는 요인을 규명하여 자살예방을 위한 프로그램 개발과 수행에 필요한 기초자료로 활용되도록 하기 위하여 시행 되었다. 본 연구는 2017년 제4차 노인실태조사 자료를 활용한 이차분석 연구이며 2017년 현재 전국 17개 시·도의 일반 주거시설에 거주하는 65세 이상의 노인 10,299 명의 자료를 활용하여 로지스틱 회귀분석을 시행하였다. 분석결과 독거노인 10.5%가 자살에 대해 생각해 보았고 성별, 나이, 만성질환 수, 우울증, 차별경험에서 자살생각 정도가 유의하게 차이를 나타냈다. 따라서 독거노인의 자살예방을 위해서 만성질환자에 대한 지속적인 관리와 우울증환자의 조기발견 및 다양한 사회활동 프로그램에 참여할 수 있도록 공공· 민간영역 모두 관심과 적극적인 관리가 필요하다.

**주제어** : 독거노인, 자살생각, 만성질환, 우울증, 차별경험

## 1. Introduction

This study is a secondary data analysis of the 2017 'Survey on the Elderly' [1] which firstly aims to investigate whether seniors living alone have more suicidal ideation than those cohabiting with family members subsequently

identifying the possible contributing factors to suicidal ideation of the elderlies living alone.

South Korea is aging faster than any other developed country, and with the hike in the elderly population came the increase of chronic diseases as well as poverty among senior

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Received December 21, 2019

Accepted February 20, 2020

Revised January 28, 2020

Published February 28, 2020

citizens. Of all the new challenges that appeared with the rapid aging society, suicide amongst the elderly is one of the gravest social issues. In late 2015, Korea's suicide rate amongst the elderly aged 65 and over was at 58.6 per 100,000 population, three times higher than the OECD average of 18.8 [1].

The Confucian tradition of Korea used to pay due respect to the elderly. Korea's rapid industrialization and urbanization, however, introduced nuclear family culture thereby depriving the elderly of the role they used to play in the close-knit community. The elderly became economically marginalized pushed away to the sidelines of the society and started experiencing poverty, diseases, loneliness and depression [2]. Depression among the elderly in particular, is associated with suicidal ideation.

According to South Korea's Health Insurance Review & Assessment Service data in 2015, 42% of the 670,000 patients who visited hospitals due to depression were aged 60 or older [3]. The problem is that the elderly cannot identify the symptoms associated with depression often misinterpreting the physical changes caused by depression as age-related symptoms, so most of them do not visit the hospital until they become seriously ill [4].

For the elderlies living alone especially, it is very difficult to track and distinguish their suicide from lonely deaths, as any signs of depression are not revealed in advance [5].

Out of Korea's 7,066,060 elderly, 19.1%(1,346,677) are living alone [6]. According to the 2017 'Survey on the Elderly' released by the Ministry of Health and Welfare, one in five senior citizens is suffering from depression. The survey also revealed 6.7% of them had contemplated suicide, and 13.2% had attempted suicide. As such, elderly depression is identified as the major risk factor for suicide—and the suicide rate of

the depressed elderly is five times higher than that of other age groups. With 49.3%, the suicide mortality rate of the elderly is over 10 times higher than that of teenage suicide, which is at 4.7% [6].

Furthermore, according to the '2017 Report on the Human Rights Situations of the Elderly,' 260 respondents out of 1,000 elderly respondents (26%) said they had thought of "wanting to die" [1]. The same survey found that the elderlies who responded they were currently in poor economic condition (43.2%) and are in poor health (39.1%) had more suicidal ideation. Therefore, it is difficult to single out one factor [7] because suicide is caused by multifold elements, be it individual, health-related, economic, social and psychological. To address these complex factors the elderlies experience and reduce suicide rates, practical and policy-based financial supports are needed. In addition, there should be institutional improvements to detect the elderly who are exposed to suicide risks at an early stage, through proactive intervention at the central government level as well as local government endeavor by operating a department specifically dedicated to preventing suicide.

By 2026, Korea is expected to become a super-aged society with the senior citizens accounting for 20.8% of the total population [6]. With such a hike in the elderly population being increasingly linked to suicide and social problems, many studies on the issue have been conducted since 2000. A slew of studies were dedicated to investigating individual factors [7,8] influencing suicide contemplation of the elderly as well as health factors such as chronic illness [9-11]. The relationship between suicidal ideation and depression of the elderly living alone were also studied [12-17]. Several studies have been dedicated to examining economic

factors[18,19] affecting suicidal ideation as well as the experiences of abuse [20] and discrimination [21].

However, the above-mentioned studies were confined to a few regions or community centers therefore hardly comprehensive. Based on the existing studies alone, producing a generalized result for the elderly populations was challenging.

To render a more comprehensive understanding of suicides among the elderly living alone, this study aims to analyze the factors influencing suicidal ideation by comparing the elderly who live alone with those who don't. To achieve these research objectives, the following research questions were set up.

First, do the elderly people living alone have more suicidal ideation than the elderly cohabiting?

Second, what are the factors that influence suicidal ideation of the elderly living alone?

## 2. Research Methodology

### 2.1 Source Analysis

The source analysis is based on the raw data materials from 'Survey on the Elderly' conducted by the Ministry of Health and Welfare and the Korea Institute for Health and Social Affairs in 2017 [1] (IRB Protocol Number 11771, 2017.05.22). Direct interviews were conducted on 10,299 people aged 65 or older.

The general characteristics of those surveyed are shown in Table 1 such as gender, partnership, religion, experiences of abuse and discrimination.

**Table 1. General characteristics of the research subjects**

(N=10,069)

Category		Alone (2,412)		Together (7,657)	
		Frequency (Persons)	Ratio (%)	Frequency (Persons)	Ratio (%)
Gender	Female	1,946	80.7	3,840	50.1
	Male	465	19.3	3,817	49.9
Partners	No	2,397	99.4	1,256	16.4
	Yes	15	.6	6,401	83.6
Religion	No	829	34.4	3,078	40.2
	Yes	1,583	65.6	4,579	59.8
Abuse	No	2,063	85.5	7,015	91.6
	Yes	349	14.5	642	8.4
Discrimination	No	2,235	92.7	7,294	95.3
	Yes	177	7.3	363	4.7

### 2.2 Research Model

Variables affecting suicidal ideation were individual, health, income and social factors. Based on these factors, the elderly living alone were compared against those cohabiting with a partner or other family members. Individual factors included sex, age, marital status (partnership), religious faith, health, number of chronic diseases currently experiencing and depression. Income factors included debt, personal income, household income, and social factors considered experiences of abuse and discrimination.

### 2.3 Terminology

Elderly people living alone were classified as single-person households, The elderlies living with a partner or children—those with more than two persons in the household—were categorized as cohabiting.

Dependent variables refer to suicidal ideation formed after reaching the age of 60. Suicidal ideation in adolescence or before reaching the age of 60 were excluded as they were concluded non-representative of the characteristics of suicidal ideation during old-age. When investigating suicidal ideation after the age of

65, those who are 65 may not experience suicidal ideation. To address this issue, this research looked into the suicidal ideation contemplated after the age of 60, not 65.

Variables affecting suicidal ideation were

divided into the following four factors Table 2 : individual, health, income, and social factors and both the elderly living alone and the elderly cohabiting were analyzed for these four factors.

**Table 2. Terminology**

Category	Factors	Variables	Details
Dependent variables		Suicidal ideation	0 No, 1 Yes(After the age of 60)
Independent Variables	Individual	Gender	0 Female, 1 Male
		Age	Unit: years
		Partners	0 No, 1 Yes
		Religion	0 No, 1 Yes
	Health	Health	1 Very bad, 2 Bad, 3 Normal, 4 Good, 5 Very good
		Chronic diseases	Unit: number of diseases
		Depression	SGDS(Depression)
	Income	Debts	Unit: 10,000 Korean Won
		Personal income	Unit: 10,000 Korean Won
		Household income	Unit: 10,000 Korean Won
Social	Abuse	0 No, 1 Yes	
	Discrimination	0 No, 1 Yes	

**2.4 Analysis methodology**

This study categorizes those aged 65 or older into two groups: either as living alone or cohabiting to identify the factors—individual, health, income and social—that cause suicidal ideation based on data from the 2017 Survey on the Elderly. To achieve the research objective, the SPSS 18.0 for window statistical program was utilized, and the specific analysis methods are as follows.

First, technical statistics—frequency and percentage—were conducted to determine the general characteristics of the research subjects.

Second, the chi-square test was utilized to analyze the difference between the suicidal ideation in the elderly living alone and those cohabiting after the age of 60.

Third, the level of the major variables of the research target was cross-analyzed between the elderly cohabiting and those living alone using frequency and percentages.

Fourth, multiple logistic regression was performed to cross-analyze suicidal ideation between the elderly living alone and those cohabiting.

**3. Findings**

**3.1 Suicidal ideation of the elderly living alone**

To find out the variables that affect the suicidal ideation among the elderly living alone and cohabiting, the results of the analysis are shown in Table 3.

The study found that among people aged 65 or older, the rate of suicidal ideation after the age of 60 was 10.5% for those living alone; and 5.5% for those cohabiting.

**Table 3. Suicidal ideation after the age of 60**

Category	Elderlies living alone (2,412)		Elderlies cohabiting (7,657)		$\chi^2$	
	N (persons)	Ratio (%)	N (persons)	Ratio (%)		
Suicidal ideation after the age of 60	No	2,159	89.5	7,240	94.5	78.125***
	Yes	253	10.5	417	5.5	

\*\*\*p<.001

**3.2 Level of key variables**

The level of key variables of those surveyed are shown in Table 4.

Looking at the levels of the key variables, the age of the elderly living alone was 75.7 (S.D. 6.8)

and the age of the elderly living together was 73.3 (S.D. 6.4). The age difference between the two was insignificant. Health conditions were also similar: for those living alone, it was 2.8 (S.D. 1.0), and for those cohabiting, it was 3.0 (S.D. 1.0). The total number of chronic diseases is slightly higher for the elderly living alone (3.2)—for those cohabiting, it was 2.6. As for depression, the average number for the elderly living alone was 5.1 (S.D. 4.4) and 3.8 (S.D. 3.9) for those cohabiting. On average, the income of the elderly living alone was an average of 10.66 million won (S.D. 4,799.9) and 27.96 million won (S.D. 8627.6) for those cohabiting. The total income was slightly higher for the cohabiting elderlies, averaging 10.81 million won (S.D. 922.9)—12.18 million won (S.D. 1,521.6) for those living alone. Total household income was 11.71 million won (S.D. 935.5) for the elderly living alone and 30.13 million won (S.D. 2,353.0) for elderly living together, showing that the latter group had twice as much income.

**Table 4. Level of key variables**

	Elderlies living alone (2,412)		Elderlies cohabiting (7,657)	
	Average	Standard deviation	Average	Standard deviation
Age	75.7	6.8	73.3	6.4
Health	2.8	1.0	3.0	1.0
Chronic diseases	3.2	1.9	2.6	1.8
Depression	5.1	4.4	3.8	3.9
Debts	1,066.2	4,799.9	2,796.0	8,627.6
Personal income	1,081.8	922.9	1,217.5	1,521.6
Household income	1,171.4	935.5	3,013.4	2,353.0

### 3.3 Factors influencing the suicidal ideation in elderly living alone

Logistic regression was conducted to uncover the factors that affect the suicidal ideation for the elderly living alone.

Twelve independent variables were injected into the model, including gender, age,

partnership, religious faith, health, number of chronic diseases, depression, debt, personal income, household income, experiences of abuse and discrimination. The dependent variable was set as suicidal ideation, and the result of the logistics regression analysis is shown in Table 5.

The analysis found that five factors were statistically significant at the level of .05: gender, age, number of chronic diseases, depression and discrimination. In other words, the study found that the fact that the elderly live alone have a direct influence on suicidal ideation, and that those who have experienced chronic diseases, depression, and discrimination are more likely to have suicidal ideation.

For the elderlies living alone, male, younger, depressed elderlies with a higher number of chronic diseases, with the experiences of abuse and discrimination were more likely to be suicidal. As for the elderlies cohabiting, those younger, unpartnered, depressed, with a higher number of chronic diseases and experiences of abuse and discrimination were more exposed to suicidal ideation.

In both groups, age, chronic disease, depression, abuse, and discrimination were significant variables affecting suicidal ideation. In other words, older age, a higher number of chronic diseases, and the experiences of abuse and discrimination affected the frequency of suicidal ideation.

As for the gender and its impact on suicidal ideation, it only affected the elderlies cohabiting—but not the elderlies living alone. The presence of a partner (i.e. significant other) and debts also generated suicidal ideation for the elderlies cohabiting while the elderlies living alone remained unimpacted.

Table 5. Factors affecting suicidal ideation for the elderly living alone

Category		Elderlies living alone				Elderlies cohabiting			
		B	Wals	P-value	Exp(B)	B	Wals	P-value	Exp(B)
Individual	Gender(0=Female)	.636	13.063	.000	1.890	.165	1.694	.193	1.180
	Age	-.066	31.388	.000	.936	-.064	45.001	.000	.938
	Partner(0=No partner)	-.567	.164	.686	.567	-.289	3.840	.050	.749
	Religion (0=No religion)	-.256	2.809	.094	.774	.145	1.643	.200	1.156
Health	Health	-.153	2.404	.121	.858	-.005	.005	.945	.995
	Chronic diseases	.112	7.078	.008	1.119	.149	22.875	.000	1.161
	Depression	.163	80.321	.000	1.177	.217	243.731	.000	1.242
Income	Debts	.000	.093	.761	1.000	.000	7.402	.007	1.000
	Personal income	.000	2.083	.149	1.000	.000	.383	.536	1.000
	Household income	.000	.000	.990	1.000	.000	1.094	.296	1.000
Social	Abuse (0=No abuse)	.474	6.267	.012	1.606	.816	29.584	.000	2.261
	Discrimination (0=No discrimination)	.652	7.639	.006	1.920	.657	12.308	.000	1.928
Constant		1.869	3.555	.059	6.480	.190	.057	.812	1.209
-2LL		1326.048				2669.844			
Cox & Snell R <sup>2</sup>		.115				.072			
Nagelkerk R <sup>2</sup>		.235				.208			
chi <sup>2</sup>		293.836				569.917			

#### 4. Conclusion

To identify the factors influencing suicidal ideation among the elderly living alone, secondary data were used using data from the 'Survey on the Elderly' [1] in 2017. The results were as follows.

First, the suicide rate of the elderly living alone was approximately twice as high as that of the elderly living together. The suicide rate among elderly people living alone was 10.5%. On the other hand, the suicide rate among the elderly was 5.5%.

Second, factors related to the elderly's suicidal ideation were found to be: gender, age, the number of chronic diseases, depression, and experiences of discrimination. The research findings are as follows.

First, the elderly living alone had more experience of suicide than those cohabiting. There is also a difference in the reason for the suicidal ideation for those living alone and those cohabiting, so when it comes to providing services, those two groups should be differentiated rather than being considered as a unified group.

Secondly, as for the individual factor, elderly women living alone are more likely to commit suicide than those cohabiting. Therefore, it is necessary to consider separate preventive measures by classifying the elderly females living alone as a higher-risk group than the elderly males living alone. It is also necessary to take a different approach to preventing suicide by age.

Thirdly, as for health factor, the elderly with chronic diseases had more suicidal ideation, and in this case, it was found that the elderly living together had more suicidal ideation than those living alone. Also, since depression experience is identified as a high risk factor for both the elderly living together and alone, so it is believed that there should be realistic program development such as close community service with staff dedicated to expanding public resources, away from the existing program framework.

Fourth, as for debt, the elderly cohabiting had more suicidal ideation whereas the elderly living alone were remained largely unaffected. As it appears that the elderly living together had more debts than the elderly living alone,

the debt factors for the elderly cohabiting should not be overlooked.

The fifth aspect of social factors shows that the cohabiting elderly had more suicidal ideation when they had experienced abuse, but those who live alone were not affected. However, it has been found that the experiences of discrimination affected both the elderly living alone and the cohabiting elderly. The cohabiting elderly experienced more discriminations than those living alone.

For further study, the following are being proposed.

First, suicidal ideation factors for the elderlies living alone and those cohabiting were mostly similar though a few variables existed, which suggests that a suicide prevention manual needs to be prepared in consideration of the elderly's cohabitation status.

Second, as for the elderlies living alone, it is expected male elderlies are psychologically more vulnerable to loneliness and thus more exposed to suicidal ideation than the female. This signifies male elderlies living alone are possibly high-risk individuals than other groups. Counseling services need to be provided considering the different psychological and emotional characteristics between and women.

Third, even if elderlies resides with the offspring, those without a spouse were more likely to be suicidal. It is possible the elderlies' emotional needs are not being met by their cohabiting children, justifying the services that allow interaction among the same peer group.

Fourth, debt increased the suicidal ideation for the elderlies cohabiting. This means, even in the elderly' familial relationship, there exists an obligation to be fulfilled by the elderly. The existence of debts can aggravate the elderly' psychological insecurity that they are not making any economical contribution to the

family. Through welfare centers, it is necessary to implement programs to boost elderlies' self-efficacy.

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