

## A Study on the Suicide Ideation Reduction Strategy of the Elderly with Suicide Risk

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**Abstract:** The purpose of this study is to clarify the characteristics of the elderly group with suicide risk more clearly. In this study, the 10th series of data from 2015 and the 11th series of data from 2016 extracted from the Korean Welfare Panel were used in combination. The subjects were 7,037 adults aged 20 and over and 4,450 elderly people aged 65 or older who answered suicide ideation item in the 10th and 11th. The main results are First, comparing 10th year suicidal ideation and 11th year suicidal ideation, the rate of change in the elderly group and the adult group without suicidal ideation was higher than that with suicidal ideation. There was no significant difference in suicidal ideation between the elderly suicide risk group and adult suicide risk group according to time. Second, the difference between suicide-related variables was clear. The elderly suicide risk group showed no spouse did not participate in social activities through economic activities or volunteering, had low income and living expenses, high depression, low self-esteem less welfare service use.

**Key words:** Suicide ideation, Korea, welfare panel data, suicide reduction strategy, service, self-esteem

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### INTRODUCTION

Korea has one of the highest suicide rates for 12 consecutive years among OECD member countries. In particular, unlike other age groups, the older aged group has not seen suicide rates decreasing. According to the '2015 Cause of Death Statistics', the number of suicide deaths decreased by 323 persons (-2.3%) from the previous year. However, the suicide rate of elderly people in their 70s (8.5%) and those over age 80 or higher (6.4%) significantly increased. Therefore, in order to reduce the suicide rate in Korea, it is urgent to reduce the suicide rate of the elderly. The purpose of this study is to investigate the characteristics of the suicide risk in the elderly and to shed light on why the suicide rate in the elderly group has increased, unlike in other age groups.

Suicide is an extremely personal event but most of the researchers agree that it is affected not only by personal characteristics but also by various factors such as family relations, the social environment factors associated with the social structure. Nevertheless, researchers tend to focus on one theoretical point of view. This is a limitation of data or researcher's point of view but it does not reveal all the various factors that may affect suicide due to these limitations. Therefore, to analyze how the characteristics of the elderly suicide risk group differ from those of

other age groups, the related variables are selected from the social integration theory, economic theory stress-evaluation-coping theory. This is because of the lack of comparative studies between the elderly and other age groups.

First, social integration theory was used as part of the first attempt to identify the causes of suicide in socio-environmental factors, away from the perspective of seeing suicide as individual pathological deviation (Recker and Moore, 2016). It is believed that the anomic phenomenon caused by the decline of traditional norms such as low fertility rate and high divorce rate and the dismantling of the family that is the basis of society causes considerable psychological stress to all and increases the likelihood of suicide. In addition, there is an explanation that the suicide rate is increased due to the weakening of the family bond and the weakening of the basic protection and comfort function of the family as the family is scattered to various regions through modernization. In this study, based on this prior research variables such as marriage status, family relationships, social participation was selected in order to identify the social integration of individuals.

Preville *et al.* (2005) showed that a weakened family network caused by divorce, separation bereavement the cutoff of the neighborhood network with friends and neighbors were the main factors of the suicide of the

elderly and a positive effect on suicide prevention (Duberstein *et al.*, 2004). In other words, the relationship between social participation and suicidal ideation has not been studied much but social activities and volunteer and recreational activities of the elderly have the opportunity to perform with others, thereby lowering suicidal ideation (Duberstein *et al.*, 2004).

The economics approach to suicide is based on Hamermesh and Soss (1974) utility theory and Merton's anomie theory. Hamermesh and Soss (1974) found that with limited resources, choosing suicide would be the best option if the expected utility is less than cost. In this case, the decrease in the individual's expected income is considered to be the main factor that lowers the expected utility (Daly *et al.*, 2013). Merton developed Durkheim's anomie theory which saw suicides occur when the social structures and means to economic success in a material society were lacking. According to Merton's anomie theory, suicide in the elderly can be seen to lead to suicide as the means of economic achievement in the old age decreases (Shin, 2004). Based on these theories, this study selected variables such as household income, living expenses, economic activity family income family income satisfaction.

The relationship between suicide and economic characteristics has been confirmed in previous studies. Poverty in the elderly has been consistently reported as a high risk of suicide (Hong *et al.*, 2013) loss of economic power due to poverty has led to various problems such as loss of status and loss of purchasing power it has been reported that this loss affects suicide (Osgood, 1992). The preceding studies on the relationship between public assistance and suicidal ideation such as the national basic livelihood security system which is a social support system, suggest that there is a possibility of increasing suicide ideation due to the supply of public assistance (Jung, 2010; Sirey *et al.*, 2008).

Stress-evaluation-coping theory suggests that adaptive or maladaptive behaviors can occur through individual cognitive evaluation of stress environment and stress coping method (Billings and Moos, 1984). Based on this theory when faced with a stressful situation when the stress is evaluated to be negative, if there is a lack of coping resources such as economic resources, health resources, support from family members, there is a high likelihood of depression, suicidal thoughts suicide attempts. This theory covers

stress, evaluation coping it is possible to select a comprehensive range of suicide ideation-related variables. Therefore, the variables such as physical health, mental health (depression, self-esteem) and social support (utilization of welfare services) were selected except for variables selected from social integration theory and economic theory.

Considering preceding studies related to this theory, subjective health status, chronic illness physical illness in a more inclusive sense were associated with suicidal ideation. First, chronic illnesses such as cancer, stroke diabetes affect suicidal thoughts and attempts (Duberstein *et al.*, 2004; Kim and Choi, 2007), increasing the risk of suicide when the fear that the quality of life will decrease due to illness (McIntosh, 1995). Secondly, depression which is a representative index of mental health is the most important predictor of suicide risk (Beck *et al.*, 1993 Cukrowicz *et al.*, 2011). Self-esteem is also related to suicidal ideation which is in the opposite direction of depression. Ha (2000) reported that the risk of suicide is high when self-esteem is low. Therefore, the self-esteem of the elderly will function as a protective factor in lowering suicidal ideation.

The purpose of this study is to clarify the characteristics of the elderly group with suicide risk more clearly. In this study, I attempted to increase the validity of the results by using Korean Welfare Panel Data which extracted the sample every year from across the nation selected the variables based on representative theories and previous studies related to suicide. First, I analyze the changes in suicidal ideation over time among the elderly and the adult. Second, I analyzed the difference of suicide risk related variables between the elderly suicide risk group and other age suicide risk group.

## **MATERIALS AND METHODS**

**Analysis data and subjects:** In this study, the 10th series of data from 2015 and the 11th series of data from 2016 extracted from the Korean Welfare Panel in 2016 were used in combination. The subjects were 7,037 adults aged 20 and over and 4,450 elderly people aged 65 or older who answered suicide ideation item in the 10th and 11th.

### **Measurement**

**Analysis:** Frequency, crosstab and t-test were performed using SPSS 21.0 (Table 1).

**Table 1: Variables**

Variables	Measurement
<b>Dependent</b>	Suicide risk: Do you have any serious thoughts about suicide during the past year?" ("Yes "or" No").
<b>Social integration</b>	
Marital status	Marital status (Married, bereavement, divorce, single)
Family relationship	Family relationship satisfaction (3 items, 7-point Likert, Cronbach's alpha is 0.630)-Family conflict (4 items, 5-point Likert, Cronbach's alpha is .837)
Social participation	Satisfaction with social participation (3 items, 5-point Likert, Cronbach's alpha is .721)- Participation in volunteer activities and economic activity status
<b>Economic status</b>	
Economic status	Household income for a year, living expenses for a month, number of economic activity families, family income satisfaction (single item, 5-point Likert)
<b>Stress vulnerability</b>	
Physical health	Subjective health status, chronic diseases, work ability
Mental health	Depression; 11 items in the short version of CES-D, Cronbach's alpha is 0.947-Self-esteem: 10 Rosenberg's self-esteem 10 items, 5-point Likert, Cronbach's alpha is 0.837
Welfare service use	The use of welfare services by using the sum of 7 questions, including cost-of-living assistance, medical support

**RESULTS AND DISCUSSION**

Changes in suicidal ideation over time are included in the analysis both with and without suicidal ideation. and in analyzing the characteristics of suicide risk group, only those who answered 'yes' to suicidal ideation were included in the analysis.

**Changes in suicidal ideation over time:** Table 2 shows the changes in suicidal ideation among the elderly and adult groups. In both elderly and adult groups, the share of those who did not have suicidal thoughts in the 10th year but changed to have suicidal thoughts in the 11th year were 2.9 and 1.8%, respectively. However, 81.1 and 81.7% of those who had thought of suicide in the 10th year changed to having no suicide ideation in the 11th year. However, 18.9% of the elderly group and 18.3% of the adult group showed suicidal ideation in both the tenth and eleventh years, so, careful attention should be paid to this group.

**Social integration level of the elderly suicide risk group:** There was a significant difference in the level of social integration between the elderly suicide risk group and the adult suicide risk group in terms of marital status, family relationship satisfaction, economic activity participation status and volunteer participation (Table 3 and 4). Both the elderly suicide risk group and adult suicide risk group were more likely to be married. However, there were many deaths, divorces separations in the elderly suicide risk group but they were mostly unmarried in the adult suicide risk group. Family satisfaction was higher in the elderly suicide risk group than in the adult suicide risk group. In the comparison of the economic activity participation status, the two groups were the most unemployed. The adult suicide risk group selected 20 years old or older, so, students and housewives will be included in the group. Nevertheless, the fact that 51.3% of the total is

**Table 2: Changes in suicidal ideation over time**

Groups (10th)	11th year suicidal ideation		Total	Chi-square
	No N (%)	Yes N (%)		
<b>Elderly</b>				
No	4.162(97.1)	124(2.9)	4.286(100.0)	120.422***
Yes	133(81.1)	31(18.9)	164(100.0)	
<b>Adult</b>				
No	6.749(98.2)	124(1.8)	6.873(100.0)	203.443***
Yes	134(81.7)	30(18.3)	164(100.0)	

\*\*\*p<0.001

**Table 3: Difference in level of social integration 1**

Parameters	Age group		Chi-square
	Adult suicide risk group N (%)	Elderly suicide risk group N (%)	
<b>Family relationship</b>			
<b>Marital status</b>			
Married	79(51.3)	77(49.7)	42.120***
Bereavement, divorce	41(26.6)	77(49.7)	
Single	34(22.1)	1(0.6)	
<b>Social participation</b>			
<b>Economic activity status</b>			
Employer	3(1.9)	0(0.0)	49.899***
Self-employed	14 (9.1)	19(12.3)	
Employee	55(35.7)	8(5.2)	
Public work	3(1.9)	9(5.8)	
Inoccupation	79(51.3)	119(76.8)	
<b>Volunteer participation</b>			
Yes	13(8.4)	1(0.6)	10.855**
No	141(91.6)	154(99.4)	
	154(100.0)	155(100.0)	

\*\*p<0.01, \*\*\*p<0.001

**Table 4. Difference in level of social integration 2 <N = 299>**

Parameters	M	SD	t-values
<b>Family relationship</b>			
<b>Family relationship satisfaction</b>			
Elderly suicide risk group	3.73	1.41	2.303*
Adult suicide risk group	3.31	1.76	
<b>Family conflict</b>			
Elderly suicide risk group	1.46	0.67	-1.593
Adult suicide risk group	1.60	0.86	
<b>Social participation</b>			
<b>Satisfaction with social participation</b>			
Elderly suicide risk group	2.90	0.57	-1.491
Adult suicide risk group	3.01	0.71	

\*p<0.05

Table 5: Difference in level of economic status <N = 299>

Parameters	M	SD	t-values
<b>Household income</b>			
Elderly suicide risk group	1337.84	01125.76	-2.707**
Adult suicide risk group	6036.67	21511.20	
<b>Living expenses</b>			
Elderly suicide risk group	0115.41	0084.77	-9.028***
Adult suicide risk group	0266.79	0190.65	
<b>Number of economic activity families</b>			
Elderly suicide risk group	0000.523	0000.80	-8.098***
Adult suicide risk group	0001.42	0001.13	
<b>Family income satisfaction</b>			
Elderly suicide risk group	0002.46	0000.87	1.573
Adult suicide risk group	0002.31	0000.91	

\*p<0.05, \*\*p<0.01, \*\*\*p<0.001

Table 6: Difference in level of stress vulnerability

Parameters	Age group		Chi-square
	Adult suicide risk groupN (%)	Elderly suicide risk groupN (%)	
<b>Physical health</b>			
<b>Chronic disease</b>			
None	68 (44.2)	8 (5.2)	78.438***
<3 months	9 (5.8)	0 (0.0)	
3-6 months	1 (0.6)	1 (0.6)	
Over 6 months	76 (49.4)	146 (94.2)	
<b>Working ability</b>			
Workable	127 (82.5)	68 (43.9)	49.899***
Simple work possible	10 (6.5)	42 (27.1)	
Chores only	16 (10.4)	43 (27.7)	
Inability to work	1 (0.6)	2 (1.3)	
Total	154 (100.0)	155 (100.0)	

\*\*\*p<0.001

unemployed means that students and housewives think suicide is high. Also, in the case of volunteer activities, participation rate of elderly suicide risk group was lower than that of adult suicide risk group.

Therefore, except for family satisfaction, the level of family and social participation of the elderly suicide risk group is lower than that of the adult suicide risk group, so that, the elderly suicide risk group has lower social integration level than adult suicide risk group.

**Economic status of the elderly suicide risk group:** The results of the comparison between the economic level of the elderly suicide risk group and the adult suicide risk group showed that the elderly suicide risk group had lower household income, living cost economic activity group than the adult suicide risk group (Table 5).

**Stress vulnerability of the elderly suicide risk group:** Comparison of stress vulnerability between elderly suicide risk group and adult suicide risk group (Table 6 and 7), the elderly suicide risk group showed higher stress vulnerability in adult suicide risk group. In other words, the elderly suicide risk group was more than twice as likely to have a chronic disease that had to be battled for more than 6 months compared to the adult suicide risk

Table 7: Difference in level of stress vulnerability <N = 299>

Parameters	M	SD	t-values
<b>Physical health</b>			
<b>Subjective health:</b>			
Elderly suicide risk group	2.44	0.77	-3.940***
Adult suicide risk group	2.84	1.00	
<b>Mental health</b>			
<b>Depression:</b>			
Elderly suicide risk group	2.11	0.64	2.521*
Adult suicide risk group	1.93	0.63	
<b>Self-esteem:</b>			
Elderly suicide risk group	3.13	0.40	-3.003**
Adult suicide risk group	3.28	0.50	
<b>Public assistant</b>			
<b>Welfare service use:</b>			
Elderly suicide risk group	1.89	0.94	-8.896***
Adult suicide risk group	0.59	0.98	

\*p<0.05, \*\*p<0.01, \*\*\*p<0.001

group the work ability was often only possible for simple work or housework the subjective health status was low. In addition, mental health also had higher depression, lower self-esteem. The level of utilization of welfare services was high.

Based on the fact that Korea has one of the highest suicide rates for 12 consecutive years among OECD member countries that the suicide rate in other age groups is decreasing, the purpose of this study was to investigate the difference between the elderly suicide risk group and the adult suicide risk group. In order to do this, I attempted to increase the validity of the results by using Korean Welfare Panel Data which extracted the sample at national level every year selected variables based on representative theories and previous studies related to suicide. The subjects were 7,037 adults aged 20 years or older and 4,450 elderly people aged 65 or older who responded to the question on suicidal ideation in the 10th and 11th year.

The main results are summarized and discussed as follows: as a result of comparing 10th year suicidal ideation and 11th year suicidal ideation, the rate of change in the elderly group and the adult group without suicidal ideation was higher than that with suicidal ideation. Therefore, both the elderly and the adult showed a decrease in suicidal ideation. Only 18.9% of the elderly group and 18.3% of the adult group showed suicidal ideation in both the 10th and 11th years, so, careful attention should be paid to this group. There was no significant difference in suicidal ideation between the elderly suicide risk group and adult suicide risk group according to time.

However, the difference between suicide-related variables extracted based on social integration theory, economic theory stress-evaluation-coping theory which are representative theories explaining the causes of suicide was clear. Except for the physical health conditions (chronic diseases, work capacity, subjective

health conditions) and economic activity conditions that are expected to vary according to age, the elderly suicide risk group showed no spouse did not participate in social activities through economic activities or volunteering had low income and living expenses, high depression, low self-esteem.

This means that the elderly group with suicide risk lacks the resources to escape from suicidal thoughts. In Korea, the suicide rate is decreasing. The reason why only the suicide rate of the elderly is increased is not the question of whether the suicidal thoughts or the suicidal thoughts persist but the level of risk factors that increase suicidal thoughts is higher than other age groups the level of protective factors reducing suicidal ideation was lower. In other words, other age groups have the resources to stoke hope in life again even at times of crisis, so, suicidal thoughts can be easily replaced with other, more simple thoughts.

### CONCLUSION

On the other hand, in the case of the elderly, there is no resource to cope with the crisis of life, suggesting that suicidal ideation leads to suicidal behavior and suicidal behavior.

### SUGGESTIONS

Therefore, it is suggested that a more aggressive suicide reduction plan is needed considering that the elderly suicide risk group has different characteristics from adult suicide risk group.

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