Effect of Household Type on Suicidal Ideation, Quality of Life, and Health-related Factors of the Elderly

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ABSTRACT

Mental health is an important factor for a successful aging process and has become a major policy issue around the world, especially in the field of health care. The number of living alone increases due to the characteristics of developmental stages such as children's independence, bereavement, divorce, and the increase in life expectancy. With population aging and change in family structure, the senior suicide rate is rapidly increasing in Korea. Since suicidal ideation is an important risk factor for suicide attempts, multifaceted research is urgently needed to analyze the factors affecting suicidal ideation considering household type. This study was a descriptive study to develop the public health factors impacting senior suicide ideation by household type. This study used secondary data and raw data was extracted from 7th KNHANES(2017) of population-based information with approval from the KCDC and collected by the stratified colonies system extraction method. A total of 1,047 respondents over 65 years old was extracted, which was divided into two groups: one-person household and multi-person household. Demographic traits included sex, education level, income quartile, and having a job. Health-related factors included subjective health perception, smoking, drinking, excessive drinking, weekday sleep times, weekend sleep times, regular walking, muscle strength exercise, body mass index, uncomfortable chewing, breakfast frequency, lunch frequency, and dinner frequency, and dietary life. Quality of life scored on EuroQol-5 Dimension and suicidal ideation in the previous year was included. The complex sample analysis was utilized to analyze the data using SPSS 20.0 program. Complex samples chi-square tests were used to examine the difference in suicidal ideation by demographic characteristics in each household. Multiple logistic regression was performed to identify the association between the variables related to senior suicidal ideation. Results of the study showed that factors affecting suicidal ideation in one-person households were sex, frequency of excessive drinking, and discomfort. For the multi-person households, influential factors were the frequency of lunch and depression. This study was meaningful in identifying different factors that contributed to senior suicidal ideation according to household type.

Keywords: Household Type, Health, Elderly, Quality of Life, Suicidal Ideation

INTRODUCTION

In many countries, the birth rate is declining and the proportion of the older population is rapidly increasing. By 2026, Korea will have a super-aged society, having started its aging process in 2017[1]. Mental health, an important factor for a successful aging process, is being dealt with as an important research topic not only in Korea but also in global healthcare. In old age compared to other age groups, the prevalence of mental health problems such as nervousness and gloom due to various physical, social, and psychological losses is higher, and suicide rates are the highest among all age groups. It is known that these mental health problems of older people are affected by demographic, physical, and psychological factors. Among them, it is reported that quality of life, health behaviors such as drinking, smoking, sleeping status, and health level have a significant effect on mental health[2].

Recent data on cause-of-death statistics[3] show that the OECD average suicide rate was 11.9 per 100,000 people and 23.0 in Korea, showing a high suicide rate. In particular, compared to 24.3 people aged 15-64 per 100,000 people, there were 47.7 seniors aged 65 and over, which is about twice that of other age groups, showing the seriousness of suicide among the aged. Suicidal ideation is 'thoughts about committing suicide', which is different from suicidal behavior, but is a risk factor for attempting suicide. Since such suicidal ideation can negatively affect the well-being of seniors as well as social stability, it is urgent to establish social interest and preventive measures.

In contrast, four-person households (31.1%) made up the majority of domestic household types in 2000. Living alone (28.6%), in a two-person household (26.7%), a three-person household (21.2%), or a four-person household in 2017 (17.7%). The number of living alone is expected to increase to 37.4% in 2047[4]. While the number of seniors living alone climbed more than 2.5 times from 543,000 in 2000 to 1,500,000 in 2019, the number of seniors aged 65 and above more than doubled from 3,394,000 in 2000 to 7,680,000 in 2019[4]. It is predicted that by 2045, the proportion of single-person households aged 65 and over will exceed 34.9% due to the aging population[5]. The changing household type has an important impact on the lives of individuals. As the number of single-person households increases, lifestyle changes and this affects health[6], raising various social and psychological problems and various health problems. Among older people, the one living with their families can receive various support from their families, but the one living alone is inevitably vulnerable to both economic conditions and physical and mental health. An in-depth examination of the elements affecting senior suicide thoughts is required in light of the alarming rise in the number of older people living alone.

Although several studies have been conducted on the suicide of older people, considering the rapid increase in the aged population and the suicide rate, the study of senior suicidal ideation is an important issue that needs to be continuously studied in the future. Also, most of the studies conducted in Korea have identified some limited related factors for seniors in some regions, and few studies have additionally analyzed variables such as the aged man living alone and chronic diseases. Moreover, the research on suicidal ideation in the aged is focused without taking home type into consideration. Little attention has been paid to analyzing the association across one-person and multi-person households in a single study. Therefore, this study aims to thoroughly identify the factors that impact older persons who live alone and those who live in multi-person households in terms of suicidal ideation. In this study, by identifying risk factors for suicidal thoughts, the importance of mental health in the aged population can be reminded once again. In addition, we intend to provide the basic data necessary to develop a suicide prevention program to lead a healthy life through mental stability and abundance.

Research questions were as follows: Does suicidal ideation differ according to general characteristics? Are there differences between single-person households and multi-person households? If so, what are the demographic characteristics, health-related factors, and quality of life-impacting senior suicidal ideation in one-person households? What are the demographic characteristics, health-related factors, and quality of life-impacting senior suicidal ideation in multi-person households?

CONCEPTUAL FRAMEWORK

Researchers have shown that subjective health status[7], financial strain[8], quality of life[2], living arrangement[7,9,10], social relationship with others[11], social support[8], depression[8,12-14], food insecurity[15], meal patterns[16], sleep time[17], pain[14,18] are related to older adults' suicidal ideation. Suicidal ideation was associated with unemployment, low income, drinking, smoking, and having a poor subjective health status, and unmarried people were more likely than married people to have these thoughts[12]. In terms of demographic characteristics, suicidal ideation of older people was 0.2 times lower in females than males. The suicidal ideation of seniors who graduated from elementary school was lower than that of the uneducated. suicidal ideation was 2.9 times higher among aged men who were single, widowed, divorced, or separated than those who were married[14].

The type of household has an effect and emotional instability such as suicidal ideation is higher in single-person households than in multi-person households[18]. The higher the depression level and the lower the subjective health status of single-person households, the greater the influence on suicidal ideation[18]. Single-person households have high rates of smoking, excessive drinking, and insufficient sleep time[19], and some age groups have low rates of physical activity and poor psychological status[20]. In single-person households, the poorer the health status, the lower the household income, and the higher the level of depression among women compared to men[21]. Compared to multi-person households, people who smoke, do not exercise, and sleep less than 6 hours are more likely to experience depression[22].

RESEARCH METHODS

Research Design and Respondents Of The Study

The present study was a descriptive study that was conducted nationwide to identify the public health factors affecting senior suicide intentions by considering household type. Data were obtained from the Seventh Korea

National Health and Nutrition Examination Survey (KNHANES VII-2) performed in 2017 by Korea Centers for Disease Control and Prevention (KCDC). The KNHANES is a national survey that examines the health level and health risk factors of people every year. It was conducted from January to December 2017, and a total of 1047 respondents were analyzed. In each city/province, the notification of selection delivered to the selected subjects is delivered to the relevant public health center in the investigation area. Cities and provinces are working together to enable investigations in response to requests from public health centers, including by supporting investigation sites and promoting target participation. In this study, to obtain a representative sample of the population, a stratified multistage probability sampling method was used based on the proportion of components of the population, geographic area, and administrative district. The respondents' data were weighted to ensure equal sampling probabilities and to include missing data. 4,416 households within the primary sampling units (129 areas) were selected. Among all data (N= 8,127), the target population of this study, which was over 65 years old were 1047.

Measurements

Demographic characteristics included sex (male, female), education level ($\leq$ elementary school, $\geq$ middle school), income quartile (low, medium, high), and having a job (yes, no). Health-related factors were as follows. Subjective health perception (good, not bad or bad), smoking (yes = currently or sometimes, no), drinking/times or month (yes = $\geq$ 1, no = < 1), excessive drinking/times or month (yes = $\geq$ 1 (7 glasses of liquor or 5 cans of beer), no = < 1), weekday sleep times/hours (<6, 6-8, >8), weekend sleep times/hours (<6, 6-8, >8), regular walking/days a week (yes = $\geq$ 2, no = $\leq$ 1), muscle strength exercise/days a week (yes = $\geq$ 2, no = $\leq$ 1), body mass index (BMI; kg/ m², underweight = < 18.5, normal = 18.5-25.0, overweight = $\geq$ 25), uncomfortable chewing, frequency of breakfast/times a week ($\geq$ 3, $\leq$ 2), frequency of lunch/times a week ($\geq$ 3, $\leq$ 2), frequency of dinner/times a week ($\geq$ 3, $\leq$ 2), dietary life (good = eating enough food, bad = inability to eat enough food) were used.

The Euro quality of life (EuroQol) Group created a technique to quantify the quality of life in relation to health. Mobility (walking), self-care (bathing, dressing), usual activities (activities of daily living), discomfort, and depression are the five areas of the EQ-5D that inquire about current health status. Respondents were questioned to rate their ability to perform on a two-point scale (bad/yes = some or serious problems, good/no = no problems). Participants were asked about their thoughts of any suicidal ideation in the previous year in order to gauge suicidal ideation (yes, no).

Statistical Analysis

The complex sampling analysis procedures were implemented by considering sampling weights, stratification variables, and cluster variables. Complex samples chi-square tests were used to examine to compare the variables by living arrangement. Multiple logistic regression was performed to identify factors related to the senior suicidal ideation. The results were reported as odds ratios (OR) and 95% confidence intervals (CI). P-values of <0.05 were considered to indicate statistically significant differences. All statistical data were analyzed using SPSS version 20.

RESULTS

Difference in Suicidal Ideation According to Variables in Each Household

Differences in suicidal ideation according to variables in each household are presented in Table 1. For one-person households, suicidal ideation was significantly different according to sex (p=.003), frequency of excessive drinking (p=.003), weekday sleep times (p=.007), weekend sleep times (p=.005), dietary life (p=.018), discomfort (p=.023), and depression (p=.000). For multi-person households, there were significant differences in economic status (p=.018), smoking (p=.031), weekday sleep times (p=.000), weekend sleep times (p=.000), BMI (p=.025), uncomfortable chewing (p=.039), frequency of lunch (p=.000), mobility (p=.000), self-care (p=.000), usual activities (p=.000), discomfort (p=.000), and depression (p=.000).

Table 1: Differences of suicidal ideation according to characteristics in each household (N=1,047)

Categories			one-person household (N=366)			multi-person household(N=681)		
			with SI	without SI	χ²(*p*)	with SI	without SI	χ²(*p*)
			n(%)	n(%)		n(%)	n(%)	
Demographic characteristics		Sex						
		Male	17 (54.2)	70 (23.9)	6.163 (.003)	24 (59.4)	356 (58.4)	.044 (.944)

	Female	24 (45.8)	247 (76.1)		20 (40.6)	273(41.6)	
	Education level						
	≤ Elementary school	27 (70.6)	216 (69.0)	.399 (.667)	28 (68.3)	327 (49.6)	2.559 (.088)
	≥ Middle school	13 (29.4)	87 (31.0)		12 (31.7)	274 (50.4)	
	Income quartile						
	low	26 (67.6)	176 (55.7)	1.150 (.331)	30 (67.2)	240 (37.2)	3.371 (.018)
	medium	10 (20.9)	71 (21.7)		6 (13.4)	157(24.2)	
	high	4 (11.7)	69 (22.6)		8 (19.4)	231 (38.6)	
	Occupation						
	Yes	11 (36.9)	73 (24.4)	.963 (.370)	11 (25.1)	235 (37.9)	1.952 (.145)
	No	29 (63.1)	230 (75.6)		29 (74.9)	366 (62.1)	
Health-related factors	Subjective health perception						
	Good	5 (16.2)	39 (12.8)	.899 (.405)	4 (11.4)	123 (21.9)	1.649 (.195)
	Bad or not bad	35 (83.8)	265 (87.2)		38 (88.6)	482 (78.1)	
	Smoking						
	Yes	4 (11.1)	31 (10.8)	.003 (.954)	6 (13.9)	68 (10.2)	3.604 (.031)
	No	37 (88.9)	286 (89.2)		38 (86.1)	561 (89.8)	
	Drinking (times/month)						
	Drinking	13 (34.4)	92 (29.8)	.411 (.659)	15 (34.9)	266 (44.6)	1.823 (.164)
	No	28 (65.6)	225 (70.2)		29 (65.1)	363 (55.4)	
	Excessive drinking (times/month)						
	< 1	9 (47.1)	111 (84.9)	9.175 (.003)	14 (67.9)	264 (71.8)	.301 (.723)
	≥ 1	6 (52.9)	22 (15.1)		6 (32.1)	99 (28.2)	
	Weekday sleep times (hours/day)						
	<6	18 (39.7)	87 (28.3)	3.880 (.007)	9 (21.0)	146 (22.2)	8.027 (.000)
	6-8	14 (37.4)	147 (45.3)		15 (35.8)	319 (52.0)	
	≥8	9 (22.8)	83 (26.4)		20 (43.2)	164 (25.8)	
	Weekend sleep times (hours/day)						
	<6	17 (37.8)	78 (25.4)	4.013 (.005)	10 (23.2)	140 (21.5)	5.984 (.000)
	6-8	15 (39.4)	151 (46.4)		13 (32.2)	300 (47.9)	
	≥8	9 (22.8)	88 (28.2)		21 (44.6)	189 (30.7)	
	Walking (days/week)						
	Yes	13 (29.6)	125 (40.9)	2.097 (.127)	18 (45.6)	192 (29.3)	2.919 (.062)
	No	27 (70.4)	174 (59.1)		22 (54.4)	409 (70.7)	
	Muscle strength exercise (days/ 1 week)						
	Yes	4 (10.9)	32 (10.6)	.104 (.897)	4 (9.6)	116 (22.2)	2.394 (.094)
	No	36 (89.1)	270 (89.4)		36 (90.4)	485 (77.8)	

BMI (kg/m²)						
	Underweight (< 18.5)	3 (10.8)	11 (3.9)	1.957 (.111)	0	23 (3.8)	2.890 (.025)
	Normal (18.5-25.0)	21 (55.3)	188 (60.1)		20 (48.3)	396 (63.0)	
	Overweight (≥ 25.0)	17 (33.8)	118 (35.9)		24 (51.7)	207 (33.2)	
Uncomfortable chewing						
	Yes	28 (63.3)	152 (47.2)	3.737 (.056)	25 (56.0)	253 (38.1)	3.402 (.039)
	No	13 (36.7)	165 (52.8)		19 (44.0)	375 (61.9)	
Breakfast (times/week)						
	Eaters (≥ 3)	34 (86.0)	297 (94.9)	2.771 (.065)	43 (97.5)	619 (97.8)	.109 (.887)
	Skippers (≤ 2)	7 (14.0)	19 (5.1)		1 (2.5)	10 (2.2)	
Lunch (times/week)						
	Eaters (≥ 3)	41 (100)	293 (92.9)	2.095 (.149)	40 (88.2)	619 (98.4)	9.657 (.000)
	Skippers (≤ 2)	0	23 (7.1)		4 (11.8)	10 (1.6)	
Dinner (times/week)						
	Eaters (≥ 3)	39 (95.4)	313 (99.2)	2.372 (.096)	43 (97.3)	621 (98.9)	.364 (.683)
	Skippers (≤ 2)	2 (4.6)	3 (0.8)		1 (2.7)	8 (1.1)	
Dietary life						
	Good	31 (75.0)	285 (90.1)	4.129 (.018)	41 (94.2)	614 (98.0)	1.221 (.290)
	Bad	10 (25.0)	31 (9.9)		3 (5.8)	15 (2.0)	
Quality of life	Mobility						
	Good	15 (39.3)	165 (55.5)	2.055 (.131)	18 (43.5)	434 (73.6)	9.331 (.000)
	Bad	25 (60.7)	138 (44.5)		23 (56.5)	169 (26.4)	
	Self-care						
	Good	32 (85.0)	263 (86.6)	.164 (.844)	31 (74.3)	569 (95.9)	24.860 (.000)
	Bad	8 (15.0)	40 (13.4)		10 (25.7)	34 (4.1)	
	Usual activities						
	Good	27 (72.3)	229 (77.5)	.634 (.524)	26 (62.2)	523 (87.5)	14.925 (.000)
	Bad	13(27.7)	74 (22.5)		15 (37.8)	80 (12.5)	
	Discomfort						
	No	14 (36.4)	178 (58.9)	3.854 (.023)	14 (33.5)	407 (68.8)	13.136 (.000)
	Yes	26 (63.6)	125 (41.1)		27 (66.5)	195 (31.2)	
	Depression						
	No	17 (42.5)	251 (83.2)	19.772 (.000)	23 (55.2)	550 (91.8)	26.942 (.000)
	Yes	22 (57.5)	51 (16.8)		18 (44.8)	52 (8.2)	

Note. SI = Suicidal ideation; BMI = Body mass index; n=Unweighted population; % = weighted %

Suicidal Ideation and its Related Factors in Each Household

What are the demographic characteristics, health-related factors, and quality of life-impacting senior suicidal ideation in one-person households and multi-person households? The results of the complex sample logistic regression model for each household are shown in Table 2 and Table 3. In one-person households, male (OR=5.73; 95% CI 1.35-24.31), frequency of excessive drinking less than one time a month (OR=0.13; 95% CI 0.02-0.74), no discomfort (OR=0.21; 95% CI 0.08-0.57) were significantly associated with the suicidal ideation. In multi-person

households, the frequency of lunch more than three times a week (OR=0.21; 95% CI 0.08-0.58), and no depression (OR=0.19; 95% CI 0.08-0.46) were significantly associated with suicidal ideation.

Table 2: Factors impacting suicidal ideation in one-person households

Categories	OR	95% CI	p
Sex			
Male	5.73	1.35 – 24.31	.018
Female	1.00		
Excessive drinking (times/month)			
< 1	0.13	0.02 - 0.74	.022
≥ 1	1.00		
Breakfast (times/month)			
Eaters (≥ 3)	0.67	0.09 – 4.70	.681
Skippers (≤ 2)	1.00		
Dinner (times/month)			
Eaters (≥ 3)	0.37	0.06 – 2.23	.273
Skippers (≤ 2)	1.00		
Dietary life			
Good	0.27	0.04 – 2.08	.209
Bad	1.00		
Mobility			
Good	1.35	0.31 – 6.01	.689
Bad	1.00		
Discomfort			
No	0.21	0.08 – 0.57	.002
Yes	1.00		
Depression			
No	0.27	0.05 –1.54	.139
Yes	1.00		

Note. OR = odds ratio; CI = Confidence interval

Table 3: Factors Impacting Suicidal Ideation In Multi-Person Households

Categories	OR	95% CI	p
Income quartile			
low	2.41	0.77 – 7.55	.096
medium	1.12	0.29 – 4.27	
high	1.00		
Weekday sleep times (hours/day)			
<6	0.60	0.23 - 1.56	.270
6-8	0.50	0.22 – 1.16	
>8	1.00		
Muscle strength exercise			
Yes	1.70	0.63 – 4.54	.292
No	1.00		
Uncomfortable chewing			
Yes	1.00		.131
No	0.56	0.27 – 1.19	
Lunch (times/month)			
Eaters (≥ 3)	0.21	0.08 – 0.58	.003

		OR	CI	p
	Skippers (≤ 2)	1.00		
Dietary life				
	Good	1.41	0.46 – 4.32	.543
	Bad	1.00		
Mobility				
	Good	0.64	0.23 – 1.74	.377
	Bad	1.00		
Self-care				
	Yes	0.70	0.21 – 2.32	.561
	No	1.00		
Usual activities				
	Yes	1.22	0.54 – 2.77	.638
	No	1.00		
Discomfort				
	No	0.47	0.21 – 1.04	.062
	Yes	1.00		
Depression				
	No	0.19	0.08 – 0.46	.000
	Yes	1.00		

Note. OR = odds ratio; CI = Confidence interval

DISCUSSION

The present study explored suicidal ideation of Korean older people in one-person households and multi-person households. Specifically, this study was to examine whether the factors influencing suicidal ideation differ by household type. The findings from this study showed that different factors were associated with suicidal ideation by household types

Demographic Characteristics and Mental Health

Gender was correlated with suicidal ideation in single-person households. Suicidal ideation was 5.73 times more likely to be reported in men. In previous studies that analyzed senior suicidal ideation, women had higher suicidal ideation than men[9,12,13,24,25], which was different from the result of this study. However, there was also the same as the result of this study that men had higher suicidal thoughts than women[14,17]. It is believed that different results have appeared because most studies have analyzed suicidal ideation without considering the household type. In fact, it was shown that the suicidal ideation of males living alone was 2.27 times greater in research[10] that examined the suicidal ideation of old people by household type. This shows that single-male household suicide prevention management has to be managed with great care.

In multi-person households, suicidal ideation was much more common in lower economic status. The financial burden was an important predictor of suicidal ideation[26]. Interestingly, the suicide ideation of aged people living alone did not alter according to their household's economic conditions, while the suicidal ideation of seniors living in multi-person households varied. One possible explanation was that the old adults in multi-person households feel more financially burdened and seniors in single-person households feel less burdened by the economic situation. It is necessary to investigate the suicidal thoughts of multi-person households with low economic conditions.

Health-Related Factors and Mental Health

Participants with suicidal ideation in one-person households were more likely to drink excessively. Moreover, it showed that the prevalence of suicidal ideation in excessive drinking less than once a month was 0.13 lower than that in excessive drinking more than once a month. This result is similar to the study[9], which found that seniors who consume moderate to heavy amounts of alcohol and live alone experience 1.79 times more suicidal ideation. Although drinking problems can lead to more negative and dangerous consequences for older people, their drinking characteristics and drinking problems are reported relatively little compared to other age groups[27]. It is

needed to examine the degree of drinking of the aged people living alone and to provide an opportunity to access programs that can reduce alcohol.

Participants with suicidal ideation in multi-person households were more likely to have uncomfortable chewing. This is consistent with the research finding[28] that the senior with suicidal thoughts experienced 56.5% of discomfort chewing, which was higher than 38.8% without suicidal thoughts. As oral health can affect by chewing food, digestion, and absorption of nutrients may be disturbed, resulting in malnutrition. The oral health status of seniors is linked to dietary habits, which can affect health status. A nutritional support project that encompasses oral health care for older adults with discomfort in chewing will be essential.

Suicidal ideation was observed to change depending on the kind of meal skipping, according to a prior study[16]. This study revealed that suicidal ideation in one-person households is more likely not to have breakfast and dinner. Additionally, in multi-person households, the incidence of suicide ideation was 0.21 lower among those who ate lunch more than three times per week than in those who skipped lunch less frequently. These results could be described by the fact that the aged people in single households do not have a domestic partner to eat with, so the necessity to make sure to eat meals decreases. Seniors in multi-person households are more likely to eat breakfast and dinner because they are with a partner. These findings demonstrate the relationship between food insecurity and psychological distress, even if there has not been any prior research to support it. This is the result of empirically confirming the importance of the need for a dietary lifestyle in terms of mental health management of the old people.

Regardless of whether the subjects lived in households one or multi, suicidal ideation had a significantly higher proportion with poor dietary life. Suicidal ideation was more common among aged people with poor dietary habits, which is consistent with prior research[15]. However, the danger of suicidal ideation differed across sites[15]. It is possible that additional context factors and environmental factors are crucial in determining whether food insecurity influences suicidal ideation. These findings require further studies to better understand that poor food insecurity is associated with psychological distress.

Quality of Life and Mental Health

In this study, discomfort in one-person households was found to be a critical factor in suicidal ideation. Suicidal ideation in the no discomfort group appears significantly lower than those of the discomfort group 0.21 times. In the presence of discomfort, suicidal thoughts increased by 1.93 times[14]. Chronic pain in senior men was related to suicidal thoughts, and in women, the pain was not a predictor[29]. On 31 included studies, people with physical pain were more likely to report suicidal ideation during their lifetime. Physical pain is a consistent danger element for suicide intention[30]. This implies that older people in pain who live alone have no one to manage them, making a pain management plan a crucial consideration.

This study revealed that depressed feeling was an important predictor of suicidal ideation in multi-person households. The group without depression showed a lower odds ratio for suicidal ideation. This finding is consistent with the majority of studies[8,9,13,14,25,26], which indicate depressive emotions strongly contribute to suicidal thoughts in older adults. It is necessary to assess the cause and degree of depression for seniors in multi-person households and to examine the relationship with the partner. This suggests that appropriate interventions for multi-person households to manage depression such as cognitive behavior therapy need to be included. However, there was a difference between the results of this study that depression was not significant in single-person households. These findings are at odds with those of previous research[7] which found that older persons, whether living alone or with companions, were more likely to consider suicide when depressed. It is judged that these results need additional confirmation through repeated studies because direct comparison is difficult due to the lack of research analyzed considering the type of household.

CONCLUSIONS

This study was conducted to identify factors affecting suicidal ideation over the age of 65 by considering the household type. The few studies that have been done thus far on the suicidal ideation of older individuals who are thinking about living arrangements have not been sufficient to demonstrate correlations between suicidal ideation and its influencing factors. Furthermore, more research that takes into account home structure may contribute more knowledge on why older people have suicide ideation. Based on these research findings, could be used as a basis for developing a multi-faceted approach to screening and managing senior suicidal ideation. Social and medical support for maintaining and promoting the health of such household groups and welfare plans to improve the quality of life are actively needed.

However, this study has certain limitations. One-item scales of mental health may be less reliable than more detailed scales. Given the limitations of the data set, it was not possible to identify other possible factors related to suicidal ideation. For future studies investigating suicidal ideation, considering that suicide is a progressive behavior

over the life course, pooling multiple waves of a survey may reduce the restriction from a single wave[31]. Also, the participants in the KNHANES are a nationally representative sample of civilians in Korea, and about 10,000 individuals aged one year and over are included each year. In this case, the potential for sampling bias in the data can be limited. Finally, since the cross-sectional design has limitations in asserting a strong causal relationship, a repeated study through a longitudinal design can predict the factors affecting suicidal ideation. Despite these limitations, this study informs useful information by identifying risk factors that predict suicidal thoughts, including various demographic, health-related, and mental characteristics, using a large, nationally representative sample. This study will add to the body of knowledge by expanding our knowledge of the factors that influence suicidal ideation. It is important to say that further consideration of the degree of drinking and discomfort in one-person households and meal skipping and managing depression in multi-person households have a significant element on senior suicidal ideation. These results imply that there is a need for greater emphasis on the approach considering household type.

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