Strategies for Early Identification of Groups at High Risk of Suicide

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People
with People
in Mind

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Introduction

I   Introduction

Over 13,000 people end their lives by suicide each year in Korea, ranking the country at the top of the Organization of Economic Cooperation and Development (OECD) rankings of suicide rates. The central focus of this study is the first stage of suicide prevention policy—namely, the stage in which who should be targeted by the policy is decided and how groups at high risk of suicide are to be identified. This study focuses on three particular topics related to these questions.

The first topic involves examining how high-risk groups are identified and the public support system for them. This study examines the national policy measures, programs, and local resources for identifying high-risk groups. The existing literature, including academic studies, national plans, and websites of competent institutions, were surveyed, and we also interviewed government officials in charge of handling suicide prevention policy measures and programs, nongovernmental activists, and members of high-risk groups to gain an understanding of how effective the existing policy support is. Interviews with actual persons not only provides us with a better understanding of the reality of suicide prevention, but also inspires us with ideas for future improvement. Chapter II provides the findings of our

survey of the Korean suicide prevention system.

The second topic involves analyzing the use of medical care by high-risk groups. Specifically, we focus our analysis not on those who are still alive, but on individuals who have already died by suicide. There is not yet an established definition of who constitutes high-risk groups. Data on these groups are accumulated in a haphazard and inconsistent manner, and are not generally disclosed to the public. We therefore analyze how people who have died by suicide used medical care available in Korea with a view to identifying the key characteristics they may have displayed in the process before taking their own lives.

For this, we analyze the cohort and tailored data provided by the National Health Insurance Service. As the current system of data sharing does not provide us with a ready list of persons who died by suicide, we had to analyze both datasets in order to identify victims of suicide. The cohort data represent the entire Korean population and help us understand overall trends. The limited types of variables used, however, limit our understanding of the true effects of mental disorders on the Korean population. Therefore, we turn to disease-tailored data to identify and analyze persons diagnosed with mental disorders and their behavior in seeking and using medical care. Chapter III summarizes the findings of this analysis.

The third and final topic pertains to a network-based survey

intended to identify high-risk groups. The network for this pur-
pose can run quite broad and include clinical and counseling
experts, health and social workers (including those who pro-
vide services at home), private gatekeepers, and immediate
family members and neighbors who spend the most time with
members of high-risk groups. As we already interviewed poli-
cymakers and social workers at both the national and local lev-
els as well as private gatekeepers in relation to the first topic,
we limit our network here to the general public who may be
family members or neighbors of members of high-risk groups.
We developed a sample of 1,500 individuals and surveyed them,
via telephone, on their perceptions of suicide prevention ef-
forts, experience with suicide prevention support, and suicide
prevention capabilities. Chapter IV provides the findings of this
survey and analysis.

II

Policy on Identifying Groups at High Risk of Suicide in Korea
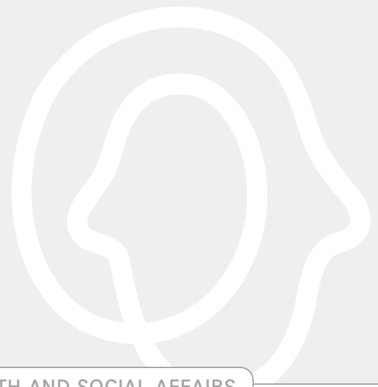
II   Policy on Identifying Groups at High Risk of Suicide in Korea

1. Suicide Prevention Policy in Korea

The National Action Plan on Suicide Prevention (NAPSP), released as an interdepartmental initiative in January 2018, envisions lowering the suicide rate in Korea to 20 per 100,000 or below and keeping the number of those who die by suicide under 10,000 each year by 2022 (NAPSP, 2018, p. 18).

The plan provides a stage-by-stage intervention strategy centered on four stages: causal analysis, development of a system for identifying high-risk groups, intensive management of high-risk groups, and follow-up care for those who attempt suicide. The first stage, which is the main subject of this study, includes three specific tactics: developing and training gatekeepers for suicide prevention, enhancing linkage between social security services provided by different institutions, and reinforcing depression testing and screening (NAPSP, 2018, pp. 25-29).

2. Scope of High-Risk Groups

Anyone can be exposed to the risks of suicide, but it is critical for policymakers to limit and specify the targets of their

suicide prevention policy in order to ensure effective intervention. The NAPSP actually does not define groups at high risk of suicide, but makes recommendations regarding whom should be targeted by specific programs.

The groups mentioned in the NAPSP include people between the ages of 40 and 79, people who seek primary care, people who have been diagnosed with chronic diseases, people who face personal financial crises, people who present medium or lower levels of risks, people who have attempted suicide in the past and visited emergency rooms as a result, surviving family members of others who died by suicide, workers and the un-employed, and the self-employed. The plan advises that suicide prevention programs should differ by the age of the target ben-eficiary groups (seniors, young and middle-aged adults, stu-dents, etc.). Although the plan stops short of providing clear and specific definitions of the targets, it suggests that the gate-keeper training program should target vulnerable (disadvantaged and poor) groups, while measures for control-ling the instruments/means of suicide, improving journalistic practices for reporting suicides, and eliminating other possible risk factors of suicide should target the entire public.

Although the plan provides for various policy programs ca-tering to different target groups, it lacks a clear understanding of who are at high risk of suicide. As a result, some of the pro-grams mentioned do not appear to have specific targets in

mind. This complicates our effort to understand whether policy programs have been appropriately designed and structured to cater to different high-risk groups, while also interfering with the communication of clear national missions and directions to actors involved in implementing those policy programs.

3. Training Volunteers Capable of Identifying High-Risk Groups

The NAPSP envisions a two-track system for developing and training gatekeepers for suicide prevention. One track targets raising the entire public's awareness of suicide risks so as to foster a seamless network of citizens capable of detecting suicide risks in others close to them and intervening accordingly. To this end, the plan envisions developing a wide range of learning programs for different age and occupational groups as well as providing incentives for training and intervention. The other track seeks to provide unique training and activity support for select people. Local social security councils, religious establishments, NGOs, and neighborhood leaders that form the grassroots network of suicide prevention are to be targeted and trained, while government employees and teachers are to undergo mandatory training, and social workers are to be dispatched to the homes of members of high-risk groups to perform specialized screening for suicide prevention (NAPSP,

2018, pp. 26-27).

"Seeing, Listening, and Speaking" (SLS) is the name of a program launched under the NAPSP. The Korea Association for Suicide Prevention (KASP) developed this gatekeeper training program in 2012, with the support of the Ministry of Health and Welfare (MOHW) and Life Insurance Philanthropy Foundation (LIPF), and the Korea Suicide Prevention Center (KSPC) has been implementing it (KSPC, 2017, p. 3). Gatekeeper training targets different types of trainees, i.e., institutions, citizens at large, and instructors. Institution-targeting classes provide 50 minutes to three hours of training for youth at schools, college and university students, adults, employees at workplaces, and other members of the citizenry. Classes for citizens at large are held twice a month, lasting for three hours for the general public and an hour for workplace-affiliated trainees.[1] The SLS Program was originally developed to provide one-time, 180-minute-long classes, but modified and shortened versions have been introduced to accommodate the needs of certain target groups.[2] Classes for instructors are held over a span of 16 hours in total for individuals qualified to receive training pursuant to Article 21 of the SLS Program Operating Policy.[3] After completing their

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[1] KSPC, Suicide Prevention Gatekeeper Training,
http://jikimi.spckorea.or.kr/new/main/ (retrieved October 18, 2019).
[2] Interview with KSPC's Training Team (April 24, 2019).
[3] KSPC (October 18, 2019).

training, instructors go on to raise awareness nationwide.[4)]

The SLS Program focuses on three main topics. First, it raises awareness of the danger and severity of the suicide problem, informing participants of why they should act and intervene. Second, it provides tips on detecting signs of high-risk persons. These tips have been proven effective in practice, but the exact criteria for high-risk persons vary from expert to expert. Third, the program trains participants on what they should do when they encounter a high-risk individual. Recommended actions include directly asking the person whether they are con-templating suicide. If they answer in the affirmative, partic-ipants should ask why they are having such thoughts, and listen actively to them. These are tips that can help reduce the risk of suicide attempts. Participants are also taught to tell high-risk persons about hotline numbers they could call and/or other-wise refer them to institutions that can help.[5)]

The true objective of this training program is to raise the sui-cide sensitivity of trainees so that they are aware of high-risk persons around them, rather than increasing the number of high-risk persons referred to professional help by these gatekeepers. It is difficult to expect gatekeepers, with such brief training, to assess the severity of suicide risks in others and provide assistance without fail.[6)]

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4) Interview with KSPC's Training Team (April 24, 2019).
5) Interview with KSPC's Training Team (April 24, 2019).
6) Interview with KSPC's Training Team (April 24, 2019).

From 2013 to 2018, the KSPC trained well over a million gatekeepers. That number is even higher if we count those who have completed training programs certified by the MOHW and provided by local governments and nongovernmental actors. Seoul has not only supported the development of the program, but also established a gatekeeper management system to ensure the effective training and management of trainees.[7]

The current system of training gatekeepers has a few shortcomings. First, the training program lacks accessibility. Koreans who cannot easily access the KSPC for training are forced to wait until their local mental health and welfare centers begin to offer courses. Also, the majority of the classes are provided only when there are large enough numbers of participants, making it difficult for individuals and small groups to access them.[8] Large-group training has its own problem in that not everyone participating is taking the training seriously. Some suggest that small-group debates and training for highly eager and dedicated trainees would be more effective.[9] Second, of the seeing, listening, and speaking that are essential to gatekeeper training, speaking is the hardest part. Gatekeeper training is not enough to motivate trainees sufficiently to reach out to people in need. Even if the trainees wanted to help, the training program does not provide them

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7) Interview with KSPC's Training Team (April 24, 2019).
8) Interview with KSPC's Training Team (April 24, 2019).
9) Interview with a gatekeeper (July 19, 2019).

with sufficient information and tips on how to provide effective assistance.[10] Local infrastructure also remains far too limited to provide timely and effective interventions even for people who are identified as being at high risk. High-risk individuals who are not poor are denied public support, or enduring support.[11] Third, there are no mechanisms for ensuring the quality of training programs provided at the local level. As the Korean government currently emphasizes only increasing the number of gatekeepers being trained, local governments and NGOs are incentivized to operate the program poorly simply with the goal of increasing the number of participants.[12]

4. Infrastructure for Identifying High-Risk Groups

As of 2017, there were seven regional suicide prevention centers (SPCs) in Seoul and elsewhere, and 25 municipal SPCs across Korea. The vast majority of municipalities lack their own SPCs, delegating suicide prevention efforts to mental health and welfare centers (MHWCs) that are part of local governments instead. As of 2017, there were 16 regional MHWCs and 227 municipal ones across Korea (MOHW, 2019, p. 21).

The roles of regional centers include analyzing regional statistics on death by suicide, researching and developing suicide

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10) Interview with a gatekeeper (July 19, 2019).
11) Interview with KSPC's Training Team (April 24, 2019).
12) Interview with KSPC's Training Team (April 24, 2019).

plans and programs, and providing gatekeeper training. These centers also provide direct services for at-risk individuals, including consultation provided by 24/7 hotlines and coordination of emergency responses (MOHW, 2018, p. 41). Regional centers mostly focus on planning and developing sides of suicide prevention. Municipal centers provide much of the public awareness, detection, and treatment referral services with support from the regional centers (MOHW, 2018, p. 49).

Regional centers do not necessarily dispatch agents to actual sites where suicides were attempted, but they are tasked with ensuring the protection of members of high-risk groups in various situations. There are five processes by which patients are admitted to mental institutions for hospitalization in Korea today. Administrative and emergency hospitalization processes admit patients promptly without requiring the consent of patients or their caretakers. Yet these forced hospitalizations bill patients or their caretakers for the costs so incurred. Persons who attempt suicide tend to be too inebriated to be able to communicate well; their caretakers may not be available for contact; and/or otherwise they or their caretakers cannot afford such hospitalization bills. These circumstances have led mental institutions to avoid or postpone forcing the admission of suicide-attempters as much as they can.[13]

Municipal centers undertake a variety projects on mental

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[13] Interview with regional MHWC workers (May 3, 2019).

health and suicide prevention, and their focus on programs shifts in response to different social issues. The focus on suicide prevention has therefore been less than consistent. When a major earthquake or wildfire hits a region, the regional center is compelled to focus on trauma management. As the issue of crimes committed by patients with severe mental disorders has come to public attention recently, municipal centers' focus has been skewed in that direction as well. The national organization on mental health is well-equipped and organized, while local ones are often overwhelmed with heavy workloads, making it difficult for them to provide effective and professional services in all cases. At the national level, the MOHW provides two separate divisions, one focusing on mental health and the other on suicide prevention. The national government's mental health-related programs are undertaken by a variety of institutions, including the National Center for Mental Health, the KSPC, the Korea Psychological Autopsy Center, and the National Center for Disaster Trauma.[14]

As persons who have attempted suicide are at a very high risk of trying again, an ER-based program was introduced in 2013 to provide follow-up management for persons who have attempted suicide. Two mental health specialists are assigned to each emergency room to provide counseling and follow-up case management for persons admitted to the ER after attempt-

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14) Interview with regional MHWC workers (June 20, 2019).

ing suicide and consent to being included in the program. The number of participating institutions grew from 25 in 2016 to 42 in 2017 and 52 in 2018.[15]

Several criticisms have been leveled against the ER-based follow-up program for persons who have attempted suicide. First, the personnel handling the program are overburdened with stress and job insecurity. Case managers are required to meet patients, who tend to be very resistant to case managers' effort to help, in person. Moreover, case managers are hired on a contract basis, a factor that fuels the turnover rate and compromises the quality of the services provided through the program.[16] Medical institutions that participate in the program receive their budgets each year, and are therefore disincentivized from hiring case managers for contracts of two years or longer, as such long-term contracts would require switching case managers' status from contract-based workers to regular and full-time employees. As a result, although they are hired by hospitals, case managers find it difficult to settle into their work. Second, there is no requirement that all medical institutions with ERs participate in the program. Participation in the program makes hardly any difference to

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15) Suicide Prevention Division, MOHW (July 5, 2018), "ER Patients Who Attempt Suicide Regain Hope Thanks to Follow-Up Program" (MOHW press release), https://www.mohw.go.kr/react/al/sal0301vw.jsp?PAR_MENU_ID=04&MENU_ID =0403&CONT_SEQ=345314&page=1 (retrieved July 20, 2019).
16) Interview with the KSPC ER Support Team (April 24, 2019); interview with staff at a participating hospital (May 20, 2019).

the evaluations these hospitals receive from the government. There are therefore few incentives to participate. To address this issue, policymakers should consider either introducing clear and appealing incentives for participation or compelling hospitals of certain sizes to participate by law. Moreover, rather than simply increasing the number of participating institutions, policymakers should make efforts to enhance the quality of the services provided, by increasing support and the number of personnel. Third, there is no clear definition of the high-risk groups the program should target. As currently practiced, the program views that relatively minor self-harms, if repeated, could raise the risk of suicide, and therefore includes a comparatively wide range of groups as its targets, including persons who harm themselves and those who actually attempt suicide. Medical institutions are therefore free to apply different standards for who should be included in the program. Fourth, there is no system of sustained support and protection for patients who undergo the four-week follow-up program. The follow-up itself is intended to refer participating patients to the local MHWC and other available resources, but patients have the choice over whether to agree to such referrals.

Follow-up may last for longer than four weeks in some situations. Even after the program officially wraps up for them, patients may continue receiving text messages encouraging them to seek professional help. Some may opt to continue

seeking outpatient care from the psychiatry departments of the participating hospitals, thus facilitating the case management team's tracing efforts. Those who refuse referrals to the MHWCs and/or switch to another medical institution for treatment, however, go off the radar.[17] It should be possible for case managers to refer patients who are admitted to the ER for attempting suicide to local centers even when patients do not provide their consent.[18]

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17) Interview with KSPC ER Support Team (April 24, 2019).
18) Interview with regional MHWC workers (May 3, 2019).

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Medical Care Utilization among High-Risk Groups

III Medical Care Utilization among High-Risk Groups

1. Research Subject and Method

A. Use of Medical Care by Suicide Victims

This study uses the National Health Insurance Service (NHIS)'s Cohort Database 2.0 and Statistics Korea's statistics on causes of mortality in order to identify the use of medical service by persons who died by suicide.[19] Specifically, this study examines persons who died from January 1, 2007, to December 31, 2015, a period for which reliable mortality data are available, particularly looking into the patterns of these persons' use of medical service in the year preceding their death.

Medical services were divided into three categories: overall services, outpatient services (medical departments and psychiatry departments in hospitals, public health institutions), and inpatient services (medical departments and psychiatry departments in hospitals, public health institutions). Inpatient service utilization via the ER was added as a proxy variable for emergency care where applicable.

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19) The research plan to use the NHIS' Cohort Database 2.0 was submitted to KIHASA's research ethics committee for review, and was approved after no scientific or ethical issues were found (Approval No. 2019-10).

The use of medical services was defined as per the advice of psychiatrists, in relation to NHI bills indicating "Code-F" for both the main and sub-diagnoses (or for the main diagnosis with the sub-diagnosis left empty). Persons who had NHI bills indicating Code-F in the year preceding their death or before were classified as having been diagnosed with mental disorders, while persons who had no such bills were classified as not having been diagnosed with mental disorders. Patients categorized as having been diagnosed with physical diseases were those whose main and sub-diagnoses indicated no Code-F.

Persons who had at least one bill that satisfied any of the definitions provided above during the period under analysis were defined as having used medical care. Persons who had no such records of bills were defined as not having used medical care. The medical care utilization rate is thus based on the number of deceased persons with the qualifying billing data and the total number of deceased persons observed during the period subject to analysis.

Given the conclusion of the existing literature that the medical care utilization rate peaks one year prior to death by suicide and declines closer to the time of death (Ahmedani et al., 2014; Chock et al., 2015; Stene-Larsen et al., 2019), we estimated the medical utilization rates of deceased persons in the month of their death, one month prior to their death, two months prior to their death, and 12 months prior to their

death. When calculating medical service utilization rates by age, the age of the persons who died was fixed to one year prior to death.

B. Death by Suicide and Medical Care Utilization among Patients Diagnosed with Mental Disorders

Our analysis concerns persons, identified on the basis of the custom data provided by the NHIS, who received medical care for mental disorders (Code-F indicated in their main diagnosis and/or sub-diagnosis) from 2008 to 2017. To avoid including redundant cases in our sample, we excluded patients who were given the same Code-F diagnoses in the three years before 2008 (2005 to 2007). Since our focus is on determining the patterns of suicide victims' use of medical care in Korea in the time leading up to their death, we also excluded persons who died in 2008 by suicide. To identify patterns in relation to diseases, we divided the mental disorders represented into three-digit codes (starting with F).

⟨Table 3-1⟩ Types of Mental Disorders Diagnosed

No.	Code	Description
1	F00-F03	Dementia
2	F04-F09	Organic, including symptomatic, mental disorders
3	F10-F19	Mental and behavioral disorders due to psychotropic substance use
4	F20-F29	Schizophrenia, schizotypal and delusional disorders
5	F30, F31, F34-F39	Mood disorders (depression exclusion)
6	F32, F33	Depressive episode, Recurrent depressive disorder
7	F40-F48	Neurotic, stress-related and somatoform disorders
8	F50-F59	Behavioural syndromes associated with physiological disturbances and physical factors
9	F60-F69	Disorders of adult personality and behaviour
10	F70-F79	Mental retardation
11	F80-F89	Disorders of psychological development
12	F90-F99	Behavioural and emotional disorders with onset usually occurring in childhood and adolescence, Unspecified mental disorder

C. Research Questions

The research questions we ask in our analysis, determined on the basis of surveying the literature on the medical care utilization by suicide victims and mental patients, as well as our own academic inclinations, are listed below. Section 2 will discuss our findings based on the answers to these questions.

① **Did deceased persons' medical care utilization change before their death?**
- Hypothesis: The closer they get to the time of their death, the less these persons seek medical care.

② **Did deceased persons seek and receive primary care before their death?**
- Hypothesis: Persons who die by suicide preferred higher-level medical institutions to primary care practices.

③ **Did deceased persons seek and receive care for their mental disorders?**
- Hypotheses: ⓐ Many who die by suicide have been diagnosed with mental disorders. ⓑ Many who die by suicide have received medical care for their mental disorders.

④ **Did deceased persons seek and receive care for their physical diseases?**
- Hypotheses: ⓐ Many who die by suicide have sought medical care not just for their mental disorders but also for physical illness.
ⓑ There is a significant difference in the use of medical care by persons who die by suicide and were diagnosed with mental disorders before their death and by persons who have never been diagnosed with mental disorders and who seek medical care only for physical disorders.

⑤ **What are the percentages of persons who died by suicide in relation to their mental disorders?**
- Hypothesis: There is a correlation between the types of mental disorders diagnosed and suicide rates.

⑥ **How much time elapsed between deceased persons' initial diagnosis with mental disorders and their death?**
- Hypotheses: ⓐ The period of time between initial diagnosis with mental disorders and death would be shorter for people who die by suicide than for the entire deceased population.
ⓑ There is a correlation between the types of mental disorders diagnosed and the length of time between diagnosis and death by suicide.

2. Findings

A. Change in the Medical Care Utilization Before Death

No significant changes were detected in the use of medical care by Koreans who died by suicide in the year preceding their death. Over 60 percent of these deceased persons continued receiving medical care each month, while the percentage of those who did not die by suicide and sought medical care remained in the 70-percent range per month. Deceased persons' use of outpatient service pattern was similar to use of overall service pattern. On the other hand, while the percentages of the deceased being hospitalized or seeking emergency care remained quite small, those percentages kept rising, peaking in the month when death by suicide occurred.

The consistent percentage of deceased persons seeking outpatient care suggests that their demand for medical care did not abate until the moment they committed suicide. The percentage of deceased persons receiving outpatient care shortly before their death by suicide remained similar to the percentage of persons who did not commit suicide and sought outpatient care. The inpatient and emergency department utilization rates, however, also include deceased persons who were admitted to hospital against their will.

[Figure 3-1] Monthly Medical Care Utilization Rates in the Year Preceding Death
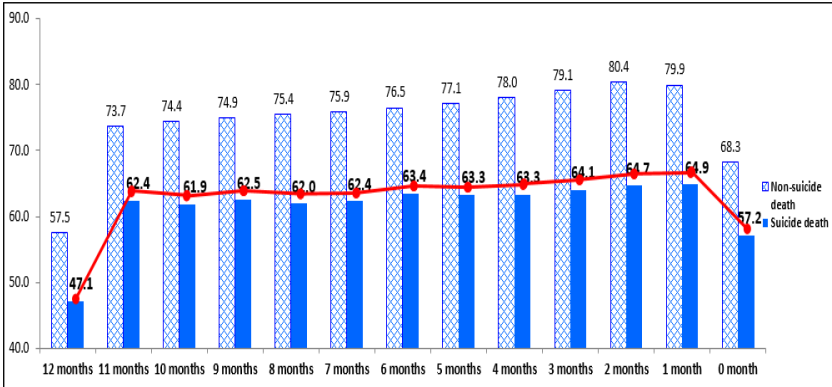
(Unit: percentage)

Source: NHIS Cohort Database 2.0 (NHI-2019-2-133).

[Figure 3-2] Monthly Outpatient Service Utilization Rates in the Year Preceding Death
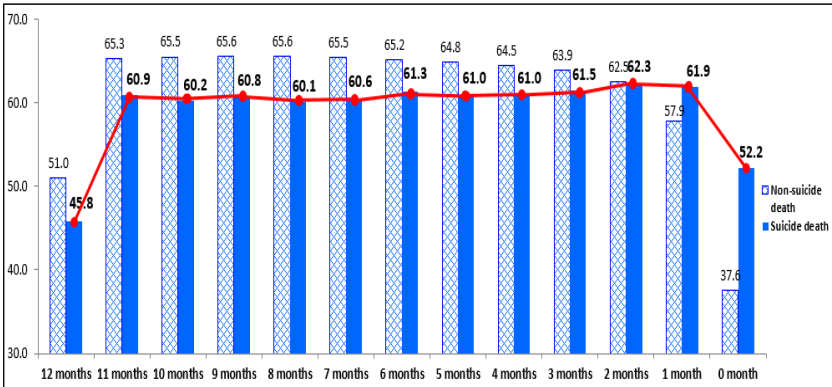
(Unit: percentage)

Source: NHIS Cohort Database 2.0 (NHI-2019-2-133).

[Figure 3-3] Monthly Inpatient Service Utilization Rates in the Year Preceding Death
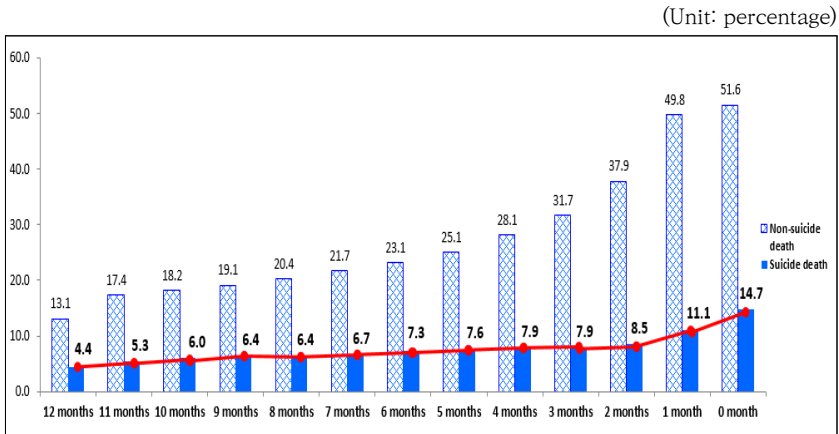
(Unit: percentage)

Source: NHIS Cohort Database 2.0 (NHI-2019-2-133).

International literature shows that persons who die by suicide tend to seek medical care more than persons who die by other causes. By contrast, the percentage of persons who died by suicide and sought medical care was significantly smaller than that of persons who died by other causes in Korea. This suggests the need to revisit, at a fundamental level, the issue of accessible medical care for high-risk groups in the country.

B. Primary Care Utilization Before Death

Persons who died by suicide in Korea used primary care significantly more (nearly 50 percent per month preceding their death) than non-primary care (around 25 percent per month preceding their death). Contrary to the hypothesis, primary

care practices in Korea, as elsewhere around the world, appear to be capable of playing an important role in providing interventions for high-risk groups.

[Figure 3-4] Monthly Primary Care Utilization Rates in the Year Preceding Death
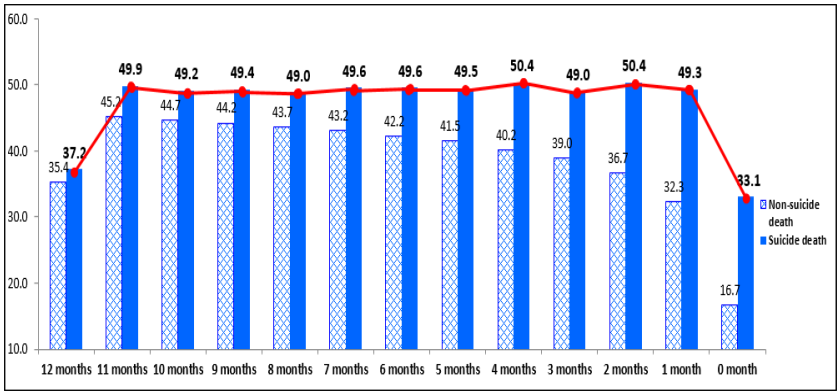
(Unit: percentage)

Source: NHIS Cohort Database 2.0 (NHI-2019-2-133).

[Figure 3-5] Monthly Non-Primary Care Utilization Rates in the Year Preceding Death
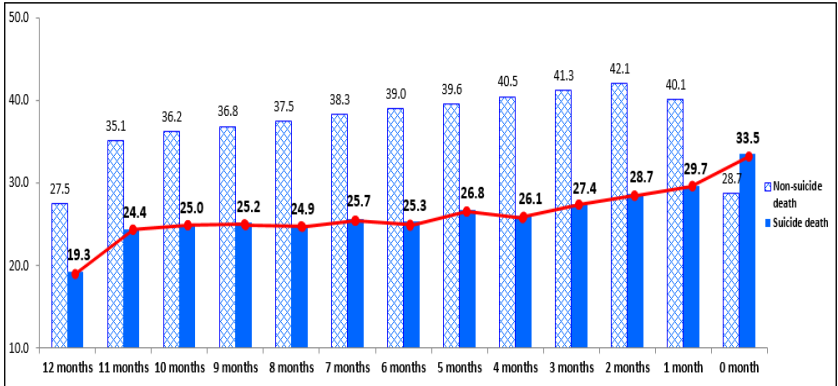
(Unit: percentage)

Source: NHIS Cohort Database 2.0 (NHI-2019-2-133).

Although the percentage of those deceased by suicide using primary care before their death remained consistent throughout the year, the percentage remained rather low at around 40 percent. This suggests that clinical management through primary care facilities has been less than adequate.

C. Mental Health Care Utilization Before Death

International literature estimates the correlation between diagnoses with mental disorders and suicide as being as high as over 90 percent (Cavanagh et al., 2003; quoted in Landy and Kripalani, 2015, p. 45). However, only 56.6 percent of Koreans who died by suicide had been diagnosed with mental disorders.

〈Table 3-2〉 Diagnoses of Mental Disorders in Persons Deceased by Suicide from 2007 through 2015 and Demographic Characteristics

Group		Diagnosed		Undiagnosed	
		N	%	N	%
Overall		1,442	56.6	1,105	43.4
Sex					
	Male	856	59.4	833	75.4
	Female	586	40.6	272	24.6
	Total	1,442	100.0	1,105	100.0
Age					
	20s	261	18.1	322	29.1
	30s	218	15.1	233	21.1
	40s	279	19.3	213	19.3
	50s	231	16.0	138	12.5
	60s	291	20.2	121	11.0
	70s+	162	11.2	78	7.1
	Total	1,442	100.0	1,105	100.0

Note: Persons whose NHI bill records, dating from 2007 through 2015, included main or sub-diagnoses with diseases classified with ICD-10 F-codes were categorized as having been diagnosed with mental disorders.
Source: NHIS Cohort Database 2.0 (NHI-2019-2-133).

The percentage of those who died by suicide and sought mental health care before their death was even lower, at around 15 percent each month, but significantly higher than the percentage of those who did not die by suicide and sought mental health care (around five percent per month).

[Figure 3-6] Monthly Mental Health Care Utilization Rates in the Year Preceding Death
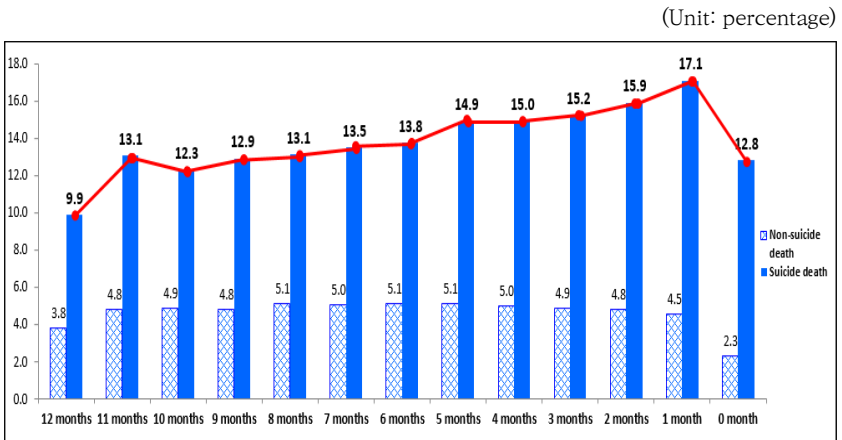
(Unit: percentage)

Source: NHIS Cohort Database 2.0 (NHI-2019-2-133).

D. Physical Health Care Utilization Before Death

The percentage of Koreans who died by suicide and sought medical care for physical illnesses in the year preceding their death remained at around 55 percent per month, lower than the percentage of those who did not die by suicide (around 70 percent per month). However, the former percentage is none-

theless significantly higher than the percentage of suicide victims who had sought mental health care before their death (around 15 percent). Physical diseases may have been important factors leading up to death by suicide, or may have been expressions of underlying mental diseases. In fact, it is known that many who feel the suicidal impulse first experience their symptoms physically before having mental symptoms that lead them to seek medical care (WHO, 2012, p. 17).

[Figure 3-7] Monthly Physical Health Care Utilization Rates in the Year Preceding Death

(Unit: percentage)
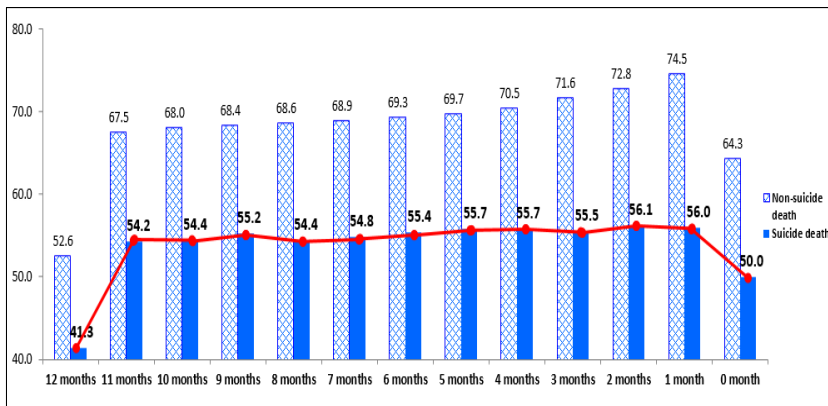
Source: NHIS Cohort Database 2.0 (NHI-2019-2-133).

Physical diseases diagnosed most frequently in patients in the year preceding their death included dorsopathies, hypertensive diseases, and arthropathies as main diagnoses for persons who died by suicide, and hypertensive diseases, kidney diseases, and dorsopathies for non-suicidal patients. The types of physical diseases diagnosed appear to have no correlation to the type of death.

However, the disease types were correlated to inpatient and emergency department utilization rates. Whereas malignant neoplasms were the leading cause of inpatient and emergency department service utilization for patients who died by non-suicidal causes, toxic effects of substances chiefly non medicinal as to source/other and unspecified effects of external causes were the leading causes for patients who died by suicide.

〈Table 3-3〉 Physical Diseases and Inpatient Service Utilization Rates Before Death

Type		Diagnosis		N	%
Persons who died by suicide	Main diagnosis	T6	Toxic effects of substances chiefly non medicinal as to source/Other and unspecified effects of external causes	165	8.0
		I6	Cerebrovascular diseases	117	5.7
		C2	Malignant neoplasms	115	5.6
		C1	Malignant neoplasms	90	4.4
		E1	Diabetes	87	4.2
	Sub-diagnosis	K2	Diseases of oesophagus, stomach and duodenum	115	6.2
		E1	Diabetes	115	6.2
		I1	Hypertensive diseases	109	5.8
		C7	Malignant neoplasms	96	5.2
		I6	Cerebrovascular diseases	64	3.4
Persons who died by other causes	Main diagnosis	C2	Malignant neoplasms	20,263	12.0
		I6	Cerebrovascular diseases	19,424	11.5
		C1	Malignant neoplasms	18,394	10.9
		C3	Malignant neoplasms	14,883	8.8
		N1	Renal tubulo-interstitial diseases/ Renal failure	6,308	3.7
	Sub-diagnosis	C7	Malignant neoplasms	19,017	11.8
		I1	Hypertensive diseases	11,706	7.2
		E1	Diabetes	9,910	6.1
		I6	Cerebrovascular diseases	9,828	6.1
		G8	Cerebral palsy and other paralytic syndromes	6,452	4.0

Source: NHIS Cohort Database 2.0 (NHI-2019-2-133).

〈Table 3-4〉 Physical Diseases and Emergency Department Service Utilization Rates Before Death

Type			Diagnosis	N	%
Persons who died by suicide	Main diagnosis	T6	Toxic effects of substances chiefly non medicinal as to source/Other and unspecified effects of external causes	133	21.8
		T5	Toxic effects of substances chiefly non medicinal as to source	44	7.2
		I6	Cerebrovascular diseases	33	5.4
		K7	Disease of liver	24	3.9
		C2	Malignant neoplasms	23	3.8
	Sub-diagnosis	E1	Diabetes	41	7.3
		K2	Esophageal/gastric/duodenal diseases	39	7.0
		N1	Renal tubulo-interstitial diseases/ Renal failure	31	5.6
		I1	Hypertensive diseases	24	4.3
		J4	Chronic lower respiratory diseases	22	3.9
Persons who died by other causes	Main diagnosis	C2	Malignant neoplasms	5531	12.9
		I6	Cerebrovascular diseases	3788	8.8
		C1	Malignant neoplasms	3665	8.6
		C3	Malignant neoplasms	3474	8.1
		J1	Influenza and pneumonia	3024	7.1
	Sub-diagnosis	C7	Malignant neoplasms	4597	11.0
		J1	Influenza and pneumonia	2420	5.8
		I1	Hypertensive diseases	2104	5.1
		E1	Diabetes	1973	4.7
		I6	Cerebrovascular diseases	1792	4.3

Source: NHIS Cohort Database 2.0 (NHI-2019-2-133).

E. Types of Mental Disorders and Suicide

Mental disorders with codes F20 to F29, i.e., schizophrenia, schizotypal and delusional disorders (183.0 per 10,000 mental health patients), had the highest suicide-caused mortality rate, followed by those with codes F10 to F19 (mental and behavioral disorders due to psychotropic substance use; 148.1 per 10,000 patients) and those with codes F60 to F69 (disorders of adult personality and behaviour; 110.7 per 10,000 patients).

On the other hand, the types of mental disorders with the largest number of patients who died by suicide were those with codes F40 to F48 (neurotic, stress-related and somatoform disorders; 3,883 patients), codes F32 and F33 (depressive episode, recurrent depressive disorder; 1,326 patients), and codes F50 to F59 (behavioural syndromes associated with physiological disturbances and physical factors; 1,006 patients). The mortality-by-suicide rates of these diseases were low relative to the absolute number of patients diagnosed, but intensive care should be provided to patients with these diagnoses in order to reduce the number of people who commit suicide.

〈Table 3-5〉 Suicide-Induced Mortality Rates by Mental Disorder

Disorder code	Total number of patients (A)	Total number of deceased patients	Total number of patients committing suicide (B)	Suicide-induced mortality rate ((B/A)×10,000)
F00-F03	18,666	10,813	53	28.4
F04-F09	10,550	2,851	57	54.0
F10-F19	34,713	6,465	514	148.1
F20-F29	11,861	2,015	217	183.0
F30, F31, F34-F39	22,628	2,348	213	94.1
F32, F33	226,921	20,672	1,326	58.4
F40-F48	1,142,866	76,242	3,883	34.0
F50-F59	168,354	16,755	1,006	59.8
F60-F69	4,606	261	51	110.7
F70-F79	889	67	-	-
F80-F89	294	39	-	-
F90-F99	3,013	313	15	49.8

Note: F00-F03: Dementia
F04-F09: Organic, including symptomatic, mental disorders
F10-F19: Mental and behavioral disorders due to psychotropic substance use
F20-F29: Schizophrenia, schizotypal and delusional disorders
F30, F31, F34-F39: Mood disorders (depression exclusion)
F32 and F33: Depressive episode, Recurrent depressive disorder
F40-F48: Neurotic, stress-related and somatoform disorders
F50-F59: Behavioural syndromes associated with physiological disturbances and physical factors
F60-F69: Disorders of adult personality and behaviour
F70-F79: mental retardation
F80-F89: Disorders of psychological development
F90-F99: Behavioural and emotional disorders with onset usually occurring in childhood and adolescence, Unspecified mental disorder
Source: NHIS tailored database (NHIS-2019-1-280).

F. Time Elapsed between Initial Diagnosis and Suicide

Of patients who were diagnosed with mental disorders for the first time in 2008, 8.2 percent had died by 2017, including

0.4 percent who died by suicide.

The time elapsed between initial diagnosis with mental disorders and death was 59.5 months on average for these patients, while the time between diagnosis and suicide was shorter, at 54.4 months. The majority of deceased mental disorder patients died from natural causes. Among those who died by suicide, those under the age of 65 were almost double those aged 65 or older.

〈Table 3-6〉 Time Elapsed between Initial Diagnosis with Mental Disorder and Death

Subject		N	Time elapsed (days)		Time elapsed (months)				
			Avg.	S.D.	Avg.	S.D.	Min.	Median	Max.
Overall		129,178	1810.7	979.2	59.5	32.2	1	60	119
Sex	Male	69,330	1766.9	981.4	58.0	32.2	1	57	119
	Female	59,848	1861.4	974.1	61.1	32.0	1	62	119
Age at death	19 to 64	28,576	1617.5	978.0	53.1	32.1	1	50	119
	65+	100,602	1865.6	972.5	61.3	32.0	1	62	119

Source: NHIS Tailored Database (NHIS-2019-1-280).

〈Table 3-7〉 Time Elapsed between Initial Diagnosis with Mental Disorder and Suicide

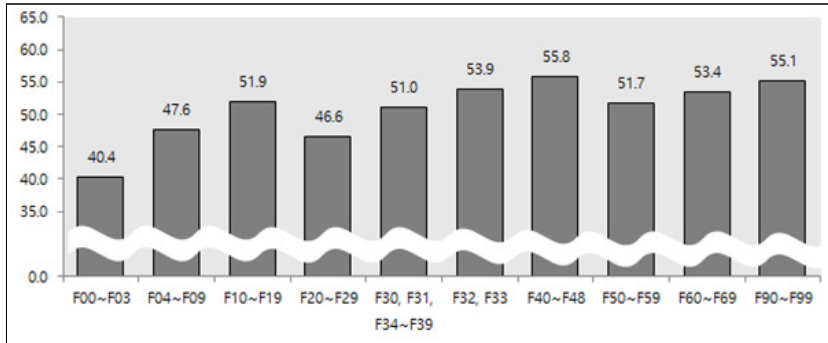| Subject		N	Time elapsed (days)		Time elapsed (months)				
			Avg.	S.D.	Avg.	S.D.	Min.	Median	Max.
Overall		6,656	1654.7	959.1	54.4	31.5	1	52	119
Sex	Male	4,210	1680.9	953.2	55.2	31.3	1	53	119
	Female	2,446	1609.7	967.7	52.9	31.8	1	50	117
Age at death	19 to 64	4,415	1621.8	957.2	53.3	31.4	1	51	119
	65+	2,241	1719.5	959.7	56.5	31.5	1	54	119

Source: NHIS Tailored Database (NHIS-2019-1-280).

The time elapsed between diagnosis with a mental disorder and suicide was the shortest for patients diagnosed with dementia (F00-F03), at 40.4 months. Patients diagnosed with neurotic, stress-related and somatoform disorders (F40-F48), and schizophrenia, schizotypal and delusional disorders (F20-F29) also had significantly shorter periods between diagnosis and suicide, at 47.6 months and 46.6 months, respectively.

〔Figure 3-8〕 Time Elapsed in Months between Initial Diagnosis with Mental
Disorders and Suicide

(Unit: months)

Note: F00-F03: Dementia
F04-F09: Organic, including symptomatic, mental disorders
F10-F19: Mental and behavioral disorders due to psychotropic substance use
F20-F29: Schizophrenia, schizotypal and delusional disorders
F30, F31, F34-F39: Mood disorders (depression exclusion)
F32 and F33: Depressive episode, Recurrent depressive disorder
F40-F48: Neurotic, stress-related and somatoform disorders
F50-F59: Behavioural syndromes associated with physiological disturbances and
physical factors
F60-F69: Disorders of adult personality and behaviour
F70-F79: mental retardation
F80-F89: Disorders of psychological development
F90-F99: Behavioural and emotional disorders with onset usually occurring in
childhood and adolescence, Unspecified mental disorder
Source: NHIS tailored database (NHIS-2019-1-280).

IV

Public Experience and Perception of Suicide Prevention

IV Public Experience and Perception of Suicide Prevention

1. Survey Purpose

The lack of extensive public suicide prevention programs has kept Koreans' participation limited. Although suicide is a serious social issue, the existing measures are unlikely to succeed without greatly increasing public awareness of the issue and building support for national policy. It is therefore time for policymakers to assess Koreans' perceptions and attitudes regarding the existing suicide prevention measures as well as their capability to participate in prevention so as to devise effective strategies.

In this study, we focus on the gatekeeper training program and survey Koreans' awareness and participation. We also analyze the effectiveness of the gatekeeper training program and evaluate Koreans' capability and self-efficacy concerning the early detection of high-risk groups to help highlight how the program can be improved.

2. Method

Our survey targeted adults in Korea aged 19 or older. We

randomly sampled survey subjects after proportional allotment by gender, age, and region to the registered resident population as of August 2019. The sampling error is ±2.5 percentage points at a 95-percent confidence level. We created telephone numbers through random digit dialing (RDD), and trained interviewers used a structuralized questionnaire to survey the sample population by phone. The survey was conducted from August 27 to September 4, 2019. A total of 1,500 persons participated in the survey as respondents. The survey design was approved by KIHASA's research ethics committee.

3. Findings

A. Perceptions of the Gatekeeper Program

Prior to delving into the findings of the survey, we first need to note the state of respondents' mental health. While approximately 10 percent of respondents had sought consultation for mental health issues and/or took prescription drugs accordingly, as many as 31 percent reported that they had contemplated suicide. Considering people's tendency to under-report mental health problems, the observed statistics suggest that there are a significant number of high-risk Koreans in need of intervention and treatment. Furthermore, many of those who reported having had suicidal thoughts said that they

had such thoughts prior to the 12 months preceding the survey.

Korea's suicide rate is exceptionally high even among OECD member states, and Korean news media regularly report on celebrity suicides. However, only 55.1 percent of respondents answered that they were interested in the national suicide prevention programs. Only 33.9 percent had heard of the gatekeeper program in particular, and a meager 5.1 percent had participated in it, despite the ambitious goal of training at least a million citizens through the program. Among respondents who had not received gatekeeper training, only 61.2 percent said they would consider participating in the program in the future.

[Figure 4-1] Gatekeeper Program: Perception, Participation, and Willingness to Participate

(Unit: percentage)
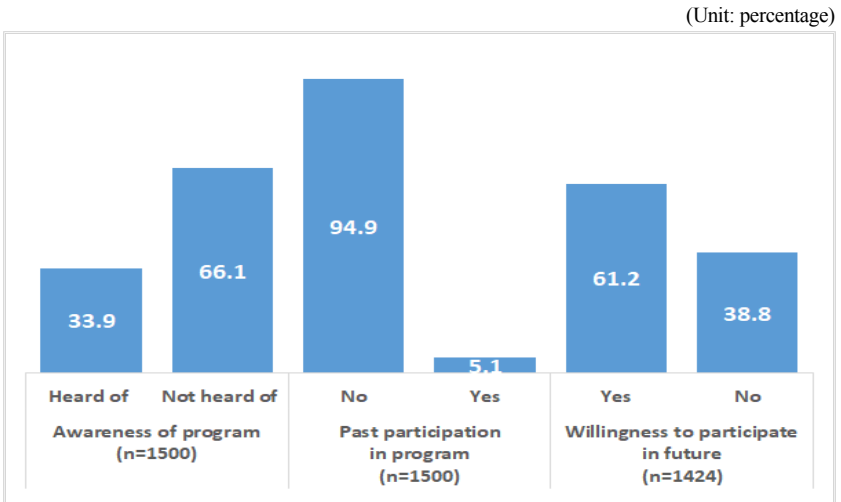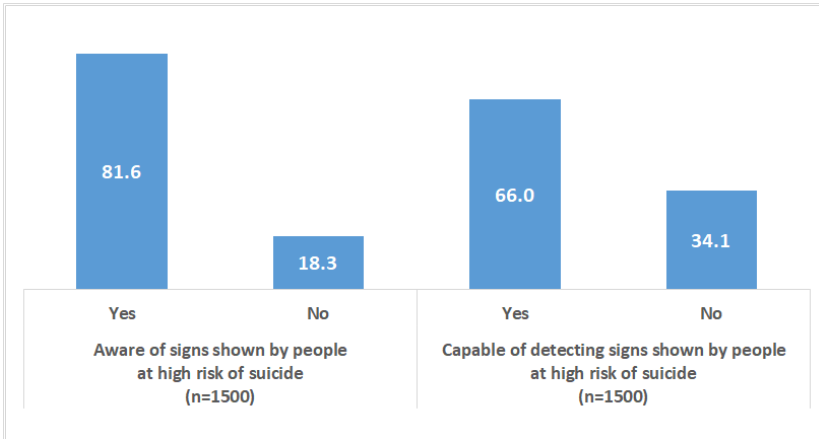
B. Capability for Supporting High-Risk Groups

The survey asked three questions regarding respondents' perception of the support available for people at high risk of suicide and their own capability for intervention. The vast majority (81.6 percent) were aware that people contemplating suicide would show some signs. Conversely, however, this meant that nearly 20 percent still needed education and training on identifying signs of suicide risk. In addition, only 66.0 percent answered that they would be able to detect such signs if they were presented with them.

Also note that, while 68.6 percent of respondents believed that directly talking with persons at risk about their suicidal thoughts could help, a higher percentage, 76.3 percent, answered that they could talk to persons at risk themselves. Attempts at intervention made by those without the proper training, and who do not properly understand its effects, could end up being ineffective or even backfire. This is another area that suggests the need for public training.
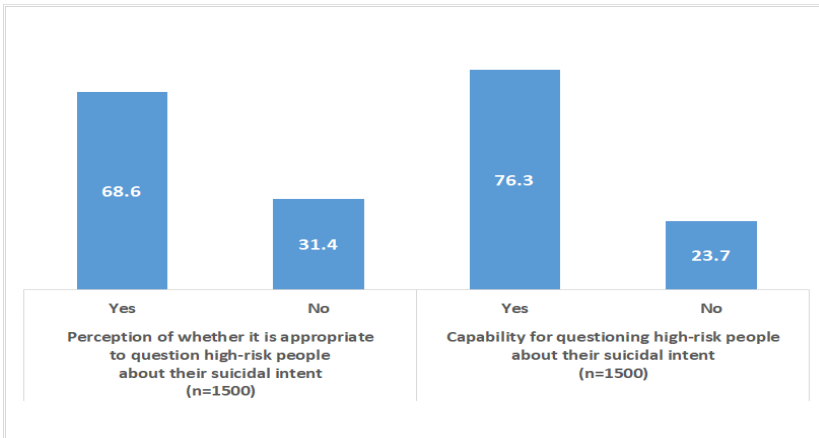
Finally, almost all respondents (92.3 percent) thought that professional help would be effective for high-risk groups, but 26.2 percent also confessed knowing no professionals or institutions to which they could refer persons at risk.

〔Figure 4-2〕 Perceptions of and Capability for Intervention for High-Risk Groups

(Unit: percentage)

[Signs of Risk of Suicide]

81.6	18.3
Yes	No
Aware of signs shown by people at high risk of suicide (n=1500)	

66.0	34.1
Yes	No
Capable of detecting signs shown by people at high risk of suicide (n=1500)	

[Appropriateness of Talking to Persons at Risk]

68.6	31.4
Yes	No
Perception of whether it is appropriate to question high-risk people about their suicidal intent (n=1500)	

76.3	23.7
Yes	No
Capability for questioning high-risk people about their suicidal intent (n=1500)	

[Effectiveness of Professional Help for Persons at Risk]
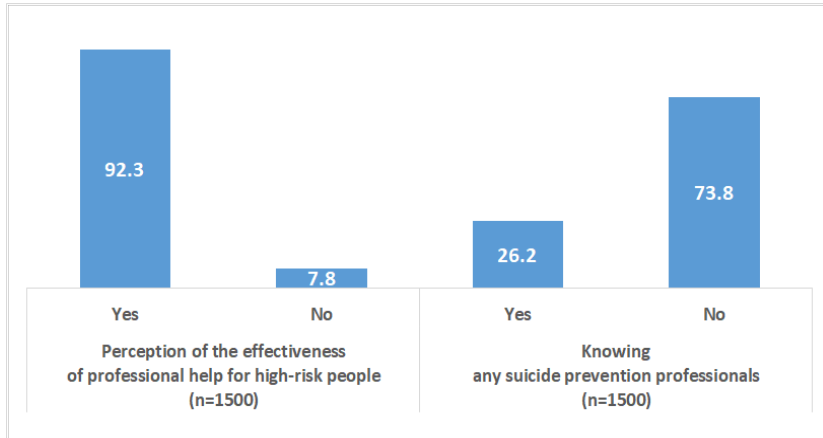
Our logistic regression analysis of the survey results revealed another interesting point. This is that either completing gate-keeper training or having past experience with mental health problems (one's own diagnoses, suicidal thoughts, etc.) did not manifestly improve respondents' awareness of the support needed for high-risk groups. Nevertheless, undergoing gate-keeper training did improve trainees' commitment to, or capability for, helping high-risk groups.

Another important fact to note is that having had suicidal thoughts in the past may give one the ability to detect signs of suicide risk in others, but does not necessarily improve their ability to talk to people showing signs of risk or refer them to professional resources. It is important to enable people who have had high risks of suicide in the past to make valuable contributions to suicide prevention programs. The government

should provide systematic policy support to equip people with the necessary knowledge and skills for intervention, to facilitate the translation of their experiences with suicide risks into readiness or capability to help others.

V

Conclusion

V   Conclusion

1. Defining Targets and Participants of Suicide Prevention Programs

A. Scope of High-Risk Groups

The suicide prevention system in Korea is based on the NAPSP of 2018. Although national policies must be communicated clearly to the local agents who are in charge of implementing them, the plan itself is rather vague about who should be targeted and supported as people at high risk of suicide. Ascertaining the demand for policy support and whom the policy should benefit and deciding the policy tasks accordingly should be prioritized before establishing a policy plan.

High-risk groups targeted by policy initiatives in the United States and Japan, on the other hand, reflect national characteristics and universal risk factors alike. The American suicide prevention policy, for example, also targets armed households. In most cases, though, suicide support in both countries is also directed at people suffering from conditions that may not be objectively noted and diagnosed, but that still involve considerable personal suffering, such as alcohol and substance abuse, domestic abuse, debilitating symptoms of mental disorders

(anxiety, panic attacks, insomnia, hallucinations, self-loathing, etc.) rather than diagnoses, social isolation, impulsive and aggressive behavior, and experiences with humiliating or despairing events (loss of relationships, health, and finance).

B. Participants of Suicide Prevention Programs

There are diverse gatekeepers active in the United States and Japan catering to the needs of different groups of high-risk people. In the immediate surroundings of people at risk, parents, friends, neighbors, teachers, and members of the clergy can serve as gatekeepers. Teachers are also required to undergo suicide prevention training for youth, and retired medical practitioners, including doctors, nurses, psychologists, and other licensed practitioners, are also required in some states to undergo suicide prevention training. Not just professionals but anyone in the community can volunteer as gatekeepers. Gatekeeper training should thus be designed to enhance trainees' awareness and capability for effective intervention.

The World Health Organization (WHO)'s step-by-step approach to strategies for suicide prevention starts first and foremost with defining core stakeholders. These include the health ministry and other relevant agencies of the central government, public health workers such as doctors, nurses, and emergency care providers, mental health service workers, police officers

and firefighters, vulnerable groups such as the elderly and eth-
nic minorities, and survivors of suicide attempts and surviving
family members of suicide victims (WHO, 2012, pp. 8-9).
Governments in Canada and Australia, too, emphasize the need
for cooperation with "survivors," including surviving family
members, survivors of suicide attempts, and mental health pa-
tients (Mental Health Commission of New South Wales, 2018, p.
13; Government of Canada, 2019, p. 6). The national and re-
gional policy system in Korea, by contrast, is fundamentally
shut off to the participation of people at high risk of suicide.
This is unfortunate because high-risk survivors can offer val-
uable insights into the problem and play important roles in
both public- and private-sector efforts for suicide prevention.

2. Collecting Better Evidence to Better Understand High-Risk Groups

Mental health problems, including depression, addiction, and
post-traumatic stress disorder, are well-known risk factors of
suicide (WHO, 2012, p. 14; Mental Health Commission of New
South Wales, 2018, p. 6). However, our attention has so far
been skewed toward the psychological autopsy of those who
died by suicide, rather than analysis and understanding of peo-
ple suffering from these mental conditions. Recall that the
WHO emphasizes the identification of core stakeholders as the

first step toward effective suicide prevention strategies. The second step involves analyzing the circumstances of people at high risk, which requires assessing specific problems of the given community, suicide and suicide attempt rates, methods of suicide committed, high-risk groups' use of medical care, and the accessibility and quality of medical care (WHO, 2012, p. 9). In this study, we analyze how Koreans at high risk of suicide used medical care. Our focus is particularly people who died by suicide and people who were diagnosed with mental disorders. Our study is distinct from the existing literature in that it focuses on analyzing high-risk groups' behavior in the use of medical care preceding their death, rather than trying to identify and evaluate the causes and risk factors of suicide after the fact.

It is crucial to continue conducting research on people at high risk of suicide and develop a more evidence-based approach to suicide prevention. This will require collecting and sharing data. It is relatively easy to find comprehensive analyses done in other countries on the medical care use of people who die by suicide. In Korea, however, the national authorities responsible for managing information on suicide-induced mortality are very conservative when it comes to sharing data. As a result, we had no choice but to rely on the NHIS' cohort and tailored data to second-guess how Koreans who died by suicide used medical care before their death. Cohort data represent

the entire national population, but indicate the number of instances of death by month only. Moreover, such data does not provide information on the specific mental diseases with which those who committed suicide had been diagnosed.

Active efforts should be launched to establish a system that facilitates the collection and sharing of evidence so as to support policy programs and clinical practices for suicide prevention. The information on suicide-related behavior we have today is quite limited and partial. We therefore need to collect more data. Related questions may be added to existing and ongoing nationwide surveys, and research on suicide-related behavior should also be encouraged (WHO, 2012, p. 18).

3. Improving Perceptions of and Capabilities for Suicide Prevention

The individuals and groups that make up a given society all bear the duty to help realize a safe and reassuring environment and form mutually supportive relationships with friends, families, and neighbors. Individuals living in communities should possess the capabilities needed to talk to one another, with confidence, about suicide-related factors and detect risks and signs of need anywhere in their communities (Mental Health Commission of New South Wales, 2018, pp. 8 and 15).

As our survey indicates, active advertising and training are needed to improve Koreans' health literacy and minimize the

social stigma of talking about suicide in order to enable Koreans to serve as guardians against suicide for one another. In other words, the society as a whole should lower the barriers that people at high risk face in seeking the help they need. Members of the lay public who do not have professional backgrounds should be given training and other resources so that they can help guide their fellow citizens away from tragic choices.

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