Innovative Research Program on Suicide Countermeasures (IRPSC)

Abstracts of Research 2017

Japan Support Center for Suicide Countermeasures (JSSC)

About IRPSC

The Innovative Research Program on Suicide Countermeasures (IRPSC) is an extensive research program aiming to promote studies of suicide countermeasures from an international and interdisciplinary perspective. IRPSC is referred to the General Principles of Suicide Prevention Policy (revised) which was approved by the Japanese Cabinet on July 25, 2017. Principles state that the Japanese government should proceed with establishing a new guideline of suicide countermeasures and prevention.

IRPSC aims at comprehensively developing an effective research environment for suicide countermeasures. The program also has objectives to establish a framework of evidence based policy-making and practice, well effective for decreasing suicide and exploring its related factors, to achieve aim of the Principles.

The program advances the following three focus areas to promote researches for suicide countermeasures and prevention.

I. Research on socioeconomic factors
II. Research for designing governmental policies and its effective implementation
III. Research using public health approaches

2017 IRPSC Researches

Area I: Research on Socioeconomic Factors

Area II: Research for Designing Governmental Policies and its Effective Implementation

Area III: Research Using Public Health Approaches

Area I: Research on Socioeconomic Factors

I-1
Comparison of Suicide Prevention Policies in OECD (Organization of Economic Cooperation and Development) Member Countries

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We have mainly undertaken the following three projects in fiscal year 2017-2018:
(1) A comprehensive review of the suicide prevention programs in other OECD countries;
(2) Re-examination of the effectiveness of national suicide prevention programs in OECD countries using updated data;
(3) Investigation of the reasons for the recent decline of the suicide rate in Japan using subnational (prefecture-level) data.

Each project is described in detail below.

(1) Examination of suicide prevention programs in member countries of the OECD (OECD countries)

We conducted a systematic review of the suicide prevention programs in place in nine OECD countries, and summarized the findings in reports made in English. The purpose of the review was to learn from the practice and experience in other countries, so as to make suggestions for improvement, in the future, of the suicide prevention policies in Japan. The nine countries were: South Korea, the United States, Canada, Australia, New Zealand, the United Kingdom, Ireland, Sweden, and Finland. We reviewed the contents of the national suicide prevention programs, the methods in place for evaluation of their effectiveness, media guidelines, and prevention efforts at suicide hotspots. The review was assisted by five research assistants who were native speakers of the languages spoken in these countries.

In addition, the principal investigator (PI) visited Australia in order to learn from the suicide prevention efforts in that country (December 2017). She also gave a research presentation at the University of Melbourne summarizing the suicide prevention efforts in Japan, as well as the findings from her latest research. In March 2018, the PI and the co-investigator travelled to England and Sweden to visit organizations and researchers engaged in suicide prevention activities.

(2) Re-examination of the effectiveness of the national suicide prevention programs in OECD countries

Using data from 21 OECD countries, the PI and co-investigator published an article in 2011 (*Social Science & Medicine*), which confirmed the effectiveness of the respective national suicide prevention programs in reducing the suicide rates. However, only data published until 2004 were analyzed and presented in the article, and it remained unclear if the conclusion would still be valid if the dataset were expanded to include more recent data. Therefore, we updated the dataset to the year 2011, and reviewed the data using the same model. The results so far are still inconclusive, and we shall continue to collect more data and refine our estimation methods to provide more robust evidence.

(3) Investigation of the reasons for the recent decline of the suicide rate in Japan using subnational (prefecture-level) data.

Japan has recently experienced an approximately 35% decline of the suicide rate. However, it remains unclear what caused such a dramatic reduction. We focused on the unprecedented financial subsidies provided by the Japanese national government to local governments for the purpose of implementing suicide prevention programs that started in 2009-2010, and examined if the special funds contributed to the reduction in the suicide rate. Using a panel dataset at the subnational (prefecture)-level from 2000 to 2013, we estimated the relationship between the amount of government subsidies and the suicide rates. The results are reported in our latest book, *Economic Analysis of Suicide Prevention.*

I-2

Suicide in Cancer Patients and Psychological Care of Cancer Patients with High Risk of Suicide

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Cancer patients are at an increased risk of suicide. Because adequate support for suicidal cancer patients is critical, it is important to address the aforementioned issues. However, few studies have investigated the risk factors for suicide in cancer patients as compared to cancer-free subjects. Therefore, we conducted two studies to identify the risk factors for suicide in cancer patients.

In the first, we conducted a forensic investigation in cooperation with the Tokyo Medical Examiner's Office. Suicide data from the Tokyo Medical Examiner's Office from 2009–2013 were extracted retrospectively. Death certificates and supplementary documents were examined. There were a total of 9841 cases of suicide, of which 503 (5.11%) had cancer or a history of cancer. The types of cancer were as follows: digestive, 211 (37.7%); urologic, 82 (14.7%); lung, 57 (10.2%); breast, 47 (8.4%); head and neck, 36 (6.4%); liver, 30 (5.4%); gynecologic, 29 (5.2%); hematologic, 27 (4.8%); pancreatic, 15 (2.68%); other, 26 (4.64%). The percentages of cases with digestive cancer and head and neck cancer with dietary or speech dysfunction and ostomies were high. The place of suicide was mainly the patients' homes. The majority of cases (366, 72.8%) were under outpatient treatment, but a few were hospitalized (25, 5.0%). It is necessary to construct a support system for cancer patients, such as those with digestive or head and neck cancer, undergoing outpatient treatment, who are thought to be at a high risk for suicide.

We conducted an online questionnaire survey of the attitudes of medical/paramedical staff towards suicide. The subjects of the self-administered questionnaire survey were psychiatrists, non-psychiatric doctors, and nurses who were engaged in the care of cancer patients. The Attitudes to Suicide Prevention Scale (ASP) was used to evaluate the attitudes of the subjects toward their clients with a high risk of suicide. The ASP is composed of 14 items, and the lower the score on the

ASP, the better the attitude towards suicide prevention. The reliability and validity of the Japanese version of ASP have also been confirmed (Kawashima et al., 2010). Valid responses were received from a total of 473 individuals (136 psychiatrists, 137 non-psychiatric doctors and 200 nurses). Of the 473, 192 had participated in workshops on suicide prevention. The ASP scores of the subjects who had participated in such workshops were lower than those of the subjects who had not participated in such workshops (37.0 vs. 39.6). Thus, medical/paramedical staff that have participated in workshops on suicide prevention might have more positive attitudes towards suicide prevention. Kawashima et al. (2013) reported that the attitudes of the medical/paramedical staff towards suicide improved with their participation in workshops on suicide prevention. Thus, to reduce the number of suicides in cancer patients, it would be desirable for medical/paramedical staff engaged in the care of cancer patients to participate in workshops on suicide prevention.

I-3

Research on Promoting Suicide Countermeasures by Boosting Social Capital with Senior Volunteers

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There are very few interventional studies aimed at fostering social capital through multi-generational symbiosis and intergenerational exchange in the community. We developed an educational program in which the elderly offers to children and residents with the main theme of “life and connection,” applying a senior volunteer project to read picture books, REPRINTS® which has a long history of the intervention research in this field. This educational program consisted of a lecture on the importance of social connections in the community and reading of picture books on “life and connection.” This educational program was developed after first developing an experimental version of the program. We developed this highly practical program for the community by consulting with members of the Board of Education in Kita-Akita city for the experimental version of the program, and members of the Health Center at Fuchu city for this educational program.

These programs were offered in a rural area (Kita-Akita city) and an urban area (Fuchu city, Tokyo). The experimental program was offered in Kita-Akita city to elderly who had completed training seminars for volunteer picture book reading. Fourteen people (average age: 65.6 years, female: 100%) participated in the program, with a pre-survey on the psychological and social functions conducted 3 weeks before the program and a post-survey conducted directly after the program. No significant differences in the results were found between the pre- and post-surveys. The main educational program was offered in Fuchu city to elderly citizens who were registered as “Genki-Ippai (spirited) supporters,” participating in friendly-greeting activities and/or social walking activities in the community. Twenty people（average age: 68.6 years; female 50.0%） participated in the program, with a pre-survey, similar to that conducted in Kita-Akita, conducted 3 weeks before the program and a post-survey conducted directly after the program. The score for the “current attitude towards life” item in the Generativity Scale, a measure of generative concern, was improved in the post-survey.

The program developed in this research could be widely applied in the community. Furthermore, the elderly who attended this educational program are now intending to utilize their learning in their own volunteer activities, so that continued promotion of “life and connection” is expected.

Area II: Research for Designing Governmental Policies and its Effective Implementation

II-1
Development of Teaching Materials to Improve the Knowledge and Skills of Medical Students for Preventing Suicide

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Participatory training incorporating elements of behavioral science is considered an effective means for improving the skills of medical professionals to address cases that they may encounter, including those who have attempted suicide. We tried to develop practical training programs that incorporates role-play.

In current medical education, it does not suffice to merely “know” something; medical professionals must also learn to “utilize” that knowledge. Active learning-based practical training programs and exercises are therefore recommended. This active learning involves the students in small groups devising actual treatment strategies for treatment scenarios, with the objective of problems being solved through role-play and hypothetical scenarios. We have created scenarios and made trigger video materials for active learning, whereby students will learn methods of interviewing patients with strong psychological burdens (familiarization, listening, and support) to “empathize with the mental state of a psychologically burdened person,” and dealing with people who have suicidal ideation, through role-play.

Example of a scenario where the basics of listening closely are learned through role-playing: a speaker is asked to freely talk about “events that were enjoyable, pleasant, or even stressful,” while a listener adopts two patterns of listening: “good listening” and “bad listening.” After the speaker has reflected on how she felt about the “good listening” and the “bad listening,” an interactive discussion is held between the facilitator and commentators. Example of a scenario where psychological crisis intervention is learned through role playing: conversation between a woman

(speaker) and her son (listener); the woman is in shock after having been notified of her cancer diagnosis. The listener acts out two patterns of listening (also conscious of non-verbal cues): “normal (immediate problem-solving and self-centered) listening” and “crisis intervention-oriented (accepting, empathetic, supportive and mutually considerate) listening.” After the two patterns of listening, an interactive discussion is held between the facilitator and commentators.

While the aforementioned scenarios are basic ones with ordinary people in mind, scenarios, such as how to handle patients with thoughts of suicide in medical settings and how they should be referred to specialist medical institutions when they visit clinics, are also included.

II-2
Death Investigation and Legal Medicine Related to Suicide Countermeasures

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Highly precise suicide statistics are indispensable for developing suicide countermeasures. However, in Japan, non-crime deaths, including those due to suicide or accidents, are investigated only minimally, so that accurate death statistics do not exist for such cases. This poses an obstacle to endeavors undertaken to prevent suicides and accidents.

We examined death-investigation systems outside Japan, and considered the possibility of their introduction to our country. Our research aimed at preventing suicides and accidental deaths was focused, in particular, on homicide-suicide deaths and child deaths. This research is currently ongoing.

Death-investigation systems worldwide can be approximately classified into three systems. The first is the European-continental type, which consists of judicial sections, such as police and prosecution, and institutes of forensic medicine, where autopsies and other medical examinations are performed. The second is the coroner system, in which a judicial officer called a coroner investigates deaths and holds inquests, while he or she delegates medical examinations to forensic pathologists. The third is the medical examiner system, in which medical examiners, who are usually forensic pathologists, investigate deaths by focusing on both crime scenes and medical examinations. In the USA, the coroner system has largely been transformed to the third system mentioned above. This year, we visited the Coroner Court of Victoria and the Victorian Institute of Forensic Medicine in Melbourne, Australia; the Office of the Medical Investigator (OMI) in New Mexico, and the Office of the Chief Medical Examiner (OCME) in New York City. We accumulated knowledge predominately on the maintenance of death statistics, suicidal deaths and their prevention, and grief care for the bereaved.

Overall, we found that the data were recorded in greater detail than in Japan. In Australia, there exists a detailed database of deaths in the coroner’s jurisdiction called the National Coronial Information System. These contain data for all of Australia and New Zealand, that can be freely accessed with permission. In addition, in Victoria, there are specific suicide-related statistics in the Victorian Suicide Register, which are utilized for developing suicide countermeasures. In New Mexico, data have been accumulated since the 1970s, and an OMI epidemiologist analyzes the data, but cooperation with the state government has not advanced to development of measures to suicide prevention. Data provided by the OCME have been utilized in New York by the administration and

the private sector.

Grief care for the bereaved is addressed in each death-investigation system using experts. Nurses address the bereaved in Victoria. A specialized counselor is involved in New Mexico, and family support centers have been established in five districts in New York. Each division carries out consultations and provides explanations, unlike in Japan, where these issues are left to the police to address. We should learn from this use of experts for provision of grief care.

Regarding homicide-suicide, we continue to study cases in the Department of Legal Medicine at Chiba University. We are also continuing our research into child deaths by analyzing death records in Chiba Prefecture, obtained by the local government from the Ministry of Health, Labour and Welfare.

II-3

Development of an Integrated Exploratory Policy Making Support Model for Public Micro Data Contributing to Comprehensive Suicide Countermeasures

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It has been suggested that multiple types of factors, including social, economic, health, and psychological factors, often interact to increase the risk of suicide-related behaviors. However, few empirical studies have been conducted on the patterns of these interactions, either at home or overseas.

To effectively implement suicide countermeasures at the local government level, it is important to devise strategies based on the characteristics of the local population. Thus, we have applied various statistical clustering methods to population statistics, including a vital statistics demographics survey, the population census, and the National Comprehensive Survey of Living Conditions, to elucidate the complex interactions of diverse factors related to suicide.

Based on our results so far, we have prepared to apply for unspecified purpose use of the statistics from the Comprehensive Survey of Living Conditions based on Article 33 of the Statistics Act. We propose to analyze this data while considering the regional factors and characterize the patterns of interactions of the factors influencing suicide risk. However, unfortunately, we were unable to obtain the regional information from the survey, against our expectation based on our interactions with the Ministry of Health, Labour and Welfare while preparing for the application. Thus, owing to time limitations, we decided to forego this analysis at this time.

Area III: Research Using Public Health Approaches

III-1
Research on the Relationship between Working Conditions and Suicide from the International Perspective

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As the suicide mortality rate in France has been relatively high among European countries, development of solutions for this problem has been a subject of public health policy for many years. Therefore, specific improvement targets and countermeasures and their effectiveness have been verified in the regional health plan (PRS - SROS) in France. As a result, the suicide mortality rate in France has declined over time. Suicide, however, still remains the highest-ranking cause of death in persons aged 25-44 years old, and the French government recognizes that the measures taken so far are inadequate. It has been pointed out that suicide measures in France are being undertaken in the absence of mutual cooperation among the agencies involved, and in response to this situation, a headquarters for French suicide measures, namely, the Observatoire national du suicide (ONS; National Suicide Observation Organization), was established. In this study, we attempted to clarify the current situation and problems in suicide countermeasures adopted in France based on the results of local stakeholders.

In France, in order to advance comprehensive suicide measures, the French National Institutes of Health and Medicine (INSERM: Institut national de la Santé et de la recherche medicale) are striving to improve the accuracy of the death certificate under collaboration with the National Institute of Legal medicine. In addition, in cooperation with health insurance organizations, ONS has conducted several pilot researches for preventing suicides, and tries to expand the scope of proven programs. Furthermore, the ONS has also organized integrated multidisciplinary research programs, such as 1) detection of expressions leading to suicide attempts by text data analysis of suicide counseling voice data, and appropriate early intervention based on it, 2) searching for biomarkers by analyzing hormones in the brains of those who attempted suicide, 3) research on the relationship between suicide and work, 4) research on the relationship between the cognitive function of the elderly and suicide, etc.

These efforts would be helpful in considering comprehensive suicide measures in countries with high suicide rates, such as Japan, Korea and Eastern European countries.

III-2

Social Epidemiological Impact Assessment Study on the Effects of Social Disparity on Suicide and Mental Health

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Background and purpose

It has been reported that the risk of suicide is correlated not only with personal factors, such as an unhealthy mental state resulting from an experience of loss or economic factors, but also with local/social environmental factors. However, the precise factors involved remain to be clearly elucidated. Meanwhile, the Cabinet Office has been publishing the suicide statistics of municipalities after 2010, and mandated in 2016, that municipalities must formulate and implement a “municipal suicide prevention policy.” So, it is anticipated that indicators for community diagnosis, evaluation of policies, and longitudinal monitoring will be developed via local comparisons to establish local suicide prevention policies. However, the amount of related research conducted is still inadequate.

Therefore, in this study, we attempted to clarify whether social capital (resources obtained from social relationships) would suppress the onset of depression, which is a risk factor for suicide, and the correlation of the suicide rate with local/social environmental factors, and to develop a prototype local management support system for suicide prevention policies.

Target and method

We prepared the data of Municipalities who cooperated in the “Japanese Gerontology Evaluation Study (JAGES)” surveys conducted in 2010, 2013 and 2016, and the “Needs Survey of Daily Life Area (Needs survey)” surveys conducted in 2013 and 2016. For cabinet-designated cities, data were prepared in units of wards. The number of municipalities was 30 in 2010, 170 in 2013, and 149 in 2016. We targeted municipalities with a population of 30,000 or more in the analysis.

The suicide rate was expressed as the average value over three years. Local and geographical variables were prepared from the data published by each ministry. Social capital variables, such as the non-participation rate in society, economic disparity (Gini coefficient) and prevalence of depression were calculated from the data obtained from the JAGES surveys and Needs surveys.

Local correlation analysis and multiple regression analysis were performed using municipalities as the analysis units. InstantAtlas® was used to develop a local management support system.

Results

There were more male suicides in areas with higher rates of depression ($\beta = 0.34$). The higher the rate of local social participation and social support, the lower the male suicide rate ($\beta = -0.36$ to -0.26). There was no relation between the female suicide rate and rate of depression. There was a strong correlation between the suicide rate and social non-participation rate in the same year, and the social support rate from two years earlier. There was a correlation between a greater than 2% fluctuation in the non-participation rate in social activities and social supports and suicide rate fluctuation, with a time lag of 2 to 5 years. The suicide rate was high in areas with a low per capita income, an aging society, and population decline. There was also a significant correlation of the suicide rate with the amount of snowfall, the average temperature, and duration of sunshine. The suicide rate was higher in areas with higher Gini coefficients. And the suicide rate fluctuation was lower in areas with lower Gini coefficient fluctuation rates. By using these indicators of the suicide rate, we developed a prototype local management support system for suicide prevention, which would enable comparison of municipalities and indicators on the internet.

Conclusion

Social capital variables show an inverse suppressive relationship with the suicide rate and depression rate. The relevance of local/social variables to the risk of suicide was clarified. A prototype regional management support system for suicide prevention was developed. In the future, we shall analyze unexplored variables, verify reproducibility using the number of suicides recorded after 2017, conducted advanced multivariate analyses, and improve the prototype system.

III-3
Comprehensive Research to Address Child Poverty and Suicide

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Low self-esteem is considered as a risk factor for suicide among children in Japan. Childhood poverty may be one of the factors related to low self-esteem among children; however, there are few comprehensive analyses of low self-esteem among children reported in the literature. Therefore, we analyzed the results of the Adachi Child Health Impact on Living Difficulty (A-CHILD) study and showed that self-esteem was significantly related to peer relationships, existence/non-existence of role models, breakfast skipping/non-skipping, mental health of the caregiver, child neglect/non-neglect, relationship with the teachers, and existence/non-existence of a place of comfort besides home and school. These results suggest that community and school could develop useful strategies to approach children directly to enhance their self-esteem, and thereby prevent child suicide.

III-4

Research on Prevention of Overwork-related Suicide and Mental Health Services

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This study was aimed at providing to promote the global trend of measures to prevent overwork-related suicide. In term of suicide prevention, the author reviewed the trends on mental health and work in international organizations by reviewing publications and interviewing professionals. As for the mental health and work issues, the Organization for Economic Co-operation and Development (OECD) has undertaken various efforts for a long time. Publications such as “Transforming disability into ability” (2003), “Sickness, disability and work” (2010), and “Sick on the Job?” (2012) are examples of the early works of the OECD. In accordance with the recent consensus that the social burden of mental illness/wellness is significant and the expectation that improving mental health may reduce the burden, the OECD changed its policy from simple disability control to investment for economic growth. “Making mental health count” (2014), a high-level forum on mental health and work (2015), and “Fit mind, fit job” (2015) are consistent with this new context. OECD recommends that both member and non-member countries seek (1) to improve their mental health care systems in order to promote mental well-being, prevent unfavorable mental health conditions, and provide appropriate and timely services which enables people living with mental health conditions to recognize the benefits of meaningful work, (2) to improve the educational outcomes and transition to further and higher education and the labor market for young people living with mental health conditions, (3) to develop and implement policies for workplace mental health promotion and return-to-work strategies, and (4) to improve the responsiveness of social protection systems and employment services to the needs of people living with mental health conditions. Such an approach to mental health and work issues is also a key component for prevention of work-related suicides. Improvement and integration of the mental health care system, educations system, workplace mental health and social protection system are needed.

III-5

Study of New Directions in Suicide Prevention Using ICT

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The objective of this study was to prepare a guideline of suicide related search-linked advertisements by evaluating the risks associated with existing advertisements (study 1), and analyzing the factors that lead to successful online consultation activity by reviewing the consultation cases of our online gatekeeping (study 2).

In study 1, we first selected 13 suicide-related terms, including “want to die” and collected 57 advertisements using Google search. By evaluating the risk of each item and qualitatively analyzing the contents, it was revealed that advertisements about businesses related to after one’s death, advertisements shown automatically by the search engine, and advertisements with denial messages such as “don’t kill yourself” were high-risk. On the other hand, consultation and support institutions are suitable with search-related advertisements using suicide-related term. Positive advertisements included kind-hearted messages, information about access to institutions, consulting means, etc. Based on these results, we prepared a plan for search-related advertisements using suicide-related terms for consultation and support institutions. In a future study, appropriate and inappropriate advertisement examples should be highlighted according to this plan, and the effect of the advertisement should be examined experimentally. Such research would put the plan into practical use.

In study 2, the subjects were 184 participants of our consulting project for the inhabitants of the Kanto area, including 96 cases who received the first email in consulting account A from June 2, 2017 to January 11, 2018 and 88 cases received the first email in consulting account B from February 17, 2018 to March 15. As for the 72 people (38.7%) who never replied to our first email, we analyzed the factors related to the lack of a reply. An intentionality tendency was seen in connection with the reply time required for the first mail. This result suggests that a shorter time needed to reply to the first email was associated with a high probability of a reply. Next, when the success of online gatekeeping was defined as (1) positive change of the clients’ feelings, (2) new connection with their families, medical institutions and the like, the enforcement of telephone consultations and meeting consultations were significantly related to the success. Thus, one route of success of online gatekeeping is to build rapport and talk about practical human relations over

the telephone or during interviews and to motivate the clients also to do so. In future studies, factors necessary to achieve this should be identified by formal analysis and case study of emails.

Japan Support Center for Suicide Countermeasures (JSSC)

JSSC acts as a think tank for promoting suicide countermeasures, and is affiliated with the Office for Policy of Suicide Prevention in Japanese Ministry of Health, Labor and Welfare. The mission of JSSC is to investigate and implement a PDCA (Plan, Do, Check, and Act) cycle to advance Japan's suicide countermeasures and to enhance support for practical initiatives at the community level. JSSC shares outcomes of its researches on suicide countermeasures in Japan with international societies, and cooperates with overseas institutions regarding suicide policies in their countries. As a WHO Collaborating Centre, JSSC dynamically proceeds overseas activities, including participation in the Mental Health Gap Action Programme (mhGAP), in depth surveys on suicide in other countries, discussions with international suicide research experts, and a worldwide collaboration of suicide research.

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