

SOCIO-DEMOGRAPHIC FACTORS INFLUENCING VIEWS ON SUICIDE

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Abstract

A population-based cross-sectional study using a questionnaire was conducted in order to clarify the socio-demographic factors influencing views on suicide in rural areas of Akita Prefecture. The response rate from 8,163 residents aged 30-69 years was 88.2%. The relationships between views on suicide and socio-demographic factors (age, sex, educational background, occupational status, and depression state) were examined using a logistic regression analysis with itemized views on suicide for dependent variables. Compared to respondents with a compulsory level of education, the odds ratio of those selecting "suicide is tragic" was relatively high for university graduates (odds ratio 2.03, 95% confidence intervals 1.50-2.75). Similarly, compared to respondents with a compulsory level of education, the odds ratio of those selecting "something must be done about suicide" was high for university graduates (odds ratio 2.83, 95% confidence intervals 2.08-3.86). In terms of sex, the odds ratio of those selecting "suicide is tragic" and "something must be done about suicide" was higher in women than in men. In terms of occupational status, people other than non-manual workers tended to select "suicide is shameful" and not to select "suicide is tragic". In conclusion, socio-demographic factors such as educational background, sex, occupational status and depression influenced views on suicide.

Key words : socio-demographic factors, views on suicide, education, sex

Introduction

Suicide has become a major public health issue in Japan. In 2004, Japan's suicide rate was 24.0 per population of 100,000, and a total of 30,247 people committed suicide¹⁾. The suicide rate is particular-

ly high in northern districts of Japan²⁾, and various research projects on community-based suicide prevention are being conducted in this region with the goal of improving public health³⁻⁶⁾.

In these research projects, intervention against depression was employed as a suicide prevention measure because depression is known to be a risk factor for suicidal behaviors. Factors influencing depressive symptoms have been studied in relation to suicide prevention in rural communities, and these studies have shown the importance of psychosocial stress, such as familial stress, among elderly persons. Furthermore, socio-demographic

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factors, including a low economic status and a low education level, are also related to depression and suicide⁷⁻⁹.

Another factor that must be considered in community-based suicide prevention programs is the acceptance of suicide among community residents, since this factor is reportedly related to depression status¹⁰. Although the acceptance of suicide seems to be related to an individual's view on suicide, the factors influencing an individual's view on suicide have not yet been examined in an epidemiological study on suicide. Therefore, the objective of this study was to clarify the socio-demographic factors associated with the views of residents regarding suicide.

Methods

Setting

The survey was conducted in two towns in southern Akita Prefecture, which is located in northern Japan. The two surveyed towns were rural communities, and their populations in 2002 were 7,890 and 8,372, respectively. The percentages of people 65 years old and over in the two towns were 32.1% and 27.3%, respectively. These percentages were higher than the overall percentage for Akita prefecture (25.1%). The average suicide mortality rate of the two towns during 2000 and 2002 was 60.7 per population of 100,000, which was markedly higher than the overall rate for Akita Prefecture. During this period, the suicide mortality rates among men and women in the survey area were 68.1 and 54.1 per population of 100,000, respectively. In contrast, the annual suicide mortality rates in Japan and Akita Prefecture in 2002 were 23.8 (men, 35.2; women, 12.8) and 42.1 (men, 65.7; women, 20.7) per population of 100,000, respectively. The two towns were located close to each other and did not differ greatly in their social contexts or natural environments. Thus, we conducted this study in these two towns.

Participants

A questionnaire survey was conducted between

July and August 2003. The target population, aged 30-69 years, was 8,163 residents excluding inpatients and institutional residents, such as individuals in nursing home or welfare facilities. Community volunteers or municipal employees delivered a questionnaire and informed consent form to each household and later collected the questionnaire from each household. A total of 7,202 people (88.2%) responded to the questionnaire.

The survey was approved by the Ethics Committee of the School of Medicine at Akita University.

Questionnaire

The items examined in this study were age, sex, educational background, occupational status, depression status, and views on suicide. Educational background was classified into four levels: compulsory education (9 years of schooling), high school graduate (12 years), junior college graduate/vocational school graduate (14 years), and university graduate or higher (16 years and over). Occupational status was also classified into four categories: non-manual worker, manual worker, self-employed, and unemployed/others. Depression status was assessed using Zung's self-rating depression scale (SDS)¹¹. The respondents were classified as to whether or not they had depressive symptoms (a score of 48 points or higher).

Regarding views on suicide, the questionnaire asked respondents to select from among the following itemized views on suicide the thoughts or feelings that were closest to their own, with multiple selections allowed. The following itemized views were listed in the questionnaire: "suicide is tragic"; "something must be done about suicide"; "suicide is shameful"; "suicide is annoying"; "I wish I could commit suicide"; and "I do not give suicide much thought".

Statistical analyses

The factors relating to each item were assessed using multiple logistic regression analysis, with each itemized view on suicide used as the dependent variable and age, sex, educational background,

occupational status, and depression status used as the independent variables. All statistical analyses were performed using SPSS® 11.0 software (SPSS Inc.).

Results

1) Characteristics of the Subjects

A total of 5,453 people (66.8%) provided complete answers for all the items. The characteristics of the subjects are presented in Table 1. The average age of the subjects was 49.7 years (standard deviation: 10.5 years). Men and women comprised 48.8% and 51.2% of the subjects, respectively. In terms of educational background, high school graduates made up the largest group, comprising 53.9% of the subjects. In terms of occupational status, non-manual workers comprised 19.5%; manual

workers comprised, 36.1%; self-employed workers comprised, 22.9%; and unemployed/others comprised, 21.5%. Of the subjects, 23.0% had depressive symptoms.

2) Views on Suicide

Regarding the subjects' views on suicide, 54.3% chose "suicide is tragic"; 26.6% selected "something must be done about suicide"; 7.2% chose "suicide is shameful"; 27.7% selected "suicide is annoying"; 41.2% selected "I do not give suicide much thought"; and 1.1% chose "I wish I could commit suicide".

The results of the multiple logistic regression analysis are shown in Table 2. Regarding educational background, respondents who had higher levels of education tended to select "suicide is tragic" and "something should be done about suicide" and not to select "I do not give suicide much thought". In terms of sex, women tended to select "suicide is tragic" and "something must be done about suicide" more often than men and selected "I do not give suicide much thought" less often than men. Older respondents selected "suicide is annoying" and "I do not give it much thought" more often than younger respondents. In terms of occupational status, people other than non-manual workers tended to select "suicide is shameful" and not to select "suicide is tragic". Only a small number of respondents selected "I wish I could commit suicide". This item was strongly associated with depressive status.

Discussion

This study showed that community residents' views on suicide were related to their educational background, sex, occupational status, age, and depression status. Regarding educational level, persons with a high educational level selected "suicide is tragic" and "something must be done about suicide." Residents who responded "something must be done about suicide" seemed to view suicide more appropriately. Residents with good mental health

Table 1. Characteristics of respondents (sample analyzed)

| Items | sample analyzed | % |
|---|-----------------|------|
| Sex | | |
| Men | 2,661 | 48.8 |
| Women | 2,792 | 51.2 |
| Age | | |
| 30-39 yr | 1,053 | 19.3 |
| 40-49 yr | 1,629 | 29.9 |
| 50-59 yr | 1,606 | 29.4 |
| 60-69 yr | 1,165 | 21.4 |
| Educational background | | |
| Compulsory education | 1,529 | 28.0 |
| High school graduate | 2,937 | 53.9 |
| Junior college graduate/ Vocational school education | 748 | 13.7 |
| University graduate or higher | 239 | 4.4 |
| Occupational status | | |
| Non-manual | 1,062 | 19.5 |
| Manual | 1,967 | 36.1 |
| Self-employed | 1,249 | 22.9 |
| Unemployed/other | 1,175 | 21.5 |
| Depression severity | | |
| SDS score of less than 48 | 4,197 | 77.0 |
| SDS score 48 and over | 1,256 | 23.0 |

Table 2. Odds ratios (OR) with 95% confidence intervals (CI) for socio-demographic factors influencing views on suicide by the multiple logistic regression

| | Suicide is tragic | | | Something must be done about suicide | | | Suicide is annoying | | | Suicide is shameful | | | I do not give suicide much thought | | | I wish I could commit suicide | | |
|---|-------------------|-------------|-------|--------------------------------------|-------------|-------|---------------------|-------------|-------|---------------------|-------------|-------|------------------------------------|-------------|-------|-------------------------------|--------------|-------|
| | OR | (95%CI) | P | OR | (95%CI) | P | OR | (95%CI) | P | OR | (95%CI) | P | OR | (95%CI) | P | OR | (95%CI) | P |
| Sex | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | |
| Women | 1.75 | (1.56-1.96) | <0.01 | 1.34 | (1.18-1.52) | <0.01 | 1.10 | (0.97-1.25) | 0.14 | 0.83 | (0.67-1.03) | 0.09 | 0.85 | (0.76-0.96) | 0.01 | 0.87 | (0.50-1.51) | 0.62 |
| Age | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | |
| 30-39 yr | 0.99 | (0.84-1.16) | 0.88 | 1.18 | (0.99-1.41) | 0.06 | 1.17 | (0.97-1.40) | 0.10 | 1.01 | (0.72-1.41) | 0.95 | 1.06 | (0.90-1.25) | 0.47 | 0.98 | (0.44-2.17) | 0.97 |
| 40-49 yr | 1.03 | (0.87-1.22) | 0.71 | 1.36 | (1.13-1.64) | <0.01 | 1.46 | (1.21-1.76) | <0.01 | 1.42 | (1.02-1.97) | 0.04 | 1.18 | (0.99-1.40) | 0.07 | 2.00 | (0.93-4.29) | 0.08 |
| 50-59 yr | 0.72 | (0.59-0.88) | <0.01 | 1.05 | (0.83-1.32) | 0.70 | 1.41 | (1.13-1.77) | <0.01 | 1.42 | (0.97-2.08) | 0.07 | 1.39 | (1.13-1.70) | <0.01 | 0.82 | (0.27-2.47) | 0.73 |
| 60-69 yr | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | |
| Educational background | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | |
| Compulsory education | 1.52 | (1.32-1.76) | <0.01 | 1.60 | (1.35-1.89) | <0.01 | 1.06 | (0.91-1.24) | 0.44 | 0.96 | (0.75-1.25) | 0.78 | 0.83 | (0.72-0.96) | 0.01 | 0.99 | (0.50-1.96) | 0.98 |
| High school graduate | 1.56 | (1.28-1.91) | <0.01 | 1.80 | (1.44-2.25) | <0.01 | 1.07 | (0.86-1.33) | 0.55 | 0.82 | (0.55-1.22) | 0.32 | 0.73 | (0.59-0.89) | <0.01 | 1.20 | (0.47-3.06) | 0.70 |
| Junior college graduate/ Vocational school education | 2.03 | (1.50-2.75) | <0.01 | 2.83 | (2.08-3.86) | <0.01 | 1.20 | (0.87-1.66) | 0.27 | 0.64 | (0.33-1.27) | 0.20 | 0.60 | (0.45-0.82) | <0.01 | 3.37 | (1.00-11.30) | 0.05 |
| University graduate or higher | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | |
| Occupational status | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | |
| Non-manual | 0.74 | (0.63-0.87) | <0.01 | 1.03 | (0.87-1.23) | 0.71 | 1.19 | (1.00-1.42) | 0.05 | 1.83 | (1.28-2.60) | <0.01 | 1.03 | (0.88-1.21) | 0.74 | 3.61 | (1.23-10.62) | 0.20 |
| Manual | 0.72 | (0.60-0.86) | <0.01 | 0.97 | (0.80-1.19) | 0.79 | 1.29 | (1.06-1.58) | 0.01 | 1.76 | (1.20-2.58) | <0.01 | 1.07 | (0.91-1.30) | 0.37 | 2.47 | (0.74-8.28) | 0.14 |
| Self-employed | 0.72 | (0.60-0.87) | <0.01 | 1.02 | (0.83-1.25) | 0.87 | 1.13 | (0.92-1.39) | 0.24 | 1.81 | (1.22-2.69) | <0.01 | 1.18 | (0.98-1.42) | 0.09 | 3.87 | (1.22-12.24) | 0.02 |
| Unemployed/other | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | |
| SDS score of less than 48 | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | |
| SDS score 48 and over | 1.00 | (0.88-1.14) | 0.99 | 0.85 | (0.73-0.98) | 0.03 | 0.93 | (0.80-1.08) | 0.33 | 1.13 | (0.89-1.44) | 0.32 | 0.52 | (0.46-0.60) | <0.01 | 11.16 | (6.03-20.67) | <0.01 |

literacy may have a more proactive view toward suicide. An association between low educational level and poor mental health literacy, such as inappropriate attitudes towards depression, has been reported¹⁰⁾. Poor mental health literacy, arising from a lack of knowledge of depression and/or stigmas toward depression, may have affected the views of the community residents regarding suicide. Differences in educational background have also been associated with attitudes toward suicide. Residents with a high level of education may have greater access to health information and may have an easier time adopting proactive views toward suicide for this reason. Therefore, suicide prevention activities, such as education programs to raise awareness of mental health in the community and the early detection and treatment of depression and other mental disorders, should be tailored to the education level of the community.

Regarding sex differences, the odd ratios of selecting “suicide is tragic” and “something must be done about suicide” were significantly higher among women than among men. Since mental health literacy is reportedly poorer in men than in women¹⁰⁾, women may have more appropriate views regarding the prevention of suicide for the same reasons as those already discussed with regard to educational level. Furthermore, women may be more prone to consult with friends and to accept help¹²⁾, which may explain the differences in the responses according to sex.

Regarding age, the odd ratios of selecting “I do not give suicide much thought” and “suicide is annoying” were significantly higher among older people. As previously reported¹³⁾, older people may have more inappropriate knowledge or negative views of suicide, and the response “I do not give suicide much thought” was thought to be associated with an inappropriate knowledge of suicide. Age differences in views on suicide should also be taken into account when planning and implementing support measures.

In terms of occupational status, the odds ratio of non-manual workers selecting “suicide is shameful”

was significantly lower than those of the other occupational groups. As the examined populations in this study lived in rural areas, workers other than non-manual workers were mainly engaged in agriculture. Motohashi *et al.*¹⁴⁾ reported that the regional industrial structure influenced urban-rural differences in suicide mortality. They suggest that rural residency may affect mental distress through socio-economic factors such as depopulation and a household structure containing three generations of family members.

In terms of depression status, the odds ratio of people with an SDS score of 48 or higher selecting “I wish I could commit suicide” was significantly higher than those of people with a score of less than 48. Depressed persons tend to view things negatively¹⁵⁾, which could lead to suicidal ideation.

This study had two limitations. One limitation is that our results may be affected by differences in the views on suicide between complete respondents and non-complete respondents, mainly because of the age of the respondents. Low completion rates were observed among the elderly, who often had inappropriate views on suicide. However, we were only able to analyze data collected from complete respondents. Another limitation is that this study was conducted in rural communities in Japan. Future research may be required in urban areas.

Conclusion

Rural residents' views on suicide are associated with educational background, sex, occupational status, age, and depression status. Women and persons with a high level of education tended to view suicide prevention efforts more favorably.

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