PSYCHOLOGY, HEALTH & MEDICINE, 2017
VOL. 22, NO. 9, 1072–1081
https://doi.org/10.1080/13548506.2016.1274409

Taylor & Francis
Taylor & Francis Group

The relationship between attitudes toward suicide and willingness to pay for suicide prevention: a cross-sectional study in Japan

Hajime Sueki

Faculty of Human Sciences, Department of Psychology and Education, Wako University, Tokyo, Japan

ABSTRACT

There are gaps in our knowledge of the role attitudes toward suicide play in determining people's willingness to participate (WTP) for suicide prevention. We conducted a large nationwide cross-sectional study with the aim of clarifying the relationship between WTP for reducing suicide risk and attitudes toward suicide. Ordinal logistic regression analyses (n = 1771) showed that there were significant associations of WTP for suicide prevention with 'Suicide as a right' (β = −.15, 95% CI: −.25 to −.04, p = .006), 'Preventability/readiness to help' (β = .81, 95% CI: .69–.94, p < .001) and 'Common occurrence' (β = .32, 95% CI: .19–.46, p < .001). 'Incomprehensibility/unpredictability' did not show an association with WTP. Taxpayer acceptance for suicide prevention is more likely to be achieved through provision of information that increases endorsement of 'preventability/readiness to help' and 'common occurrence' factors, and decreases 'suicide as a right' scores.

ARTICLE HISTORY
Received 13 May 2016
Accepted 14 December 2016

KEYWORDS
Suicide prevention; attitudes toward suicide; economic value; contingent valuation; willingness to pay

According to World Health Organization (WHO) global estimates, more than 800,000 individuals die by suicide each year (World Health Organization [WHO], 2014); therefore, suicide is a global public health issue. In Japan, as determined by the 'Basic act on suicide countermeasures', the Japanese government and local governments are obligated to promote suicide prevention. This law was established in 2006 for the purpose of realizing a society where a Japanese citizen can live a life worth living healthily, especially in light of how the number of the suicides in Japan increased explosively in 1998 (Cabinet Office, Government of Japan, 2016). From 2016, when this law was revised, expenses for suicide prevention were included in the primary budget of the Japanese Ministry of Health, Labour and Welfare.

Suicide prevention has great benefit. For 5 years from 2010 to 2014, the economic cost (sum of lifetime income of suicide victims) of suicide was estimated to be a total loss of 1 trillion yen ($8.3 billion) annually (Kaneko & Shinozaki, 2004). Another estimation (Sueki, 2016) based on willingness to pay (WTP) yielded a similar result. In addition to the direct economic cost, suicide elicits grief in suicide survivors. Although an estimated economic cost of bereavement due to suicide does not exist, it is natural to assume that there are more grieving costs among suicide survivors than survivors of natural deaths. A systematic

CONTACT Hajime Sueki h_sueki@wako.ac.jp

review of suicide survivors' reactions showed that suicide survivors reported higher levels of rejection, shame, stigma, need to conceal the cause of their suicide attempt, and blame than all other survivor groups (Stack, 2007; Sveen & Walby, 2008). These social costs could be decreased by suicide prevention.

Previous studies have determined the risk factors for suicide, and some strategies (e.g. reducing access to lethal means, providing psychiatric treatment) have been scientifically proven to reduce suicide rates (Mann et al., 2005). Most of these strategies are practicable at low cost. Strategies that are both low-cost and cost-effective include frequent follow-ups for patients who have been discharged from a hospital after a suicide attempt (WHO, 2010), provision of cognitive behavioral therapy for people with a history of self-injury (Byford et al., 2003), provision of online self-help services aimed at reducing suicidal ideation (van Spijker, Majo, Smit, van Straten, & Kerkhof, 2012), and development of guidelines concerning suicide-related news reports (Vos et al., 2010). However, the resolution of this social issue has not been highly prioritized (Sueki, 2016).

Many previous studies have conducted surveys regarding the cost of measures that target reductions in various mortality risks. These surveys aimed to estimate the value of statistical life (VSL), and to clarify the appropriateness of the measures. The VSL represents people's WTP for avoiding one person's statistical death caused by a particular event. Specifically, the VSL is calculated by dividing the WTP for a particular amount of risk reduction by the amount of risk reduction. In Japan, the VSL is estimated primarily to adapt measures for preventing deaths due to traffic accidents, and the value for these accidents is JPY (¥) 200 to 500 million (USD $1.67–4.67 million) (Japanese Cabinet Office, 2007). This result is similar to those from many meta-analysis studies of VSL, which estimate it at approximately several million USD (Bellavance, Dionne, & Lebeau, 2009; Kochi, Hubbell, & Kramer, 2006; Lindhjem, Navrud, Braathen, & Biausque, 2011; Viscusi & Aldy, 2003). In other words, to avoid one person's statistical death due to a traffic accident, the people deem it appropriate to spend a public fund of several hundred million yen.

The VSL estimate based on the WTP for measures to reduce the risk of suicide is lower than that for reducing the risk of mortality due to other causes. Sueki (2015), who used open-ended WTP questions, reported that the median WTP for reducing suicide risk by 20% was ¥1000, with the VSL at ¥25 million ($.21 million). In addition, a double-bounded dichotomous choice contingent valuation survey showed that the median WTP for reducing suicide risk by 25% was ¥1572, with the VSL at ¥31.44 million ($.26 million) (Sueki, 2016). To the best of our knowledge, except in the above-mentioned studies, the suicide-based VSL has not been estimated; however, these results suggest that the public may be less positive concerning allocation of funds to suicide prevention measures compared with preventive measures against other mortality risks.

One of the factors responsible for the low WTP for suicide prevention measures is people's attitudes toward suicide (Sueki, 2016). A recent study (Sueki, in press) showed that WTP for reducing suicide risk was negatively associated with endorsement of the 'incomprehensibility and unpredictability of suicide' in the Attitudes Towards Suicide Scale (ATTS) (Kodaka, Inagaki, & Yamada, 2013; Renberg & Jacobsson, 2003). However, this study asked only 106 Japanese university students, so generalizability was very limited.

Therefore, we conducted a large nationwide cross-sectional study with the aim of clarifying the relationship between WTP for reducing suicide risk and attitudes toward suicide. By clarifying the factors influencing WTP for suicide prevention and by intervening in these

factors, we may be able to develop effective approaches to achieve public understanding of the value of budgetary provisions for suicide countermeasures, and this achievement may lead to more effective suicide prevention efforts, thereby improving overall public mental health.

Method

Study design

The study used a cross-sectional approach and was conducted with members of comprehensive Internet survey panels through a major Japanese Internet survey company (Cross Marketing Inc., Tokyo, Japan). The survey was based on a target population aged 20 years or older, aligned with the demographics of the 2010 census data in Japan (Japanese Ministry of Internal Affairs and Communications, 2014). We distributed survey information to 127,506 people selected by sex, age, and residential area. We determined the sample size based on the expected response rate for online surveys and statistical power. In total, 28,836 people visited the survey website, and 2855 completed the questionnaire (response rate: 10.1%).

Questionnaire

All participants answered the self-administered questionnaire-type survey on the Internet. The survey contained questions about WTP for suicide prevention, and about attitudes toward suicide, lifetime experience of suicide (suicide ideation, suicide plans, suicide attempts, or close contact with someone who died by suicide), and other demographic items (age, sex, marital status, family structure, job status, educational background, and annual household income).

As in a previous study (Sueki, 2016), we used the contingent valuation method (CVM) to estimate the WTP value for suicide prevention measures. We provided the study participants with an explanation regarding the current state of suicide prevention measures, presented them with hypothetical scenarios concerning the details and quality of these measures (e.g. 20% reduction in the annual suicide risk by reinforcing suicide prevention measures), and asked them directly about their WTP. After answering the WTP question, participants explained their answers by selecting one of six potential rationales. The details of these scenarios and questions about potential rationales are the same as those previously reported (Sueki, 2016). We assessed WTP with an open-ended question.

Study participants' attitudes towards suicide were assessed with the 37-item Japanese version of the ATTS, which uses a 5-point Likert-type response scale (0: strongly disagree, 4: strongly agree). The ATTS was originally developed in Sweden (Renberg & Jacobsson, 2003), and the Japanese version was developed by Kodaka et al. (2013) with the approval of the original author. Kodaka et al. (2013) performed factor analysis on the 37 items, and extracted six factors. The internal consistency of these factors was relatively low (Cronbach's α: .34–.75). However, among the available Japanese-language scales to assess attitudes toward suicide, we felt that the Japanese version of the ATTS most thoroughly covered various attitudes; therefore, we used this version in our study. In addition, because of the low internal consistency of the ATTS, we used its Japanese version after performing factor analysis with our own data.

Participants

After obtaining data for the 2855 participants who completed surveys, we excluded those who had not indicated their WTP for suicide prevention measures, i.e. those who had selected either 'I am willing to spend money to help people, whether to implement countermeasures against suicide or in other ways' or 'Although it is important to implement countermeasures against suicide, I am against any tax increase' as their motivation for WTP. This is because selecting either of these two items as their motivation for paying additional tax did not mean that they paid it for suicide prevention. We also excluded data from participants who incorrectly answered questions designed to familiarize them with the concept of mortality risk. These participants were considered as not understanding the concept of mortality risk and were therefore deemed unsuitable for completing the questionnaire survey estimating WTP using CVM. These exclusion criteria are the same as those in Sueki's (2016) study. After all exclusions, data from 1771 participants (61.4%) remained for analysis.

Statistical analyses

Initially, the full set of ATTS items was subjected to exploratory factor analysis (principal factor method). Considering interpretability and the results of ATTS factor analysis in previous studies, we identified a four-factor structure, with the extracted factors explaining 39.6% of the total variance. We removed items that loaded more heavily than .3 on two or more factors or did not load more heavily than .3 on any single factor. The remaining 27 items were submitted to another principle component factor analysis. The final factor analysis (promax rotation) resulted in the 27-item, 4-factor structure (Suicide as a right, Preventability/readiness to help, Common occurrence, and Incomprehensibility/unpredictability) shown in Table 1. The factor solution extracted 44.0% of the variance.

For the primary examination of the relationships of attitudes toward suicide and WTP for suicide prevention, ordinal logistic regression analyses were used. We divided the WTP, as the dependent variable in the regression, into quartile groups because the WTP was not normally distributed. The aim was to investigate whether attitudes toward suicide (Suicide as a right, Preventability/readiness to help, Common occurrence, and Incomprehensibility/unpredictability) showed significant association with the WTP for suicide prevention, adjusting for participants' characteristics and lifetime experience of suicide. We examined three versions of the model: Model 1 (non-adjusted) controlling for nothing; Model 2 controlling for participant characteristics (sex, age, marital status, family structure, job status, educational background, and household income); and Model 3 (fully adjusted) controlling for participant characteristics and lifetime experiences of suicide. In these three models, we added potential confounders in the order of their strength of relationship to WTP for suicide prevention, to check robustness of the results. The p-values presented are for two-tailed tests. The analysis was performed using SPSS software (SPSS 19.0 for Windows; SPSS Inc., Chicago, IL). The exchange rate used was 120 JPY to 1 USD.

Results

This final sample included 968 men (54.7%). Participants' mean age was 47.4 (SD = 14.2) years. Over half (1015; 57.3%) were married; 934 (52.7%) had one or more children; 293

Table 1. The results of exploratory factor analysis on the Attitudes Towards Suicide Scale.

	Factor			
	I	II	III	IV
Factor I: Suicide as a right (Mean = 3.09, SD = .79, Cronbach's α = .85)				
Suicide understandable if severe, incurable disease-people	.91	.18	−.17	−.03
Give help to commit suicide if severe, incurable disease-people	.78	.00	−.10	.17
Suicide acceptable means to end incurable disease-people	.75	−.04	−.08	.09
Get help to commit suicide if severe, incurable disease-myself	.73	.18	.05	−.07
Right to commit suicide-people	.61	−.19	.03	.01
Situations where suicide is the only solution	.45	−.07	.25	−.12
Get help to commit suicide if severe, incurable disease-myself	.44	.04	.21	.02
Factor II: Preventability/readiness to help (Mean = 3.28, SD = .63, Cronbach's α = .73)				
Duty to restrain a suicidal act	.04	.64	−.01	.18
Suicide can be prevented	.11	.63	−.07	.06
Attempts a cry for help	.15	.52	.18	.08
Suicide one's own business	.16	−.52	.28	.18
Can always help	.02	.50	.14	.14
Prepared to help a suicidal person-myself	−.03	.46	.26	.00
Suicide decision can't be reversed	.22	−.46	.16	.16
Factor III: Common occurrence (Mean = 2.59, SD = .56, Cronbach's α = .64)				
Could express suicide with or without meaning it-myself	−.02	.11	.67	−.16
Everyone has considered suicide	.12	.13	.49	−.15
Could kill myself out of loneliness	.05	.21	.48	−.15
Attempts due to revenge and punishment	−.11	.01	.45	.17
Attempts due to interpersonal conflicts	−.06	.10	.43	.19
Suicidal thoughts will never disappear	.02	−.11	.43	.14
Suicide happens without warning	−.03	−.02	.36	.16
Factor IV: Incomprehensibility/unpredictability (Mean = 2.88, SD = .61, Cronbach's α = .65)				
Not understandable that people can take their lives	−.20	.05	−.06	.63
Suicides among younger people particularly puzzling	−.10	.18	−.06	.56
People who talk about suicide do not actually take their lives	.13	.03	.08	.53
People who make threats seldom complete suicide	.25	.06	−.08	.43
Attempts are impulsive actions	−.11	.19	.24	.35
Most people avoid talking about suicide	.01	.01	.07	.35
Eigenvalues	6.09	2.81	2.34	1.53
Percentage of the variance	20.99	30.68	38.76	44.02

(16.5%) were unemployed; 967 (54.6%) had a higher education background (college/university degree or graduate school); 561 (31.7%) had middle-class incomes (¥4 million per year to ¥7 million per year); and 496 (28.0%) had high incomes (more than ¥7 million per year). In addition, 706 (39.9%) had experienced suicidal ideation; 270 (15.2%) had planned suicide; 165 (9.3%) had attempted suicide; and 519 (29.3%) had family members, relatives, or acquaintances who had died by suicide. The median, mean, and mode values for WTP were ¥1000 ($8.33), ¥1612 ($13.40), and ¥1000 ($8.33). The median and mode VSL were ¥25 million ($.20 million) and ¥40.3 million ($.34 million). The excluded sample (n = 1084) was significantly more likely to be male (p = .006), to be highly educated (p < .001), and to have attempted suicide within their lifetime (p = .016). There were no other significant differences between those included in the study sample and the excluded group (n = 1084).

Table 1 shows the results of exploratory factor analysis. We labeled the four factors in consideration of previous studies about ATTS: Suicide as a right, Preventability/readiness to help, Common occurrence, and Incomprehensibility/unpredictability. The four factors were internally consistent (Cronbach's α = .64–.85).

Table 2 reports the regression coefficients of each ATTS factor's score. There were significant associations of WTP for suicide prevention with Suicide as a right (β = −.15, 95%

Table 2. Predictors of willingness to pay for suicide prevention.

	Model 1 (non-adjusted)					Model 2					Model 3 (fully adjusted)				
	B	95%CI lower	95%CI upper	Wald	*P*	*B*	95%CI lower	95%CI upper	Wald	*P*	*B*	95%CI lower	95%CI upper	Wald	*P*
Attitudes toward suicide															
Suicide as a right	**−.15**	**−.28**	**−.02**	**4.84**	**.028**	**−.15**	**−.28**	**−.01**	**4.66**	**.031**	**−.15**	**−.25**	**−.04**	**7.66**	**.006**
Preventability/readiness to help	**.88**	**.73**	**1.04**	**122.91**	**<.001**	**.90**	**.75**	**1.06**	**124.98**	**<.001**	**.81**	**.69**	**.94**	**155.58**	**<.001**
Common occurrence	**.35**	**.19**	**.52**	**18.07**	**<.001**	**.34**	**.17**	**.51**	**15.94**	**<.001**	**.32**	**.19**	**.46**	**22.22**	**<.001**
Incomprehensibility/unpredictability	−.05	−.19	.09	.51	.477	−.03	−.17	.11	.16	.688	−.07	−.18	.05	1.27	.259
Demographic variables															
sex, male						−.07	−.25	.11	.59	.443	.10	−.04	.24	1.95	.163
Age						−.01	−.01	.00	1.96	.162	**−.01**	**−.01**	**.00**	**5.67**	**.017**
Marital status, being married						.03	−.21	.26	.05	.829	.00	−.18	.19	.00	.966
Family structure, with children						−.09	−.33	.15	.52	.473	−.02	−.20	.17	.03	.873
Job status, disemployment						.00	−.25	.26	.00	.976	−.13	−.33	.08	1.52	.218
Educational background, high (college/university degree or graduate school)						**.34**	**.16**	**.52**	**13.99**	**<.001**	**.31**	**.17**	**.45**	**18.14**	**<.001**
Household income, middle (JPY 4 million/year to JPY 7 million/year)						.14	−.08	.35	1.55	.213	**.17**	**.00**	**.34**	**3.95**	**.047**
Household income, high (> JPY 7 million/year)						**.23**	**.00**	**.46**	**3.92**	**.048**	**.24**	**.05**	**.42**	**6.37**	**.012**
Lifetime experience of															
Suicide ideation											.13	−.04	.30	2.24	.135
Suicide plan											−.08	−.34	.18	.36	.549
Suicide attempt											**.43**	**.14**	**.72**	**8.63**	**.003**
An acquaintance's death by suicide											.12	−.03	.27	2.39	.122

WTP: Willingness to pay
CI: Confidence interval

Note: Bold type indicates significance ($p < .05$).

CI: −.25 to −.04, p = .006), Preventability/readiness to help (β = .81, 95% CI: .69–.94, p < .001) and Common occurrence (β = .32, 95% CI: .19–.46, p < .001). Incomprehensibility/unpredictability did not show an association with WTP.

Discussion

Preventability/readiness to help and Common occurrence were the factors showing a significant positive correlation with the WTP for suicide prevention. In other words, the tendency for study participants to agree to pay taxes to support suicide prevention is related to their awareness that suicide can be prevented, as well as to their belief that suicide can happen to anyone. These relationships seem reasonable, given that additional taxation for suicide prevention measures is likely to be deemed important if the public believes that suicide is unpreventable or that it occurs only in a small proportion of the population. On the other hand, Suicide as a right showed a significant negative correlation with the WTP. This relationship also seems reasonable, because if suicide is considered a right to control our own lives, suicide prevention would violate this right. Taken together, these findings suggest that increasing taxpayer acceptance for suicide prevention is more likely to be achieved through provision of information that increases endorsement of the Preventability/readiness to help and Common occurrence factors, and decreases the attitude toward Suicide as a right. However, it remains controversial as to whether we should decrease the attitude towards considering suicide as a right in order to drive forward suicide prevention as an official policy.

Our finding that negative attitudes toward suicide may lead to failure to be open to suicide prevention is consistent with scientific knowledge on health literacy (Sørensen et al., 2012). Some studies showed that poor health literacy is related to low WTP in promoting healthy behavior (Bosompra, Ashikaga, Flynn, Worden, & Solomon, 2001; Khawali, Ferraz, Zanella, & Ferreira, 2014; Liu, Tsou, & Hammitt, 2009). Poor health literacy is a limiting factor for help-seeking and receiving policy benefits. Therefore, those with poor health literacy may be reluctant to pay the tax required for promoting their health. This study showed that a similar phenomenon occurs with suicide prevention policy. To break this negative cycle and prevent suicide, intervention is necessary to improve health literacy for the whole community.

The validity and reliability of this research seems to be high because the relationships between the WTP and confounders are similar to those found in previous studies estimating WTP for reducing risks for other cause of death. Having risk factors for certain types of death, high income and high educational background have been related to WTP in many previous studies (Cabinet Office, Japan, 2007; Yasunaga, 2008, 2009; Yasunaga, Ide, Imamura, & Ohe, 2006). The results of the present study were also similar to those of previous studies regarding the estimation of the suicide-related WTP/VSL in Japan. In our study, the median value for WTP for reducing suicide risk by 20% was ¥500–¥1000 ($4.17–8.33), and the VSL ¥12.5– ¥25.0 million ($.10 million–$.20 million). In a previous study that used the double-bounded dichotomous choice-type item for investigating the WTP for suicide prevention measures (Sueki, 2016), the WTP and VSL for reducing suicide risk by 25% were estimated at ¥1572 ($13.10) and ¥31.44 million ($.26 million). Therefore, the use of an open-ended question to assess WTP had little influence on the study results, suggesting high validity and reliability.

The present study had two limitations. First, the generalizability of the study results is limited. The study participants were registered with an online investigation company. We were unable to obtain data of non-participants of the survey. After excluding some participants from the analyses, educational attainment was higher for those retained than for those excluded. As was the case in the present study, our previous study (Sueki, 2016) reported higher educational background among the study participants as a consequence of selecting those with a full understanding of the study parameters. We suggest that this phenomenon was attributable to relatively difficult CVM-related investigations. In addition, the ratio of lifetime experience of suicidal ideation/behaviors of this study's participants is high when comparing with those from a large-scale Internet-based investigation in Japan (Sueki, Yonemoto, Takeshima, & Inagaki, 2014). Therefore, the results of our study may only apply to people with suicidal tendencies who have a high-level educational background and use the Internet frequently. Secondly, the validity and reliability of the Japanese version of the ATTS were suboptimal. Although this instrument is the best available choice for investigating relevant attitudes, a previous study (Kodaka et al., 2013) has shown insufficient internal consistency for the investigated factors; therefore, we performed factor analysis using our own data. We achieved relatively higher internal consistency values for each investigated factor compared with those reported in the previous study (Kodaka et al., 2013). In contrast, the original ATTS (Renberg & Jacobsson, 2003) produced slightly more diverse factors for suicide-related attitudes. Hence, we may have been unable to fully assess such attitudes in our study.

In spite of the above-mentioned limitations, the present study is significant in that it is the first large nationwide investigation of the relationship between WTP for suicide prevention and attitudes toward suicide. This study improved upon the validity, reliability, and generalizability of the previous study (Sueki, in press) of WTP for suicide prevention and attitudes toward suicide. Our study cannot ascribe causal connections between suicide-related attitudes and WTP, but future experimental interventions may clarify the factors constraining WTP and VSL for suicide prevention. Interventions aimed at modifying suicide-related attitudes (e.g. lectures and e-learning) may change WTP. Such investigations may also facilitate the implementation of approaches that aid the general public's understanding of the value of devoting funds to suicide prevention measures.

Disclosure statement

No potential conflict of interest was reported by the author.

ORCID

Hajime Sueki http://orcid.org/0000-0002-0316-1710

References

Bellavance, F., Dionne, G., & Lebeau, M. (2009). The value of a statistical life: A meta-analysis with a mixed effects regression model. *Journal of Health Economics, 28*, 444–464.

Bosompra, K., Ashikaga, T., Flynn, B. S., Worden, J. K., & Solomon, L. J. (2001). Psychosocial factors associated with the public's willingness to pay for genetic testing for cancer risk: a structural equations model. *Health Education Research, 16*, 157–172.

Byford, S., Knapp, M., Greenshields, J., Ukoumunne, O. C., Jones, V., Thompson, S., ... & Davidson, K. (2003). Cost-effectiveness of brief cognitive behaviour therapy versus treatment as usual in recurrent deliberate self-harm: a decision-making approach. *Psychological Medicine, 33*, 977–986.

Japanese Cabinet Office. (2007). *Research study on economic analysis of damage and cost of traffic accident: report*. Retrieved from http://www8.cao.go.jp/koutu/chou-ken/h19/houkoku.pdf (in Japanese).

Japanese Cabinet Office. (2016). *The basic act for suicide prevention*. Retrieved from http://law.e-gov.go.jp/htmldata/H18/H18HO085.html (in Japanese).

Japanese Ministry of Internal Affairs and Communications. (2014). *Census in 2010*. Retrieved from http://www.stat.go.jp/data/kokusei/2010/.

Kaneko, Y., & Shinozaki, T. (2004). Social cost of suicide and economic effect of suicide prevention. *Roudou no Kagaku, 59*, 21–24 (in Japanese).

Khawali, C., Ferraz, M. B., Zanella, M. T., & Ferreira, S. R. (2014). Willingness to pay as patient preference to bariatric surgery. *Health Expectations, 17*, 73–81.

Kochi, I., Hubbell, B., & Kramer, R. (2006). An empirical Bayes approach to combining and comparing estimates of the value of a statistical life for environmental policy analysis. *Environmental & Resource Economics, 34*, 385–406.

Kodaka, M., Inagaki, M., & Yamada, M. (2013). Factors associated with attitudes toward suicide. *Crisis, 34*, 420–427.

Lindhjem, H., Navrud, S., Braathen, N. A., & Biausque, V. (2011). Valuing mortality risk reductions from environmental, transport, and health policies: A global meta-analysis of stated preference studies. *Risk Analysis, 31*, 1381–1407.

Liu, J. T., Tsou, M. W., & Hammitt, J. K. (2009). Willingness to pay for weight-control treatment. *Health Policy, 91*, 211–218.

Mann, J. J., Apter, A., Bertolote, J., Beautrais, A., Currier, D., Haas, A., ... & Mehlum, L. (2005). Suicide prevention strategies: A systematic review. *JAMA, 294*, 2064–2074.

Renberg, E. S., & Jacobsson, L. (2003). Development of a questionnaire on attitudes towards suicide (ATTS) and its application in a Swedish Population. *Suicide and Life-Threatening Behavior, 33*, 52–64.

Sørensen, K., Van den Broucke, S., Fullam, J., Doyle, G., Pelikan, J., Slonska, Z., & Brand, H. (2012). Health literacy and public health: A systematic review and integration of definitions and models. *BMC Public Health, 12*, 80.

van Spijker, B. A., Majo, M. C., Smit, F., van Straten, A., & Kerkhof, A. J. (2012). Reducing suicidal ideation: Cost-effectiveness analysis of a randomized controlled trial of unguided web-based self-help. *Journal of Medical Internet Research, 14*, e141.

Stack, S. (2007). Societal economic costs and benefits from death: another look. *Death Studies, 31*, 363–372.

Sueki, H. (2015). Contingent valuation estimation of willingness to pay for suicide countermeasures: A cross-sectional study among university students in Japan. *Kokorono Kenkou (The Japanese Journal of Mental Health), 30*, 42–53. Retrieved from https://www.researchgate.net/publication/281740600_Contingent_valuation_estimation_of_willingness_to_pay_for_suicide_countermeasures_A_cross-sectional_study_among_university_students_in_Japan (in Japanese).

Sueki, H. (2016). Willingness to pay for suicide prevention in Japan. *Death Studies, 40*, 283–289. doi: 10.1080/07481187.2015.1129371

Sueki, H. (in press). The relationship between willingness to pay for reducing the risk of death by suicide and attitudes toward suicide among university students in Japan. *Kokorono Kenkou (The Japanese Journal of Mental Health), 31*. Retrieved from https://www.researchgate.net/publication/302350920_The_relationship_between_willingness_to_pay_for_reducing_the_risk_of_death_by_suicide_and_attitudes_toward_suicide_among_university_students_in_Japan (in Japanese).

Sueki, H., Yonemoto, N., Takeshima, T., & Inagaki, M. (2014). The impact of suicidality-related internet use: A prospective large cohort study with young and middle-aged internet users. *PLoS ONE, 9*, e94841.

Sveen, C. A., & Walby, F. A. (2008). Suicide survivors' mental health and grief reactions: A systematic review of controlled studies. *Suicide and Life-Threatening Behavior, 38*, 13–29.

Viscusi, W. K., & Aldy, J. E. (2003). The value of a statistical life: a critical review of market estimates throughout the world. *Journal of Risk and Uncertainty, 27*, 5–76.

Vos, T., Carter, R., Barendregt, J., Mihalopoulos, C., Veerman, J. L., Magnus, A., ... & Wallace, A. (2010). *Assessing cost-effectiveness in prevention (ACE–Prevention): Final report.* Brisbane and Melbourne: University of Queensland and Deakin University. Retrieved from http://www.sph.uq.edu.au/docs/BODCE/ACE-P/ACE-Prevention_final_report.pdf

World Health Organization. (2010). *mhGAP intervention guide for mental, neurological and substance use disorders in non-specialized health settings*. Retrieved from: http://www.thehealthwell.info/node/69810

World Health Organization. (2014). *Preventing suicide: A global imperative.* Retrieved from http://www.who.int/mental_health/suicide-prevention/world_report_2014/en/

Yasunaga, H. (2008). Willingness to pay for mass screening for prostate cancer: A contingent valuation survey. *International Journal of Urology, 15*, 102–105.

Yasunaga, H. (2009). Who wants cancer screening with PET? A contingent valuation survey in Japan. *European Journal of Radiology, 70*, 190–194.

Yasunaga, H., Ide, H., Imamura, T., & Ohe, K. (2006). Benefit evaluation of mass screening for prostate cancer: Willingness-to-pay measurement using contingent valuation. *Urology, 68*, 1046–1050.