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Regular Article

One-year follow up after admission to an emergency department for drug overdose in Japan

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Aim: The aim of the study was to investigate the incidence of and risk factors for repetition of suicidal behavior within a year after admission for drug overdose in Japan.

Methods: Patients admitted to the emergency department of a general public hospital in Tokyo for drug overdose of prescribed medicine and/or over-the-counter drugs between March 2008 and February 2009 were followed up after 1 year. Demographic characteristics, previous suicide attempts, and mental health state were examined by self-report questionnaire and interview at recovery from the initial attempt. Information about suicidal behavior during the follow-up period was obtained from the outpatient psychiatrists by postal questionnaire 1 year after discharge.

Results: Of 190 patients admitted to the emergency department, 132 patients answered the questionnaire and had the interview. Information about the

follow-up period for 66 patients was obtained. Of the 66 patients, 28 patients attempted suicide again and two patients committed suicide during the 1-year follow-up period. Psychiatric diagnosis of personality disorder and denial of suicidal intent at the time of recovery were associated with increased risk for another suicide attempt. Lethality levels of suicidal behaviors before and after admission were associated with each other.

Conclusion: The rate of fatal and non-fatal suicide attempt within a year after admission for self-poisoning was substantial. Psychiatric diagnosis of personality disorder was a risk factor for repetition of suicide attempt. Clinicians should pay attention to the means of previous suicide attempts even though the patient denies suicidal intent at recovery.

Key words: drug overdose, Japan, prospective cohort study, suicide attempt.

JAPAN HAS ONE of the highest suicide rates among developed countries.¹ For more than 10 years, suicide rates in Japan have been higher than 24.9 per

100 000 people.¹ Since the 'Basic Act on Suicide Prevention' was put into force in Japan in 2006, both community and medical models of suicide prevention projects have been conducted, such as publication of suicide prevention manuals and educational program for psychiatric professionals. However, there has been no clear effect of these projects on suicide rate.¹

Suicide attempt is the strongest risk factor for suicide, and a global strategy of suicide prevention by

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the World Health Organization included research on suicide attempts as an important focus.² Many previous studies, conducted mainly in Western countries, showed a high rate of suicide after suicide attempt,^{3–7} and several risk factors for suicide after suicide attempt have been reported. On the other hand, in Japan, studies on suicide attempters have been scarce,^{8–10} and there was no available study that followed up suicide attempters and examined the risk for repeat of suicide attempt. Therefore, the risk factors for recurrence of fatal and non-fatal suicide attempt following a suicide attempt are unknown among the Japanese. As culture affects suicidal behaviour,¹¹ studies are required to investigate the risk for repetition of suicide attempt in Japan, specifically examining risk factors for repetition of suicidal behavior within a short period after suicide attempt, as suicide risk after suicide attempt was found to be highest during the first 3 years and especially in the first 6 months.⁵

This study focused on patients who were admitted to hospital for drug overdose, because a previous study found self-poisoning to be the most prevalent type of suicide attempt that required admission.¹² The objectives of this study were to: (i) investigate the incidence of suicidal behavior after admission for drug overdose in Japan; and (ii) investigate risk factors for repetition of suicidal behavior within a year after admission for drug overdose.

METHODS

Study design

This study was a fixed-length cohort study that followed up the patients for 1 year.

Study sample

This study followed up the samples in a cross-sectional survey that investigated depression and dissociation in patients who were admitted to the emergency department of a public hospital in Tokyo owing to drug overdose. The hospital was one of the three hospitals that had emergency rooms in the catchment area of approximately 970 000 inhabitants within 96 km². Admission to the emergency department was decided by the doctors in the emergency department based on the need for physical care. The inclusion criteria for the cross-sectional

survey were all the patients who were admitted to the emergency department for drug overdose between March 2008 and February 2009, and who could communicate enough in Japanese. Drug overdose was defined as the intentional self-administration of more than the prescribed dose of prescribed medicine and/or over-the-counter drugs. It was made explicit that involvement with the survey was on a voluntary basis, and written informed consent for participation in the study was obtained from participants. All the participants in the cross-sectional survey were included in the cohort study. If there were patients who were admitted repeatedly owing to drug overdose in the study period, only the first episode of self-poisoning was included in the cohort. Data were kept anonymously and securely in electronic forms. This study was conducted with permission from the ethics committee of Tokyo Fuchu Metropolitan Hospital (since 2010, Tokyo Metropolitan Tama Medical Center).

Data collection

Eligible patients were given a self-report questionnaire and interviewed by trained psychiatrists in the hospital after they recovered from coma and became clearly conscious, as judged by the psychiatrists who conducted the interviews. The interviewers examined sociodemographic background, psychiatric history, and current use of psychiatric services. They also evaluated severity of suicidal intent at the time of recovery using the response list for Question 9 in the Beck Depression Inventory ('I don't have any thoughts of killing myself', 'I have thoughts of killing myself, but I would not carry them out', 'I would like to kill myself', and 'I would kill myself if I had the chance'). Psychiatric diagnosis based on International Statistical Classification of Diseases and Related Health Problems was given by the interviewer.

The self-questionnaire included the Kessler Psychological Distress Scale (K10) and the Adolescent Dissociation Experience Scale (ADES).^{13,14} The K10 is a 10-item, five-point Likert scale questionnaire developed by Kessler for population surveys and is also suggested for use in screening for mental illness.¹⁵ The score ranges from 10 to 50, and individuals with a score over 25 are considered to have a moderate or severe mental disorder.¹⁶ The Japanese version of K10 showed performance equivalent to the original version.¹⁷ The ADES is a 30-item self-report measure

for screening pathological dissociation.¹⁴ Armstrong *et al.* developed this scale targeting adolescents by revising the Dissociation Experience Scale (DES), which is a similar self-reporting questionnaire targeting adults. However, the ADES has been employed in several studies using an adult sample as it is easier to use than the DES,^{18,19} which consists of 28 analogue scales, and it has already been confirmed that the score of the ADES is 10 times the score of the DES.¹⁴ The validity and reliability of the Japanese version of the ADES is already established.²⁰ Each item of the ADES has an 11-point Likert scale with a score from 0 to 10, and a mean score of the 30 items over 4.0 points suggests pathologic dissociation.¹⁹

At discharge, those without current psychiatric service use were referred to psychiatrists near the patient's home address. One year after the admission for self-poisoning, a questionnaire was sent to each outpatient psychiatrist to obtain information about the incidence of completed suicide, suicide attempt, and self-cutting during the follow-up period of 1 year. Self-cutting was defined as 'deliberate cutting of the surface of the body with or without suicidal intent'. Definition of suicide attempt was not given in the questionnaire, and identification of these incidents was based on the psychiatrist's written reply to the dichotomous questionnaires, including the method of suicide attempt (e.g. 'Has the patient attempted suicide by drug overdose during the follow-up period?'). In addition, for cases of completed suicide since hospital discharge, we spoke with the outpatient psychiatrists to confirm the information.

Data analysis

Data were analyzed using Microsoft EXCEL, STATA version 11.0, and SPSS version 17.0. Sociodemographic background, psychiatric history of the patients, and severity of depression, dissociation, and suicidal intent were regarded as the independent variables. The dependent variable was suicidal behaviors within the 1-year period of follow up.

The difference in the exposures of interest between those who were followed up and those who were lost to follow up was examined. The χ^2 -test was performed to compare proportions for binary or categorical variables, and the Student's *t*-test was performed to compare means of continuous variables. Residual analysis was conducted to compare distribution of psychiatric diagnosis between the two

groups. The Mann–Whitney *U*-test was performed for each question of the Intent Scale as the answers were not normally distributed. Statistical significance was evaluated using 0.05 level, 2-sided tests.

For the analysis of risk factors for suicide attempt during the follow-up period, cases without information for the entire follow-up period were excluded. Univariable logistic regression was performed to investigate the odds of suicide attempt for each exposure variable. The association between the variables that were found to increase the odds of suicide attempt was examined using the χ^2 -test, and multivariable logistic regression was performed to adjust for possible confounders.

The association between the variables that were found to be associated with increased risk for suicide attempt in the univariable logistic regression and lethality of suicidal behavior after admission for drug overdose was examined using the χ^2 -test. We divided the means of suicide attempt into two categories based on the violence of the means. Self-poisoning, gas, and drowning were defined as non-violent suicide attempts, and all other suicide attempts were defined as violent suicide attempts according to a previous study.²¹ Based on external knowledge, violent suicide attempt was considered as the most lethal suicidal behavior, followed by non-violent suicide attempt and self-cutting. If a patient used multiple means of suicide attempt, the most lethal means was taken into consideration.

RESULTS

A total of 199 admissions of 190 patients to the emergency department for drug overdose were observed between March 2008 and February 2009. Of the 190 patients, 39 patients missed recruitment due to absence of the psychiatrists in charge of this research, 16 patients refused to participate in the study, two patients died due to acute intoxication after drug overdose during hospitalization, and one patient could not communicate well in Japanese. The mean age and sex ratio were not significantly different between the participants and non-participants in the cross-sectional survey. A total of 132 patients participated in the cross-sectional survey and completed the interview and the self-report questionnaire. Of the 132 patients, 66 patients were followed up for 1 year, for a follow-up rate of 50.0%. The reasons for loss to follow up were: 41 cases of no reply, 24 cases

Table 1. Comparison of the characteristics between followed up patients and patients lost to follow up

	Followed up patients (<i>n</i> = 66)	Patients lost to follow up (<i>n</i> = 66)	<i>P</i> -value
Sociodemographic characteristics			
Mean age (years) (SD)	33.3 (11.5)	30.2 (12.0)	0.122
Sex (female)	48 (73.7%)	54 (81.8%)	0.213
Having cohabitant	49 (74.2%)	42 (64.6%)	0.232
Education (≥12 years)	59 (89.4%)	52 (78.8%)	0.096
Having occupation	42 (64.6%)	44 (67.7%)	0.711
Psychiatric diagnosis in ICD-10			
F2	7 (10.9%)	4 (7.4%)	0.509
F3	29 (45.3%)	12 (22.2%)	0.001
F4	11 (17.2%)	23 (42.6%)	<0.001
F5	1 (1.6%)	2 (3.7%)	0.459
F6	13 (20.3%)	11 (20.4%)	0.992
F7	2 (3.1%)	0 (0.0%)	0.190
F8	1 (1.6%)	2 (3.7%)	0.459
Psychiatric history			
History of self-cutting	36 (61.0%)	28 (44.4%)	0.067
Past admission in psychiatric department	37 (58.7%)	19 (30.2%)	0.001
Ongoing psychiatric medication	62 (95.4%)	40 (61.5%)	<0.001
History of suicide attempt			
Self-poisoning	47 (73.4%)	41 (63.1%)	0.206
Suicide attempt using charcoal	2 (3.1%)	0 (0.0%)	0.151
Jumping	7 (10.9%)	6 (9.2%)	0.747
Hanging	7 (10.9%)	7 (10.8%)	0.975
Other suicide attempt	6 (9.4%)	5 (7.7%)	0.732
Mental health status at recovery			
Mean K10 score	33.9 (8.3)	32.7 (10.2)	0.497
K10 ≥ 25	53 (91.4)	46 (78.0)	0.044
Mean ADES score	3.7 (2.3)	3.1 (2.4)	0.211
ADES ≥ 4	20 (39.2)	18 (38.3)	0.926
Suicide intent at recovery			
'I do not want to commit suicide at all'	25 (37.9%)	26 (39.4%)	0.887
'I think of death but do not want to commit suicide'	32 (48.5%)	31 (47.0%)	
'I want to commit suicide'	6 (9.1%)	6 (9.1%)	
'I am seeking a chance to commit suicide'	3 (4.6%)	3 (4.6%)	

ADES, Adolescent Dissociation Experience Scale; K10, Kessler Psychological Distress Scale.

of disengagement from the psychiatrist's service, and one refusal by the patient to give information.

The baseline characteristics of patients who were followed up and of those who were lost to follow up are shown in Table 1. In general, there were only a few differences between the two groups. Those who were followed up were more likely to have had the experience of admission to the psychiatric department, to take ongoing psychiatric medication ($P = 0.001$ and $P \leq 0.001$, respectively), to have had

depression above the threshold level ($P = 0.044$), and to have the psychiatric diagnosis of F3 (mood disorders) ($P = 0.001$), while those lost to follow up were more likely to have the diagnosis of F4 (neurotic, stress-related and somatoform disorders) ($P \leq 0.001$). There was no difference in suicide intent at recovery between those followed and those lost to follow up.

Of the 66 patients who were followed up for 1 year, 25 patients (37.9%) performed self-cutting, 28

Table 2. Suicidal behaviors within 1-year follow up of 66 patients who were admitted for drug overdose

	<i>n</i>	Crude rate per 1000 person-years
Completed suicide	2	30.3
Suicide attempt		
Any	28	424.2
Self-poisoning	25	378.8
Jumping	5	75.8
Hanging	3	45.5
Gas	0	0.0
Other suicide attempt	0	0.0
Self-cutting	25	378.8

patients (42.4%) attempted suicide, and two patients (3.0%) committed suicide within the 1-year follow-up period, one by drug overdose and the other by hanging (Table 2).

From the univariable logistic regression analysis, a history of admission to the psychiatric department (odds ratio [OR] 3.34; 95% confidence interval [CI] 1.09–10.26), a psychiatric diagnosis of personality disorder (OR 8.89; 95%CI 1.40–56.57), denial of suicide intent at recovery (OR 4.36; 95%CI 1.38–13.84), and a previous history of suicide attempt (OR 5.76; 95%CI 1.16–28.48) were associated with attempted suicide within a year after admission due to drug overdose (Table 3). After adjusting for possible confounders, the psychiatric diagnosis of personality disorder (OR 8.20; 95%CI 0.99–68.01) ($P = 0.051$) and denial of suicide intent on recovery (OR 4.82; 95%CI 1.27–18.34) ($P = 0.021$) were associated with a suicide attempt within a year after admission due to drug overdose.

Among the variables that were found to be associated with a suicide attempt during the follow-up period in the univariable logistic regression, only a previous history of suicide attempt tended to be associated with the lethality of suicidal behavior within a year after admission ($P = 0.085$). Therefore, we investigated the association between the lethality of suicidal behavior before and after admission due to self-poisoning. From ordinal logistic regression, both of them were associated with each other ($P < 0.001$). A history of more lethal suicidal behavior was associated with more lethal suicidal behavior within a year after admission for self-poisoning (Table 4). While only one of the patients without a

history of suicide attempt (1/12 patients, 8.3%) made a suicide attempt after admission, approximately half of the patients with a history of non-violent suicide attempt (16/35 patients, 45.7%) made a violent suicide attempt after the admission for self-poisoning. Approximately two-thirds of the patients with a history of violent suicide attempt (8/12 patients, 66.7%) made any suicide attempt after admission, and half of them (6/12 patients, 50.0%) made a violent suicide attempt.

DISCUSSION

This is the first prospective cohort study in Japan that has followed up patients who were admitted to an emergency department for drug overdose, and we observed a substantial proportion of fatal and non-fatal recurrent suicidal behavior within a year after discharge. Psychiatric diagnosis of personality disorder and denial of suicide intent at recovery were associated with increased risk for suicide attempt after discharge. Lethality of previous suicide attempt before the index admission was associated with lethality of suicidal behavior after discharge.

The suicide rate within a year after admission due to drug overdose was substantial in this first prospective cohort study in Japan which followed up patients admitting to an emergency department due to drug overdose. The observed suicide rate within a year after self-poisoning was relatively high in this study (2/66 in a year) compared with the previous studies.²² There may be several explanations for this. First, the patients included in the cohort were those who made a suicide attempt serious enough to require admission. Second, the patients followed up might have had more severe mental illness than those who were lost to follow up, as the patients who were followed up were more likely to have a history of self-cutting, a history of admission to the psychiatric department, and depression at recovery. The majority of those who repeated suicide attempt during the follow-up period took a non-violent method rather than a violent method, and the trend was similar to the population-based trend of suicide attempt in Japan.⁸

While neither depression nor dissociation at recovery were associated with suicide attempt after discharge, psychiatric diagnosis of personality disorder and denial of suicide intent at recovery were associated with increased risk for suicide attempt after

Table 3. Odds ratios of attempted suicide within 1 year after an emergency department admission for drug overdose

	Total n	n (%)	Crude OR (95%CI)	P-value	Adjusted OR (95%CI)	P-value
Sociodemographic characteristics						
Age group						
<20	6	1 (16.7)	(Reference)	–		
20–29	20	6 (30.0)	2.14 (0.20–22.48)	0.525		
30–39	23	15 (65.2)	9.38 (0.93–94.65)	0.058		
40–49	12	3 (25.0)	1.67 (0.13–20.58)	0.690		
50–59	2	1 (50.0)	5.00 (0.15–166.6)	0.368		
≥60	2	0 (0.0)	–			
Sex						
Male	17	5 (29.4)	(Reference)	0.304		
Female	48	21 (43.8)	1.87 (0.57–6.13)			
Having cohabitant						
Yes	49	19 (38.8)	(Reference)	0.725		
No	16	7 (43.8)	1.22 (0.39–3.85)			
Education (years)						
≥12	58	24 (41.4)	1.76 (0.32–9.87)	0.518		
<12	7	2 (28.6)	(Reference)			
Having occupation						
Yes	42	14 (33.3)	(Reference)	0.197		
No	22	11 (50.0)	2.00 (0.69–5.74)			
Psychiatric history						
Ongoing psychiatric medication						
Yes	61	26 (42.6)	–	–		
No	3	0 (0.0)	–			
History of admission in psychiatric department						
Yes	37	19 (51.4)	3.34 (1.09–10.26)	0.035	2.18 (0.53–9.03) [†]	0.280
No	25	6 (24.0)	(Reference)		(Reference)	
Psychiatric diagnosis in ICD-10						
F2	7	2 (28.6)	1.07 (0.13–8.79)	0.952	1.47 (0.14–15.71) [‡]	0.749
F3	28	10 (35.7)	1.48 (0.31–6.88)	0.616	3.79 (0.52–27.60) [‡]	0.189
F4	11	3 (27.3)	(Reference)	–	(Reference)	–
F5	1	0 (0.0)	–	–	–	–
F6	13	10 (76.9)	8.89 (1.40–56.57)	0.021	8.20 (0.99–68.01) [‡]	0.051
F7	2	1 (50.0)	2.67 (0.12–57.62)	0.532	–	–
F8	1	0 (0.0)	–	–	–	–
Mental health status at recovery						
K10 score						
≥25	53	20 (37.7)	(Reference)	0.179		
<25	4	3 (75.0)	4.95 (0.48–50.9)			
ADES score						
≥4.0	20	10 (50.0)	2.00 (0.63–6.38)	0.241		
<4.0	30	10 (33.3)	(Reference)			
Suicide intent at recovery						
'I do not want to commit suicide at all'	25	14 (56.0)	4.36 (1.38–13.84)	0.012	4.82 (1.27–18.34) [§]	0.021
'I think of death but do not want to commit suicide'	31	7 (22.6)	(Reference)		(Reference)	
'I want to commit suicide'	6	2 (33.3)	1.71 (0.26–11.40)	0.577	2.51 (0.26–24.01) [§]	0.425
'I am seeking a chance to commit suicide'	3	3 (100.0)	–	–	–	–

Table 3. (Continued)

	Total n	n (%)	Crude OR (95%CI)	P-value	Adjusted OR (95%CI)	P-value
History of self-cutting						
Yes	36	14 (38.9)	0.92 (0.31–2.71)	0.879		
No	22	9 (40.9)	(Reference)			
History of suicide attempt						
Yes	49	24 (49.0)	5.76 (1.16–28.48)	0.032	4.02 (0.69–22.23) [†]	0.120
No	14	2 (14.3)	(Reference)		(Reference)	
Jumping						
Yes	7	5 (71.4)	4.17 (0.74–23.4)	0.105		
No	56	21 (37.5)	(Reference)			
Hanging						
Yes	7	4 (57.1)	2.06 (0.42–10.10)	0.373		
No	56	22 (39.3)	(Reference)			
Gas						
Yes	2	0 (0.0)	–	–		
No	61	26 (42.6)	–			
Other suicide attempt						
Yes	6	2 (33.3)	1.45 (0.25–8.60)	0.679		
No	57	24 (42.1)	(Reference)			

[†]Adjusted for psychiatric diagnosis and history of suicide attempt. [‡]Adjusted for history of admission in psychiatric department and suicide intent at recovery. [§]Adjusted for psychiatric diagnosis. [¶]Adjusted for history of admission in psychiatric department.
 ADES, Adolescent Dissociation Experience Scale; CI, confidence interval; K10, Kessler Psychological Distress Scale; OR, odds ratio.

discharge. Contrary to expectations, depression at recovery was not associated with increased risk of reattempt of suicide during the follow-up period. Risk factors for attempted suicide might be different from those for completed suicide. Also, contrary to

expectations, dissociation at recovery was not associated with suicide attempt within a year after discharge although dissociation was seen as associated with suicidality in a previous study.²³ There may be several explanations for this. First, while the previous study

Table 4. Lethality of suicidal behavior before the index admission for drug overdose and after discharge

	Suicidal behavior within a year after discharge n (%)				Total
	Violent suicide attempt	Non-violent suicide attempt	Self-cutting	No suicidal behavior	
History of suicide attempt before the index admission					
Violent suicide attempt	6 (50.0)	2 (16.7)	2 (16.7)	2 (16.7)	12 (100.0)
Non-violent suicide attempt	2 (5.7)	14 (40.0)	6 (17.1)	13 (37.1)	35 (100.0)
Self-cutting	0 (0.0)	1 (14.3)	2 (28.6)	4 (57.1)	7 (100.0)
No suicidal behavior	0 (0.0)	1 (8.3)	0 (0.0)	11 (91.7)	12 (100.0)
Total	8	18	10	30	66

History of suicide attempt before the index admission was associated with suicidal behavior within a year after discharge ($P < 0.001$ in ordinal logistic regression).

utilized an outpatient clinic, we utilized the patients who were admitted to the emergency department due to drug overdose. The average level of dissociation in the participants of this study might be relatively high, and thus having dissociation might not predict reattempt. Second, the number of subjects might be too few to produce the statistical power to detect differences between groups based on those exposures. Unexpectedly, those who denied suicidal ideation at recovery were more likely to attempt suicide than those who mentioned suicidal ideation but denied suicidal behavior. There are at least two possible explanations for this. First, those who had affective instability denied suicidal ideation at recovery even though they had it when they attempted suicide. Affective instability was found to be a risk factor for suicide.²⁴ Second, those who denied their suicidal ideation might have a relatively high level of suicidal ideation and wanted to reject further help or to avoid admission to the psychiatric department, and therefore might not speak about their suicidal intent even though they had it. A negative relation between a higher level of suicidal ideation and help-seeking intentions was shown in the previous study.²⁵ However, there was no significant difference of distributions of the patients who denied their suicidal ideation at recovery between the follow-up patients and those lost to follow up, which might be due to the small number of samples. Future study should utilize more samples and investigate help-seeking intention of the patients. Third, denial of suicidal ideation might reflect a 'cathartic effect' of suicide attempt (decreased suicidality following a suicide attempt).²⁶

We found that the lethality of the previous suicide attempt was associated with the lethality of suicidal behavior after discharge. This result is consistent with a previous study, which showed that the worst suicidal ideation in life was associated with an increased risk of suicide.²⁷ Also, it is possible that patients with an aggressive personality tend to repeat a violent method in attempting suicide.²¹

There are several limitations to this study. Because the participants were recruited from only one hospital in Tokyo, it is unlikely that the results of this study can be generalized to the whole of Japan. As there were 55 patients who were potentially eligible but not included in the cross-sectional survey, there might be a possibility of selection bias despite some similarities in demographic characteristics between participants and non-participants in the survey.

Among 190 patients admitted due to overdose, only 66 patients (35%) were followed up. As the follow-up rate was low, the suicide rate might be either overestimated or underestimated. The rate might be underestimated because a study following up self-poisoning reported that the least cooperative patients tended to repeat their acts of self-poisoning.²⁸ On the other hand, the suicide rate might be overestimated because more seriously ill patients might keep going to psychiatrists and be followed up. We did not obtain the information on how many reattempts have been conducted by each patient during the follow-up period. Because the sample was relatively small, the statistical power may be low. In addition, considering the low follow-up rate, the findings from this study should be interpreted with caution. Further, because we did not obtain information about what kinds of interventions (i.e. psychotherapy, case management, only medication) have been conducted for each patient during the follow-up period, we could not evaluate the effects of those interventions.

Even taking these limitations into consideration, the suicide rate within a year after admission for self-poisoning was substantial. This means that clinicians in Japan should carefully evaluate the suicide risk of patients who are admitted for drug overdose. As psychiatric diagnosis of personality disorder and denial of suicide intent at recovery were associated with increased risk for suicide attempt after discharge, these factors may be more reliable than mental health status at recovery when predicting future suicide attempt. As this study showed that a history of lethal suicidal behavior was associated with lethal suicidal behavior after discharge, clinicians should be especially careful about patients with a history of suicide attempts using lethal methods even though they remain engaged in psychiatric services. This may also mean that medication is not enough to prevent repetition of a violent suicide attempt, and that social and psychological supports, such as case management and intensive contact, are required to prevent the suicide of patients with a history of suicide attempt.^{9,29}

A similar study with more participants and a more efficient follow-up method is required to obtain more precise information about the incidence and risk factors for suicide within a short period after self-poisoning. Also, the effectiveness of social and psychological support for suicide attempters by drug overdose, in addition to psychiatric medication, should be investigated.

Conclusions

The rate of fatal and non-fatal suicide attempt within a year after admission for self-poisoning was substantial. Psychiatric diagnosis of personality disorder and denial of suicide intent at recovery were associated with increased risk for repetition of suicide attempt after discharge. Clinicians should pay attention to the means of previous suicide attempts because lethality of previous suicide attempt before the index admission was associated with lethality of suicidal behavior after discharge.

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Development and preliminary evaluation of communication skills training program for oncologists based on patient preferences for communicating bad news

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ABSTRACT

Objective: The purposes of this study were to develop a communication skills training (CST) workshop program based on patient preferences, and to evaluate preliminary feasibility of the CST program on the objective performances of physicians and the subjective ratings of their confidence about the communication with patients at the pre- and post-CST.

Methods: The CST program was developed, based on the previous surveys on patient preferences (setting up the supporting environment of the interview, making consideration for how to deliver bad news, discussing about additional information, and provision of reassurance and emotional support) and addressing the patient's emotion with empathic responses, and stressing the oncologists' emotional support. The program was participants' centered approach, consisted a didactic lecture, role plays with simulated patients, discussions and an ice-breaking; a total of 2-days. To evaluate feasibility of the newly developed CST program, oncologists who participated it were assessed their communication performances (behaviors and utterances) during simulated consultation at the pre- and post-CST. Participants also rated their confidence communicating with patients at the pre-, post-, and 3-months after CST, burnout at pre and 3 months after CST, and the helpfulness of the program at post-CST.

Results: Sixteen oncologists attended a newly developed CST. A comparison of pre-post measures showed improvement of oncologists' communication performances, especially skills of emotional support and consideration for how to deliver information. Their confidence in communicating bad news was rated higher score at post-CST than at pre-CST and was persisted at 3-months after the CST. Emotional exhaustion scores decreased at 3-months after CST. In addition, oncologists rated high satisfaction with all components of the program.

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Significance of results: This pilot study suggests that the newly developed CST program based on patient preferences seemed feasible and potentially effective on improving oncologists' communication behaviors what patients prefer and confidence in communicating with patients.

KEYWORDS: Communication skills training, Patients', preference, Bad news, Patient-physician relationship

INTRODUCTION

The communication skills of physicians delivering bad news about cancer, such as an advanced cancer diagnosis, can affect the degree of a patient's distress (Uchitomi et al., 2001; Schofield et al., 2003; Morita et al., 2004). However, many physicians do not have a standard strategy for delivering bad news to patients (Baile et al., 2000) and find it difficult to communicate bad news with cancer patients and their relatives (Fujimori et al., 2003).

Therefore, communication skills training (CST) has been designed to enhance physicians' communication skills when delivering bad news and has been shown to improve both the objective performance of physician and subjective ratings of their confidence about communicating with patients (Baile et al., 1999; Fallowfield et al., 2002; Jenkins & Fallowfield, 2002; Back et al., 2007; Lenzi et al., 2010). However these CST programs do not necessarily have a strong theoretical basis (Girgis et al., 1999; Cegala & Lenzmeier, 2002) and reflect patient preferences (Butow et al., 1996; Parker et al., 2001). Consequently, the provision of CST cannot always improve patients' distress and satisfaction with care (Shilling et al., 2003; Fellows et al., 2004). Meanwhile, patient preferred communication features have been linked with lower psychological distress and higher satisfaction levels (Schofield et al., 2003). Therefore, interventions in enhancing physicians' communication skills that are based on the patients' preferences are needed (Cegala et al., 2002; Schofield et al., 2003).

According to our previous reports about patient preferences for physicians' styles of communicating bad news, cancer patients have preferred that physicians communicate bad news while taking into account setting up the supportive environment of the interview, giving consideration on how to communicate the bad news, providing various information which patients would like to know, and providing reassurance and emotional support to patients and their relatives (Fujimori et al., 2005; 2007; 2009). We also suggested the most difficult communication issues for physicians in clinical oncology were breaking bad news (for example, a diagnosis of advanced cancer, recurrence, and stopping anti-cancer treatment), providing emotional support, and dealing with patients' emotional responses (Fujimori et al., 2003).

The purposes of this study were to develop a CST workshop program for oncologists to improve patient preferred communication skills when breaking bad news based on the previous studies and to evaluate preliminary feasibility the CST program on the objective performances of physicians and the subjective ratings of their confidence about the communication with patients at the pre- and post- CST.

METHODS

CST Program Development

The CST program was designed to aim that oncologists learn to patients' perceive preferences and needs for communication of each patient, based on our previous surveys on the preferences of Japanese cancer patients regarding the disclosure of bad news (Fujimori et al., 2005; 2007; 2009). The conceptual communication skills model was consisted of four dimensions, referred to as SHARE: S, setting up the supporting environment of the interview; H, make consideration for how to deliver the bad news; A, discuss about various additional information which patients would like to know; and RE, provision reassurance and addressing the patient's emotion with empathic responses. Especially, the program stressed RE, because it is the most important patient preference (Fujimori et al., 2007; Fujimori & Uchitomi, 2009) and also one of the most difficult communication skills for physicians (Fujimori et al., 2003). The conceptual model had been confirmed content validity by two psychiatrists, a psychologist and two oncologists who were experienced attending staff in clinical oncology with knowledge about communication between patients and oncologists.

The program is participants' centered approach and consisted of a 1-hour computer-aided didactic lecture with text and video, 8-hours role plays with simulated patients, discussions and an ice-breaking; a total of 2-days, based on previous studies (Fujimori et al., 2003; Fellows et al., 2004) and discussion about feasibility by two psychiatrists and a psychologist who were experienced attending staff in clinical oncology with knowledge about communication between patients and oncologists. The program provides the suitable communication in the three situations of breaking bad news to patients: diagnosis

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of advanced cancer, recurrence, and stopping an anti-cancer treatment. These situations were found difficult to deal with in practice by physicians (Fujimori et al., 2003). To role-play, many scenarios were drawn up tailored to each participants' specialties. The participants were divided into groups of four each with two facilitators.

The facilitators were psychiatrists, psychologists, and oncologists, all of whom had had clinical experience in oncology for 3 or more years and had participated in specialized 30-hours training workshops on facilitating workshops on communication skills in oncology. The simulated patients, who had had experience in medical school for 3 or more years, were also participated 30-hours training workshops. To strengthen in improving physicians' empathic responses, facilitators lead a discussion and role plays on the potential needs and emotion of the patient and communication which patients prefer physicians' empathic responses during a lecture and discuss the SPs express during role plays.

Evaluation of the CST Program

Participants

Oncologists in Japan attended the CST program at National Cancer Center Hospital East. All participants were expected by their hospital directors and local district medical directors to promote palliative care in their hospitals and surrounding area. After giving written informed consent, the oncologists participated in the study.

Measurement

The Objective Performance of Communication Skills. Before and after participating in the workshop, oncologists' performances, such as behaviors and utterances, were recorded using a video-camera during a consultation with simulated patients, while they were asked to tell a patient an inoperable advanced cancer. Their consultation video files were assessed in random order by two blind-raters independently, who trained more than 60-hours in order to standardize the interpretation and application of the assessment based on the manuals, using two assessment tools. First, we prepared the 32 items for the impressions of participants' performances during simulated consultation, which were based on the patient preferences: setting up the supporting environment of the interview, consideration for how to deliver the bad news, discussing additional information, and providing reassurance and addressing the patient's emotion with empathic responses (Fujimori et al., 2007). The average Spearman correlation coefficients of each intra-coder were 0.79 and 0.76.

The average Spearman correlation coefficient of inter-coder was 0.78, except for five items which showed the correlation coefficients were less than 0. Thus, we only evaluated 27 items.

The Roter interaction analysis system (RIAS) (Roter et al., 1995) was also used for analyzing the objective utterances of communication skills. The RIAS has 42 mutually exclusive items for physicians and patients' utterances. In the RIAS, the unit of analysis is the "utterance," defined as the smallest discriminable speech segment. Every utterance is assigned to one of the mutually exclusive items that were aligned with our training, and then researchers condense them into fewer theoretically meaningful clusters depending on the purpose of their studies. The Japanese version of RIAS was used to evaluation of consultations in Japanese oncology setting by Ishikawa et al. (2002). In this study, we focused on the 23 items and added three items; silence, warning sign, and ask for perception about bad news, of the following behaviors for physicians; setting up the interview, medical and the other information given, active listening, and reassurance and empathic responses. The average Spearman correlation coefficients of each intra-coder were 0.86 and 0.82. The average Spearman correlation coefficient of inter-coder was 0.83, except for one item which showed the correlation coefficients were less than 0. Thus, we only analyzed 25 items.

Confidence in Communication with Patients.

Confidence in communication with patients was assessed with a questionnaire consisting of 21 items by Baile et al. (1997). It measures the self-efficacy of communication skills in breaking bad news. All items were rated on a 10-point Likert scale from 1 to 10, ranging from "not at all" to "extremely." The previous studies had adopted this questionnaire to evaluate CST programs (Fujimori et al., 2003; Baile et al., 1997).

Burnout. The Maslach Burnout Inventory (MBI) is a well validated, self-administered, and a standardized instrument for evaluating burnout (Maslach & Jackson, 1986). The Japanese version of MBI was validated by Higashiguti et al. (1998). It consists of 22 items and three subscales: depersonalization (five items), personal accomplishment (eight items), and emotional-exhaustion (nine items). Each item was measured on a seven-point Likert scale ranging from 0 to 6 according to frequency with which feeling/attitudes are experienced.

Evaluation of the Workshop. Nine components of the workshop (lecture on communication skills, giving feedback to others, getting feedback from others, using role play, facilitators' general approach,

facilitators' suggestion, simulated patients, scenarios, and relevance of the workshop to their own clinical practice) were evaluated. Each item was measured on a 11-point Likert scale from 0 to 10, ranging from "not at all" to "usefulness" (Fujimori et al., 2003).

Procedure

Before the workshop, participants were informed about this study and gave consent in writing for participant of this study. After that, they were required to participate in a simulated consultation in which they were asked to give the diagnosis of inoperable advanced cancer to a simulated-patient and to complete a pre-training survey regarding demographic characteristics, confidence in communication with patients, and MBI. Demographic characteristics included age, sex, marital status, specialty, clinical experience, and clinical experience in oncology. After workshop, participants were required to participate in a simulated consultation similar to the first, fill in the questionnaires consisted of confidence in communication, and evaluate the workshop. Three-months after the workshop, all participants were asked to answer a set of questionnaires that consisted of confidence and MBI.

Analysis

The scores of participants' possessed skill at pre-CST were compared using paired *t*-test with the scores at post-CST. We also estimated the confidence of participants and compared the rating score at pre-CST with post-CST and 3-months after CST using repeated measures analysis of variances (ANOVAs). When ANOVAs showed a significant difference, post hoc tests were performed. Each factor score of MBI was compared at pre-CST with 3-months after CST using *t*-test. The statistical analysis was used the SPSS 19.0 software.

Table 1. Participant characteristics (N = 16)

	Median (range), years	N	%
Age	36 (29–55)		
Clinical experience	10 (3.8–25.0)		
Clinical experience in oncology	8 (2.3–25.0)		
Sex			
Male		11	68.8
Female		5	31.3
Specialty			
Digestive		7	43.8
Thoracic		4	25.0
Head & Neck		2	12.5
Urology		1	6.3
Gynecology		1	6.3
Medical oncology		1	6.3

RESULTS

Participant Characteristics

Sixteen oncologists participated in the workshop. Their characteristics were shown in Table 1.

Performance of Communicating Bad News

In each pair of bad news consultations, the score of 13 out of 27 categories of SHARE significantly increased, related to mainly "make consideration for how to deliver the bad news" and "provision reassurance and addressing the patients' emotion with empathic responses" (Table 2). In each participant, the mean of 9.7 skills were had higher score at the post-CST. In RIAS, the utterances assigned 11 of 25 categories significantly increased, related to "setting up interview," "reassurance and empathic responses," "medical and the other information giving," "reassurance and empathic responses," and "how to deliver the bad news" (Table 2). The utterances of each participant increased in the mean of 10.5 skills at post-CST.

Confidence for Communicating Bad News

All items of the confidence related to communication with patient of participants were significantly higher scores at post-CST than at pre-CST and maintained at the high level in 3-months after CST (Table 3).

Burnout

Compared with pre-CST, the mean score of all subscales at 3-months after CST decreased (emotional exhaustion: 11.64 ± 3.77 and 10.29 ± 3.75 , respectively; $p = 0.04$, depersonalization: 18.60 ± 9.41 and 14.47 ± 9.48 , respectively; $p = 0.08$, personal accomplishment: 33.13 ± 9.65 and 28.80 ± 12.66 , respectively; $p = 0.01$).

Table 2. Mean Score of Total Performances for Physicians During Consultations by Assessing SHARE and RIAS Categories

	Pre-CST		Post-CST		t	p	% of physicians who improve the skill
	Mean	S.D.	Mean	S.D.			
SHARE categories							
Setting up the supporting environment of the interview	9.14	2.35	10.64	1.50	1.66	n.s. ^a	42.9
Greeting a patient cordially	2.79	1.84	3.71	1.07	2.06	* ^b	28.6
Looking at patient's eyes and face	3.50	0.94	3.86	0.53	1.16	n.s.	28.6
Taking sufficient time	2.85	1.35	3.07	1.21	0.42	n.s.	28.6
Make consideration for how to deliver the bad news	13.94	8.03	22.13	6.44	3.45	** ^c	85.7
Encouraging a patient to ask questions	2.43	1.74	2.43	1.60	0.00	n.s.	21.4
Not beginning bad news without preamble	1.50	1.55	4.00	0.00	6.01	**	85.7
Asking how much you know about patient's illness before breaking bad news	1.79	1.93	2.93	1.63	2.00	*	35.7
Not using technical words	2.64	1.44	3.21	0.97	1.85	*	42.9
Using actual images and test data	1.29	1.86	2.50	1.95	2.58	*	35.7
Writing on paper to explain	1.36	1.91	0.57	1.45	-1.32	n.s.	7.1
Checking to see that patients understand	1.43	1.55	2.64	1.82	2.46	*	64.3
Checking to see whether talk is fast-paced	0.57	1.45	1.78	1.71	2.08	*	50.0
Communicating clearly the main points of bad news	0.93	1.33	2.07	1.27	3.08	**	50.0
Discuss about additional information	14.64	3.71	16.21	2.83	1.13	n.s.	42.9
Answering patient's fully	3.50	1.16	3.71	0.83	0.59	n.s.	14.3
Explaining the status of patient's illness	2.93	1.38	3.29	0.99	0.92	n.s.	42.9
Telling the prospects of cancer cure	3.86	0.36	3.07	1.54	-1.76	† ^d	14.3
Providing information on support services	0.00	0.00	0.14	0.53	1.00	n.s.	7.1
Discussing patient's daily activities and work in the future	1.29	1.33	1.29	1.64	0.00	n.s.	35.7
Explaining a second opinion	0.00	0.00	1.14	1.88	2.28	*	28.6
Checking questions	3.07	1.44	3.57	0.76	1.07	n.s.	35.7
Provision reassurance and addressing the patient's emotion with empathic responses	18.50	7.30	24.64	3.59	3.56	**	85.7
Asking about patient's worry and concern	0.86	1.46	2.07	1.69	2.19	*	64.3
Saying words to prepare mentally	1.57	1.91	3.29	1.14	3.12	**	57.1
Remaining silent for concern for patient feelings	1.36	1.82	2.29	1.49	1.87	*	57.1
Accepting patient's expressing emotions	2.43	1.45	3.50	0.76	2.90	**	71.4
Saying words that soothe patient feelings	2.79	1.42	3.21	1.25	1.31	n.s.	35.7
Telling in a way with hope	3.43	1.45	3.71	0.61	0.72	n.s.	14.3
Telling what patient can hope for	3.50	1.16	3.79	0.58	0.84	n.s.	21.4
Assuming responsibility for patient's care until the end	2.57	1.45	2.79	1.37	0.56	n.s.	35.7
RIAS categories							
Setting up the interview	1.93	0.92	2.71	1.44	1.92	*	42.9
Greeting/social conversation	1.93	0.92	2.71	1.44	1.92	*	42.9
Reassurance and empathic responses	14.90	8.97	22.93	9.21	2.64	*	71.4
Empathy	0.50	0.65	1.00	1.24	1.71	†	42.9
Show compassion for worry and concern	0.21	0.43	0.71	0.73	2.19	*	42.9
Reassurance	3.29	1.98	3.50	1.99	0.43	n.s.	35.7
Tell partnership	1.00	0.00	0.71	0.73	-0.84	n.s.	21.4
Show understanding	4.79	3.83	8.21	4.98	2.28	*	71.4
Show supportive response	2.00	3.21	4.93	7.12	1.89	*	42.9
Show concern for patient	0.71	0.99	1.50	1.88	1.71	†	35.7
Show respect/gratitude	0.14	0.53	0.00	0.00	-1.00	n.s.	0
Validation	1.07	1.07	1.21	1.19	0.38	n.s.	35.7
Silence	1.14	2.25	0.71	0.99	0.81	n.s.	21.4
Open-ended question about psychosocial feelings	0.14	0.53	0.43	0.65	1.17	n.s.	35.7
Medical and the other information giving	10.43	2.38	9.22	3.66	1.43	n.s.	28.6
Information giving about medical condition	3.93	1.28	5.00	2.63	1.41	†	71.4
Information giving about therapeutic regimen	5.43	1.99	3.07	1.38	-3.49	**	7.1
Information giving about psychosocial feelings	0.29	0.47	0.79	0.70	1.99	†	7.1

Continued

Table 2. Continued

	Pre-CST		Post-CST		t	p	% of physicians who improve the skill
	Mean	S.D.	Mean	S.D.			
Counseling and direction about medical condition/therapeutic regimen	0.79	1.05	0.36	0.50	-1.47	†	14.3
How to deliver the bad news	9.50	4.54	16.79	5.42	3.90	**	92.9
Open-ended question about medical condition	0.50	0.94	1.64	0.93	5.55	**	78.6
Open-ended question about lifestyle	0.00	0.00	0.29	0.47	2.28	*	28.6
Counseling and direction	3.86	1.56	5.00	1.88	1.63	†	57.1
Ask for opinion	0.14	0.36	0.57	0.85	1.71	†	28.6
Ask for permission	0.71	1.14	0.86	1.03	0.38	n.s.	42.9
Ask for understanding	0.14	0.36	1.07	1.33	2.51	**	100
Ask for perception about bad news	0.43	0.51	1.00	0.78	2.83	**	100
Warning	0.43	0.65	1.21	0.80	3.29	**	100
Confirm comprehension/inform exactly/rephrase	3.29	2.05	5.14	2.32	2.68	**	50.0

a: n.s.= not significant

b: *p < .05

c: **p < .01

d: †p < .10

Evaluation of the Workshop

Participants reported to form a high estimate (mean scores; 7.88–9.13) of all CST components (Table 4).

DISCUSSION

This study developed CST program based on patient preferences and the newly developed CST program seemed feasible and potentially effective and might be applied to medical education for physicians, especially in Japanese culture which are characterized by a family-centered communication style, an emotionally demanding patient preference and a little more 'paternalistic' physician-patient relationship (Fujimori et al., 2005; 2007; 2009).

Two assessment tools for performances, which are the SHARE as an assessment of impressions of participants' performances and the RIAS as an assessment of participants' utterances, showed the similar results. As we intended, our developed CST program might be strengthened in improving physicians' empathic responses and active listening skills. Especially, more than 70% of participants have improved performances of "not beginning bad news without preamble" and "accepting patient's expressing emotions" categories of SHARE, and "show understanding," "open-ended question about medical condition," "ask for understanding," "ask for perception about bad news," and "warning" categories of RIAS. Taken together with these results, the newly developed CST program might be expected for physicians to be able to provide an emotional support for

patients, resulting in their reduce distress such as depression and anxiety.

In contrast, physicians' behaviors and utterances related to most categories of "discussing about additional information" of SHARE did not change between pre- and post-CST. One possible reason might be that participants of this study might have already had these communication skills, because the scores of "telling the prospects of cancer care" category of SHARE had been already rated high scores at pre-CST. Another possible reason might be that this program does not have insufficient effect on "providing information of support services" of SHARE. Most participants might not have enough knowledge about the psychosocial support services and daily activities. If so, it might be effective to add in the CST program a lecture of information which most patients had not possess.

All subjective confidence ratings about communication increased significantly after CST and maintained 3-months after it. This result showed that this CST program allowed participants to work on these areas in a manner that was inspiring confidence, and had an either equaling or surpassing efficacy on participants' confidence compared to our previous program which showed 18 of 21 items had improved after CST and maintained 3-months after CST (Fujimori et al., 2003).

As the results of participants' burnout, the emotional-exhaustion and depersonalization showed positive changes 3-months after CST, however the personal accomplishment also decreased significantly. This result did not replicate the result of our

Table 3. Scores of the Participants' Self-Rating Confidence Scale for Communication with Patient

	Pre-CST		Post-CST		3-months after CST		F	p	Multiple comparison
	Mean	S.D.	Mean	S.D.	Mean	S.D.			
Creating comfortable setting	4.13	2.07	7.20	1.47	7.20	1.97	15.59	** a	t1 ^b < t2 ^c , t3 ^d
Assessing patient's ability to discuss bad news	4.93	2.02	7.07	1.39	7.27	1.28	17.94	**	t1 < t2, t3
Detecting verbal cues	5.13	1.77	7.20	1.32	7.73	1.28	21.95	**	t1 < t2, t3
Encouraging family presence	6.40	1.59	8.07	1.58	8.27	1.16	11.46	**	t1 < t2, t3
Assessing current knowledge	5.73	1.58	7.40	1.24	7.93	1.33	16.04	**	t1 < t2, t3
Detecting patient's anger	5.40	1.96	6.73	1.53	7.27	1.49	7.83	**	t1 < t2, t3
Including family in discussion	6.53	1.36	7.87	1.88	8.40	1.18	12.29	**	t1 < t2, t3
Detecting nonverbal cues	4.53	1.85	6.80	1.57	7.20	1.74	17.87	**	t1 < t2, t3
Assessing how much the patient wants to know	4.33	1.95	6.73	1.44	7.00	1.81	23.87	**	t1 < t2, t3
Detecting anxiety	4.40	1.55	6.73	1.49	7.13	1.51	28.06	**	t1 < t2, t3
Planning discussion in advance	5.73	1.58	7.73	1.94	8.07	1.71	17.50	**	t1 < t2, t3
Detecting patient's sadness	4.80	1.52	6.67	1.59	7.20	1.52	21.50	**	t1 < t2, t3
Confirming patient's understanding of cancer	5.00	1.65	7.13	1.46	7.67	1.45	20.43	**	t1 < t2, t3
Checking to see that information was received accurately by patient	4.73	1.62	6.87	1.55	7.53	1.46	26.05	**	t1 < t2 < t3
Providing information in small increments	4.87	1.85	6.47	1.73	7.53	1.36	18.33	**	t1 < t2 < t3
Avoiding medical jargon	5.80	1.66	7.33	1.88	8.07	1.33	13.00	**	t1 < t2 < t3
Reinforcing and clarifying information	5.80	1.37	7.40	1.64	8.13	1.19	15.48	**	t1 < t2 < t3
Responding empathetically to patient's feelings	5.27	1.67	7.47	1.46	8.27	1.10	27.95	**	t1 < t2 < t3
Planning a strategy for disclosing information	5.33	1.84	7.53	2.01	8.13	1.46	18.71	**	t1 < t2, t3
Handling patient's emotional reactions	4.33	1.72	7.13	1.55	7.40	1.30	28.80	**	t1 < t2, t3
Managing your own response to patient distress	4.50	1.83	7.07	1.44	7.21	1.37	30.33	**	t1 < t2, t3

a: **p < .01

b: t1 = Pre-CST

c: t2 = Post-CST

d: t3 = 3 months after CST

previous study which showed participants' emotional-exhaustion worsened 3-months after CST (Jenkins & Fallowfield, 2002) and this CST program was suggested improving the physicians' emotional-exhaustion and depersonalization, like the speculations in previous studies that physicians' burnout had decreased after CST (Baile et al., 1997; Ramirez et al., 1995). Although this study also cannot explain the reason why the participants' personal accom-

plishment for their job decreased 3-months after CST, it is possible that participants have intensified their attempts to be empathic with patients and realized that the consultations were more challenging. It might have to be assessed at longer follow-up to provide a more satisfactory explanation of the phenomenon.

The participants evaluated the CST program fully positively on all components, suggesting that they were generally satisfied with the content, methodology, and facilitators of the workshop: a learner-centered model as well or better as our previous study (Fujimori et al., 2003). These results of this study showed the CST program suggested to useful to physicians.

Two limitations of this study should be noted. First, this preliminary study did not set up the control group and the participants are small because the aims of this study were development and feasibility evaluation of CST program based on patient preferences. Our next step study will perform randomized control trial, as the results of this study suggested a newly developed CST program was the feasible and potentially effective. Second, this study did not evaluate the impact of this CST program on

Table 4. Usefulness of the CST Program

	Mean	S.D.	range
Diadic lecture on communication skills	7.88	1.67	5-10
Giving feedback to others	8.38	1.26	7-10
Getting feedback from others	8.94	1.12	7-10
Using role play	9.00	1.15	7-10
The facilitators' general approach	9.13	1.09	7-10
The facilitators' suggestion	9.13	1.09	7-10
Simulated patient	9.00	1.10	7-10
Scenarios	8.31	1.30	6-10
Relevance of the workshop to their own clinical practice	8.25	1.34	6-10

patients' outcomes such as patients' distress and satisfaction. Future research efforts should be evaluated the patients' outcomes.

In conclusion, a newly developed CST program based on patient preferences is suggested being feasible and potentially effective on communication behaviors of oncologists, confidence in communicating with patients, and emotional exhaustion. A randomized control study to conclude the developed CST program is effective was needed further.

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Effectiveness of Japanese SHARE model in improving Taiwanese healthcare personnel's preference for cancer truth telling

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Abstract

Background: Communication skills training (CST) based on the Japanese SHARE model of family-centered truth telling in Asian countries has been adopted in Taiwan. However, its effectiveness in Taiwan has only been preliminarily verified. This study aimed to test the effect of SHARE model-centered CST on Taiwanese healthcare providers' truth-telling preference, to determine the effect size, and to compare the effect of 1-day and 2-day CST programs on participants' truth-telling preference.

Method: For this one-group, pretest–posttest study, 10 CST programs were conducted from August 2010 to November 2011 under certified facilitators and with standard patients. Participants (257 healthcare personnel from northern, central, southern, and eastern Taiwan) chose the 1-day ($n = 94$) or 2-day ($n = 163$) CST program as convenient. Participants' self-reported truth-telling preference was measured before and immediately after CST programs, with CST program assessment afterward.

Results: The CST programs significantly improved healthcare personnel's truth-telling preference (mean pretest and posttest scores \pm standard deviation (SD): 263.8 ± 27.0 vs. 281.8 ± 22.9 , $p < 0.001$). The CST programs effected a significant, large ($d = 0.91$) improvement in overall truth-telling preference and significantly improved method of disclosure, emotional support, and additional information ($p < 0.001$). Participation in 1-day or 2-day CST programs did not significantly affect participants' truth-telling preference ($p > 0.05$) except for the setting subscale. Most participants were satisfied with the CST programs (93.8%) and were willing to recommend them to colleagues (98.5%).

Conclusions: The SHARE model-centered CST programs significantly improved Taiwanese healthcare personnel's truth-telling preference. Future studies should objectively assess participants' truth-telling preference, for example, by cancer patients, their families, and other medical team personnel and at longer times after CST programs.

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Introduction

Truth telling is a common but difficult clinical task for doctors, and it can only be gradually improved through training. The most renowned current standardized communication skills training (CST) program is the US SPIKES model [1,2]. The SPIKES model, developed at the US.MD Anderson Cancer Center and based on CST, suggestions from experts, and a literature review [2], was designed to train oncologists to break bad news about cancer [1,2]. The model proposes a truth-telling procedure in six steps: setting (setting up the interview), perception

(assessing the patient's perception), invitation (obtaining the patient's invitation), knowledge (giving knowledge and information to the patient), empathy (addressing patient emotions with empathy), and strategy and summary (summarize treatment plan if patient is ready) [1]. Truth telling is usually implemented in approximately 60 min. Since this model was proposed in 2000, it has been widely used in Western countries [1] such as the US and Europe. Furthermore, its effectiveness has been verified in the US [3–5], the UK [6,7], Germany [8], Japan [9,10], and China [11].

However, truth telling in Western countries is influenced by an emphasis on patient autonomy, which is significantly