

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

different from the family-centered truth-telling culture in Asian countries [11]. Therefore, the Japan Psycho-Oncology Society (JPOS) developed the SHARE model on the basis of studies of cancer patients' preferences for truth telling [12,13]. The SHARE model emphasizes four important dimensions of truth telling: supportive environment, how to deliver bad news, additional information, and reassurance and emotional support [12]. The last dimension (reassurance and emotional support) is particularly emphasized throughout the SHARE model-centered truth-telling process to reflect cancer patients' preferences [12,13]. Implementing SHARE truth telling takes approximately 10–15 min. Only a preliminary study has verified the SHARE model [14], but it may meet the needs for developing CST in Taiwan better than the SPIKES model because Japanese culture is similar to Taiwanese folk customs, and its shorter time to implement truth telling conforms better to Taiwan's busy medical environment. The SHARE model is currently used as the education model for CST not only in Taiwan but also in several major cities in South Korea and China (e.g., Beijing and Xian). The SHARE and SPIKES truth-telling models are compared in Table 1.

To develop a good truth-telling technique, doctors, including clinically experienced attending physicians, must receive periodic training in standardized communication skills. To date, no large-scale study has verified the effectiveness of SHARE model-centered CST. To fill this gap in knowledge, the authors conducted this study for the following reasons: (i) to test the effect of Japanese SHARE model-centered standardized CST on Taiwanese healthcare personnel's preference for truth telling; (ii) to determine the size of this effect; and (iii) to compare the effect of 1-day and 2-day CST programs on participants' truth-telling preference.

Methods

Design and participants

This one-group pretest–posttest study was part of a larger project undertaken by the Taiwan Psycho-Oncology Society (TPOS) to promote CST programs to improve the level of oncologists' truth telling in Taiwan. The study was approved by the institutional review board of Chang Gung Memorial Hospital (101-1173C) to hold 10 CST programs led by certified facilitators using standard patients from September 2010 to November 2011. The TPOS informed all hospitals in Taiwan about the CST (the purpose, time, place, and registration information). This information was also published on the TPOS website and at its annual meeting. Participants were 257 healthcare personnel from northern, central, southern, and eastern Taiwan. The majority of participants was doctors ($n = 143$, 57.4%) and had signed up to participate because of personal interest ($n = 180$, 70%).

Communication skills training programs

The SHARE model used in our study was developed by TPOS in collaboration with JPOS. The SHARE CST was translated into Chinese and used in intensive training of healthcare personnel (at least 50 h of CST, train-the-trainer workshops, facilitator workshops, and facilitator internships). Some translated sentences were also modified to more closely reflect Taiwanese culture. For instance, 'Let's fight this together' was changed to 'Let's work together.' The first 22 facilitators trained by the TPOS were assessed by Dr. Fujimori (main developer of the SHARE model) and Dr. Fang (last author and head of the TPOS) and awarded Taiwan–Japan certificates.

Table 1. Comparison of the SPIKES and SHARE models

	SPIKES	SHARE
Institute where developed	MD Anderson Cancer Center, USA	Japan Psycho-Oncology Society and National Cancer Center Hospital East, Japan
Year developed	2000	2007
Basis for development	Literature search and expert input	Patients' preferences for truth telling
Core values	Patient autonomy, order of truth telling, and providing detailed information	Confucian-based values of Asian culture and reassurance and emotional support for patients and their families during truth telling
Training period	3–5 days	1–2 days
Instructor/trainee ratio	One instructor/five trainees	Two instructors/four trainees (instructors: one expert in psychology and one expert in oncology)
Types of cancer in training materials	$n = 5$ (breast cancer; prostate cancer; lymphoma, lung cancer; and melanoma cancer)	$n = 26$ (trainees choose to engage in role play according to the type of cancer role play)
Teaching methods	Didactic lessons and role play	Didactic lessons and role play
CST-related empirical studies	Verified by many studies	Verified by a preliminary study
Time to execute truth telling	Approximately 60 min	Approximately 10–15 min
Countries where used	Europe, USA, and China	Japan, Taiwan, South Korea, and China

CST, communication skills training.

These 22 facilitators were the first CST facilitators in Taiwan and conducted CST in this study. To match the Japanese SHARE model CST to the medical culture of Taiwan, all teaching materials provided by JPOS were revised by all TPOS directors on the basis of local data in Taiwan, feedback from CST facilitators and participants, and suggestions of clinical experts. However, the CST process, training of facilitators and standard patients, and use of teaching strategies meet JPOS recommendations.

Considering the positive effects of CST, the Bureau of Health Promotion in Taiwan has sponsored and supported high-quality CST training programs held by the TPOS at various medical institutions in Taiwan since 2011. SHARE CST uses small classes (four participants, two facilitators, and one standard patient). Role play is used to enable participants to learn the important skills of truth telling (Table 2). In Japan, SHARE CST was designed with 1-day and 2-day versions. Although the TPOS tried to promote the 2-day CST, it was not well received in Taiwan's busy medical environment. However, one of our study aims was to compare the effectiveness of 1-day and 2-day CST programs; thus, this study provided two CST programs as options for healthcare personnel (Table 2). Both versions included the same class modules and standard teaching materials and were led by the same facilitators. The only difference was that the 1-day and 2-day versions included 1 and 2 h of role playing for each participant, respectively (Table 2). Participants chose the CST programs according to their needs.

Truth-telling questionnaire

Participants' truth-telling preference was assessed using the 70-item Japanese truth-telling questionnaire [12], which has four subscales: method of disclosing bad news, providing emotional support, providing additional information, and setting. Self-reported responses are scored on a 5-point Likert scale from 1 (extremely unimportant) to 5 (extremely important). Higher scores indicate greater respondent preference for truth telling except for the setting subscale. The questionnaire was shown to have good internal consistency among 529 outpatients with cancer; subscale reliabilities were 0.77–0.93 [12]. The scale was translated into Chinese by Dr. Tang, with Dr. Fujimori's authorization, and found to have good reliability and validity with Taiwanese medical students and attending physicians [15].

Questionnaire scores were used in this study to indicate CST effectiveness. We reasoned that if healthcare personnel's truth-telling perceptions changed after SHARE model-centered CST to more closely match cancer patients' preferences for truth telling, as embodied in the SHARE model, the CST would have been effective, and healthcare personnel's future truth telling would be successful with patients. Dr. Fujimori agreed with this

reasoning. The questionnaire was administered as the pretest to all participants before the introduction to the CST program (Table 2). The questionnaire was again completed as the posttest after the last role play and before group feedback. Participants completed questionnaires in 10–30 min. In this study, the internal consistencies (Cronbach's alphas) of the overall truth-telling scale and its subscales were 0.92–0.94 and 0.79–0.91, respectively.

Statistical methods

Data were analyzed by descriptive statistics. For continuous data, such as age and clinical experience, variables were described by means and SDs. For categorical data, such as gender and education level, variables were described by frequency distribution and percentage. These descriptive statistics were used to analyze participants' preference for truth telling. The difference between participants' pretest and posttest truth-telling scores (before and after participating in CST programs) was analyzed by paired-sample *t*-test. Cohen's $d = \frac{M1-M2}{\sigma}$ was calculated to determine the effect size of the CST [16]. The difference between the truth-telling preferences of participants in the 1-day and 2-day CST programs was analyzed by multiple regression analysis.

Results

Participants' characteristics

The 257 participating healthcare personnel were on average 38.60 years old (SD = 8.09). The majority were women (52.5%) and had graduated from college (61.1%), with half having abundant clinical experience (≥ 10 years, 50.2%). The largest proportion was doctors (57.2%), followed by nurses (22.2%). The majority served in medical centers (52.8%). Nearly two-thirds of participants took the 2-day CST program ($n = 163$, 63.4%), whereas the rest took the 1-day CST program ($n = 94$, 36.6%). Most participants were satisfied with the programs (93.8%) and were willing to recommend them to other colleagues (98.5%) (Table 3).

Participants' truth-telling preferences

Comparison of all participants' truth-telling scores before and after participating in the CST programs shows that their overall truth-telling scores and subscale scores improved significantly ($p < 0.001$) (Table 4). The effect size was 0.91 ($d = \frac{281.89-263.88}{19.89}$).

We also compared the effect of CST program dose (1-day vs. 2-day program) on participants' truth-telling preference. Because healthcare personnel in the 1-day and 2-day CST programs differed in some basic demographic variables (e.g., age, gender, education level, marital status, clinical experience, and workplace hospital level) (data not shown), these were treated as confounding variables.

Table 2. SHARE model-centered communication skills training programs

Time	1-day CST program (6 h)		2-day CST program (12 h)	
	Procedures	Note	Procedures	Note
Day one morning	Facilitators' preworkshop meeting and participant check-in (30 min) Participant pretest (10 min) Introduction to workshop (10 min) Grouping; introduction to SHARE modules (50 min) First role-playing practice (60 min) Second role-playing practice (60 min)	A large-scale classroom is required with a capacity of 50. Each group has four participants assigned to one classroom. Participants assemble in the large classroom to complete truth-telling questionnaire and basic demographic data. The principal investigator gives the introduction in the large classroom. The facilitator of each group starts grouping participants. Facilitators introduce the SHARE model in small-group teaching. SP complete check-in procedure. Each role-playing practice includes only one participant and one SP. The participant and SP practice the truth-telling process, whereas the other three participants observe.	Facilitators' preworkshop meeting and participant check-in (30 min) Participant pretest (30 min) Introduction to workshop (10 min) Grouping; introduction to SHARE modules (50 min) First role-playing practice (60 min) Second role-playing practice (60 min)	A large-scale classroom is required with a capacity of 50. Each group has four participants assigned to one classroom. Participants assemble in the large classroom to complete truth-telling questionnaire and basic demographic data. The principal investigator gives the introduction in the large classroom. The facilitator of each group starts grouping the participants. Facilitators introduce the SHARE model in small-group teaching. SP complete check-in procedure. Each role-playing practice includes only one participant and one SP. The participant and SP practice the truth-telling process, whereas the other three participants observe.
Day one afternoon	Third role-playing practice (60 min) Fourth role-playing practice (60 min) Participant posttest (10 min) Group feedback (50 min) Certificates issued (10 min)	Participants return to large classroom to complete truth-telling questionnaire and survey on program satisfaction. Mutual feedback from SP, participants, and facilitators. Sharing of feedback. Facilitators personally issue certificates to participants in their groups. The workshop closes for participants.	Third role-playing practice (60 min) Fourth role-playing practice (60 min)	Day 1 includes four role-playing practice sessions, with each participant practicing once.
Day two morning			Participant, SP, and facilitator check-in Fifth role-playing practice (60 min) Sixth role-playing practice (60 min) Seventh role-playing practice (60 min) Eighth role-playing practice (60 min) Participant posttest (30 min)	Grouping is initiated right after check-in. Day 2 includes four role-playing practice sessions so all participants can practice again.
Day two afternoon			Group feedback (80 min) Certificates issued (10 min) Facilitators' postworkshop meeting (30 min)	Participants return to large classroom to complete truth-telling questionnaire and survey on program satisfaction. Mutual feedback from SP, participants, and facilitators. Sharing of feedback. Facilitators personally issue certificates to participants in their groups. The workshop closes for participants. Facilitators share CST experiences with each other. If any incident happened during CST, facilitators should reach a consensus on how to manage the situation in the future.

CST, communication skills training; SP, standard patients.

Descriptive analysis showed that participants in the 2-day program had better posttest truth-telling scores (Table 4),

but this difference was not significant ($p > 0.05$) in multiple regression analysis when confounding variables were controlled, except for the setting subscale (Table 5).

Table 3. Participant characteristics ($N = 257$)

Characteristic	Mean \pm standard deviation (range)	n (%)
Age (years)	38.60 \pm 8.09 (24–64)	
Gender		
Male		122 (47.5)
Female		135 (52.5)
Education level		
Junior college		12 (4.7)
College		157 (61.1)
\geq Graduate school		88 (34.2)
Marital status		
Never married		94 (36.6)
Married		161 (62.6)
Divorced		2 (0.8)
Clinical experience (years)		
1–3		39 (15.2)
4–6		55 (21.4)
7–9		34 (13.2)
≥ 10		129 (50.2)
Job title		
Doctor		147 (57.2)
Psychologist		19 (7.4)
Nurse		57 (22.2)
Social worker		21 (8.2)
Other		13 (5.0)
Workplace hospital level		
Medical center		131 (52.8)
Nonmedical center		117 (47.2)
Motivation to participate in CST		
Personal interest		180 (70.0)
Assigned		77 (30.0)
CST program (hours)		
6		94 (36.6)
12		163 (63.4)
Satisfaction with the program		
Extremely dissatisfied		7 (2.7)
Neutral		9 (3.5)
Satisfied		82 (31.9)
Extremely satisfied		159 (61.9)
Willing to recommend CST to colleagues		
Yes		253 (98.5)
No		4 (1.5)

CST, communication skills training.

Discussion

Our results show that, after participating in the CST program, healthcare personnel's preference for truth-telling improved significantly, consistent with previous reports on the effectiveness of CST [3,6,17–22]. However, our study evaluated CST effectiveness on the basis of participants' truth-telling preference, whereas other studies assessed participants' self-efficacy [3], confidence in truth telling [17], communication skills with patients [22], and confidence in communication [9,10]. Although the outcomes measured are different, the effectiveness of CST was verified. To more objectively compare the effectiveness of CST in cross-institutional and cross-national studies, future studies should develop and apply consistent assessment outcomes.

Moreover, our results show that the CST had a large ($d = 0.91$), significant effect. This large effect might have been associated with our theoretical framework (SHARE model-centered CST), facilitator quality (facilitators were certified after receiving at least 50 h training), low ratio of facilitators to participants (2:4), quality of standard patients (standard patients received intense training and were assessed regularly), and solid, standard teaching materials that were regularly revised according to empirical evidence or experts' comments.

Moreover, 70% of participants had volunteered to attend the CST program. Their motivation to learn may have been stronger than in previous studies. In addition, our participants included doctors with abundant clinical experience and other healthcare personnel, such as psychologists, nurses, and social workers. Including professionals from different fields has been suggested as preferable in CST programs because these professionals provide different perspectives that may enable participants to learn from one another [23]. These reasons may have contributed to the large effect of CST in our study.

Table 4. Comparison of pretest and posttest truth-telling scores ($N = 257$)

	Total sample		1-day CST ($n = 94$)		2-day CST ($n = 163$)	
	Pretest (mean \pm SD)	Posttest (mean \pm SD)	Pretest (mean \pm SD)	Posttest (mean \pm SD)	Pretest (mean \pm SD)	Posttest (mean \pm SD)
Overall scale	263.88 \pm 27.0	281.89 \pm 22.9*	263.56 \pm 30.63	283.56 \pm 25.12	264.00 \pm 24.62	280.86 \pm 21.45
Method of disclosure	77.37 \pm 8.87	83.48 \pm 7.46*	77.23 \pm 9.81	83.52 \pm 7.87	77.49 \pm 8.29	83.41 \pm 7.23
Emotional support	70.78 \pm 8.54	76.74 \pm 7.08*	70.33 \pm 9.10	76.61 \pm 7.01	71.01 \pm 8.18	76.79 \pm 7.13
Additional information	68.26 \pm 8.16	72.94 \pm 6.91*	67.91 \pm 8.72	73.00 \pm 6.68	68.45 \pm 7.80	72.87 \pm 7.05
Setting	47.46 \pm 8.50	48.73 \pm 9.00*	48.09 \pm 10.27	50.44 \pm 11.31	47.04 \pm 7.32	47.79 \pm 7.19

CST, communication skills training; SD, standard deviation.

* $p < 0.001$.

Table 5. Multiple regression on truth-telling preference by communication skills training dose ($N = 257$)

	CST dose β (2-day vs. 1-day)	p
Overall scale	-3.325	0.168
Method of disclosure	-0.108	0.892
Emotional support	-0.281	0.706
Additional information	-0.961	0.183
Setting	-1.736	0.046

CST, communication skills training.

1-day CST is used as the baseline value.

Adjusted for age, gender, education level, marital status, clinical experience, and workplace hospital level.

Our study did not find a significant difference in the truth-telling preference of participants in the 1-day and 2-day CST programs ($p > 0.05$), except for the setting subscale. This finding contrasts with a previous finding that the communication skills of oncologists participating in a 3-day CST program were significantly superior to those of participants in a 1.5-day CST program [19]. The setting subscale items (e.g., ensuring that the telephone does not ring, using technical words, and breaking bad news at the first meeting) are basic communication skills but are often neglected by physicians in Taiwan [15]. Thus, Taiwanese clinicians may need more practice in long CST programs to change their truth-telling preference related to the setting. Our findings suggest that a shorter training program is as equally effective as a longer training program. If this hypothesis is supported in future empirical studies, shorter CST programs can be promoted, which will be particularly beneficial in extremely busy medical environments, such as in Taiwan.

However, our finding that the effectiveness of the two CST programs did not differ significantly may be explained by the selection of assessment times and inadequate selection of outcome variables. We measured participants' outcomes immediately after the programs, but the effectiveness of the two CST programs might differ if the outcomes were measured at longer times, for example, 3 or 6 months after CST. Unfortunately, our plan for long-term assessments was hindered by the difficulty and expense of passing Institutional Review Board (IRB) review at the 62 hospitals across Taiwan from which our participants were recruited. In Taiwan, IRB approval is needed for studies on hospital personnel [24].

Another reason for failure to detect a difference in effectiveness of the 1-day and 2-day CST programs might be inadequate selection of outcome variables. In addition to measuring participants' truth-telling preference, future studies are advised to concurrently assess their self-efficacy [3], confidence in communication [9,10], or anxiety while truth telling. We also suggest that other researchers refer to specific suggestions proposed in a review of CST programs [25] using Kirkpatrick's Triangle to evaluate CST effectiveness at four levels: participants' reactions, participants' learning, participants' behavior, and patients' outcomes. At the first level, participants' satisfaction with the

CST (each module) can be assessed. At the second level, standard patients can be invited to assess the truth-telling skills of participants before/after their participation in the CST programs. At the third level, actual clinical situations before/after the CST program can be videotaped to record participants' actual consultations for patients with cancer. At the fourth level, cancer patients can be invited to assess doctors' truth-telling skills, their understanding of the patients' needs, and the fit of their responses. In this study, we used only first-level assessment. Future studies may gradually expand the scope to second-level, third-level, or even fourth-level assessment to more effectively and comprehensively evaluate CST effectiveness.

This study had some limitations. First, participants only completed one posttest immediately after the end of the CST programs. Therefore, the long-term CST effectiveness (e.g., at 3 or 6 months) is unknown. Second, because of time and equipment limitations at the study sites, we did not videotape the participants' truth-telling process and did not include standard patients' assessment of participants' truth-telling skills. Instead, we used only first-level assessment. Future researchers may choose higher-level assessments as suggested [24] to evaluate the benefit of CST more completely. Third, 70% of our participants had volunteered to participate in the CST program. Their self-selection and motivation to learn may have biased our assessment of the effectiveness of the CST program. However, this possibility is minimized by our findings that voluntary and nonvoluntary (assigned) participants did not differ significantly in either their overall truth-telling preference scores or most subscale scores and by the 1-day and 2-day CST programs having the same percentage of voluntary and assigned participants (data not shown).

Conclusions

SHARE model CST improved Taiwanese healthcare providers' preferences for cancer truth telling. Truth-telling knowledge and skills should be replenished every few years for all healthcare personnel, including clinically experienced attending physicians. Further studies are needed to assess the long-term benefit of CST on patients' outcomes and to compare the effectiveness of different CST programs and the factors affecting physicians' method of truth telling.

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Conflict of interest

The authors have declared that there is no conflict of interest.

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