Original Article

Impact of a communication skills training course for students of therapist training schools

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ABSTRACT

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Purpose: Communication skills are necessary when students of therapist training schools undergo clinical practice. We verified the effects of introducing a course on communication skills training based on coaching theory.

Methods: Second-year students of a vocational college participated in the study. Fourteen students in the occupational therapy department attended a course on communication skills training (CS group) and 21 students in the physiotherapy department did not attend the course (control group). The CS group received 6 classes on communication skills. Assessments by self and others (CS group only) on communication skills, anxiety assessment, and self-efficacy assessment were conducted before the course (T1), two months after T1 (T2), and 3 months after T1 before clinical practice (T3). In the CS group, course evaluation was also conducted at T2.

Results: For course evaluation, all participants selected the top two grades on a five-grade scale for necessity, satisfaction, contents, interest and understanding. For communication skills self-assessment, the scores at T2 and T3 were higher than that at T1 in both groups. For communication skills assessment by others, the score at T3 was higher compared to those at T1 and T2. For anxiety assessment, state anxiety did not change in the CS group, but increased at T3 in the control group.

Conclusion: The findings of this study indicate that the communication skills training course improves the communication skills of students and eases their state anxiety before clinical practice.

Keywords: coaching, communication, clinical practice, education, rehabilitation professions

Introduction

Health professionals engaged in rehabilitation play important roles in giving support for patients' functional recovery and their dependence. Especially for those who have direct contact with patients during treatment, such as physiotherapists, occupational therapists and speech therapists (hereinafter referred to as therapists), communication skills that enable them to build a relationship with patients and facilitate patients to proactively take part in rehabilitation are required.

Among the educational programs of communication skills for patients reported previously [1−4], except some that targeted medical students, most were for healthcare professionals. On the other hand, a shortage of communication skills education for health professionals has been mentioned, except for those engaged in cancer care [5], and medical staff who felt insufficiently trained in communication skills tended to have low job satisfaction and high anxiety [6, 7]. Furthermore, there is no study that examines the effect of communication skills education on students who are trained to become therapists.

In 2011, the number of applicants for the 47th national examinations for physiotherapist and occupational therapist totaled 18,380 (according to the Ministry of Health, Labour and Welfare notification, March 30, 2012). These figures imply that many of the hospitals are accepting students in practical training. Students meet patients for the first time in the clinical practice setting, and communication skills are already necessary. However, complaints have been heard from hospital therapists who supervise these trainees, that students generally lack patient communication skills, suggesting that students do not necessarily have sufficient opportunities to acquire communication skills before their clinical practice.

In recent years, coaching as a communication skill has attracted attention. Coaching is a communication skill that promotes spontaneous actions of a person in order to achieve a certain goal [8]. The efficacy of coaching has been proven in patients with diverse diseases including diabetes [9], hyperlipidemia [10, 11], depression [12], cancer pain [13], and compromised urinary bladder syndrome [14]. In the field of rehabilitation, our group has demonstrated that coaching conducted by doctors improves self-efficacy in patients with spinocerebellar degeneration [15], and through a qualitative analysis, we have identified the functions of coaching that contribute to improve patients' self-efficacy [16].

The purpose of the present study was to introduce a communication skills training course based on coaching theory into the teaching curriculum of a therapist training school, and to verify its efficacy. Good communication with patients may increase the motivation of students' participation in clinical practice and their knowledge and understanding [17]. Evaluating the effects of the communication skills training course is meaningful not only for the educators in the training schools, but also for the clinical facilities that accept students for clinical practice.

Subjects and methods

Subjects

All second year students of a rehabilitation college participated in the study. In the second year, students experience clinical practice for the first time. The first clinical practice lasts three weeks, during which students take care of patients. We planned to introduce the new course before clinical practice for the second year students. Fourteen students in the occupational therapy department were assigned to attend the communication skills training course (CS group) and 21 students in the physiotherapy department to not attending the course (control group).

At the end of June 2010, we explained the research to the participating college and obtained agreement to cooperate with the study. In the first half of October 2010, we conducted a pre-course orientation for the subjects, and explained that the survey data for course evaluation would be handed to the researchers as anonymous research material.

The communication skills training course

The communication skills training course was implemented from the second week of October to the third week of November in 2010. During this period, a 100-min class was given once weekly. First, to reduce the bias between departments in knowledge initiation, both groups of students participated in a joint class. Thereafter, only students from the occupational therapy department participated in six more classes. The lecturer of the joint class was a doctor specialized in rehabilitation medicine with the qualification of International Coaching Federation professional certified coach. The classes were taught by three lecturers (including a doctor in rehabilitation medicine and an occupational therapist) who were knowledgeable in coaching.

The objectives of the course were: (1) to acquire communication skills necessary for smooth communication with patients receiving treatment; and (2) to acquire knowledge on communication skills that induce patients to undertake rehabilitation proactively toward attaining a goal.

In the joint class, the importance of communication and the overview of coaching were taught. Contents of the subsequent communication skills classes are shown in Table 1. From the second class, students undertook field work. After each class, each student chose one communication skill from the skills taught in that class, and implemented the task in his/her daily life (for example, choose "listening skill" and set the task as "listening to someone until the end, without interrupting what he/she has to say"). At the next class one week later, students assessed the achievement rate using a worksheet.

The book "A Guide to Coaching for Rehabilitation Practice and Education" edited by Shin-ichi Izumi [8] was used as the textbook for the course.

During one month from the end of the course to clinical practice, all second year students participated in the usual "clinical practice preparation" classes (5−8 hours per week), in which simulation was conducted with teachers playing the roles of supervisors or patients. In these classes, students in the CS group applied the communication skills acquired to anticipated conversations with patients or supervisors in the clinical setting.

Study design

The research was conducted as a longitudinal observational study. Evaluations comprised baseline survey (T1) conducted at orientation, post-course survey (T2) conducted two months after T1, and pre-clinical practice survey (T3) conducted three months after T1 (Figure 1).

Table 1. Outline of the classes for evaluation of course effect.

No. of class	Teaching contents	Teaching method

1st class	About coaching
	    Structure and 3 principles of coaching
	    Coaching flow
	    Coaching conversation
		Lecture

2nd class	Review of last session
	Skills to build trust relationship
	    What is trust relationship?
	    Comfortable space
	    "Listening" skill
	    "Acknowledgment" skill
		Lecture
		Practice
		 (individual task, group role play)
		Field work
		 (Set task for this week and evaluate the present state)

3rd class	Review of last session Clinical application of skills taught last week	Lecture Practice (individual task, group role play) Field work (Confirm level of attainment of last week's task, set task for this week, and evaluate the present state)
4th class	Review of last session "Acknowledgment" skill "Questioning" skill "Proposition" skill	Lecture Practice (individual task, group role play) Field work (Confirm level of attainment of last week's task, set task for this week, and evaluate the present state)
5th class	Review of last session Clinical application of skills taught last week	Lecture Practice (individual task, group role play) Field work (Confirm level of attainment of last week's task, set task for this week, and evaluate the present state)
6th class	Review of last session Total practice	Lecture Practice (individual task, group role play)

Outcome measures

Primary outcome

According to "Kirkpatrick's four-level evaluation model" [18] which is a model for evaluating training and measuring effectiveness, training effect can be evaluated by the following four levels. Level 1 evaluates "reaction" (satisfaction) using a questionnaire immediately after training (course in this study). Level 2 evaluates "leaning"; to what extent students understand and acquire skills from the training contents. Level 3 evaluates "behavior"; to what extent the training contents changes students' behavior. Level 4 evaluates "results"; the final outcomes as a result of students' behavior change.

In this study, evaluations up to level 3 were conducted. The course effect at level 4 is the outcome of patient interaction after the subjects have graduated and become therapists, and therefore cannot be evaluated during the present study period.

In the present study, each level was evaluated as follows.

(1) Level 1

Using a course evaluation form, "necessity", "satisfaction", "contents", "interest", "understanding" and "difficulty" were evaluated on a five-point scale. Data were obtained at T2.

(2) Level 2

Communication skills self-assessment was conducted using the "communication skill evaluation form" constructed by Michimata [19] and Tanabe et al [20] (Table 2). The validity and reliability of this scale were verified in a previous study [19]. The total score

and scores of four subscales (attitude, listening, acknowledgment, and proposition) were calculated. Data were obtained at T1, T2, and T3.
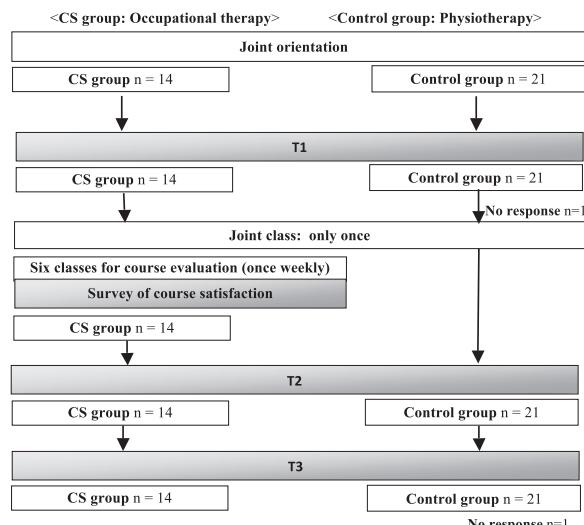

Figure 1. Study schedule.
CS group: subjects who attended the communication skills training course; control group: subjects who did not attend the communication skills training course; T1: baseline survey ; T2: survey at 2 months after baseline (post-course survey); T3: survey at 3 months after baseline (pre-practice survey).
For the CS group (occupational therapy) and control group (physiotherapy), after explaining the research outline and purpose of study participation, a joint class was conducted for both groups. Thereafter, only the CS group participated in the classes for course effect evaluation. At T1 to T3, communication skills self-assessment and assessment by others, anxiety assessment, and self-efficacy assessment were conducted. However, assessment by others was conducted only in the CS group.

(3) Level 3

To evaluate the extent to which the effect of the communication skills training course is reflected in the students' behavior, evaluation of individual students by others was conducted. One student was evaluated by 8 randomly selected fellow students (same department and same year) using the above-mentioned "communication skill evaluation form". Data were obtained at T1, T2, and T3.

Secondary outcomes

The students were preparing for their first clinical practice, and were presumably having anxiety toward their new experience of interacting with patients. We hypothesized that acquiring communication skills decreases anxiety or confers confidence in interpersonal relationship, and therefore selected "anxiety" and "self-efficacy" as secondary outcomes. These two parameters were evaluated using the following scales:
(1) Anxiety

Anxiety was evaluated using the "State-Trait Anxiety Inventory (STAI)" [21], Japanese version [22]. Using STAI, "state anxiety" that indicates the extent of anxiety at the time of evaluation, and "trait anxiety" that indicates the inherent tendency of becoming anxious were evaluated separately. A higher score indicates a higher level of stress.
(2) Self-efficacy

Self-efficacy is the belief of a person in his/her ability to execute certain behaviors necessary to produce given attainments, and is evaluated using the "Self Efficacy Scale" [23, 24]. In the present study, a Japanese version of the generalized self-efficacy scale [25] was used.

Statistical analyses

First, the CS group and control group were compared with respect to gender and age using χ^2 test and unpaired t-test, respectively.

Table 2. Communication skill evaluation items (self-assessment).

1.	Listen attentively to the other person.
2.	Use words or actions to make the other person talk easily.
3.	Ask questions so that the other person can answer freely and comfortably.
4.	Talk in a way that the other person can take action proactively.
5.	Talk about contents that are accepted easily by the other person.
6.	Respect and acknowledge the other person.
7.	Create an environment (expression, eye contact, tone of voice, pose, distance, etc.) conducive to talking for the other person.
8.	Accept what the other person is talking.
9.	Propose or request in a way that is easily accepted by the other person.
10.	Adjust the way of talking to the character or characteristics of the other person.
11.	Value the communication with the other person.

The participant responded to each item and scores on a five-point scale ranging from "totally agree" (5 points) to "totally disagree" (1 point), and the total score was calculated.
For assessment by others, "the other person" was replaced with "me".

For level 1, the responses for each item were counted and computed.

For level 2, two-way repeated measures ANOVA and multiple comparisons (Bonferroni method) were conducted, using communication skill self-assessment scores (total score and scores of four subscales) as dependent variables, and time factor and group factor as independent variables.

For level 3, one-way repeated measures ANOVA and multiple comparisons were conducted using scores of communication skill assessment by others as dependent variables, and time factor as independent variable.

For the secondary outcomes of anxiety and self-efficacy, two-way repeated measures ANOVA and multiple comparisons were conducted using anxiety or self-efficacy score as dependent variable, and time factor and group factor as independent variables.

The statistical software SPSS for Windows 11.0 (SPSS Japan Inc., Tokyo) was used. A p value less than 0.05 was considered to be significant.

Results

Subject attributes

There were no significant differences in gender distribution and age between the CS group and control group (Table 3).

Level 1 evaluation

Results of course satisfaction are shown in Figure 2.

All participants selected the top two grades on a five-grade scale for "necessity", "satisfaction", "contents", "interest" and "understanding". "Difficulty" was graded as "quite difficult" by 64.3% of the subjects.

Level 2 evaluation

In the communication skill self-assessment, no main effect for group and no interaction between group and time were found, but a significant main effect for time was observed (Table 4). Multiple comparisons showed that in both groups, scores at T2
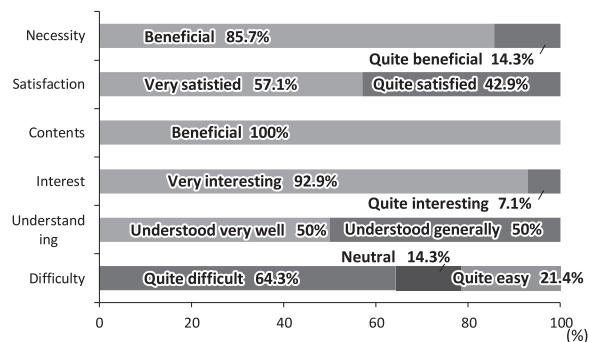

Figure 2. Level of course satisfaction (course evaluation form).

For the items of necessity, satisfaction, contents, interest, and understanding of the course, all participants selected the top two grades. On the other hand, for the item of difficulty, 64.3% responded "quite difficult".

Table 3. Attributes of subjects.

		CS group (n=14)		Control group (n=21)		p
		Number	%	Number	%	
Gender	Male	9	64.3	16	76.2	0.445
	Female	5	35.7	5	23.8	
		Mean	SD	Mean	SD	
Age (years)	Male	21.9	3.6	23.6	4.6	0.340
	Female	19.8	0.1	22.4	3.3	0.105

CS group: subjects who attended the communication skills training course; control group: subjects who did not attend the course; SD: standard deviation.

Table 4. Level of attainment (communication skill self-assessment).

Time of assessment	CS group (n=14)		Control group (n=21)		Main effect for group		Main effect for time		Interaction	
	Mean	SEM	Mean	SEM	F	p	F	p	F	p
T1	41.0	1.7	42.3	1.4						
T2	46.9	1.4	45.1	1.2	0.0	0.952	15.9	0.000	1.3	0.270
T3	45.9	1.5	45.5	1.3						

CS group: subjects who attended the communication skills training course; control group: subjects who did not attend the course; SEM; standard error of the mean; T1: baseline; T2: 2 months after baseline (end of communication skills course); T3: 3 months after baseline (before clinical practice).

Table 5. Level of behavior change (communication skill assessment by others).

T1		T2		T3		F	p
Mean	SEM	Mean	SEM	Mean	SEM		
44.4	1.0	44.2	0.9	46.5	1.0	11.9	0.000

SEM; standard error of the mean; T1: baseline; T2: 2 months after baseline (end of communication skills course); T3: 3 months after baseline (before clinical practice).

Table 6. Anxiety and self-efficacy assessments.

Parameter		CS group		Control group		Main effect for group		Main effect for time		Interaction	
		Mean	SEM	Mean	SEM	F	p	F	p	F	p
State anxiety	T1	48.2	1.9	39.6	1.7	4.2	0.049	7.4	0.001	7.8	0.001
	T2	48.6	2.1	41.3	1.8						
	T3	48.2	2.4	50.2	2.0						
Trait anxiety	T1	48.1	2.1	47.9	1.8	0.1	0.742	1.0	0.378	0.5	0.632
	T2	48.9	2.6	46.2	2.2						
	T3	49.4	2.4	49.0	2.1						
Self-efficacy	T1	68.8	3.0	66.4	2.6	0.0	0.918	1.0	0.358	1.4	0.264
	T2	63.6	3.4	67.7	2.9						
	T3	68.9	2.0	66.8	1.7						

CS group: subjects who attended the communication skills training course; control group: subjects who did not attend the course; SEM; standard error of the mean; T1: baseline; T2: 2 months after baseline (end of communication skills course); T3: 3 months after baseline (before clinical practice).

and T3 were significantly higher than the score at T1. Analyses of subscale scores detected significant main time effects for "attitude", "listening", "acknowledgment" and "proposition" (F = 6.2, p = 0.003; F = 15.4, p = 0.000; F = 6.2, p = 0.003; and F = 12.6, p = 0.000, respectively).

Level 3 evaluation

In communication skill assessment by others, a significant main effect for time was observed (Table 5). Multiple comparisons showed that score at T3 was significantly higher than that at T1 and also significantly higher than that at T2 (p = 0.017 and 0.000, respectively). Similar improvements were observed for the subscales "attitude" (correspondingly, p = 0.004 and 0.000), "listening" (p = 0.106 and 0.005) and "acknowledgment" (p = 0.014 and 0.002), but not for "proposition" (p = 0.366 and 0.690).

Anxiety and self-efficacy assessments

No main effects for group and time, and no interaction were found for trait anxiety and self-efficacy (Table 6). On the other hand, significant main effects for group and time, and interaction were observed for state anxiety. Multiple comparisons showed no increase in state anxiety over time in the CS group, whereas state anxiety increased significantly

at T3 than at T1 and T2 (p = 0.000 for both) in the control group.

Discussion

In the present study, a communication skills training course based on coaching therapy was introduced into the curriculum for students of a therapist training school, and the effects were evaluated for the first time.

Evaluation of course effect based on Kirkpatrick's four-level model

Level 1

All course participants selected the top two grades for all parameters except "difficulty", showing a high degree of satisfaction toward the course. The fact that 64.3% of the students graded the course as "quite difficult" does not contradict the high degree of satisfaction. The responses may imply that while students have a good understanding of the course contents, contemplation of the actual practice makes them feel some difficulties. Nevertheless, rather than simple teaching contents, slightly difficult contents would increase the motivation of learning [26]. From these results, the course can be evaluated as efficacious at level 1.

Level 2

Communication skill self-assessment scores increased in both groups. The CS group showed an increase in score from T1 to T2, while T2 and T3 scores did not change significantly. These findings indicate that students in the CS group strived to understand and practice the communication skills taught in the course, and the acquired skills continued to be reflected in their actions during the month until T3.

As possible explanations for the increased score in the control group, it could be an effect of the joint class and also Hawthorne effect (participation in the study per se may change the awareness about communication). Therefore, the contents of changes in the two groups may be different.

From the viewpoint of level of attainment, the efficacy of this course cannot be denied. However, there is a possibility that factors other than the course content (such as expectation toward the new curriculum and changes in teaching staff teaching or listening in the classes) may also have an impact.

Level 3

Score of communication skill self-assessment was increased at T2 and then maintained until T3, whereas scores of assessment by others did not change at T2 but was improved one month later at T3, showing that although behavior change (assessment by others) is more perceptible than the level of attainment (self-assessment), the effect takes longer to manifest.

Behavior change in humans involves five stages: pre-contemplation, contemplation, preparation, action, and maintenance [27]. Applying these stages to our study results, the period before the course corresponds to the "pre-contemplation" stage, in which the issue has not been identified and there is no interest in introducing new approach. The joint class may be perceived as the "contemplation" stage, in which the issue is vaguely recognized and consideration is given to how to address this issue. The course period is equivalent to the "preparation" stage, in which the issue is well defined and preparations and trials are made. The one month between the end of the course and clinical practice corresponds to the "action" stage, in which behavior change takes place to address the defined issue. The CS group was given an opportunity to apply the communication skills in the clinical practice preparation classes. It is possible that improvement in self-assessed communication skill manifests relatively early, during or after the preparation stage, while improvement in assessment by others reflects behavior change during the action stage.

Although it cannot be denied that interventions consisting of the communication skills training course and subsequent application classes are efficacious from the viewpoint of behavior change, further study is required to compare with a control group. Furthermore, no improvement in the subscale "proposition" was observed in assessment by others, and this finding deviated from self-assessment. Therefore, methods of communication skills training to effectively communicate "proposition" to others require further study.

Effect of communication skills training course on state anxiety

While anxiety increased before clinical practice (T3) in the control group, anxiety did not change in the CS group. Anxiety usually increases before events such as clinical practice. The fact that state anxiety did not increase in the CS group suggests that readiness (preparedness for new action) for the clinical practice may overcome state anxiety. According to studies examining the effect of anxiety on performance, state anxiety reaches a peak before an event and affects test results [28, 29]. The communication skills training course enhances students' mental readiness for communication, consequently easing their anxiety, which may help students' performance in their practice.

Limitations of this study

First, for fair treatment among students, we did not assign students of the same department to CS group and control group. The difference in curriculum between departments may have an effect on the results of this study.

Second, the level 4 effect of the course could not be evaluated. Although we considered assessment by clinical practice supervisors, since assessment could not be conducted within the scheduled study period, this was excluded from the evaluation of attainment level.

Third, the mechanisms by which the series of interventions improve communication skills and reduce state anxiety remain unknown. Further studies such as quality analysis using semi-structured interviews of subjects in the CS group and counseling classes for the control group are required to elucidate the functions of the communication skills course.

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