



Original Article

Differences in the occupational therapy goals of clients and therapists affect the outcomes of patients in subacute rehabilitation wards: a case-control study

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Abstract. [Purpose] This study aimed to examine the effects of differences in the goals recognized by the client and the occupational therapist on patient outcome. [Participants and Methods] A retrospective case-control study was conducted to compare rehabilitation outcomes of cases wherein the occupational therapy goals were matched/unmatched (control) with those of the patients in seven subacute rehabilitation wards in Japan. The outcomes were Functional Independence Measure, number of days of hospitalization, occupational therapy, and total medical cost. [Results] The motor Functional Independence Measure scores in the matched-goal group were significantly higher than those of the unmatched-goal group, and the home discharge rate showed a tendency to increase. It was speculated whether the client had received an explanation about the goal. [Conclusion] Rehabilitation outcome may vary depending on whether occupational therapy goals are matched.

Key words: Occupational therapy, Goal-setting, Case control study

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INTRODUCTION

Collaborative goal setting is considered a key component of rehabilitation planning, with the understanding that selected goals will drive the clinical decision-making process¹⁾ and enhanced outcomes²⁾. Goal setting is considered to improve client engagement in therapy and make rehabilitation more meaningful to individuals who receive these services²⁾. Some tools or decision-aids, which help the client and therapist to identify and set goals, have been developed over the past two decades^{3–5)}. Moreover, evidence from meta-analysis has showed that goal setting results in greater improvements in patient QOL and self-efficacy⁶⁾.

Nevertheless, despite the tools and evidence regarding goal-setting, studies have suggested that therapists are often not as successful at involving clients and their families in the goal-setting process for therapy as they would like to be⁷⁾. We have shown that, while occupational therapists and their clients tend to believe that clients are both involved in goal selection and that the therapist explains the goal of the therapy to the clients, there was frequently a mismatch between the two about their

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Table 1. Questions for study participants

Questions for OTs	Questions for CLs	Response options
Q1. What are your client's occupational therapy goals?	Q1. What are your occupational therapy goals	Open-ended (free text) responses
Q2. Did you involve your CL in the goal selection process?	Q2. Did you participate in the goal-selection process?	5-point Likert scale*
Q3. Did you explain these goals to your CL?	Q3. Did you receive an explanation about the goals from your OT?	5-point Likert scale*

OT: Occupational therapist; CL: Client.

*Response options: 1) Strongly disagree →5) Strongly agree.

understanding of the actual goal of therapy with only 21% of goal statements matching (submitting).

Although we clarified the current state of agreement on the goal from a previous study, the effect of the coincidence of the goal to the rehabilitation outcome is unknown. Here, we report the result of the relationship between the degree of agreement on the goal by the occupational therapist and the client goal on the outcome of the therapy.

PARTICIPANTS AND METHODS

We did a retrospective case-control study to compare the rehabilitation outcomes between cases where the occupational therapy goals of the therapist and the client matched, and did not match (control group). The data were collected from seven subacute rehabilitation-wards in Japan between November 1, 2017, and December 31, 2017. This study was approved by the ethics committee of Sendai Seiyō College (No. 3003).

The study participants were a convenience sample of occupational therapists ($n=79$, experience years 5.0 ± 4.6) and their clients, enrolled in the study in pairs. Hence, if either declined to participate, both would be excluded. However, each occupational therapist could have more than one client involved in the study. For clients to be included in the study they had to be admitted to the hospital more than a month prior to enrollment in the study, be medically stable, and not have aphasia. They also have to undergo a Mini-Mental State Examination (MMSE) of over 23 points (indicative of no clinically meaningful cognitive impairment). Clients were excluded if it was not possible to set an activity-level goal for them (e.g. if they were still medically unstable and/or unable to move from bed).

We obtained the basic demographic information and outcome data about the clients from the medical records in each hospital. The main outcome data are as follows: Functional Independence Measure (FIM), Hospitalization days, Occupational therapy total time (minutes), and Total medical cost. The basic demographic information was obtained regarding gender, age, diagnosis, and MMSE score.

To collect data on the occupational therapy goal, the research assistants interviewed both the occupational therapist and their client using a short semi-structured interview format. Table 1 shows the questions asked of each participant group.

Three authors (YS, KT, TS) then allocated these goal statements into one of the three groups based on the focus of the goal: 1) impairment level (e.g. muscle strengthening, memory training), 2) basic activity of daily living (ADL) level (e.g. personal cares, toileting, grooming, dressing), or 3) other occupational level (e.g., instrumental ADLs, leisure activities, social participation). Moreover, we also independently checked the level of goal agreement for pairs of OTs and their clients across the sets of goals for each pair: (1) Matched goals; only some (at least one) of the reported goals matched, or the goals matched at a broad conceptual level with different levels of detail regarding the target occupation (e.g., Occupational therapist: "The client will be able to eat independently by using an adapted spoon"). (2) Unmatched goals; none of the reported goals matched in any regard (e.g., Occupational therapist: "The client will be able to drive a car and go shopping". Client: "To improve muscle strength").

We compared the baseline characteristics using two-tailed independent t-tests or χ^2 tests for categorical data. We compared the total FIM scores at discharge, FIM scores gain, total medical costs, and hospitalization days, using two-tailed independent t-tests. In addition, home discharge rate estimates were calculated using the Kaplan-Meier method⁸⁾ and compared with the use of a stratified log-rank test. Furthermore, using the COX regression proportional hazard model, the confounding factor adjustment as a covariate, age, total FIM score at admission, and MMSE were introduced and analyzed. We also evaluated for variables affecting outcomes by multiple regression analysis with dependent total FIM scores at discharge. For all analyses, a p-value of 0.05 was considered statistically significant and data were processed using Stata 14.2 software.

RESULTS

The final number of participants enrolled in the study was 100 clients. Their mean age was 69.8 years (SD: 14.70) and their MMSE score mean was 27.1 (SD: 3.48). Eighteen occupational therapists (18%) reported using a structured goal-setting tool such as the Canadian Occupational Performance Measure, Management Tool for Daily Life Performance, or the Aid

Table 2. Characteristics data

	Match (n=44)	Unmatch (n=56)	p value
Age Mean (SD) (years)	67.9 (16.16)	71.3 (13.40)	0.248
Gender Male N (%)	16 (36%)	30 (54%)	0.087
Diagnosis N (%)			
Stroke	24 (55%)	31 (55%)	0.970
Orthopedic	18 (41%)	23 (41%)	
Other	2 (5%)	2 (4%)	
MMSE Mean (SD)	26.9 (3.37)	27.2 (3.59)	0.763
Total FIM score Mean (SD)	83.3 (18.95)	75.2 (23.25)	0.062
Motor FIM score Mean (SD)	55.0 (18.81)	48.3 (19.04)	0.081
Cognitive FIM score Mean (SD)	30.50 (6.68)	27.1 (6.87)	0.013

Table 3. Answers to questions on the goal setting process

Questions for OTs & CLs	Responder	Percentage responding to each option				
		OT decided	More determined by OT	Both decided	More determined by CL	CL decided
Q2. Who decided on the goals for occupational therapy?						
	OT	13%	11%	72%	2%	2%
	CL	5%	3%	56%	10%	16%
Q3. Did you involve your clients in the goal setting process? (For OT)		Strongly disagree				Strongly agree
		1	2	3	4	5
	OT	0%	4%	22%	59%	15%
Did you participate in the goal setting process? (For CL)	CL	2%	2%	12%	18%	66%
	Q4. Did you explain these goals to your CL? (For OT)		Strongly disagree			
		1	2	3	4	5
OT		0%	3%	19%	59%	19%
Did you receive an explanation for these goals from your OT? (For CL)	CL	1%	3%	10%	21%	65%

OT: occupational therapist; CL: client.

Table 4. Main outcomes

	Match (n=44) M (SD)	Unmatch (n=56) M (SD)	p value
Total FIM score at discharge	112.8 (18.70)	106.2 (19.90)	0.094
Motor FIM score at discharge	82.7 (9.65)	74.3 (18.17)	<0.001
Cognitive FIM score at discharge	32.5 (3.31)	32.0 (3.30)	0.463
Total FIM change score	29.5 (19.07)	31.1 (18.32)	0.680
Hospitalization (days)	101.4 (37.80)	109.2 (40.93)	0.329
OT total time (min)	5,617.3 (2,426.21)	5,513.2 (2,883.37)	0.848
OT total time min/day	55.3 (14.81)	50.0 (20.26)	0.148
Total medical cost Yen	3,976,075 (1,769,169)	3,932,069 (1,599,925)	0.897

M: mean; SD: standard deviation; FIM: Functional Independence Measure; OT: Occupational Therapy.

Decision-Making Occupation Choice. Although there was significant difference in the Cognitive FIM at the baseline, no MMSE score is the same (Table 2).

It was revealed that among the 100 pairs of OT and clients, 44 (44%) pairs recalled matching goal plans, and the goals of 56 (56%) pairs unmatched. Overall, both the occupational therapists and the clients tended to agree that the clients have been involved in some capacity in the goal-setting process (Table 3).

The Motor FIM score in the matched goal group is significantly higher than in the unmatched goal group (Table 4). Home discharge ratio in the matched group and unmatched group was 95.5% (95% CI, 83.1 to 98.9) and 85.7% (95% CI, 73.6 to 92.8), respectively. In the match group, hazard ratio for home discharge compared with that of the unmatched group was 1.47 (95% CI, 0.96 to 2.25; $p=0.078$) and the adjusted hazard ratio was 1.36 (95% CI, 0.85 to 2.16; $p=0.195$) (Table 5). Furthermore, multiple regression analysis was conducted using FIM scores at discharge as dependency variables and two other variables: satisfactory explanation ($\beta=0.26$, $p<0.01$) and FIM scores at hospitalization ($\beta=0.40$, $p<0.01$) (Table 6).

Table 5. Hazard ratio for home discharge

Variables	Single analysis			Multiple analysis		
	Unadjusted hazard ratio	95% Confidence interval	p value	Adjusted hazard ratio	95% Confidence interval	p value
Goal matching 0: Unmatch 1: match	1.47	0.96 to 2.25	0.078	1.36	0.85 to 2.16	0.195
AGE	1.00	0.99 to 1.02	0.548	1.01	0.99 to 1.02	0.415
MMSE	1.02	0.96 to 1.10	0.494	1.02	0.93 to 1.10	0.698
Total FIM score at admission	1.03	1.02 to 1.04	<0.001	1.03	1.02 to 1.04	<0.001

Table 6. Total FIM score at discharge

Variables	Beta*	Coef**	95% Confidence interval	p value
Total FIM score at admission	0.45	0.40	0.25 to 0.56	p<0.001
Age	-0.09	-0.12	-0.33 to 0.09	0.262
Did you involve your CL in the goal-selection process? (OT)	-0.04	-0.99	-5.53 to 3.55	0.666
Did you participate in the goal-selection process? (CL)	0.09	1.86	-2.13 to 5.86	0.356
Did you explain these goals to your CL? (OT)	-0.04	-1.20	-5.84 to 3.43	0.607
Did you receive an explanation for these goals from your OT? (CL)	0.28	6.30	2.07 to 10.53	0.004
Matched (1), Unmatched (2)	-0.04	1.72	-4.42 to 7.86	0.579
MMSE	0.10	0.59	-0.36 to 1.54	0.222
Constant		45.45	5.68 to 85.22	0.026

OT: Occupational therapist; CL: Client.

R-squared=0.495, Adjusted R-squared=0.450.

*standardized partial regression coefficient, **regression coefficient.

DISCUSSION

Our result showed that the matched goal probably affected to increasing the motor FIM and home discharged rate compared to unmatched goal. It was then speculated whether the clients of this group had received any explanation about the goal.

The most interesting finding in current study is that the goal matched or unmatched affects the rehabilitation outcomes. Previous studies have shown that having a goal or a structured goal setting promotes QOL or self-efficacy than having no goal or an ordinary goal setting⁶⁾. We also showed that individualized and occupation-based goal setting tend to enhance the health-related QOL for subacute stroke client⁹⁾ or significantly improves the ADL of elderly residents in nursing home¹⁰⁾, compared to ordinary goal setting. However, these results have not previously described any effect of matching a goal. Although it is needless to mention the importance of goal setting, our findings suggest especially the importance of sharing or understanding the goal of each client and therapist.

We also examined the effect of the decision-making process involved in the goal setting. In our survey, both clients and occupational therapists engaged in decision making in the goal-setting process. In particular, the result of multiple regression analysis showed that motor FIM score improved when the client received an explanation about the goal rather participated in the goal setting. Rose et al.¹¹⁾ reported that patients were not provided with enough information about goal-setting, and they proposed that therapists should communicate clearly and demonstrate that they are listening to patients but without adopting a paternalistic approach. However, clients are often unable to formulate goals, or they set unrealistic ones¹²⁾. These results suggested the importance of shared decision making (SDM). Elwyn et al.¹³⁾ suggested the three steps of SDM, “team talk,” “option talk,” and “decision talk”. Future studies must examine not only rehabilitation outcomes but also the goal-setting process.

Our result suggested that rehabilitation outcome may be different whether occupational therapy goal is matched. Moreover, the reason was related the client received the explanation for goal. However, these consequences should be interpreted with inherent limitations. Although there were no significant differences in demographic characteristics between the matched versus unmatched group, we cannot be certain that other systematic differences between these 2 groups were not present.

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Conflict of interest

The authors declare no conflict of interests.

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