



Original Article

Association between reasons for employment and burnout tendencies among rehabilitation technology professionals

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Abstract. [Purpose] The deterioration in the psychological states of healthcare workers may impact the quality and quantity of medical care provided to patients, leading to unfavorable treatment outcomes. Thus, we aimed to investigate the relationship between reasons for employment and the mental health status of rehabilitation technology professionals in Japan. A cross-sectional survey was conducted using a questionnaire to gather relevant data. [Participants and Methods] Data from 112 rehabilitation technology professionals, including physical and occupational therapists as well as speech-language pathologists, were analyzed. Questionnaires were utilized to collect data on participant characteristics, reasons for employment, virtual competence, self-esteem, burnout levels, self-compassion responses, subjective health assessments, and feelings of isolation. [Results] Multiple regression analysis indicated that the regression coefficients of the Lubben Social Network Scale-6, the World Health Organization-five well-being index, the virtual ability scale, the self-esteem scale, and the reasons for employment scale scores were -0.168 , -0.191 , -0.273 , -0.197 , and -0.329 , respectively. Additionally, structural equation modeling was used to verify the goodness-of-fit indices. The burnout scale scores exhibited a satisfactory fit with the Lubben Social Network Scale-6, the World Health Organization-five well-being index, the virtual ability scale, the self-esteem scale, and the reasons for employment, as indicated by all goodness-of-fit indices. [Conclusion] This study revealed a significant association between the reason for employment and burnout tendency, which was found to be the strongest. Therefore, it is important to know the reason for employment to ascertain burnout tendencies. Conversely, as associations were also found for several adjustment variables, it is necessary to consider not only the reasons for employment but also other factors when assessing burnout tendencies.

Key words: Burnout, Reason for employment, Rehabilitation technology specialist

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INTRODUCTION

Deterioration of the psychological states of healthcare professionals may impact the quality and quantity of healthcare provided to patients, potentially leading to poor treatment outcomes¹⁾. Brunner et al. studied the economic impact of productivity loss due to stress felt on the job. They estimated that the productivity loss due to work-related stress was CHF 195

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(approximately 28,028 Japanese yen) per person per month²), indicating that healthcare workers' stress is related to problems with patients and economic aspects.

Maslach et al. identified burnout syndrome as a response to excessive stress in the workplace characterized by emotional exhaustion, negativity toward others, and loss of ideals. Burnout syndrome causes emotional drainage, negative and isolating reactions to others, a sense of emptiness due to the loss of ideals, and decreased ability and performance at work³. Timenetsky et al. reported that 58% of their team of physical therapists experienced high levels of emotional exhaustion and depersonalization and low levels of job satisfaction⁴.

In addition to these factors, economic problems⁵) may also contribute to burnout syndrome. A survey conducted by the Ministry of Health, Labour and Welfare on reasons for employment in all occupations reported that the reason for employment in 53.3% was "for money"⁶). Therefore, it can be inferred that many rehabilitation technology specialists (rehabilitation technology workers) experience burnout due to economic dissatisfaction, although some rehabilitation technology professionals find their work rewarding and engage in their profession for non-economic reasons, and employment for non-economic reasons may have a protective effect against burnout.

Therefore, this study aimed to clarify the relationship between the reasons for employment and the mental health status of rehabilitation technicians in Japan and to conduct a cross-sectional survey using a questionnaire.

PARTICIPANTS AND METHODS

One hundred and sixty rehabilitation technology specialists (physical and occupational therapists and speech-language pathologists) from three facilities in Kawagoe City, Saitama Prefecture, which included a hospital with a recovery rehabilitation ward, general ward, and geriatric healthcare facility, were included in the study. An anonymous questionnaire that mentioned the purpose of the study was administered to participants. We used the responses of only those who provided consent to participate in the study and excluded those who did not (Fig. 1).

Data on participant attributes, reasons for employment, virtual competence, self-esteem, burnout, self-compassion response, subjective health, and isolation were collected through questionnaires.

Participant attributes included gender, number of family members living together, last educational qualification, motivation for employment, annual household income (total income of all family members), subjective experience of follow-up from supervisors and seniors, and length of employment at the workplace. Occupations such as a physical therapist, occupational therapist, and speech-language pathologist were excluded from the information collection because the combination of age, gender, and annual income could easily identify an individual. Reasons for employment were taken as "for money" and "for satisfaction", based on the report by Nemoto et al.⁵), and the extent of the reason was assessed using the four-case method. Virtual competence was assessed using the virtual competence scale. The Virtual Competence Scale answers the 10 items with 1: not at all, 2: not very much, 3: undecided, 4: sometimes, and 5: often. The higher the score, the higher the sense of virtual competence, and the tendency to underestimate the competence of others and thus estimate one's own competence higher⁷). Self-esteem was assessed using the Self-esteem Scale. Self-esteem Scale is a 10-item scale to measure the degree of self-esteem. For each item, respondents answer on a scale of (1) strongly agree, (2) agree, (3) disagree, or (4) strongly disagree. The higher the score, the higher the self-esteem^{8, 9}); burnout tendencies by Burnout Scale. The Burnout Scale is a 17-item questionnaire that assesses three components as emotional exhaustion, depersonalization, and personal achievement. The higher the total score, the greater the tendency toward burnout¹⁰); and self-compassion by Self-Compassion Response

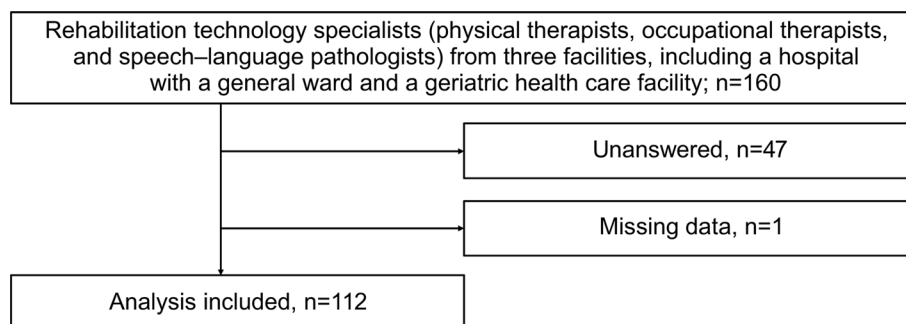


Fig. 1. Participant selection flowchart.

One hundred and sixty rehabilitation technology specialists (physical and occupational therapists and speech-language pathologists) from three facilities in Kawagoe City, Saitama Prefecture, which included a hospital with a recovery rehabilitation ward, general ward, and geriatric healthcare facility, were included in the study. An anonymous questionnaire that mentioned the purpose of the study was administered to participants. We used the responses of only those who provided consent to participate in the study and excluded those who did not.

Scale Japanese translated version (SCRI-J). Self-compassion is a compassionate way of relating to one's self in emotionally painful situations that accepts one's suffering as it is and alleviates it. The scale consists of 8 items, and the number of choices that represent the self-compassion response is simply added up, and the higher the score, the higher the self-compassion¹¹). A short version of the Lubben Social Network Scale (LSNS-6). The LSNS-6 is a social network scale for the elderly, consisting of 6 items. A score of less than 12 on a 30-point scale indicates social isolation¹²) The World Health Organization Well-Being Index (WHO-5) was used to assess isolation. WHO-5 was used to assess subjective health. The 5-item WHO-5 is a short and generic global rating scale measuring subjective well-being¹³).

This study was approved by the Kawagoe Rehabilitation Hospital Ethical Review Committee (Approval No. 22-12).

Correlations between reasons for employment and each measure were examined using the Spearman rank correlation coefficient. Differences in burnout scale scores for each reason for employment were examined using the Kruskal–Wallis test (post hoc test: Steele–Drewas multiple comparisons).

Multiple regression analysis was conducted with burnout scale scores as the dependent variable and reason for employment as the independent variable, and LSNS-6, SCRI-J, follow-up, Virtual Competence Scale, self-esteem scale, income, gender, and years of experience as adjustment variables. The model was used to confirm the relationship between burnout scale scores and reason for employment.

Structural equation modeling was performed using variables whose effects were confirmed by multiple regression analysis to examine model fit. Statistical software R version 4.2.2 (Freesoftware Foundation, Inc. Boston, MA, USA) was used and the significance level was set at $p < 0.05$.

RESULTS

The questionnaire revealed that 36.7% of the participants were male. The number of years of experience as a therapist was 6.17 ± 5.39 years; total Burnout scale score, 47.28 ± 9.43 ; total score of the LSNS-6, 13.27 ± 4.83 ; SCRI-J score, 8.65 ± 3.77 ; WHO5 score, 13.08 ± 4.67 ; virtual competence scale score, 22.64 ± 6.77 points; and, self-esteem scale score, 24.77 ± 4.91 (Table 1).

Reasons for employment were Burnout Scale Total score ($\rho =$, $p < 0.001$), Burnout Scale Emotional exhaustion ($\rho =$, $p < 0.01$), Burnout Scale Personal Achievement ($\rho =$, $p < 0.001$), Burnout Scale Depersonalization ($\rho =$, $p < 0.05$), LSNS-6 Friends ($\rho =$, $p < 0.05$), LSNS-6 Total ($\rho =$, $p < 0.05$), Follow ($\rho =$, $p < 0.05$) and Virtual Competence Scale ($\rho =$, $p < 0.01$), and correlated with the Virtual Competence Scale ($\rho =$, $p < 0.01$). Total scores on the burnout scale were correlated with LSNS-6 Family ($r = -0.248$, $p < 0.01$), LSNS-6 Friends ($r = -0.196$, $p < 0.05$), LSNS-6 Total ($r = -0.283$, $p < 0.01$), SCRI-J ($r = -0.439$, $p < 0.001$), the WHO5 ($r = -0.437$, $p < 0.001$), Follow ($r = -0.294$, $p < 0.01$), Virtual Competence Scale ($r = 0.44$, $p < 0.001$), Self-esteem scale1 ($r = -0.424$, $p < 0.001$), reason for employment ($r = -0.412$, $p < 0.001$) (Table 2).

A comparison of the differences in Burnout scale scores between reasons for employment revealed that the Burnout scale scores for those who responded, “For satisfaction” (33.86 ± 4.10) were lower than those who responded “A little for satisfaction” (44.87 ± 10.75 , $p < 0.05$), “A little for money” (48.24 ± 6.75 , $p < 0.001$) and “For money” (52.28 ± 8.85 , $p < 0.001$) (Table 3). The multiple regression analysis showed that the LSNS-6 ($\beta = -0.168$, $p < 0.05$), WHO-5 ($\beta = -0.191$, $p < 0.05$), virtual competence scale ($\beta = 0.273$, $p < 0.01$), and self-esteem scale scores ($\beta = -0.197$, $p < 0.05$) and reasons for employment ($\beta = -0.329$, $p < 0.001$) were independently associated with BO scale (Table 4).

Structural equation modeling was performed to check the goodness-of-fit indices and found that the fit of the relationship between the Burnout scale and the LSNS-6, WHO-5, Virtual Competence Scale, Self-Esteem Scale, and Reasons for Employment was good for all goodness-of-fit indices (Comparative Fit Ind=1.00, Tucker–Lewis Index=1.00, Root Mean Squared Error of Approximation ≤ 0.001 , standardized root mean squared residual < 0.001) (Fig. 2).

DISCUSSION

This is the first report in Japan to show that the reason for employment independently influences the Burnout Tendency. Of the survey participants, 65% answered that their reason for working was “For money” or “A little for money”. This trend is higher than that found in a survey conducted by the Ministry of Health, Labour and Welfare (53.3%)⁸). This difference may be due to the different average generations of the participants. The percentage of those citing economic reasons increases from their late 20s to their 30s, while the percentage of those citing non-economic reasons increases in their 40s. The participants in this study have 6.17 years of experience. It is possible that life events such as marriage, childbirth, and home purchase coincided with and affected many of the participants.

Multiple regression analysis was conducted to determine whether working for economic reasons affects burnout propensity. Working for economic reasons was associated with a higher burnout tendency, even after controlling for various social and psychological conditions.

Maslach report that burnout syndrome is a response to excessive stress in the workplace, which is emotionally draining, causes feelings of emptiness due to negative and isolated reactions to others and loss of ideals, and decreases personal achievement due to reduced ability and performance on the job³). French et al. proposed The Person–Environment–Fit model to represent the causes of this work-related stress¹⁴). This model emphasizes the degree of congruence or fit between individu-

Table 1. Participant characteristics

Item	Classification	Total	Mean/Median	Standard deviation/range
Number of participants	-	112	-	-
Gender	Number of males	24	-	-
Living together	-	72	-	-
Number of people living together	-	-	1.46	1.27
Last educational attainment	Specialty	44	-	-
	Junior college	1	-	-
	University	62	-	-
Motive	Graduate	5	-	-
	Completely for money	25	-	-
	A little for money	48	-	-
	Slightly rewarding	31	-	-
Income	For completely worthwhile	8	-	-
	2 to 3 million yen	34	-	-
	3–4 million yen	62	-	-
	4–5 million yen	11	-	-
Income	5–6 million yen	5	-	-
	Follow	-	7	3–10
	Number of years	-	6.21	5.46
	Virtual Competence Scale	-	22.88	6.86
Self-esteem scale	-	24.77	4.89	
BurnoutScale	Sense of emotional exhaustion	-	16.16	4.26
	Depersonalization	-	13.16	4.34
	Personal accomplishment	-	18.04	3.90
	Total	-	47.37	9.73
SCRI-J	-	-	8.68	3.78
WHO5	-	-	13.00	4.67
LSNS-6	Family	-	6.69	2.89
	Friends	-	6.47	3.41
	Total	-	13.16	4.94

Follow: Do you feel followed by your seniors or superiors?

SCRI-J: Japanese version of the Self-Compassionate Reactions Inventory; WHO5: World Health Organization-five; LSNS-6: Japanese version of the Lubben Social Network Scale.

als and their work environments. Stress is caused by the mismatch between individuals and their work environment. Stress occurs when an individual and their work environment do not agree with each other or their ideals. In light of previous research, interpretation of the results of this study suggests that people feel stressed when their reasons for employment, whether economic or noneconomic, are inconsistent with their perceived environment. In addition, the tendency toward burnout is stronger among those who cite economic reasons for employment, suggesting that when economic reasons are cited, there is more likely to be less consistency between the individual and the work environment, and the burnout tendency may increase as the mismatch persists.

Hayamizu et al. surveyed 584 high school students and found that students who felt angry about their personal events had a higher sense of virtual competence⁷⁾. Although the participants were from different generations, the results of this present study also showed that virtual competence affected burnout tendency. In other words, the results can be interpreted as those more likely to have “negative” feelings toward others having a stronger burnout tendency.

The results of multiple regression analysis showed that the higher the self-esteem, the weaker the Burnout tendency. Cast et al.¹⁵⁾ stated that those with high self-esteem tend to have stable emotions and positive self-feelings, which can help them cope effectively with conditions such as burnout syndrome, and this study showed similar results. The results of the previous study were also supported by the current study.

Although Nemoto et al.⁵⁾ reported that participants who worked for economic reasons reported lower subjective health, the present study did not find significant association between them. This may be due to the differences in the participants. Because the previous study was conducted with older adults, and the participants in this study were not elderly, there may be differences in health awareness.

The strength of this study lies in the fact that the reasons for the employment of rehabilitation technicians in Japan were collected from multiple facilities and showed a relationship with burnout trends. According to the Ministry of Health, Labour and Welfare (2019), 127,000 physical therapists and 74,615 occupational therapists¹⁶⁾ are employed in Japan. Therefore, the current study is useful for understanding the relationship between labor and health in the rehabilitation technology profession.

Table 2. Correlation between reason for employment and Burnout Scale Total and each variable

Item	Reason for employment		Burnout total	
	ρ		r	
Burnout Scale Total	-0.412	***	-	
Burnout Scale Emotional exhaustion	-0.292	**	-	
Burnout Scale Personal Achievement	-0.522	***	-	
Burnout Scale Depersonalization	-0.216	*	-	
LSNS-6 Family	-0.123		-0.248	**
LSNS-6 Friends	-0.189	*	-0.196	*
LSNS-6 Total	-0.230	*	-0.283	**
SCRI-J	0.179		-0.439	***
WHO5	0.122		-0.437	***
Follow	0.216	*	-0.294	**
Virtual Competence Scale	-0.245	**	0.440	***
Self-esteem scale1	0.103		-0.424	***
Income	-0.038		-0.043	
Number of people living together	0.009		-0.010	
Number of years	-0.093		0.033	
Reason for employment	-		-0.412	***

Spearman, Pearson, $p < 0.05$. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Follow: Do you feel followed by your seniors or supervisors?

SCRI-J: Japanese version of the Self-Compassionate Reactions Inventory; WHO5: World Health Organization-five; LSNS-6: Japanese version of the Lubben Social Network Scale.

Table 3. Comparison of burnout scale scores by reason for employment

	Completely for the money	A little for money	A little for satisfaction	Completely for satisfaction	
Burnout	52.28 ± 8.67	48.195 ± 7.71	44.87 ± 10.58	36.75 ± 8.44	*

Mean ± standard deviation. * $p < 0.05$. Kruskal–Wallis test, Multiple comparisons: Bonferroni's adjustment.

Table 4. Factors affecting burnout tendency (results of multiple regression analysis)

Item	β	Standard error	
LSNS-6	-0.168	0.078	*
SCRI-J	-0.130	0.089	
WHO5	-0.191	0.076	*
Follow-up	-0.109	0.077	
Virtual competence scale	0.273	0.078	**
Self-esteem scale	-0.197	0.093	*
Income	0.061	0.076	
Gender	0.121	0.072	
Reason for employment	-0.329	0.073	***
Years of experience	-0.130	0.076	

Multiple regression analysis, no multicollinearity, Multiple R-squared: 0.574, Adjusted R-squared: 0.531. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Follow: Do you feel followed by your seniors and supervisors?

SCRI-J: Japanese version of the Self-Compassionate Reactions Inventory; WHO5: World Health Organization-five; LSNS-6: Japanese version of the Lubben Social Network Scale.

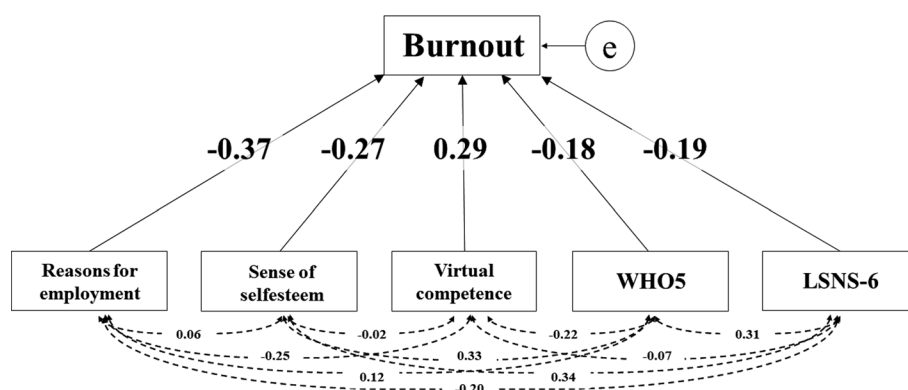


Fig. 2. Structural equation modeling of factors affecting burnout tendency.

The numbers listed between the Burnout scale and the LSNS-6, WHO-5, Virtual Competence Scale, Self-Esteem Scale, and Reasons for Working refer to the standard partial regression coefficient (β). The values listed for the dashed line connecting the LSNS-6, WHO-5, hypothetical competence scale, self-esteem scale, and reasons for employment refer to correlation coefficients. The analysis showed that the fit of the relationship is good for all goodness-of-fit indices (Comparative Fit Ind=1.00, Tucker-Lewis Index=1.00, Root Mean Squared Error of Approximation ≤ 0.001 , standardized root mean squared residual < 0.001). e: error; WHO5: World Health Organization-five; LSNS-6: Japanese version of the Lubben Social Network Scale.

However, this study has several limitations. First, it was conducted as a questionnaire survey. Second, this is a cross-sectional survey and does not show a temporal association between reason for employment and burnout propensity. Third, because this is a cross-sectional study, we have not been able to prove a causal relationship between reasons for employment and burnout tendencies.

In this study, a questionnaire survey on mental status and basic items such as reasons for employment and burnout tendency was conducted on 112 professionals engaged in rehabilitation. The results suggest that, in addition to stress and other factors that have been pointed out in the past, reasons for employment, which have not been the focus of attention, independently affect burnout tendency.

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Conflicts of interest

There are no companies or entities with which the conflict of interest relationships should be disclosed.

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