

Relationship Between Work Stress, Workload, and Quality of Life Among Rehabilitation Professionals

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Abstract

Background: This study explored the relationship between work stress, workload, and quality of life (QOL) among rehabilitation professionals. **Methods:** This study applied a cross-sectional design. A questionnaire was distributed to rehabilitation professionals—comprising physicians in the rehabilitation department, occupational therapists, physical therapists, speech-language pathologists, and audiologists—working in teaching hospitals. A total of 152 valid responses were collected, yielding a valid response rate of 93.8%. **Results:** For female respondents, factors affecting the QOL were educational level, type of professional license, length of service, average leisure hours per week, expense on leisure per week, work stress, and workload (all $p < .01$). For male respondents, no factor reached statistical significance ($p > .001$). **Conclusion:** This study provides the following suggestions to hospital administrators: establishing a stress-relief helpline, evaluating employees' workload, regularly arranging stress management training courses, implementing employee health promotion programs, and promoting proactive strategies to improve employee physical and mental health.

Keywords: Work stress; Workload, Quality of life.



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1. Introduction

Taiwan is currently an aged society, where health professionals play a crucial role in maintaining people's independence in daily living activities. Medical institutions should collaborate to implement strategies for creating healthy work environments, which can in turn improve the quality of life (QOL) and service efficiency of health professionals, thus benefiting patients, health professionals, and medical institutions [1]. In addition to ensuring high-quality services, medical institutions are also subjected to various hospital evaluations and accreditations as well as the various regulations of the government's health insurance system. The heavy workload in medical institutions increases employees' workplace fatigue and engenders problems of work overload. High work stress predisposes employees to fatigue, and heavy workloads cause work stress and frustration, which are also the main reason for high turnover rates [2]. Work stress is a conceptual process that implicates individuals' perceptions and reactions to stimulation such as danger or threats [3]. *Desa, et al.* [4] argued that an appropriate amount of stress can increase people's focus and preserve their enthusiasm toward their work, enabling them to handle work challenges. *Lin, et al.* [5] found that the gender of hospital employees also affects their perception of workplace fatigue and work stress.

The term "workload" started to receive attention in 1970 by mainly reflecting on the scientific management methods prevailing in the 1930s. Workload is also often mentioned in the fields of psychology, praxeology, and nursing. In *Work Overload*, Frank *Gryna* [6] mentions that work overload refers to when the resources and capabilities required are no longer adequate to meet the job requirements. Work overload includes the requirement of working for long hours, working overtime, failing to achieve company goals with limited resources and time, having limited time off, and working "off the clock," all of which prevent employees from focusing on a single task. Overtime and work overload cause physical illness and a reduction in the number of working days and poor working conditions. Numerous scholars have provided various explanations and definitions for work overload: Work overload can be divided into quality and quantity dimensions. The quantity dimension describes whether the amount of work imposed on employees is excessive, whereas the quality dimension describes whether employees can effectively complete work tasks, or the relationship between work requirement and capacity. Work overload is the primary factor causing work fatigue for human service workers [7, 8], and it reduces QOL [9]

The concept of QOL can be traced back to Aristotle. He viewed life based on happiness and considered that happiness is a blessing from God. Happiness refers to positive spiritual activities and satisfaction of the soul.

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Accordingly, happy people can live well and handle life smoothly. With advancements in science, people expect to have a high QOL in addition to satisfying their basic living needs. The term “quality of life” emerged after World War II and was formally proposed by Campbell, *et al.* [10]. They considered that personal satisfaction includes different aspects of life such as marriage, family life, friendship, living standards, finance, and religion.

In 1995, the World Health Organization defined QOL as “individual’s perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns. It is a broad ranging concept affected complexly by the person’s physical health, psychological state, personal beliefs, social relationships and their relationship to salient features of their environment” [11]. QOL is a subjective experience of an individual’s environment and a multilevel conceptual need. If a person considers that he or she has reached a state of physical, psychological, and social comfort, he or she has a high QOL [12]. Cheng, *et al.* [13] found that the overall workload imposed on social workers in regional hospitals is high. Such workers are highly exhausted both physically and mentally, nervous, and subjected to time pressure. Moreover, they are required to concentrate on decision-making in their work environments, which is the primary source of workload perception. Chen, *et al.* [14] reported that physicians are more likely to have ischemic heart disease within 10 years compared with other practitioners. Physicians should be encouraged to practice behavioral patterns of health promotion and set an example for patients regarding self-care and avoid high-risk work environments. According to the literature, QOL is a multilevel conceptual experience. In addition to physiological, psychological, and social aspects, environmental factors should be considered in the analysis of QOL.

Because of the changes in the medical labor market, the types and effects of work stressors are expected to vary. On the basis of the principles of occupational health psychology, topics relevant to the working conditions of rehabilitation professionals require more attention. The turnover and retention rates of rehabilitation professionals have been the primary management concerns in rehabilitation departments of hospitals. Therefore, the objective of this study was to explore the relationship between work stress, workload, and QOL among rehabilitation professionals.

2. Methods and Materials

A. Research Design and Participants

This study applied a cross-sectional design. Rehabilitation professionals working in a teaching hospital were included in this study; the professionals comprised physicians in the rehabilitation department, occupational therapists, physical therapists, speech-language pathologists, and audiologists. The inclusion criteria were as follows: respondents should (1) serve in teaching hospitals (including district teaching hospitals, regional teaching hospitals, and medical centers); (2) passed the national examinations of rehabilitation professionals; and (3) agree to sign the informed consent form. A structured questionnaire was used for collecting data. The questionnaire was designed on the basis of the domestic and foreign literature and finalized after validity verification by hospital business managers and experts. A total of 162 copies of the questionnaire were distributed from July 1 to August 30, 2017. After the returned copies were assessed for validity, 10 were eliminated because of their incompleteness and skeptical response patterns (e.g., same response for all items). A total of 152 valid samples were collected, yielding a valid response rate of 93.8%. The research design was reviewed and approved by the Institutional Review Board of Taiwan Adventist Hospital (105-E-21).

B. Research Instruments and Reliability and Validity Testing

The self-developed questionnaire was used to collect various data, including respondents’ demographics, scales of work stress, workload, and QOL. The questionnaire items were rated on a 5-point Likert scale (5 = strongly agree; 4 = agree; 3 = neutral; 2 = disagree; and 1 = strongly disagree). Regarding data collection, each dimensions, the number of items, and the corresponding Cronbach’s alpha are outlined as follows: work stress, 10 items, Cronbach’s alpha coefficient = 0.866; workload, 6 items, Cronbach’s alpha coefficient = 0.786; and QOL, 10 items, Cronbach’s alpha coefficient = 0.868. The Cronbach’s alpha for overall reliability was 0.854; thus, the empirical data of this study were determined to have a certain degree of reliability (Table 1).

C. Statistical Analysis

Data archiving and analysis were conducted using SPSS for Windows version 18.0; significance was set at $p < .05$. Descriptive statistics were used to examine and screen the data to eliminate false data before statistical analysis. For inferential statistics, a regression analysis was conducted to explore the relationship between work stress, workload, and QOL.

3. Results

A. Sample Characteristics

Among the respondents who provided valid responses, 58 (38.2%) were men and 94 (61.8%) were women. Regarding age, most respondents were aged 20–34 years ($n = 86$, 56%), followed by those aged 35–49 years ($n = 62$, 40.8%), and those aged older than 50 years ($n = 4$, 2.6%). Concerning marital status, most respondents were single ($n = 87$, 57.2%) followed by those who were married ($n = 59$, 38.8%). For the highest educational level, most respondents had a bachelor’s degree ($n = 123$, 80.9%). Concerning the medical institution level, most respondents worked in regional hospitals ($n = 64$, 42.1%), followed by district hospitals ($n = 57$, 37.5%). Regarding the type of professional license, most respondents were physical therapists ($n = 95$, 62.5%), followed by occupational therapists

($n = 37, 24.3\%$). For the length of service, most respondents had a service length of 1–10 years ($n = 107, 70.4\%$). Regarding average leisure time and expense per week, most respondents spent less than 10 hours on leisure ($n = 55, 36.2\%$) and spent less than NT\$2,000 on leisure ($n = 52, 34.2\%$). The p values obtained for the aforementioned factors through a Chi-square test were as follows: age, $p = .822$; marital status, $p = .826$; educational level, $p < .01$; medical institution level, $p = .267$; type of professional license, $p = .236$; length of service, $p = .162$; average leisure time per week, $p = .773$; and average expense on leisure per week, $p = .873$ (Table 2).

B. Analysis of Work Stress, Workload, and QOL

This study also compared the relationship between work stress, workload, and QOL. Collinearity may be present in a regression analysis of control variables and independent variables; thus, collinearity was explored first by calculating the variance inflation factor (<10) and condition index (<10). For the male and female respondents, the F -statistics obtained after a regression on QOL were as follows: $F = 1.180$ ($p = .330$) and $F = 2.859$ ($p < .001$), respectively (Table 3). According to the regression model in Table 3, for the female respondents, factors influencing QOL were educational level, type of professional license, length of service, average leisure time per week, average expense on leisure per week, work stress, and workload (all $p < .001$). By contrast, for the male respondents, no factor reached statistical significance ($p > .001$).

4. Discussion

A. Research Findings and Discussion

The results indicate that among the respondents, the observed work stress, workload, and QOL differed in terms of gender. This finding is similar to that of Lin, *et al.* [5], who reported that the effects of work stress varied in terms of employees' gender. In the present study, among the female respondents, both work stress and workload had positive relationships with QOL. Physicians in the rehabilitation department had a more positive QOL than physical therapists. A more negative relationship between work stress and workload and QOL was observed among respondents who graduated from junior college compared with those who graduated from university. Moreover, a more negative relationship between work stress and workload and QOL was observed among those with a service length of more than 11 years compared with those with a service length of less than 10 years. Different arrangements in leisure time had both positive and negative relationships with QOL. Studies have indicated that working under heavy workloads or working under such conditions for a prolonged period would cause physical and mental discomfort and burnout [15, 16]; therefore, workload and working time could significantly influence QOL. For the male respondents in this study, both work stress and workload were not significantly related to QOL. This may be because male rehabilitation professionals are able to cope with their job requirements and workload; this thus explains why none of the variables reached statistical significance for the male respondents.

The results of this study verify that employees' work stress influences their QOL. Compared with working in other workplaces, working in hospitals has the potential to pose health risks through medical waste; employees' working hours are relatively unstable, which affects their daily life and leisure and recreational activities and may result in reduced QOL. Higher work stress has a negative effect on all QOL aspects. This result is consistent with that of Chiang, *et al.* [1], who reported that higher perceptions of work stress among employees result in greater perceptions of poor physical and mental health. Recently, the government has actively promoted various evaluations and hospital visits for accreditation. With medical institutions undergoing evaluation attempting to demonstrate collaborative teamwork in their daily operations in order to pursue higher medical service quality, rehabilitation professionals are being subjected to unnecessary stress, causing burnout in the long term.

This study suggests that hospital human resource departments should organize various leisure activities for employees and adopt lively training methods to enhance employees' ability and competence in their work. Recently, due to the revision of the Labor Standards Act, medical industries are facing a labor market disequilibrium in terms of supply and demand. Therefore, to retain health professionals, hospitals should provide employees with more policy-oriented incentives. To improve employees' physical and mental health, a few measures are recommended to hospital managers: establishing a stress-relief helpline in hospitals, assessing the workload of hospital employees, regularly arranging stress management training courses, implementing health promotion programs to employees, adopting proactive and preventive medical concepts, regularly arranging promotions and lectures, organizing education training on stress and emotion management, and implementing health promotion programs in various medical institutions.

This study suggests that future research can adopt long-term follow-up designs to verify the existence of causal relationships between variables if adequate resources are available. Increasing the sample size is recommended to improve the generalizability and accuracy of study findings.

B. Research Limitations

This study adopted purposive sampling and sampled only a portion of rehabilitation professionals in Taiwan; thus, the generalizability of the study findings is limited. Moreover, some rehabilitation professionals might have already left their jobs due to high work stress and physical and mental illness; hence, the sample size may have been underestimated, resulting in the healthy worker effect phenomenon.

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Table-1. Reliability analysis

Construct	Mean	SD	Cronbach's α
Work stress	3.230	0.681	0.868
Workload	3.693	0.489	0.786
Quality of life	3.255	0.537	0.868

Table-2. Baseline characteristics (N = 152)

Measure	Male	%	Female	%	Sum	%	X ²
Age							0.822
20-34Years	34	22.4	52	34.2	86	56.6	
35-49Years	23	15.1	39	25.7	62	40.8	
50-64Years	1	0.7	3	2.0	4	2.6	
Civil status							0.826
Single	36	23.0	52	34.2	87	57.2	
Married	21	13.8	38	25.0	59	38.8	
Separated	2	1.3	4	2.6	6	3.9	
Educational level							0.080
Junior college	1	0.7	10	6.6	11	7.2	
University	48	31.6	75	49.3	123	80.9	
Graduate school	9	5.9	9	5.9	18	11.8	
Medical institution level							0.267
Medical center	12	7.9	19	12.5	31	20.4	
Regional hospital	20	13.2	44	28.9	64	42.1	
District hospital	26	17.1	31	20.4	57	37.5	
Type of profession license							0.236
Physician in rehabilitation department	1	0.7	5	3.3	6	3.9	
Occupational therapist	40	26.3	55	36.2	95	62.5	
Speech-language pathologist	15	9.9	22	14.5	37	24.3	
Audiologist	1	0.7	9	5.9	10	6.6	
Physician in rehabilitation division	1	0.7	3	2.0	4	2.6	
Length of service (year)							0.162
1-10	46	30.3	61	40.1	107	70.4	
11-20	9	5.9	26	17.1	35	23.0	
> 21	3	2.0	7	4.6	10	6.6	
Average leisure time per week (hour)							0.773
< 10	19	12.5	36	23.7	55	36.2	
11-20	19	12.5	33	21.7	52	34.2	
21-30	12	7.9	15	9.9	27	17.8	
> 30	8	5.3	10	6.6	18	11.8	
Average expense on leisure per week (NT\$)							0.873
< 2,000	18	11.8	34	22.4	52	34.2	
2,001-4,000	17	11.2	28	18.4	45	29.6	
4,001-6,000	12	7.9	15	9.9	27	17.8	
6,001-8,000	6	3.9	7	4.6	13	8.6	
> 8,000	5	3.3	10	6.6	15	9.9	

Table-3. Regression model

Measure		Quality of life	
Control variable		Male	Female
Age (Reference group: 20-34 Years)			
	35-49Years	.503	1.498
	50-64Years	1.976*	.682
Civil status (Reference group: single)			
	Married	-.659	-.773
	Separated		1.465
Educational level (Reference group: college)			
	Junior college	-.183	-1.770*
	Graduate school	-1.134	.797
Medical institution level (Reference group: Regional hospital)			
	Medical center	-.968	-.780
	District hospital	-1.157	.255
Type of professional license (Reference group: Physical therapist)			
	Physician in rehabilitation division	.771	2.249**
	Occupational therapist	1.750	-.311
	Speech-language pathologist	.543	-.662
	Audiologist	-.062	.300
Length of service (Reference group: 1-10 years)			
	11-20 years	-1.089	-3.267**
	> 21 years	-.446	-3.132**
Average leisure time per week (Reference group: < 10 hours)			
	11-20 hours	.980	-1.732*
	21-30 hours	-.643	1.991*
	> 30 hours	-.312	1.936*
Average cost on leisure per week (Reference group: < NT\$2,000)			
	NT\$2,001-4,000	.811	-.003
	NT\$4,001-6,000	1.877*	-1.409
	NT\$6,001-8,000	1.018	-2.004**
	> NT\$8,000	.980	-.532
Independent variable			
	Work stress	-2.734**	2.345**
	Workload	-.385	4.380***
R^2		.533	.564
Adj. R^2		.081	.367
F values		1.180	2.859
P values		0.330	0.001***

Note: *** $p < .01$, ** $p < .05$, * $p < .1$