



The relationship between workplace violence, depression, burnout, subjective health status, job and life satisfaction of physical therapists in South Korea

Yoon-Jung Hur^a, Ho-Young Kim^b, Suk-Min Lee^c

^aRehabilitation 1 team, Yonsei University Health System, Severance Rehabilitation Hospital, Seoul, Republic of Korea

^bDepartment of Physical Therapy, The Graduate School, Sahmyook University, Seoul, Republic of Korea

^cDepartment of Physical Therapy, College of Health Science and Social Welfare, Sahmyook University, Seoul, Republic of Korea

Objective: To investigate the physical therapists' actual experience of workplace violence and examine its relationship with depression, burnout, subjective health status, and job and life satisfaction.

Design: Cross-sectional study.

Methods: The level of workplace violence was assessed using the Korean Workplace Violence Scale composed of 24 questions in the following 4 subscales of workplace violence. Depression was assessed using the Korean version of the Patient Health Questionnaire-9. Burnout was assessed using the Korean version of the Maslach Burnout Inventory-Human Services Survey, which is a 5-item scale. Subjective health status was measured on a 5-point scale. Job and life satisfaction was measured based on the assessment tool used in the World Values Survey.

Results: There was a significant correlation between the three subscales of workplace violence and health indicators, including depression, subjective health status, job and life satisfaction ($p < 0.05$). The organizational protective system subscale showed a significant negative correlation with depression and a positive correlation with subjective health status as well as job and life satisfaction ($p < 0.05$). The area of 'psychological and sexual violence from customers' showed a significant moderate correlation with depression and job satisfaction ($p < 0.05$). Also, there was a negative correlation that was significant between depression and subjective health status, job satisfaction, and life satisfaction ($p < 0.05$).

Conclusions: This study suggested that future studies should continue to investigate and reveal the causal relationships between workplace violence and physical therapists' health indicators.

Key Words: Burnout, Depression, Job and life satisfaction, Physical therapist, Subjective health status, Workplace violence

Introduction

Workplace violence has become a global social problem. In Korea, the service industry's distinct characteristics of supporting an organizational culture of violence has been raised as a social issue. The US Department of Labor's Occupational Safety and Health Administration (OSHA)'s survey included workplace violence among the top four causes of industrial accident deaths in the last ten years. It was also

found that around 170,000 workers in London experienced workplace violence such as sexual assaults and harassment, threats, and insults in 2013. Such workplace violence is a factor that not only reduces the efficiency and productivity of organizations [1] but also threatens the health of individuals who have been subjected to violence. Given its negative effects on organizations and individuals, greater efforts are being made to reduce workplace violence [2-4].

The World Health Organization has categorized work-

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Corresponding author: Suk-Min Lee (ORCID <https://orcid.org/0000-0002-6062-956X>)

Department of Physical Therapy, College of Health and Welfare, Sahmyook University, 815 Hwarang-ro, Nowon-gu, Seoul 01795, Republic of Korea

Tel: 82-2-3399-1632 Fax: 82-2-3399-1639 E-mail: leesm@syu.ac.kr

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place violence into two types: physical violence (e.g., beating, kicking, striking, shooting, pushing, biting, and pinching) and mental violence (e.g., threats of physical force; mental, spiritual, and moral violence; or violence that can harm social development) [5]. Workplace violence is the most complex and dangerous occupational risk factor in the health care work environment [6], and its health effects are found to be relatively consistent. Experiencing workplace violence, bullying, and verbal violence increases the risks of mental health problems, including depression. Some studies have reported an association between the effects of workplace violence experiences on physical health [7], such as increased sleep problems [8,9], increased musculoskeletal symptoms [10], and negative changes in subjective health status [11]. Experiences of physical, mental, and verbal violence lead to decreased morale due to factors such as increased job stress, lower productivity, reduced positive confidence about the career, and job satisfaction that in turn impede efficient work performance. In addition, these factors increase turnover intention by deprivation of a sense of achievement while increasing job dissatisfaction [12-14]. These behavioral consequences negatively affect co-workers in the same space, causing the entire group to experience burnout [15].

It has been reported that among various workplace violence cases, health professionals, both employees and nurses working in hospitals, experience work-related violence at least once but they are often coerced into silence due to the location's unique characteristics, in which medical personnel from diverse specialties collaborate with specialists [16].

According to Statistics Korea data [17] released in 2019, the number of clinical physical therapists was 41,113, indicating that the job accounts for a large proportion of health professionals. The physical therapists' duties are comprised of meeting patients or their caregivers and personally caring for those who are physically and mentally unstable, or show low judgement and agitated emotions due to unexpected situations, such as sudden injury or illness. Hence, physical therapy is one of the professional groups that is most frequently exposed to physical contact and verbal abuse. The health of the physical therapists should be managed with care because their work performance influences not only the patients or their caregivers and the therapists themselves but also the overall quality of rehabilitation services. For effectively managing their health, a safe working environment must be ensured. The nation's prior research on workplace violence is often directed mainly at private sectors, such as

nurses, flight attendants and hotel workers, and studies by standardized workplace violence assessment tools tailored to the country's circumstances are very rare. This study, therefore, investigates the actual experience of workplace violence in physical therapists using the Korean Workplace Violence Scale (K-WVS) in which the level of emotional labor that physical therapists experience has been standardized. The specific research goals are as follows:

- 1) To investigate the actual experience of workplace violence in physical therapists.
- 2) To examine the level and intensity of the subscales of workplace violence according to the physical therapists' general characteristics.
- 3) To examine the correlations between workplace violence, depression, burnout, subjective health status, and job and life satisfaction in physical therapists.

Methods

Participants

A structured self-reported survey was conducted with physical therapists working at hospitals, welfare centers, and public and private institutions nationwide, to investigate their actual experiences of workplace violence and to examine its relationship with depression, burnout, subjective health status, and quality of life. A total of 1,250 copies of the questionnaire were distributed, of which 1,092 were collected. Of these, 950 were included in the final analysis, excluding 142 incomplete responses. The survey was conducted after receiving consent forms confirming the respondents' voluntary participation in the survey (IRB No. 2-7001793-AB-N-012018119HR).

Measures

The questionnaire used was a structured self-administered questionnaire consisting of 14 questions on the respondents' general and job characteristics, 24 on workplace violence, 9 for depression screening, 5 on burnout, 1 on subjective health status, and 2 related to job and life satisfaction.

Workplace violence

The level of workplace violence was assessed using the K-WVS [18] composed of 24 questions in the following 4 subscales of workplace violence: 'Organizational protective system for workplace violence (14 questions)', 'Experiences of psychological and sexual violence from supervisors and coworkers (4 questions)', 'Experiences of psychologi-

cal and sexual violence from customers (4 questions)', and 'Experiences of physical violence from customers, supervisors, and coworkers (2 questions)' [18]. Higher total scores on this measure indicate a higher degree of workplace violence.

A reliability test conducted to determine the internal consistency of the four subscales of workplace violence yielded Cronbach's α values of 0.757, 0.755, 0.963, and 0.650, for 'psychological and sexual violence from customers,' 'psychological and sexual violence from supervisors and coworkers,' 'physical violence from customers, supervisors and coworkers' and 'organizational protective system for workplace violence,' respectively. The assessment scores for each subscale of workplace violence were converted into a maximum score of 100 points in accordance with the formula presented below.

Converted score for each subscale

$$= \frac{(\text{sum of scores on each item in the respective subscale} - \text{number of items})}{(\text{the highest possible total score for the respective subscale} - \text{number of items})} \times 100$$

Depression

Depression was assessed using the Korean version of the Patient Health Questionnaire-9, a depression screening tool originally developed by Spitzer *et al.* [19] and translated into Korean by Han *et al.* [20]. It diagnoses major depression and is reported to have excellent sensitivity and specificity (88% for each). The questionnaire consisted of 9 questions related to: 'little interest in doing things,' 'feeling depressed,' 'sleep disorders,' 'feeling tired,' 'poor appetite or overeating,' 'feelings of being a loser,' 'trouble concentrating,' 'moving slowly or being restless,' and 'thoughts of hurting oneself'. It examined how often the research participants experienced each item in the past two weeks. For each item, they were asked to check the response that best described their severity of symptoms, on a scale of 0 to 3 points, and the total points were then computed [20]. Higher total scores on this measure indicate a higher degree of depression. While Han *et al.* [20] reported Cronbach's α value for the questionnaire as 0.820, this study's Cronbach's α value was 0.853.

Burnout

For burnout assessment, 5 items were used from the Korean Maslach Burnout Inventory-Human Services Survey (MBI-HSS) form, based on the original MBI-HSS de-

veloped by Maslach *et al.* [21]. Measured on a 4-point Likert scale, where '1' corresponds to 'Not at all' and '4' to 'Extremely so' where the higher the total score, higher total scores on this measure indicate a higher degree of burnout [21]. The reliability of the original tool was Cronbach's $\alpha = 0.760$, while the scale used in this study indicated Cronbach's $\alpha = 0.917$.

Subjective health status

Subjective health status was measured on a 5-point scale ('Very good,' 'Fairly good,' 'Acceptable,' 'Rather poor,' and 'Very poor') using the question, 'Overall, what is your subjective health status?' Higher scores denoted better perceived subjective health status.

Job and life satisfaction

Job and life satisfaction was measured based on the assessment tool used in the World Values Survey [22]. The life satisfaction questionnaire consists of three items; 'work satisfaction (job satisfaction),' 'family life satisfaction,' and 'satisfaction for my life' [22]. Items were measured on a 10-point scale, with 1 point for 'Very unsatisfactory' to 10 points for 'Very satisfactory.' This study used two of the three items: 'work satisfaction (job satisfaction)' and 'satisfaction for my life.'

Data analysis

Subjects' demographic characteristics were expressed in frequencies and percentages or means and standard deviations. To determine the level of workplace violence along with the participants' general and job characteristics; t-test, ANOVA, rank sum, and the Kruskal-Wallis tests were performed according to data distribution. Since scores from factors such as 'psychological and sexual violence from supervisors and coworkers,' 'psychological and sexual violence from customers,' and 'physical violence from customers, supervisors, and coworkers' showed right-skewed distributions, nonparametric methods such as the rank sum and the Kruskal-Wallis tests were used to verify the differences between the groups. The spearman correlation analysis was conducted to verify the relationship between workplace violence and other attributes known to be associated with it, such as depression, burnout, subjective health status, and job and life satisfaction. All statistical analyses were performed using the SAS 9.2 (SAS Institute Inc., Cary, NC, USA) and were determined to be significant at $p < 0.05$.

Table 1. General and job characteristics of participants (N=950)

Variable	Physical therapists
Sex	
Male	532 (56.0)
Female	418 (44.0)
Age group (y)	
20-29	530 (55.8)
30-39	292 (29.7)
40-49	107 (11.3)
≥50	20 (2.1)
Educational level	
College	241 (25.4)
University	592 (62.3)
Graduate	117 (12.3)
Marital status	
Do not have a spouse (single/divorced/ separated/bereaved)	605 (63.7)
Have a spouse	345 (36.3)
Work experience (y)	
<5	502 (52.8)
5-9	217 (22.8)
10-19	172 (18.1)
≥20	53 (5.6)
Type of institution	
Primary care provider	71 (7.5)
Secondary care provider	492 (51.8)
Tertiary care provider	340 (35.8)
Other (welfare center/public or private institution)	39 (4.1)
Employment type	
Regular workers	664 (69.9)
Contract workers	271 (28.5)
Part-time workers	15 (1.6)
Weekly working (h)	
<40	73 (7.7)
40-48	870 (91.6)
≥49	7 (0.7)
Holiday work	
Yes	659 (69.4)
No	290 (30.5)
Daily patient care (h)	
<8	420 (44.2)
≥8	525 (55.3)
Daily patient care (number of patients)	
<15 patients	682 (71.8)
≥15 patients	268 (28.2)

Values are presented as n (%).

Results

General characteristics of the participants

Nine-hundred and fifty participants participated in this

study. The general and job characteristics are shown in Table 1.

Relationships between the four sub-scales of workplace violence and general and job characteristics

The mean score and standard deviation for workplace violence in each subscale was examined along with the participants' general and job characteristics. Compared to the physical therapists in other groups, the level of workplace violence was significantly higher statistically in the 'psychological and sexual violence from customer' sub-scale for female physical therapists in their 20s, having no spouse, work experience of five or more years but less than 10 years, working as secondary care providers, or working on holidays. In the 'psychological and sexual violence from supervisors and coworkers' sub-scale, the level of workplace violence was statistically significant for physical therapists in their 50s or above, with graduate school or higher educational level, who had been working for 20 years or longer, as regular workers. Compared to physical therapists in other groups, the level of workplace violence was higher for physical therapists who worked as secondary care providers, were regular workers, worked on holidays, or cared for less than 15 patients a day in the subscale of 'physical violence from customers, supervisors and coworkers.' In the subscale of 'organizational protective system for workplace violence,' the level of workplace violence was lower for physical therapists in their 30s, having no spouse, who had been working for 5 years or more but less than 10 years at institutions other than medical institutions, were regular workers working 49 hours or more a week, including holidays, or who cared for patients less than 8 hours a day. The variables mentioned in each scale were statistically significant ($\alpha = 0.05$) (Table 2).

Correlation between workplace violence and depression, burnout, subjective health status, and satisfaction

Correlation analysis between the four subscales of workplace violence and depression, burnout, subjective health status, and job and life satisfaction revealed that three workplace violence subscales (e.g., psychological and sexual violence from customers, psychological and sexual violence from supervisors and coworkers, physical violence from customers, supervisors, and coworkers) had a significant negative correlation with health indicators such as subjective health status, and job and life satisfaction. However, these subscales had a strong positive correlation with depression (psychological and sexual violence from custom-

Table 2. Relationships between the four sub-scales of workplace violence and general and job characteristics

Variable	Psychological and sexual violence from customers		Psychological and sexual violence from supervisors and coworkers		Physical violence from customers, supervisors, and coworkers		Organizational protective system for workplace violence	
	Mean (SD)	<i>p</i> -value	Mean (SD)	<i>p</i> -value	Mean (SD)	<i>p</i> -value	Mean (SD)	<i>p</i> -value
Sex		<0.001		0.823		0.649		0.181
Male	13.83 (13.37)		6.10 (10.74)		3.13 (8.15)		55.15 (24.30)	
Female	21.61 (15.73)		6.57 (11.42)		3.30 (8.42)		57.66 (24.3)	
Age group (y)		<0.001		0.008		0.233		<0.001
20-29	18.41 (14.95)		5.56 (10.72)		3.08 (7.99)		59.26 (23.52)	
30-39	17.57 (15.10)		7.19 (11.16)		3.71 (8.54)		52.14 (24.84)	
40-49	11.44 (13.90)		7.32 (12.04)		2.95 (9.38)		55.09 (24.84)	
≥50	12.5 (10.98)		8.33 (11.47)		0.83 (3.72)		57.61 (26.85)	
Educational level		0.113		0.007		0.444		0.221
College	18.18 (14.43)		5.39 (11.21)		2.62 (7.29)		56.47 (24.45)	
University	17.35 (15.40)		6.20 (10.74)		3.37 (8.27)		57.27 (24.32)	
Graduate	14.81 (13.49)		8.76 (11.87)		3.56 (9.98)		53.11 (23.98)	
Marital status		0.001		0.087		0.372		0.009
Do not have a spouse	18.34 (15.15)		6.23 (11.49)		3.33 (8.32)		53.94 (25.14)	
Have a spouse	15.33 (14.43)		6.44 (10.20)		2.99 (8.17)		58.05 (23.73)	
Work experience (y)		<0.001		0.008		0.608		<0.001
<5	17.97 (14.84)		5.61 (10.89)		3.25 (8.32)		59.93 (23.46)	
5-9	19.81 (15.49)		7.14 (10.64)		3.53 (8.19)		50.88 (24.00)	
10-19	13.80 (14.73)		7.07 (12.29)		3.00 (8.58)		52.65 (25.33)	
≥20	11.63 (10.88)		7.38 (9.89)		2.51 (7.59)		59.56 (24.80)	
Type of institution		<0.001		0.312		0.001		<0.001
Primary	8.68 (13.90)		3.75 (7.15)		1.40 (5.45)		56.90 (28.74)	
Secondary	20.61 (15.32)		6.19 (10.67)		3.99 (8.89)		51.63 (22.86)	
Tertiary	14.21 (13.13)		6.91 (11.94)		2.54 (7.99)		65.42 (21.89)	
Other	15.81 (15.85)		7.05 (12.17)		2.13 (5.64)		42.36 (29.09)	
Employment type		0.539		<0.001		0.044		<0.001
Regular workers	17.58 (15.22)		7.05 (11.51)		3.58 (8.78)		53.17 (24.08)	
Contract workers	16.66 (14.48)		4.73 (9.84)		2.46 (7.03)		64.93 (22.60)	
Part-time workers	13.33 (10.81)		2.22 (4.94)		0 (-)		55.07 (29.54)	
Weekly working (h)		0.457		0.711		0.512		0.025
<40	16.89 (13.39)		5.70 (11.93)		2.51 (7.17)		50.48 (26.67)	
40-48	17.22 (15.06)		6.36 (10.96)		3.25 (8.36)		57.17 (24.08)	
≥49	24.99 (18.00)		7.14 (12.19)		4.76 (8.13)		43.87 (18.58)	
Worked on holidays		<0.001		0.062		0.010		<0.001
Yes	19.22 (15.07)		6.68 (11.30)		3.56 (8.54)		54.57 (23.10)	
No	12.84 (13.70)		5.40 (10.35)		2.41 (7.58)		61.12 (26.39)	
Daily patient care (h)		0.333		0.364		0.301		0.002
<8	16.56 (14.19)		6.68 (11.76)		3.41 (8.23)		54.04 (22.97)	
≥8	17.87 (15.54)		6.01 (10.40)		3.07 (8.33)		58.53 (25.26)	
Daily patient care (number of patients)		0.367		0.417		0.002		0.585
<15	17.02 (14.98)		6.37 (10.96)		3.61 (8.61)		56.46 (23.48)	
≥15	17.84 (14.90)		6.15 (11.26)		2.17 (7.24)		56.79 (26.39)	

ers: $r=0.42$, $p<0.05$; psychological and sexual violence from supervisors and coworkers: $r=0.23$, $p<0.05$; physical violence from customers, supervisors, and coworkers: $r=$

0.18 , $p<0.05$). Burnout had no correlation with workplace violence subscales. The 'organizational protective system for workplace violence' sub-scale showed a negative corre-

Table 3. Correlation between workplace violence variables and health indicators

Variable	1	2	3	4	5	6	7	8	9
1. Psychological and sexual violence from customers	1.00								
2. Psychological and sexual violence from supervisors and coworkers	0.38 ^a	1.00							
3. Physical violence from customers, supervisors, and coworkers	0.39 ^a	0.29 ^a	1.00						
4. Organizational protective system for workplace violence	-0.26 ^a	-0.24 ^a	-0.13 ^a	1.00					
5. Depression	0.42 ^a	0.23 ^a	0.18 ^a	-0.30 ^a	1.00				
6. Burnout	-0.10	-0.90	-0.05	0.06	-0.13 ^a	1.00			
7. Subjective health status	-0.27 ^a	-0.14 ^a	-0.11 ^a	0.27 ^a	-0.52 ^a	0.08	1.00		
8. Job satisfaction	-0.29 ^a	-0.16 ^a	-0.11 ^a	0.30 ^a	-0.49 ^a	0.12 ^a	0.39 ^a	1.00	
9. Life satisfaction	-0.25 ^a	-0.13 ^a	-0.12 ^a	0.21 ^a	-0.49 ^a	0.10	0.41 ^a	0.63 ^a	1.00

^a $p < 0.05$.

lation with depression ($r = -0.30$, $p < 0.05$), but a positive correlation with subjective health status ($r = 0.27$, $p < 0.05$) and job ($r = 0.30$, $p < 0.05$) and life satisfaction ($r = 0.21$, $p < 0.05$). Especially, 'psychological and sexual violence from customers' showed the moderate positive correlation with depression ($r = 0.42$, $p < 0.05$) and the mild negative correlation with job satisfaction ($r = -0.29$, $p < 0.05$). Also, depression showed the strong negative correlation with subjective health status ($r = -0.52$, $p < 0.05$), job satisfaction ($r = -0.49$, $p < 0.05$), and life satisfaction ($r = -0.49$, $p < 0.05$) (Table 3).

Discussion

This study investigated the level and intensity of workplace violence factors experienced by physical therapists and examined their correlation with health indicators such as depression, subjective health status, and job and life satisfaction. The level and intensity of workplace violence was found to be higher in women. Also, an increased incidence of workplace violence especially in the subscale of 'psychological and sexual violence from customers' was found in younger physical therapists who did not have a spouse, had shorter work experience, and worked on holidays. Compared to other subscales, 'psychological and sexual violence from customers' showed a stronger positive correlation with depression and negative correlation with subjective health status, and job and life satisfaction. Similar to the results of previous studies, a high correlation was found between age, work experience, and workplace violence experience. For example, a study by Oh and Kim [23] found that younger nurses experience more verbal abuse from customers. Other studies of other nurses also showed that nurses with shorter work experience had a higher degree of workplace violence

than those with longer work experience [24,25]. The positive correlation between work experience and workplace violence can be explained in terms of how therapists beginning their career, who have less than one year's work experience score lower in responding to 'psychological violence from customers' because they do not have a broad understanding of the surrounding situations as they are trying to adjust to their work and have little opportunity to personally deal with problematic situations which can usually be handled by more experienced therapists. Also, it is judged that therapists who have been working for more than one year, but less than five years are likely to experience more violence since in that stage of their careers, the frequency of face-to-face interactions with patients or their caregivers is the highest, and they are more exposed to problematic situations.

The sub-scale of 'psychological and sexual violence from customers' was found to have a relatively strong and statistically significant correlation with depression. In addition, depression showed a strong statistically significant negative correlation with subjective health status, and job and life satisfaction. Previous studies have also reported a high correlation between experiencing workplace violence and mental and subjective health status in various occupational groups. Particularly, in relation to health care professions, it was found that workplace violence negatively affected life and job satisfaction in nurses [24], and the satisfaction of emergency room staff members decreased with higher experiences of violence [26,27].

In addition, this study showed that there is a statistically significant negative correlation between 'organizational protective system for workplace violence' and depression, subjective health status, and job and life satisfaction. It is, therefore, necessary to establish a system and have legal and in-

stitutional measures that can protect physical therapists from workplace violence.

The implications of this study are as follows: It is important to prevent violence from patients and their caregivers at the workplace to protect physical therapists, who are suffering from poor working environments such as long working hours, assaults, verbal abuses, and sexual harassment. Toward this end, specific measures should be in place for an employee protection system at an organizational level, including developing a customer response manual necessary while dealing with dangerous customers. Considering the high level and intensity of workplace violence in groups with less work experience, it is necessary to establish a mentor system based on work experience, and prepare violence prevention guidelines as recommended by Vartia *et al.* [28], who emphasized the importance of the middle managers' role in the event of violence and the appropriate use of guidelines directing concrete procedures.

To fundamentally address quality degradation concerns in rehabilitation services caused by depression, poor health conditions, and low life satisfaction of physical therapists, priority should be given to improving the protection system at the workplace (organizational environment) and creating a workplace culture. It is important to integrate opinions of all members of the organization while developing and implementing measures related to violence [29]. Improving the organizational environment's protection system and support between coworkers cannot be achieved only through the solitary efforts of the respective institutions and individuals but require continuous and systematic support from the Korea Physical Therapy Association and the government. To solve workplace violence, it is necessary to strictly apply a zero tolerance policy and implement severe punishment to perpetrators. A top-down approach should be adopted, whereby an association representing the physical therapists sternly demands from the hospital management proper handling of damage from violence and imposition of severe penalties on offenders, as per the guidelines of the OSHA of the United States [30].

This study has the following limitations: First, it does not provide causal relationships due to being a cross-sectional study. Second, its results cannot be generalized to all physical therapists since it only covered a limited number of therapists who experienced workplace violence. Nevertheless, it is meaningful in that it confirmed the actual experiences of workplace violence of physical therapists using a validated assessment tool that reflects the actual workplace

emotional situation of workers in Korea. Therefore, this study can be used as a starting point or primary data in developing effective coping strategies and preventive measures against workplace violence for ensuring a safe working environment for physical therapists.

In conclusion, this study investigated the actual experiences of workplace violence of physical therapists and examined its correlation with health indicators such as depression, subjective health status, and job and life satisfaction. Significant negative correlations were found between the three subscales of workplace violence and all the health indicators, including depression, subjective health status, and job and life satisfaction. The scale that showed a strong correlation with depression and subjective health status was 'psychological and sexual violence from customers,' while depression showed a strong negative correlation with subjective health status, and job and life satisfaction. The organizational protective system for workplace violence showed a negative correlation with depression, and a positive correlation with subjective health status, and job and life satisfaction.

Therefore, a protective system should be established in a concrete way to protect physical therapists from the customers' psychological and sexual violence. Based on the findings of this study, it is suggested that future studies continue to investigate and reveal the causal relationship between workplace violence and physical therapists' health indicators, based on this study's findings.

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the authorship and/or publication of this article.

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