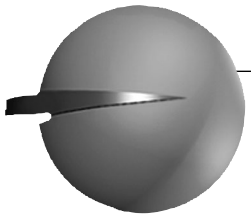

Original Article

Effects of Yoga on Stress, Stress Adaption, and Heart Rate Variability Among Mental Health Professionals—A Randomized Controlled Trial

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Keywords
yoga,
work-related stress,
stress adaptation,
heart rate variability

ABSTRACT

Background: Mental health professionals experiencing work-related stress may experience burn out, leading to a negative impact on their organization and patients.

Aim: The aim of this study was to examine the effects of yoga classes on work-related stress, stress adaptation, and autonomic nerve activity among mental health professionals.

Methods: A randomized controlled trial was used, which compared the outcomes between the experimental (e.g., yoga program) and the control groups (e.g., no yoga exercise) for 12 weeks. Work-related stress and stress adaptation were assessed before and after the program. Heart rate variability (HRV) was measured at baseline, midpoint through the weekly yoga classes (6 weeks), and postintervention (after 12 weeks of yoga classes).

Results: The results showed that the mental health professionals in the yoga group experienced a significant reduction in work-related stress ($t = -6.225$, $p < .001$), and a significant enhancement of stress adaptation ($t = 2.128$, $p = .042$). Participants in the control group revealed no significant changes. Comparing the mean differences in pre- and posttest scores between yoga and control groups, we found the yoga group significantly decreased work-related stress ($t = -3.216$, $p = .002$), but there was no significant change in stress adaptation ($p = .084$). While controlling for the pretest scores of work-related stress, participants in yoga, but not the control group, revealed a significant increase in autonomic nerve activity at midpoint (6 weeks) test ($t = -2.799$, $p = .007$), and at posttest (12 weeks; $t = -2.099$, $p = .040$).

Linking Evidence to Action: Because mental health professionals experienced a reduction in work-related stress and an increase in autonomic nerve activity in a weekly yoga program for 12 weeks, clinicians, administrators, and educators should offer yoga classes as a strategy to help health professionals reduce their work-related stress and balance autonomic nerve activities.

INTRODUCTION

Helping behaviors occur when people decide to provide assistance and then carry out an action. The decision and process of helping behaviors involves complex social cognition and rational decision making. In current society, the assistance in which mental health professionals provide patients with problems of daily living is increasing in importance. However, mental health professionals are subjected to persistent and repeated emotional stress due to intensive and lengthy interactions with patients, resulting in the phenomenon of professional burnout. Findings from a study by Sahraian, Fazelzadeh, Mehdizadeh, and Toobaee (2008) indicated that mental health professionals showed significantly higher levels of emotional exhaustion and depersonalization in comparison with those working in other specialties. In the highly specialized field of mental health, professionals who are often under time constraints experience stress when dealing with complex patients who are potentially violent or are at risk for suicide. Mental health professionals including psychiatrists, nurses, psychologists, social workers, advanced practice nurses, and occupational therapists are often called upon to maintain a positive attitude and enthusiasm, especially in the face of multiple accreditation inspections and high work demands. Work-related stress develops gradually and affects both the physical and mental health of those experiencing it, which can eventually lead to burnout. Work-related stress symptoms include insomnia, sleep disturbances, menstrual disorders, body weight fluctuations, irritation, and depression (Bauer et al., 2003).

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Burnard (1991) described how work-related stress directly affects the physical and mental health of mental health professionals and indirectly affects the organization and even the patients.

If work-related stress and stress adaptation of mental health professionals was better understood, more assistance could be provided to them to assist them in handling their stress, maintaining their enthusiasm, and engaging in their work. Yoga is a body–mind exercise which promotes physical, mental, and spiritual relaxation by way of Asanas (bodily positions of stretching, breathing and meditation; Bhavanani, Ramanathan, Balaji, & Pushpa, 2014). Through yoga practice, individuals may be able to work better in highly stressful situations (Louie 2014). Knobben (2013) carried out a literature review of 32 studies that examined the effects of yoga on quality of life and improvement of mental health in healthy people and patients. They found that yoga had an effect of .49 (49%) improvement on depression. They concluded that yoga was an effective exercise program for all populations, including healthy people and patients with mental illness or somatic illness. Lavey et al. (2005) also demonstrated that yoga exercise significantly improved the symptoms in psychiatric patients.

Studies of yoga effects on work-related stress in the medical field focus primarily on nursing staff (Chang, Chen, & Kuo, 2004; Chen, Lee, Tsai, & Tsai, 2013; Chung et al., 2014; Gomes & Teixeira, 2014; Liu & Liu, 2009; Tang, Chen, Chen, Chang, & Lin, 2005). Few studies have measured effects of yoga on work-related stress and stress adaptation in different mental health professionals (Chang et al., 2003; Shen, Cheng, Tsai, Lee, & Guo, 2005), particularly those in Chinese societies where Daoism religion is popular. Daoism emphasizes living a harmonious life with compassion, moderation and humility. These tenets of Daoism may enhance the effects of yoga practice. We conducted a pilot study of a yoga program for mental health professionals in our institution. The participants perceived positive feelings after the yoga practices and expressed "the mood is more relaxed" and "yoga helps to modify long-lasting poor standing or sitting postures." For this reason, we hypothesized that yoga could effectively reduce the work-related stress of mental health professionals by well designed and implemented yoga classes, which could provide a suitable means of stress adaptation for health professionals. Based on this hypothesis, our aim was to investigate the effects of yoga on work-related stress, stress adaptation, and balance of autonomic nerve activity among mental health professionals including psychiatrists, nurses, psychologists, social workers, and occupational therapists. It also was hoped that the improvement of work-related stress would be correlated with balance of heart rate variability (HRV) for better stress adaptation. Therefore, this study had three objectives as listed:

(1) Work-related stress and stress adaptation of mental health professionals in the experimental group will be significantly improved after yoga intervention.

(2) Work-related stress and stress adaptation of mental health professionals in the experimental group will be significantly improved after yoga intervention compared to those in the control group.

(3) The HRV indexes, comprised of sympathetic (LF) and parasympathetic (HF) nerve functions as well as autonomic nerve activity (LH/HF), of the mental health professionals in the experimental group may be significantly improved after yoga intervention compared to those in the control group.

Terminology

The key variables were defined as follows: mental health professionals, work-related stress, stress adaptation, yoga, and HRV.

Mental health professionals are professionals who carry out mental health services in hospitals including psychiatrists, nurses, psychologists, social workers and occupational therapists.

(1) Work-related stress: the long-lasting and negative experiences of workers perceived as uncomfortable. The measureable dimensions include the characteristic of work, interpersonal relationships, career development, organizational structure, and the role of the worker.

(2) Stress adaptation: The adjustments in perceptions and behaviors to resolve or adapt to stress; measureable dimensions include problematic orientation and emotional orientation.

(3) Yoga: Yoga originated from ancient Hindu culture, which is one of six major philosophic factions of ancient India. Contemporary yoga uses a series of methods for self-cultivation to approach the union of body and mind, including specific postures to exercise the body, breathing to control one's breath, and meditation to slow the mind.

(4) HRV: HRV represents the variability of heart rate and the ability to adapt to stress, which retrieves the relative physiological signals of autonomic nerve activity in the human body, including sympathetic (LF) and parasympathetic (HF) nerve activities as well as autonomic nerve balance (LH/HF). LF is from the abbreviation of low frequency, which indicates a physiological signal between .040 and .150 Hz as the discharge of sympathetic nerves, representing the activity of sympathetic nerves. HF is from the abbreviation of high frequency, which indicates a physiological signal between .150 and .400 Hz as the discharge of parasympathetic nerves, representing the activity of parasympathetic nerves. The ratio of LF and HF means the status of balance between sympathetic and parasympathetic nerve systems.

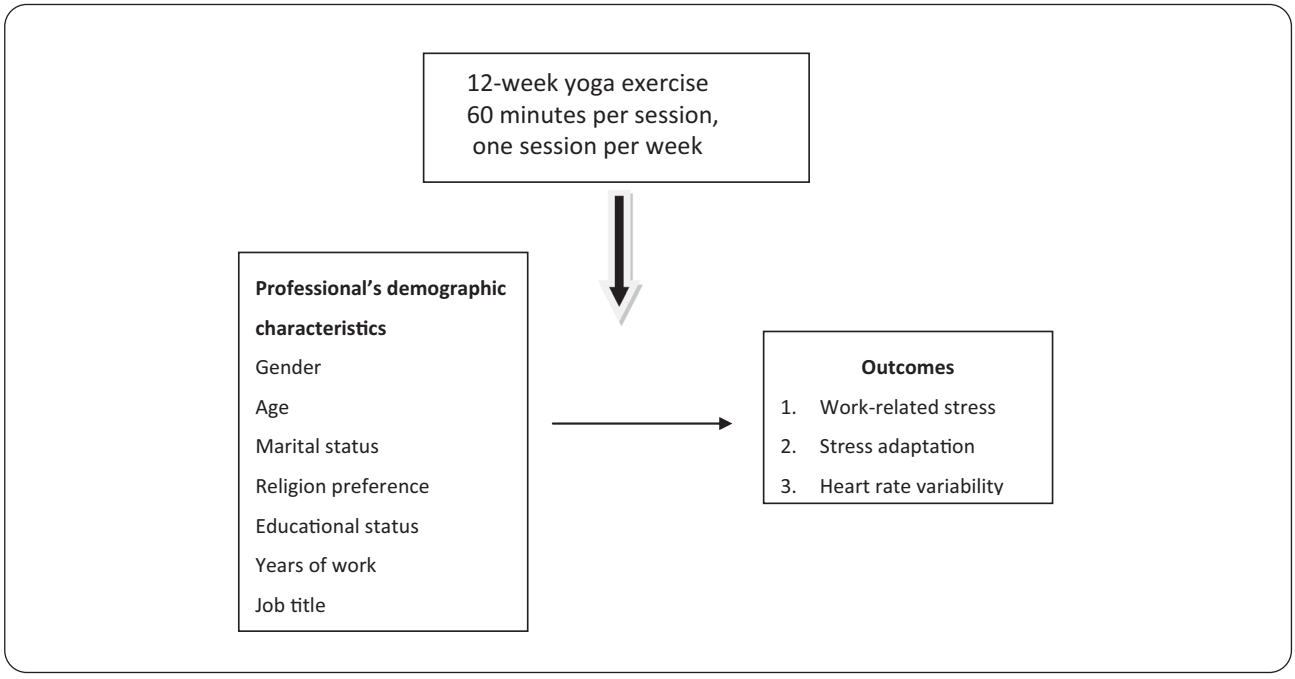

Figure 1. The conceptual framework of the effects of yoga on stress, stress adaptation, and rate variability among mental health professionals.

This study examined the effects of a 12-week yoga intervention on work-related stress, stress adaptation, and balance of autonomic nerve activities measured by HRV for mental health professionals. The research framework is shown in Figure 1.

RESEARCH METHODS

Study Design

This study was a single-blind, parallel-arm randomized controlled trial in which the analyzer was unaware of which group was the experimental or control group. The intervention consisted of a series of weekly, 60-minute yoga classes over a 12-week period (Figure 1). Those who were assigned to the control group participated in a free tea time during which they watched television and did not exercise. The participants each signed an informed consent prior to enrolling in the study.

Research Participants

The research participants were 60 mental health professionals in a teaching hospital who were not involved in any formal exercise program. They were randomly assigned to the yoga group or control group. This experimental study estimated the sample size based on effect size = .45, power = .8, alpha level = .05, two-tailed, and it was calculated to be 28 for each group; taking 10% of loss to follow-up into consideration, the sample size was set to be 30 for each group. Each participant completed a pretest and a posttest. The inclusion criteria consisted of mental health professionals who were not involved in a formal exercise program and who were willing to participate in this study. Exclusion criteria included pain due to injuries to shoulders, waist, or lower back, and musculoskeletal diseases such as muscle strains, that made participants unsuitable to participate in this study. The participants were recruited through poster advertisement and in person. After we received registration, a meeting was held to explain the details of the trial. Then, the participants signed the informed consent form and were randomly assigned to yoga or control groups by drawing lots. There were 30 participants each in the yoga and control groups. It was expected that the two groups were homogeneous through drawing lots of random allocation. The study flow chart is shown in Figure 2. The average age of participants was 30 years, primarily female, unmarried, with a religious affiliation of Daoism, college educated, and employed in health care.

Research Measures

The research tools of the study consisted of subjective self-administered scales and an objective biofeedback (HRV) monitor. Before and after the yoga intervention, all participants were asked to complete the self-administered scales including: demographic characteristics (e.g., gender, age, marital status, religious preference, educational status, and years of work), professional background, work-related stress scale, and stress adaptation scale. Also, HRV was measured, retrieved, and analyzed at pre- (6 weeks), midpoint, and post- (12 weeks) tests to reflect the relevant physiological signals of autonomic nerve activity, such as sympathetic nerve function, parasympathetic nerve function, and autonomic nerve activity.

The work-related stress scale was derived from the Chinese version of work-related stress scale by Lan (2004). The scale

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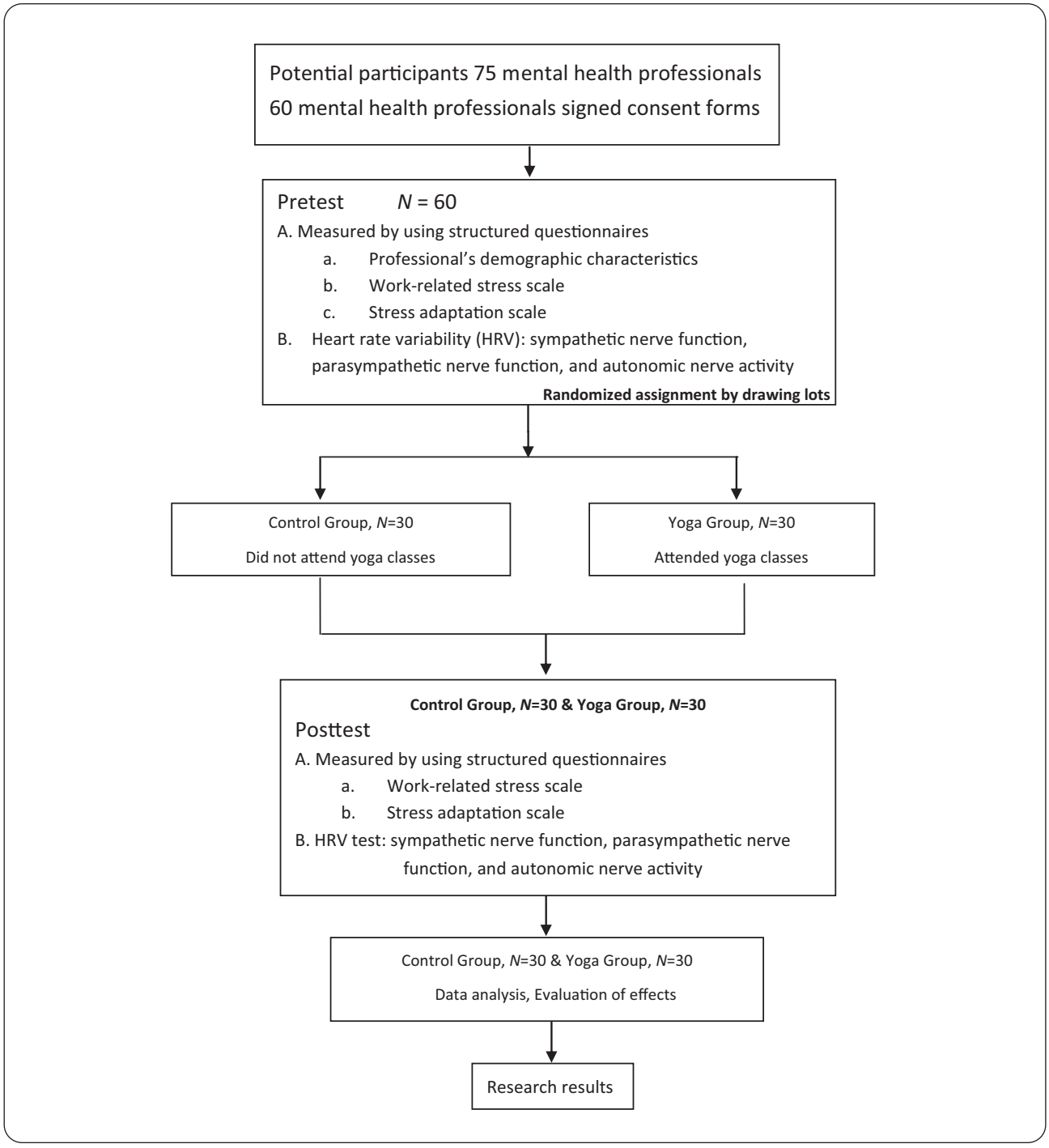

Figure 2. Study flow chart.

includes 10 items for measuring work satisfaction, such as "Do you feel overloaded?"; 10 items for role, such as "Aren't you understanding your working scope?"; 10 items for career development, such as "Are you unconfident about your future career?"; 5 items for interpersonal relationships, such as "Do you experience difficulties in getting along with colleagues?"; and 15 items for organizational structure, such as "Do you feel less involved in policy making?" The participants were asked to respond to each question by choosing one out of five levels of perceptions, from 1 (*not at all*), 2 (*somewhat*), 3 (*moderate*), 4 (*much*), to 5 (*very much*). A higher score indicates higher stress levels.

The original 60-item stress adaptation scale developed by Dewe (1991), was revised into a Chinese version by Chang

(2003) with 30 questions. All questions refer to experiences during the past month. For example, "In the last month, how often have you been upset because of something that happened unexpectedly?" and "In the past month, how often have you felt that you were unable to control the important things in your life?" The author granted us permission to use the Chinese version of the adaptation scale. The participants were asked to respond to each question by choosing one out of four levels of frequencies, from 1 (*always*), 2 (*often*), 3 (*sometimes*), to 4 (*never*). A higher score indicates better adaptation.

In addition to the self-administered scales, HRV Monitor (V1.89) was applied to collect the quantitative indexes of sympathetic nerve function, parasympathetic nerve function, and autonomic nerve activity, in pre- (6 weeks), midpoint, and post- (12 weeks) tests. These indexes were used to correlate to the effects of yoga on work-related stress and stress adaptation among the mental health professionals. The HRV Monitor (V1.89) was manufactured by Yang Ying Inc. (Taipei, Taiwan).

Intervention

The intervention in this study was a weekly 60-minute yoga class. Each yoga class was subdivided into six 10-minute subsessions. The yoga class regularly began with slower warm-up exercises: Abdominal breathing, cooling breath, and bellows breath, followed by forced abdominal breathing, meditation, and bodily stretching positions. The fidelity of the intervention was monitored and directed by two qualified teachers. The control group participated in a free tea time without exercise.

Research Ethics

This research protocol was approved by the hospital's Institutional Review Board. The participants signed informed consent forms before the pretest. During the process of data collection, personal information and privacy were protected according to relevant regulations. Data collected by questionnaire and by examination of autonomic balance with HRV were kept confidential for analyses by using assigned numbers given to experimental and control participants.

Data Analysis

Research data collected from the participants by questionnaire and HRV examination were coded and double-checked. Data analyses were carried out by using SPSS version 20.0 for Windows (SPSS Inc., Chicago, IL, USA). Chi-square tests and *t* tests were used to compare the differences of the demographic characteristics and data at baseline between the two groups. Analysis of Covariance (ANCOVA) was used to test whether the two groups had significant changes between pre- and posttests by controlling the confounding of the covariates.

RESULTS

There were 30 participants in each of the yoga and control groups. The demographic characteristics of the two groups, including gender ($X^2 = .20$, $p = .33$), marital status ($X^2 = 1.113$, $p = .785$), religious reference ($X^2 = 9.147$, $p = .079$), educational status ($X^2 = 2.955$, $p = .086$), job title ($X^2 = .0$, $p = 1.000$), and age ($X^2 = -1.233$, $p = .222$), showed no significant differences (Table 1). The total scores of pretest stress adaptation between yoga and control groups did not reach statistical significance ($t = -1.00$, $p = .32$). However, the total scores of pretest work-related stress between the two groups reached statistical significance ($t = -2.38$, $p = .02$; Table 2). Thus, we took the total scores of pretest work-related stress as a covariate to control for possible confounding.

The work-related stress and stress adaptation of the participants in the yoga group improved significantly after the 12-week yoga intervention. The differences of total scores of work-related stress between pretest and posttest in the yoga group were examined by paired *t* tests. Results showed a significant difference between the two tests ($t = -6.225$, $p = .0$), indicating the participants in the yoga group demonstrated a significant reduction in their work-related stress after the yoga intervention. The differences of total scores of stress adaptation between pretest and posttest in the yoga group were also examined by paired *t* tests. There also was a significant difference for stress adaptation between the two tests ($t = 2.128$, $p = .042$), indicating the participants increased the level of stress adaptation after the intervention. In the control group, there was no significant difference between work-related stress ($t = .343$, $p = .734$) and stress adaptation ($t = -.024$, $p = .981$) from pre- to posttest (Table 3).

The changes in work-related stress and stress adaptation of participants in the yoga group compared to those in the control group were analyzed by ANCOVA analysis. The dependent variable was the difference of total score of posttest score minus pretest score of work-related stress and stress adaptation, respectively. The independent variable was group and the covariate was pretest total score of work-related stress. Results showed that the work-related stress of the mental health professionals in the yoga group significantly decreased after yoga intervention ($t = -3.216$, $p = .002$) compared to those in the control group (Table 4). The mean difference of stress adaptation between pre- and posttest in the two groups did not differ significantly ($t = 1.760$, $p = .84$), indicating the stress adaptation of the mental health professionals in the yoga group did not change significantly after yoga intervention compared to those in the control group (Table 4).

The quantitative indexes of autonomic nerve signals including sympathetic nerve function, parasympathetic nerve function, and autonomic nerve activity were measured by HRV monitor to examine the physiological effects of yoga among the mental health professionals. We carried out an ANCOVA using pretest total score of work-related stress as covariate. The differences of the HRV indexes between the midpoint (6 weeks) HRV test and the pretest of HRV assessment were tested by ANCOVA analysis. The difference in sympathetic nerve function (LF) between the two groups did not reach statistical significance ($t = .359$, $p = .721$; Table 5), parasympathetic nerve function (HF) did not significantly differ between the two

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Table 1. Comparisons of Demographic Characteristics Between Yoga and Control Groups

				$N = 60$
	Yoga group $n = 30$ **n**	**Control group** $n = 30$ **n**	$\chi^{2a,b}/t^{c}$	**p**
Gender			.938[a]	.333
Male	4	8		
Female	26	22		
Marital status			1.113[b]	.785
Unmarried	19	21		
Married	10	9		
Divorce	1	0		
Religion preference			9.147[b]	.079
Buddhism	7	6		
Christian	3	3		
Catholicism	1	0		
Taoism	10	15		
Folk belief	6	0		
Others	3	6		
Educational status			2.955[a]	.086
Diploma or below	5	12		
BS and above	25	18		
Job title			0[a]	1.0
Medical and nursing staff	19	18		
Nonmedical or nursing staff	11	12		
Age (M ± SD)	32.07 ± 7.54	29.77 ± 6.89	−1.233[c]	.222

Note. [a]Chi-square value analyzed by Chi-square test.
[b]value analyzed by Fisher's exact test.
[c] *t*-value analyzed by independent *t* test.

groups either ($t = 1.762$, $p = .83$; Table 5). However, the autonomic nerve activity (LF/HF) differed significantly between the two groups ($t = -2.799$, $p = .007$), which means after six sessions of yoga intervention the autonomic nerve activity (LF/HF) of the participants in the yoga group increased .772 compared to the control group.

We also compared the differences of the HRV indexes between the post- (12 weeks) HRV test and the pretest of HRV. The difference in sympathetic nerve function (LF) between the two groups was not significantly different ($t = .599$, $p = .551$; Table 6), parasympathetic nerve function (HF) showed no significant difference between the two groups either ($t = 1.112$, $p = .271$; Table 6). On the other hand, the autonomic nerve activity (LF/HF) varied significantly between the two groups ($t = -2.099$, $p = .040$), indicating that after 12 weeks of participating in yoga classes, the autonomic nerve activity (LF/HF) of the participants increased .599 compared to the control group. In the pretest of HRV, the autonomic nerve activity revealed a significant difference between yoga and control groups, showing the mean difference (B) of .009 with standard error of .004, which is far smaller than the mean difference (B) of −.772 at 6-week midtest or -.599 at 12-week posttest. The 12-week finding

Table 2. Comparisons of Pretest Scores of Work-Related Stress and Stress Adaptation Between Yoga and Control Groups

				***N* = 60**
Pretest scores	**Yoga group** ***M* ± *SD***	**Control group** ***M* ± *SD***	***t***	***p***
Work-related stress	103.93 ± 37.22	83.10 ± 30.09	−2.38	.02
Stress adaptation	36.00 ± 8.30	33.73 ± 9.23	−1.00	.32

Table 3. Comparisons of Work-Related Stress and Stress Adaptation Before and After Yoga Intervention by Yoga and Control Groups

					***N* = 60**
Variables	**Pretest** ***M* ± *SD***	**Posttest** ***M* ± *SD***	**Mean difference**	***t***	***p***
Yoga group					
Work-related stress	103.93 ± 37.22	70.97 ± 38.35	−32.97 ± 29.01	−6.225	<.001
Stress adaptation	36.00 ± 8.30	40.57 ± 9.80	4.57 ± 11.75	2.128	.042
Control group					
Work-related stress	83.10 ± 30.09	85.50 ± 38.20	2.40 ± 38.30	.343	.734
Stress adaptation	33.73 ± 9.23	33.70 ± 9.29	−.03 ± 7.64	−.024	.981

in HRV with the mean increase of .599 is less robust than the 6-week finding in the mean increase of .772, but there is no significant mean difference between the midpoint (6 weeks) and the posttests (12 weeks).

DISCUSSION

Mental health professionals experience work-related stress from work or work-related factors. The work-related stress can result in fatigue, anxiety, depression, reduced work capacity, and even symptoms of burnout. Mental health professionals, similar to other health professionals, are susceptible to physical and psychological burnout while caring for people with mental illness (Lauber, Nordt, Braunschweig, & Rossler, 2006). Mental health professionals must learn to cope with work-related stress and improve their adaptation to stress. This study showed that a weekly regular yoga practice over a 12-week period significantly decreased work-related stress and increased stress adaptation of mental health professionals. For psychiatric inpatients, Lavey et al. (2005) also showed that yoga improved the mood of mentally ill patients. The findings were consistent with the study of the general population, showing that a therapeutic yoga program, similar to a mindfulness-based program, significantly improved perceived stress (Wolever et al., 2012). Taken together, these studies suggest that the physical, mental, and spiritual exercise of yoga is helpful in reducing work-related stress in those who suffer from it in the workplace, including mental health institutions.

In the ANCOVA analysis, we demonstrated a significant reduction of work-related stress and increase of stress adaptation in the group practicing yoga classes for 12 weeks. When we compared the changes between yoga and control groups, we found that the work-related stress and autonomic nerve activity, but not stress adaptation, showed a significant change. It is not clear why yoga exercise decreased work-related stress and enhanced autonomic nerve activity, but did not enhance stress adaptation in mental health professionals. This may be because yoga practice can balance physiological and autonomic functions of stress, but not provide the skills for stress adaptation. Another possibility is that the uncontrolled physical or leisure activities in the control group in this study may have acted as confounders.

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Table 4. Comparison of Mean Differences of Work-Related Stress and Stress Adaptation Between Yoga and Control Groups

				N = 60
Source	***B***	**Std. Error**	***t*[a]**	***p***
Work-related stress				
Intercept	32.655	11.831	2.760	.008
Pretest stress	−.364	.124	−2.939	.005
Group	−27.782	8.639	−3.216	.002
Stress adaptation				
Intercept	.598	3.703	.162	.872
Pretest stress	−.008	.039	−.196	.845
Group	4.758	2.704	1.760	.084

t[a] analyzed by using ANCOVA.

The results of testing sympathetic nerve function, parasympathetic nerve function, and autonomic nerve activity by objective HRV monitor showed that the autonomic nerve activity of the participants in the yoga group increased both at the midpoint (6 weeks) and posttests (12 weeks). Of note, the elevation of autonomic nerve activity after the 6-week yoga class was higher than that after the 12-week yoga class, but there is no significant difference between the 6-week and the 12-week analyses. This implies that 6 or more weeks of yoga classes could effectively increase the autonomic nerve activity of the participants. Our research findings were consistent with those of Smith, Hancock, Blake-Mortimer, and Eckert (2007), showing that 10 weekly 60-minute yoga classes in the workplace can reduce stress and improve health status. These research findings support the therapeutic effects of yoga exercise by promoting relaxation and relieving stress.

In this study, we used a series of 12 weekly 60-minute yoga exercise sessions to relieve work-related stress and to enhance stress adaptation in healthcare providers who have very busy schedules. However, weekly 60-minute sessions may not be sufficient. In future studies, doubling or tripling the number of weekly 60-minute yoga sessions should be considered to help determine an optimal yoga exercise frequency. Because yoga exercise includes meditation and most of the study participants indicated religious affiliation with Daoism, it may be necessary to control for religion as a confounder in future studies. Moreover, additional considerations such as educational levels, gender, marital status, race, quality of yoga teachers, styles and contents of yoga exercises, and participants' fidelity and satisfaction need to be controlled in order to develop a useful yoga program for work-related stress reduction and stress adaptation of health professionals. Because the

Table 5. Comparison of the Midtest (6 weeks) of HRV With Baseline Between Yoga and Control Groups

				N = 60
Source	***B***	**Std. Error**	***t*[a]**	***p***
Sympathetic nerve function (LF)				
Intercept	−216.523	262.609	−.825	.413
Pretest stress	.841	2.750	.306	.761
Group	68.837	191.761	.359	.721
Parasympathetic nerve function (HF)				
Intercept	−98.379	195.790	−.502	.617
Pretest stress	−.922	2.050	−.450	.655
Group	251.942	142.969	1.762	.083
Autonomic nerve activity (LF/HF)				
Intercept	−.346	.353	−.981	.331
Pretest stress	.005	.004	1.451	.152
Group	−.722	.258	−2.799	.007

t[a] analyzed by using ANCOVA.

Table 6. Comparison of the Posttest (12 weeks) of HRV With Baseline Between Yoga and Control Groups

				***N* = 60**
Source	***B***	**Std. Error**	***t*[a]**	***p***
Sympathetic nerve function (LF)				
Intercept	−150.191	440.709	−.341	.735
Pretest stress	2.995	4.615	.649	.519
Group	192.902	321.814	.599	.551
Parasympathetic nerve function (HF)				
Intercept	197.444	298.206	.662	.511
Pretest stress	−2.362	3.123	−.756	.453
Group	242.040	217.755	1.112	.271
Autonomic nerve activity (LF/HF)				
Intercept	−.706	.391	−1.805	.076
Pretest stress	.009	.004	2.235	.029
Group	−.599	.286	−2.099	.040

t[a] analyzed by using ANCOVA.

elevation of autonomic nerve activity after the 6-week yoga class was higher than that after the 12-week yoga class, but there is no significant difference between the 6-week and the 12-week analyses, this suggests that a yoga program greater than 6 weeks may effectively enhance the activity of parasympathetic nerves to elevate stress adaptation. Due to time constraints and classroom location and size, the sample size was small and the results are not able to be generalized to all mental health professionals nationwide. Therefore, future studies should be completed in multicenter trials with an optimal dose, and better standardized content of yoga to investigate the mechanism by which yoga improves autonomic nerve activity. **WVN**

LINKING EVIDENCE TO ACTION

- Mental health professionals show significantly higher levels of emotional exhaustion and depersonalization in comparison to those health professionals working in other specialties.
- By offering a weekly contemporary yoga exercise program over a 12-week period that included (a) specific postures to exercise the body, (b) breathing to control one's breath, and (c) meditation to slow the mind, we found that mental health professionals experienced a reduction in work-related stress and an increase in autonomic nerve activities. Thus, it is recommended that clinicians, administrators, and educators offer a yoga program to help health professionals reduce their work-related stress and balance of autonomic nerve activities.

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