



Psychosomatic and physical responses to a multi-component stress management program among teaching professionals: A randomized study of cognitive behavioral intervention (CB) with complementary and alternative medicine (CAM) approach



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ABSTRACT

Background: The present study aims to assess psychosomatic and physical responses to a multi-component stress management program with the use of CAM and CB approaches among teaching professionals in Hong Kong.

Method: A random controlled trial (RCT) was used to compare between CB group (n = 26) and the CAM-CB group (n = 30). Interventions were administered for 1.5 h once a week for eight consecutive weeks. A self-administered questionnaire including perceived stress scale (PSS) and frequency of psychosomatic symptoms were measured at baseline (T1), immediate after the program (T2), and 4 weeks after the program (T3). Physical parameters were measured at T1 and T2.

Results: A reduction of 23% in PSS was observed in the CB group, while the CAM-CB group yielded 18% reductions in PSS from T1 to T3 [$F(2,108) = 3.099$; $p = .049$]. No significant interactions were observed in the frequency of psychosomatic symptoms and physical parameters. However, a significant downward time trend was observed ($p < .001$) and larger percentage changes in physical responses were shown in the CAM-CB group than CB group.

Conclusion: Clinical evidence of both the CAM-CB and CB program has been demonstrated in the current study and both approaches are easy to be self-implemented. The CAM technique might serve as an alternative choice for self-administered stress management to replace the additional time needed for professional follow-up contacts. It might further improve some physical responses such as handgrip strength and resting heart rate, which are associated with better psychosomatic health and better occupational stress management.

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1. Introduction

The work of teaching professionals is beyond the transfer of knowledge which involves dynamic interactions with students, parents, colleagues, and school authorities. Of the 26 occupations, teaching has been ranked as the most stressful occupation and the stressful nature is applicable to all professional teaching roles

(Johnson et al., 2005). Stress from work is characterized as a symptom of unpleasant emotional responses in the workplace (Hakanen, Bakker, & Schaufeli, 2006). A local study has found that over 35% of secondary teachers had experienced strong maladaptive stress responses due to vocational strain (S. S. K. Leung, Mak, Chui, Chiang, & Lee, 2009). Several research reports have consistently documented mental and physical fatigue experienced by teaching professionals. Perception of adverse psychosocial factors in the workplace such as effort-reward imbalance, undesirable work events and organizational injustice are shown to have an elevated risk of subsequent mental health problems (Bonde, 2008). Tiredness, eyestrain, anxiety, sleep problems, voice disorder,

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shoulder and neck pain, headache, cold/flu, and lower back pain are common physical complaints and psychosomatic symptoms faced by teaching professionals (Chong & Chan, 2010; Seibt, Spitzer, Druschke, Scheuch, & Hinz, 2013). The stress-induced problems are widespread phenomenon encountered by teachers in the world, predominantly in Asian and European countries (Klassen et al., 2013). The problems reflected either they have insufficient knowledge on ways of properly handling their stress or there are very limited self-administered stress management techniques available to them.

1.1. Stress coping using cognitive behavioral (CB) approaches

CB approaches adopted in stress management or resilience programs have become popular among employers over the last decade (Mok, Chau, Chan, & Ip, 2014; Patterson, Chung, & Swan, 2014). Considerable evidence exists to support the efficacy of cognitive behavioral therapy (CBT) in the management of common mental health problems such as mild or moderate depression and anxiety (Clarke, Kuosmanen, & Barry, 2015; Sockol, 2015). A review summarized the beneficial impacts of CBT on physical illness and psychosomatic symptoms such as pain, headache, tinnitus, and insomnia, but the effect sizes were slightly below what were previously reported for depression and anxiety (Cuijpers, van Straten, & Andersson, 2008). Most of the stress management programs with CB component are tailored to suit the employee group with the addition of particular challenges faced in their working contexts. However, a recent review has evaluated that the use of CBT alone as a self-help technique with no further follow up support from persons produced a much lower effect in improving mental health conditions than those with minimal contact of persons (Farrand & Woodford, 2013). This has led to an increased focus on alternative approaches which consist mainly of easier self-help techniques to widen access for oneself stress management.

1.2. Stress coping using complementary and alternative medicine (CAM)

The use of CAM such as mind-body exercises and acupressure has recently gained an increased popularity among a wide range of professionals in various fields. It has been established in healthcare settings and shown to have positive effects in reducing stress-related physical and psychosomatic responses such as insomnia and musculoskeletal pain (Raman, Zhang, Minichiello, D'Ambrosio, & Wang, 2013; Sarris & Byrne, 2011). A meta-analytical review suggested that multiple component interventions focusing on both well-being and behavioral training were more effective than either focus on behavioral training or cognitive behavioral training (Singer, Ethridge, & Aldana, 2007). We, therefore, combined the two approaches, CB and CAM, for stress management purposes among teaching professionals to maximize its potential beneficial effects in relieving the stress-related responses.

1.3. A theoretical model

The present stress management program was developed based on the theoretical model of stress process by Cohen et al (S. E. Cohen, Kessler, & Gordon, 1995). A culturally relevant self-help components, qigong and acupressure, were chosen aiming to cultivate the awareness of the unity of mind and body which in turn control physiological stress reactivity and ventilate negative emotions (Au et al., 2015; H. W. Tsang, Lee, Au, Wong, & Lai, 2013). The CB technique was used to facilitate the benign appraisal of stress and transform negative automatic thoughts into positive thinking (Claire et al., 2008; Reinholt & Krogh, 2014). The efficacy of the

cognitive behavioral intervention with the additional training of CAM techniques (CAM-CB) has received preliminary support in our earlier publication (H. W. H. Tsang et al., 2015). In our earlier study, significant reductions in the levels of depression, anxiety, and stress have been demonstrated using a quasi-experimental design. Methodological improvements in the present study included randomized control trial (RCT) with an active control (i.e., CB alone), as well as psychosomatic and physical stress-related indicators.

1.4. Objectives and hypotheses

The aims of the present study are to (1) assess psychosomatic and physical responses to the multi-component stress management program with the use of CAM and CB approaches; and (2) compare the effectiveness of the CAM-CB intervention to CB intervention on stress related parameters among teaching professionals. We hypothesized that the multi-component stress management intervention would be associated with more pronounced reductions in perceived stress levels and the associated stress-related physical and psychosomatic parameters than CB intervention. In addition, more improvements in personal well-being would be observed in the CAM-CB intervention group than CB intervention group.

2. Methods

2.1. Study design

A randomized controlled trial (RCT) was conducted to examine the effectiveness of CAM-CB intervention for teaching professionals in comparison to CB intervention. The effects on perceived stress levels, frequency of psychosomatic symptoms they encountered, as well as physical and personal wellbeing were examined.

2.2. Participants and settings

Participants with teaching qualifications at either primary or secondary schools in Hong Kong were invited to join the public lectures on stress and wellness in May 2013. A total of 77 teaching professionals were recruited from the public lectures for joining the study from June to August 2013. Eventually, a total of 56 eligible participants with written consent were randomly assigned to either the intervention group (CAM-CB) or the active control group (CB) using a computer random number generator. A CONSORT flowchart is shown in Fig. 1 for the recruitment and randomization details.

2.3. Cognitive-behavioral intervention (CB)

Table 1 provides an overview of the 8-week stress management program. The CB intervention was constructed based on the CB model of Aaron Beck (Beck, 1995) and split into eight 1.5-hr sessions. The content of the first four sessions included identification of sources of work-related stress at schools, introduction of the CB model such as identification of the activating event and their automatic thoughts, as well as cognitive restructuring techniques. The last four sessions were added as a control to neutralize the effect of additional time due to CAM sessions implemented in the CAM-CB group. Participants were asked to record negative automatic thoughts and their use of acquired cognitive restructuring techniques as homework exercises and shared the experiences in the last four sessions.

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