Australian Journal of Teacher Education

Volume 42 | Issue 9 Article 9

2017

Pranayama Meditation (Yoga Breathing) for Stress Relief: Is it Beneficial for Teachers?

Stevie-Jae Hepburn
The University of Queensland, Australia, s.hepburn@uq.edu.au

Mary McMahon
The University of Queensland, marylmcmahon@uq.edu.au

Recommended Citation
Hepburn, S., & McMahon, M. (2017). Pranayama Meditation (Yoga Breathing) for Stress Relief: Is it Beneficial for Teachers?. *Australian Journal of Teacher Education, 42*(9).
http://dx.doi.org/10.14221/ajte.2017v42n9.9

Pranayama Meditation (Yoga Breathing) for Stress Relief: Is it Beneficial for Teachers?

Stevie-Jae Hepburn
Mary McMahon
The University of Queensland

Abstract: The effects of stress can have a significant impact on an individual's personal life, relationship with colleagues, job satisfaction and career prospects. If unmanaged, stress can be the trigger that drives talented, motivated teachers out of our classrooms and into other professions. Yoga and meditation have been prescribed as a form of complementary alternative medicine for the treatment of stress, anxiety and depression. The current exploratory, mixed-methods case study aimed to determine if the participants in a five-week pranayama meditation (yoga breathing) course experienced a degree of stress relief. The course included one 60-minute weekly meditation class focusing on breath awareness. The Perceived Stress Scale was administered pre and post-course, weekly journal reflections were recorded, and a structured interview was completed at the conclusion of the course. Findings indicated that the participants experienced a decrease in their perceived level of stress. Participants reported benefits in both their professional and personal lives.

Introduction

We need teachers in our classrooms to inspire, encourage and support students to reach their full potential. Teachers create supportive learning environments, facilitate learning through lesson activities, provide pastoral support, work in partnership with parents and nurture the development of the students in their care. The duties teachers perform often do not fit within the set hours of 8 am - 3 pm. Teachers are required to draw on an extensive repertoire of cognitive and interpersonal skills often under high-stress situations. Teacher retention programs often fail to provide teachers with effective stress management techniques (Harris, 2011). Teacher migration and intent-to-leave the profession has a significant impact on schools (Martin, Sass, & Schmitt, 2011). Effective coping strategies empower teachers to fight against burnout and work-related stress (Richards, 2012). Yoga breathing techniques have been prescribed for the treatment of stress, anxiety and depression (Brown & Gerbarg, 2005) and yoga, as stress relief, is a growing field of research. The aim of this study was to establish if pranayama meditation (yoga breathing) reduced the perceived level of stress teachers experienced and determine the benefits experienced by the participants.

This article reports on research that investigated whether the participants in a five-week pranayama meditation (yoga breathing) course experienced a reduction in stress. First, sources of stress for teachers will be described, followed by the use of yoga and meditation for stress relief. Second, the methodology including the instruments, participant background and data analysis techniques will be explained followed by the results. Finally, the discussion considers the results in relation to the relevant literature on stress management. The article concludes with implications for further research.

Literature Review

Sources of Teacher Stress

Teaching is a demanding profession (Gronn, 2003) with increased accountability, work intensification and challenging student behaviour (Flook, Goldberg, Pinger, Bonus, & Davidson, 2013). Externally imposed reform can be problematic if not appropriately managed and can have a negative impact on teaching staff (Fullan, 2000) resulting in a decrease in motivation, productivity and work effort which subsequently has an impact on school effectiveness (Tett & Meyer, 1993). The school administration team determine how policy and externally imposed changes are implemented and play a crucial role in influencing teachers' job satisfaction and their ability to persist in the profession (Liu & Onwuegbuzie, 2014).

The contextual factors linked to work-related stress identified in recent quantitative studies (e.g., Aloe, Amo & Shanahan, 2014; Hughes, 2012; Skaalvik & Skaalvik, 2010) are not dissimilar to the external factors identified in *The Teacher Stress Inventory* (Fimian, 1988). External factors are not easily changed at the classroom level, nor does it seem apparent there will be a major shift in the near future. The major external factors influencing work-related stress include the social school environment, school culture, sense of belonging within the school community and collegial support (Skaalvik & Skaalvik, 2010). The sense of belonging within the school community is influenced by autonomy and involvement in policy (Hughes, 2012). Salary concerns, school leadership, role overload, increased paperwork, rest and recovery time, and parental support are also noted as significant influences on the level of job satisfaction and stress experienced (Hughes, 2012; Liu & Onwuegbuzie, 2014; Skaalvik & Skaalvik, 2010).

Limited time for preparation and collaboration and limited collegial support is a characteristic of the current culture of teaching (Skaalvik & Skaalvik, 2010) and teachers often suffer from feelings of guilt, time pressure and burnout (Martin et al., 2011). The little preparation time available for the incorporation of new curriculum, teaching standards and extra-curricular tasks is absorbed into administrative duties (Gronn, 2003; Hargreaves, 1994). With less time for preparation and collaboration, there is a reduction in the opportunity for teachers to engage in professional learning communities and team building activities (Fullan, 2000). Role overload results in less time for rest and recovery and can result in an increased chance of burnout (Liu & Onwuegbuzie, 2014; Skaalvik & Skaalvik, 2010).

The goal of many teachers entering the profession is to teach effectively and help students to achieve their potential (Hughes, 2012). A key factor influencing a teachers' intent-to-leave the profession is their perception of their own effectiveness in the classroom, that is how well students are learning under their instruction (Hughes, 2012). Self-efficacy influences how a classroom is managed and consequently the behaviour of the students and their ability to achieve (Aloe et al., 2014; Martin et al., 2011). Studies have examined the link between working conditions, in particular, student behaviour, and the degree of perceived stress and burnout experienced by teachers (McCormick & Barnett, 2011; Smith & Bourke, 1992) and the challenges faced by Newly Qualified Teachers (NQTs) (Goddard, O'Brien, & Goddard, 2006). Teacher burnout which is a product of stress is influenced by student engagement, beliefs in classroom management, student motivation, feelings of depersonalisation and exhaustion (Martin et al., 2011). A multivariate study examining the link between classroom management and self-efficacy and burnout indicated that teachers with a higher level of classroom management and self-efficacy were more resistant to feelings associated with burnout and work-related stress (Aloe et al., 2014). Similarly, Martin et al. (2012) supported the notion that teacher burnout is a result of exhaustion, depersonalisation, low self-efficacy and confidence in relation to classroom management.

Teachers who experience high levels of stress in relation to managing student misbehaviour suffer from depersonalisation, exhaustion and a reduced sense of accomplishment (McCormick & Barnett, 2011).

An implication of work-related stress and intent-to-leave the profession is that of teacher retention. The issue is not localised in Australia; it is an international concern that is well documented in educational research and often featured in the media (Haesler, 2012; McMillen, 2013; Parker, Martin, Colmar, & Liem, 2012). In Australia, up to 50% of graduates migrate out of the teaching profession within the first five years (McMillen, 2013). Major reasons cited include student behaviour and salary concerns. Teaching is viewed as emotionally taxing with a high degree of emotional labour (Skinner & Beers, 2016). A key factor influencing whether a teacher will stay in the classroom is their ability to cope with change and stress (Aloe et al., 2014; Hughes, 2012; McCormick & Barnett, 2011).

Teacher migration (Martin et al., 2011) increases the strain on the remaining faculty members and increases instability within the faculty (Fullan, 2000). With fewer experienced teachers there is a reduction in the opportunity for mentoring and coaching of early career teachers, resulting in less support and guidance available in times of stress (Hansford & Ehrich, 2006; Hargreaves & Fullan, 2000). Not only is there a loss of experience within the profession, there is a financial cost accrued through the recruiting and hiring of new teachers.

Howard and Johnson (2004) examined the characteristics of resilient teachers and identified the coping strategies they employed to deal with the external and classroom factors. Specifically, they identified two paths teachers follow when dealing with stress. The dysfunctional path includes avoidance, unhealthy habits (drinking alcohol and smoking) which often lead to leave being taken and in some cases medication for stress relief. The alternative path includes depersonalising issues and events, empathising with parents and students, relaxation, exercise and seeking support from colleagues, friends and family. Howard and Johnson highlighted the importance of a supportive leadership team, an effective student discipline system, opportunities for mentoring and support groups. Richards (2012) found similar results when examining the sources of teacher stress, manifestations of stress and coping strategies. Teachers need to be equipped with the skills to care for others and to care for themselves. Attention needs to be directed towards assisting teachers with stress management because their motivation, creativity and engagement with students can be directly affected by their level of job satisfaction and stress (Howard & Johnson, 2004).

Stress and Burnout

Burnout refers to the psychological needs of professionals being met and catered for. When resources are not available there can be a subsequent erosion of the psychological state (Schaufeli, Leiter, & Maslach, 2009). Stress is a major trigger or contributing factor for burnout (Howard & Johnson, 2004). Stress alters the functioning of the hippocampus located in the brain which can limit neurone growth and memory function (Jindal, Gupta, & Das, 2013). If unmanaged, stress can reduce the functioning of the immune system, increase chronic pain, blood pressure and related cardiovascular conditions (Chong, Tsunaka, Tsang, Chan, & Cheung, 2011). Stress can result in negative psychological impact, physiological fatigue and emotional exhaustion. When an individual is under stress, the hypothalamus (part of the central nervous system) is stimulated which results in the sympathetic nervous system triggering physiological response which includes increased heart rate and blood sugar levels, decreased digestive function and suppression of the immune system (Huag, Chien, & Chung, 2013).

Stress Relief

Most research has focused on identifying the concerns faced by teachers and examples of resilience. Few studies have focused on the use of pranayama meditation (yoga breathing) stress relief programs for teachers. In a comprehensive review of fifty-four university teacher training programs (Harris, 2011), only five programs included a course detailing stress management techniques. Teachers were forced to seek their own stress management strategies once appointed (Harris, 2011). A key consideration is that individuals may need to become aware of the manifestations of stress and the impact it can have on the mind and body. Increasing awareness of the impact of stress and encouraging teachers to care for themselves and prioritise their health is crucial. Resilient teachers attempt to eliminate stress by taking action to solve problems, keep their feelings under control, prioritise tasks and manage their time effectively (Howard & Johnson, 2004). Such skills and approaches are associated with the positive effects of regular meditation practice.

Meditation and Stress Relief

Meditation has long been used as a form of stress relief in many cultures (Anderson, Levinson, Barker, & Kiewra, 1999) and is well documented in the psychology and medical literature. The process of meditation (i.e., becoming aware of thoughts and focusing attention on the breath) improves the functioning of the prefrontal cortex (PFC) in the brain which includes the frontal lobes that control executive functioning, including cognitive functioning, decision making, social behaviour and problem solving (Jindal et al., 2013). The positive changes that occur include a decrease in blood pressure, heart rate and oxygen metabolism which supports the notion of meditation as a form of stress relief.

Schreiner and Malcolm (2008) claimed that Focused Attention Meditation (FAM) could reduce anxiety, depression, and stress along with improving cognitive functioning. Traditional Buddhist meditation programs have been examined with findings indicating participants experienced an improvement in stress levels and mood (Shonin, Van Gordon, & Griffiths, 2013). Anderson et al. (1999) highlighted the lack of research focusing on the use of stress management programs for teachers. They investigated the benefits of a five-week meditation program for 91 high school teachers and reported that the meditation program had a positive impact on the stress and anxiety levels of the participants which were maintained after the conclusion of the course. However, Chiesa, Calati, and Serretti (2011) reviewed 23 articles focusing on the cognitive benefits of Mindfulness Meditation Practices (MMP) and suggested the results should be treated with caution until more standardised programs can be reviewed. As outlined by Jennings et al. (2017) the research surrounding Mindfulness-based Interventions (MBI) is a new area for research with only recently larger scale, standardised interventions being conducted. For example, Flook et al. (2013) conducted a modified Mindfulness-Based Stress Reduction (mMBSR) program for teachers and found positive results for reducing teacher stress. Gold et al. (2010) reported an improvement in anxiety, depression and stress for the Primary School teachers participating in a Minfulness-based Stress Reduction (MBSR) program. Similarly, Jennings et al. (2017) examined the benefits experienced by the teachers participating in the Cultivating Awareness and Resilience in Education (CARE) program. The results indicated a positive effect on mindfulness and adaptive emotion regulation and a decrease in psychological distress.

Yoga and Stress Relief

Yoga is a form of movement-base meditation, and pranayama meditation is one of the eight limbs of yoga (Brown & Gerbarg, 2005). *Prana* means 'to breathe', and *yama* is to rein or curb. One of the more commonly practised forms of pranayama meditation is that of breath awareness and controlling the breath. For example, directing the attention to the breath, focusing the attention on the movement of the chest, the expansion and depth of the inhale and the exhale. Pranayama meditation (yoga breathing) is a form of focused attention meditation and is comparable to the diaphragmatic breathing included in mindfulness-based interventions, for example, the Mindfulness-based Stress Reduction (MBSR) program (Kabat-Zinn, 1991; Stahl & Goldstein, 2010).

Exercise and meditation (yoga) are noted as a strategy resilient teachers use to maintain a healthy work-life balance (Howard & Johnson, 2004). Over 30 million people worldwide practise a form of yoga and healthcare professionals are recommending yoga as a form of complementary alternative medicine (McCall, Ward, Roberts, & Heneghan, 2013). In the battle against stress, yoga is a tool that individuals can introduce into their daily routine with relative ease. McCall et al. (2013) reported on 454 articles focusing on the benefits of yoga in preventing and treating disease. The empirical evidence suggests that there are positive effects on the endocrine system and the nervous system. The findings indicated strong support for yoga practice in reducing cortisol (stress hormone) and increase serotonin and melatonin, therefore, supporting the claims that regular practice assists with hormone regulation and stress reduction. Chong et al. (2011) conducted a review of randomised clinical controlled trials to determine the effects of yoga for stress management in healthy adults. The findings indicated that yoga provides a degree of stress relief for healthy adults, with successful studies including a minimum of four weeks for the yoga class attendance. Research into yoga therapy has identified weaknesses in the methodology (Hayes & Chase, 2010). Despite this, studies with larger participant samples have provided supportive evidence for yoga as a form of stress relief (Smith, Hancock, Blake-Mortimer, & Eckert, 2007).

Worry and anxiety are identified as a result of work-related stress for teachers (Richards, 2012) and yoga is often prescribed to reduce anxiety (Michalsen, et al., 2005; Smith, et al., 2007). Pilkington, Kirkwood, Rampes and Richardson (2005) reviewed the findings on yoga-interventions used for the treatment of depression and found inconclusive evidence for their effectiveness. They suggest that the variations in intervention structure can limit the generalisability of the results. Nonetheless, the review by Pilkington et al. (2005) reported empirical evidence for the benefits of Sudarshan Kriya Yoga (SKY) specifically in reducing depression. More emphasis is placed on the breathing techniques as opposed to the asana (physical practice). The findings indicated that programs including both asana and pranayama were more beneficial than programs featuring only asana. Such findings support the information presented by Jindal et al. (2013) that breathing meditation (pranayama) alters the chemical responses occurring in the body. The findings indicate that participants do not need to attend a full yoga class which includes asana (poses) but that pranayama (breathing) meditation alone can improve well-being. Breathing effectively stimulates the parasympathetic nervous system and the relaxation response in the body balances the proportion of oxygen and carbon dioxide in the blood, coupled with the full extension of the diaphragm and abdominal muscles which improve digestion and elimination (Rosen, 2002).

The literature reviewed here outlines the sources of stress for the teaching profession at the contextual and classroom level and a growing need to provide adequate stress relief strategies. Pranayama Meditation (yoga breathing) is one aspect of yoga practice which benefits various stress related conditions. In light of the physical and emotional conditions

which result from work-related stress, providing teachers with the opportunity to de-stress should be a high priority. Providing adequate stress relief and support systems for teachers could result in fewer teachers leaving the profession and healthier, motivated teachers staying in the classroom.

Methods

An exploratory mixed methods case study design was developed to address the following research questions:

RQ1: Does pranayama meditation reduce the perceived stress level teachers' experience?

RQ2: What is the teachers' experience of a pranayama meditation course?

The exploratory mixed methods case study design allowed for the exploration of the experiences of the participants in a pranayama meditation course through the collection of multiple data sets.

Participants and Sampling

Purposeful, homogeneous sampling was used to identify full-time teaching staff willing and able to participate in the study. The participants were five full-time teachers from a metropolitan all-boys independent school with over 1300 students. The participants ranged in age from 30 – 60 with a mean age of 42.6 years. Of the five participants, three had either curriculum or pastoral care positions of added responsibility. All of the participants had previously attended a yoga class or meditation course but did not participate in regular yoga or meditation practice. All of the participants had over five years of teaching experience and had worked in more than one school during their career.

Instruments

Three data collection instruments were used: The Perceived Stress Scale (PSS) (Cohen, Kamarck, & Mermelstein, 1983), weekly journal reflections and one-on-one open-ended structured interviews. The participant background questionnaire included the PSS and questions focusing on their interest in the program, expectations, and their level of experience with yoga and meditation. The PSS is a self-reporting measure for assessing psychological stress, and it was used to detect whether participants experienced a change in their level of perceived stress before and at the conclusion of the pranayama meditation program. Using this 10-item scale, participants were asked to reflect on how they were feeling in the preceding month (e.g., the degree to which they feel their life has been overwhelming, stressful, uncontrollable or unpredictable). For example: *In the last month, how often have you felt that you were unable to control the important things in your life? 0 = Never, 1 = Almost never, 2 = Sometimes, 3 = Fairly often, 4 = Very often.* The internal consistency of the PSS has been established, and the test-retest reliability of the PSS is identified as six weeks with few studies confirming test-retest timeframes (Lee, 2012). The PSS has been recommended as a tool for identifying individuals at risk of developing psychiatric conditions, and the 10-item scale is the most frequently used version of the PSS in educational and psychology research (Taylor, 2014).

The weekly reflections and review of the course provided details surrounding how the participants felt during the meditation classes and in the week leading up to the meditation class. The weekly journal reflections completed by the participants throughout the course will

not be reported on in this paper. The structured interview included the same open-ended questions for each participant, therefore, increasing the comparability of the responses and thus reducing the interviewer bias limiting additional questions or discussion occurring during the interview. The interview questions focused on the course specifically and were structured to determine the perceived benefits and potential applications of the techniques learnt by the participants' for managing stress.

Procedure

Data collection took place over a six-week period in the final term of the academic year. Subsequent to receiving ethical clearance from the relevant university ethics committee, the Principal was sent the Gatekeeper Information Letter and Consent Form. Following gatekeeper clearance, an initial email providing the Participant Information Letter and Consent Form was emailed to the 102 teaching staff of the participating school and five participant consent forms were returned. Prior to the commencement of the weekly class, participants were asked to complete the participant background questionnaire and the PSS online via Survey Monkey. Each week the participants attended a 60-minute pranayama meditation (yogic breathing) class conducted by the researcher. The class was held on the school site at the conclusion of the school day on the same day each week. The participants were encouraged to complete ten minutes of home practice daily. The class included breath awareness (diaphragmatic breathing), seated and restorative poses and a guided relaxation sequence (body scan). Each of the sessions included a different breathing technique, for example, the initial breathing meditation involved examining the quality of the breath and practising diaphragmatic breathing (three-part breath) as detailed in Rosen (2002) and Kabat-Zinn (1991) and simple seated arm stretches followed by a supine guided meditation that involved a body scan. The body scan meditation was developed by the researcher. Basic and advanced body scan meditation scripts are commonly practised in mindfulness-based stress reduction programs (e.g., Kabat-Zinn 1991, Stahl & Goldstein, 2010) and hatha yoga classes.

After the class, the participants were emailed the weekly journal reflection questions to establish their experience of the class. The PSS was completed again after the final session. The interviews were conducted a week after the final session by the researcher. The interviews were recorded and transcribed, and the duration of the interviews ranged from ten to fifteen minutes. The trustworthiness of the data analysis was ensured through the application of the four criteria outlined by Given and Saumure (2008): transferability, confirmability, dependability and credibility. Transferability was addressed through the case study summaries and presentation of the interview data wherein the participants provided an overview of their work-life balance, perceived stress and experiences during the meditation course. Confirmability was addressed through the selection of a mixed-methods design to allow for multiple data sets to be included. Dependability was addressed via tracking the instruments selected and the changes made during the study. The mixed-methods case study design allowed for a holistic portrayal of the participant experience, therefore, providing credibility to the study design.

Data Analysis
Perceived Stress Scale

The PSS scores were collected via Survey Monkey and the results exported to Excel. The items were rated on a 5-point Likert scale, and pre and post scores are detailed in Figure 1. The scores were calculated using the scoring guidance outlined by the authors (Cohen, et

al., 1983). The reverse scored items were included and the average score calculated using Microsoft Excel. The PSS data was embedded within the case study summaries and provided additional data for RQ1.

Interview Transcripts

A thematic analysis of the interview transcripts was undertaken informed by interview transcript analysis steps outlined by Braun and Clarke (2009) and Cohen, Manion and Morrison (2007). The interviews were transcribed, unitised (dividing data into segments) and inductive margin coding was completed. After the initial margin coding, the data from the interviews was then grouped question by question, and the focus for each question formed six domains. Coding was completed for each domain. The codes were grouped into sub-themes and then refined into themes. The domains, themes, and sub-themes are detailed in Table 1.

Domains	Themes	Sub-themes
Work-life balance	Work	Stress
		Role demands and workload
	Time management	Prioritising tasks
		Separating work from home
	Health	Self-care
		Increased productivity
		Stress relief
Benefits gained	Professional	Curriculum (pastoral care)
		Classroom management
	Personal (awareness)	Physical
		Emotional / mental
Degree of stress relief	Relaxation	Calming / rest
		Stress management
	Focus	Breathing
		Mind
	Awareness	Conservations
		Knowledge
Maintain practice	Scheduling	Making time
		On-campus sessions
	Benefits	Positive experience
		Preventative measure
Negative aspects and challenges	Commitment	Benefits motivate
		Managing time
	Term time	Pressure
Opportunities for staff	School-based support	Increase collegial discussions
		Classroom attitude
	Benefits	Staff well-being
		Approach to health

Table 1: Coding of interview transcripts

Results

The results based on the Perceived Stress Scale (PSS; Cohen et al., 1983) conducted pre and post-course will be reported first followed by the results of the structured interview conducted at the conclusion of the course.

Perceived Stress Score

All of the participants in the course reported a decrease in their perceived stress scores as illustrated in Figure 1. Four of the five participants increased their feelings of control over the events in their lives. Three of the five participants reported an increase in confidence and scored higher on the item: *In the last month, how often have you felt confident about your ability to handle your personal problems?* The overall perceived stress scores for all of the participants decreased to below the norm average stress score of 13 (Cohen et al., 1983) (as illustrated in Table 1). A score of 20 or above is considered a high-stress score (Geng, Midford, & Buckworth, 2015). Three of the participants were classified in the high-stress range at the onset of the course and were below the average at the conclusion of the five-week course. Each of the weekly journal reflections echoed the scores presented in the pre and post-course PSS data. The scores ranged from 16 (pre-course) and 9 (post-course).

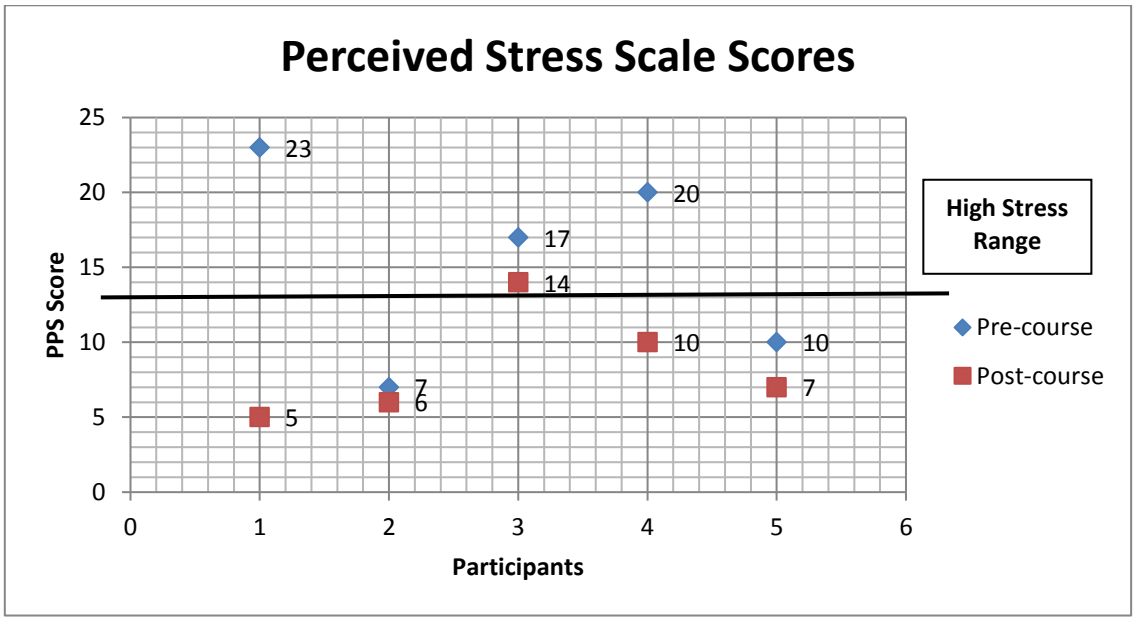

Figure 1: Changes in Perceived Stress Score

Interview Data

Interview results are presented according to the six domains and themes detailed in Table 1 beginning with work-life balance. Where appropriate, participant quotations have been used to illustrate the results. Pseudonyms are used to preserve the anonymity of the participants. Themes are italicised.

Work-life Balance

A key theme for maintaining balance was identified as *time management* such as prioritising tasks, separating work from home and maintaining a good balance where one makes time for exercise and relaxation, therefore, increasing overall productivity. Joanne (Participant 1) explained: "And I've found with this level of stress, I just have to be doing something for me –you know…. Then I can be more present to my work, to my family and to be the person I hope to be".

Focusing on *health* is crucial to maintaining balance and reducing stress. Using relaxation is a solution to stress and increases the sense that life is in balance. However, it was noted that as work demands increase, exercise and self-care decrease as explained by Susan:

> *I make space for life and space for school. I mean, at exam time and things like that yeah there's school over – it takes up the other time, but throughout most of the year I make sure I do no school work on the weekends and as much as possible I try to do work at school and bring as little home as possible. (Susan, Participant 5)*

Stress levels are linked to *work* and the time of year (Term 4) and role overload result in a physical response to stress. The need for making time and prioritising health was identified by the participants as an important factor for maintaining a healthy balance between work and their personal life. Daniel outlined the need for balance: "….I'm good at knowing when I should say 'no' to work and when I should be doing something else because I know that I should do that so I can manage my productivity over a longer period of time". (Daniel, Participant 3)

Benefits Gained

The participants hoped to gain awareness and understanding of different strategies for managing stress, meditation, and additional techniques to add to an existing fitness routine.

The *professional benefits* were related to using the breathing techniques to calm students and reinforce the sense of routine during the start of the lesson consequently playing a role in effective behaviour management, lesson structure and increasing student awareness of the techniques available for remaining calm. For example, Jack explained how he had incorporated the techniques into his lessons:

> *…now it is like I can incorporate it easier. And to be honest, I incorporated it into my year 10 class yesterday. I just said to them, 'right all of you, 1 minute of quiet' and they were just breathing nice and quietly. It was at the beginning of the lesson, and they came straight in from lunch. They were pretty good, but I thought I would try it and see, and there were obviously a few that were like [breathes loudly]. But the rest of them had the goal of one minute of quiet and then we sort of – yeah I think we had a better lesson… I suppose earlier in the year it could be a good platform for classroom management especially for year 7, 8 and 9. It'd be good for the boys to learn about it. (Jack, Participant 2)*

The *personal benefits* included sub-themes such as an increased awareness of their stress levels and their breathing throughout the day or during periods of relaxation, stress and exercise. The awareness increased their ability to maintain control and manage stress. An increased sense of awareness regarding being in control and overcoming struggles or challenges was noted. The focus on breathing was identified as a technique the participants could easily incorporate into their daily activities. The increased knowledge and understanding provided emotional and mental relief from stress. The techniques learnt provided physical benefits which were not expected by the participants. For example, Joanne explained, "there were physical benefits as well as emotional benefits in terms of the stress levels being at a manageable level". Similarly, Daniel was surprised by the physical benefits experienced:

> *Physically I felt better by the end of it and each week. To be honest, I wasn't expecting that. I did expect to get a better understanding of the techniques. And I*

did. And I felt it gave me some techniques to use when under a period of stress. The breathing techniques were useful for that. (Daniel, Participant 3)

The information presented in the course provided more awareness and structure than the participants had previously experienced which increased awareness influenced their approach to overall health and well-being.

Degree of Stress Relief

Relaxation was a theme in the results, and the classes provided a sense of calm and restful time for stress management. Jacob referred to the impact of the classes:

...I'd say both direct and indirect [stress relief]. The activity specifically helps [referring to the class] but then the way it sort of promotes the conversation and the mental awareness and reflective focus on life-balance and even with exercise and healthy eating or mental awareness of how you actually do build up tensions and how to release it. (Jacob, Participant 4)

An increased ability to *focus* the mind, drawing attention to breathing at various points throughout the day was noted as beneficial for stress relief. When referring to the 10-minute home practice, Susan explained:

...concentrating on breathing and practising the breathing at home. It just helped, it makes your body focus – you're not watching TV, you're not talking to someone, you're not making or playing on the computer or doing housework. You're just focusing on relaxing and having a break. (Susan, Participant 5)

The participants identified when they felt they were able to apply the techniques in their own daily lives. For example, Joanne identified that "....when I feel my stress levels building, I do that breathing – you know that 'in through the nose' and even that simple breath sequence. To get the breathing going smoothly and to focus the mind". (Joanne, Participant 1)

A theme evidenced in the interview data was that of *awareness*. The participants became more aware of when they were feeling the effects of stress, increased their knowledge of the strategies for relieving stress and felt the approach could be applied to a classroom situation to help their students as outlined by Susan: "Who would have thought a one-hour class would make such a difference – and it has." (Susan, Participant 5)

Maintain Practice

Scheduling and class location were noted as major themes influencing future class attendance. Having a structured, scheduled time increases motivation to attend, for example when practising at home there can be more distractions whereas a class after work on campus would be easier to attend. The participants found the combination of poses, meditation and breath awareness resulted in both physical and stress relief *benefits*. Susan explained "…it [the course] was enjoyable. It is really nice to have that hour set aside, for me". The feeling after the class, the physical pain relief, the increased awareness of stress levels and as a preventative measure to reduce stress were identified as motivating factors for continuing with the meditation classes.

Negative Aspects and Challenges

When asked if there were any disadvantages experienced, the participants outlined that there were minimal disadvantages. After school *commitments* such as meetings and

family demands were noted, but commitment to the course was identified as a motivating factor to overcome scheduling challenges and commitments during *term-time*.

Opportunities for Staff

When asked if the program would be useful for other staff or the school, the participants identified potential applications for the course for staff and students as a *school-based support* program for the staff to increase the collegial discussions surrounding health and well-being thus creating a positive culture around physical and mental health. As evidenced in Joanne's response:

> *I think it would be incredible. I think it would be just what we need here. I think that is something which the school should put on and provide. I think it helps the tone of the school and the feeling within the school. I think it would be a great thing. (Joanne, Participant 1)*

Discussion

The aims of this study were to establish whether pranayama meditation (yoga breathing) reduced the perceived level of stress teachers reported and determined the benefits experienced by the participants. Of the studies reviewed, none addressed similar research questions. Anderson et al. (1999) investigated the impact meditation had on teachers' perceived stress levels and reported a reduction in the teacher's Perceived Stress Scale (PSS; Cohen et al., 1983) scores. Pranayama meditation was not included in the study.

Previous quantitative studies have demonstrated the benefits of meditation and yoga for stress relief through the reduction in stress levels of participants (Huag et al., 2013; McCall, 2013; McCall et al., 2013; Schreiner & Malcolm, 2008). Similarly, the results on the PSS (Cohen, et al. 1983) in the current study indicated a decrease in the perceived stress of the participants. Oman et al. (2008) found that participants in a mediation course scored lower on the PSS at the conclusion of the course, the findings of the current study support this claim. The current study goes beyond using only the PSS scores and presents a holistic view of the benefits experienced by including the interview responses. The participants provided concrete examples of how the techniques they had learnt had an impact on their approach to work and their health.

The participants found themselves more aware of their feelings and more able to focus their minds more easily. These findings support the notion that meditation improves cognitive functioning which is supported by the literature (Jindal et al., 2013; Schreiner & Malcolm, 2008; Shonin et al.,2013). The results indicated that the participants felt there was a link between their stress levels and the sense of control they felt over their emotions. This supports Schreiner and Malcolm's (2008) claim that mindfulness meditation focuses the attention to experiences in a non-judgemental manner.

The physical benefits identified by McCall (2013) and the study by Michalsen et al. (2005) involving stabilising hormone production and reducing cortisol levels, could explain why the participants felt more relaxed and at ease after the class, but this requires further investigation. The findings of the current study support the claims of John et al. (2007) that Pranayama meditation alone can improve the sense of well-being experienced. Individuals perceive their level of stress differently, and the interview data suggests the benefits of the course were not limited to work-related stress. Previous studies have assessed the long-term impact of a yoga or meditation course on participants and found there to be lasting benefits

(Anderson et al., 1999; Moore & Malinowski, 2008; Oman et al., 2008). The participants in the current study explained how they had incorporated the techniques into their daily routine and that they would be interested in maintaining the practice because they could feel the benefits.

Stress management strategies are not typically included in teacher training programs (education degrees) and teachers are often required to seek stress management strategies for themselves (Harris, 2011). If teachers are aware of how stress manifests in their own lives, they can address their stress levels before health concerns arise. The participants identified that they wanted to develop a deeper understanding of techniques available for managing stress so they could relax more easily. When describing their work life balance, the participants identified that to maintain a healthy work-life balance they needed to prioritise their work, and these findings support the claims of Howard and Johnson (2004) regarding awareness of workload and resistance to burnout. All of the participants noted that work (teaching) is a source of stress and there can be a physical reaction to stress which is a characteristic of burnout as identified by Martin et al. (2011). Another characteristic of resilience outlined by Howard and Johnson (2004) is that of time management. This was evidenced as a theme in the current study with participants identifying that they needed to strive to effectively manage their time. They wanted to address their stress levels to be more present and focused on the job and in all areas of their life, indicating an increased awareness of how to manage stress. As outlined by Howard and Johnson (2004) resilient teachers are aware of their stress levels, they reduce stress when possible, try to solve problems and control emotions when dealing with challenging students.

The classroom factors influencing job satisfaction (e.g., student behaviour, coping with change, interpersonal challenges, resource availability) are linked to perceived stress and burnout (McCormick & Barnett, 2011; Smith & Bourke, 1992). Teachers that can deal with the challenges faced in the classroom have a higher degree of self-efficacy and are more resistant to burnout (Aloe et al., 2014; Martin et al., 2011). The findings indicate that the teachers experienced an increased ability to deal with challenges and control events in their lives and therefore experienced a change in their perceived level of stress.

The benefits of the course as described by the participants focused on an increased sense of personal and professional awareness related to how they felt in the classroom and within themselves. Previous studies have identified the benefits of yoga for school-aged children regarding classroom performance and reduction in stress (Oman et al., 2008; White, 2012) and an increase in creative thinking (Berard et al., 2009). The participants experienced similar results when they used a breathing technique from the course to give their students a chance to relax at the start of the lesson thus allowing the students to focus which resulted in a more productive lesson. Effective classroom management techniques are important for teachers to increase their sense of self-efficacy and therefore increase the level of job satisfaction experienced (Hughes, 2012).

The second major benefit outlined by the participants related to their personal lives. Meditation and yoga have been prescribed to treat various mental health conditions and stress-related illnesses (Anderson et al., 1999; Jindal et al., 2013; McCall et al., 2013; Smith et al., 2007). The current study focused on healthy adults with no known medical conditions. One participant used the breathing technique after dealing with a challenging class and found herself to be less reactive to student behaviour in the classroom which supports Howard and Johnson's (2004) claim that resilient teachers are less reactive and calm when dealing with student behaviour and generally experience an increased sense of self-efficacy. Similarly, previous studies that have examined the benefits of meditation for improving cognitive functioning (Moore & Malinowski, 2008; Zeidan et al., 2010) found that meditation can

improve mood, executive functioning and attention. In the current study, the participants had an increased ability to focus, maintain attention and clarity of thought.

Recommendations for the Profession and Future Research

Many of the structures and procedures which can be a source of stress for some teachers cannot be changed (Ashiedu & Scott-Ladd, 2012). The participants felt that the pranayama meditation (yoga breathing) program would be of use for all staff and they could foresee future applications as a school-based program for staff and students. The previous research examining the benefits of meditation and yoga did not detail information regarding whether participants would continue with the meditation or yoga practice. The participants in the current study indicated they would continue with their yoga practice. Evidence supports the links between meditation and cognitive functioning (Jindal et al., 2013). Teacher preparation programs could, therefore, include stress management techniques to better equip teachers to manage stress. Further, meditation training could be offered in educational institutions increasing the potential to reduce stress and improve executive functioning which could be useful for staff and students for academic, professional and personal development.

Future research could investigate the benefits of a pranayama meditation (yoga breathing) course across multiple sites with a larger sample group. A control group could be included, and a follow-up after the conclusion of the course would provide evidence towards the long-term impact of the course. The inclusion of yoga poses into the course would also be a consideration as previous studies have found yoga can successfully reduce stress and anxiety levels. There is a limited body of research on the benefits of pranayama meditation (yoga breathing) for teacher stress relief, and the current study fills a gap in the existing literature by highlighting the need to provide teachers with stress management techniques. Few studies examine the use of such strategies in healthy adults as a preventative measure for stress nor has pranayama meditation been identified as a stress management technique alone.

Conclusion

Students need motivated, creative, healthy teachers to develop lessons which inspire and promote learning. Due to the changing nature of the profession and the increased accountability and job demands, teaching is an increasingly high-stress, multifaceted profession with an ever increasing role description. The loss of experienced teachers and early-career teachers needs to be prevented. This study cannot prevent teachers leaving the profession nor can it change the demands of the profession, but it does address the issue and provide a possible strategy for enabling teachers to cope with stress.

Case study design can have limitations surrounding the generalisability of the results, cross-checking and researcher bias (Cohen et al., 2007). The current study included a small participant sample and featured participants from only one site. Participation was voluntary, and the participants' experiences may not be generalisable to the general teaching staff. A control group was not included in the study, and therefore there was no way to compare the results of the program to the control group. In light of the limitations, the study provided a detailed overview of the experiences of the participants in the course and found that the participants felt less stressed as a result of participating in the course.

The findings of the current study indicate that the teachers participating in a five-week pranayama meditation (yoga breathing) course reported a decrease in perceived stress and felt more in control of their emotions. The benefits permeated into both their professional and

personal lives influencing their approach to their work, engagement with students and their exercise or relaxation routine. The teachers also felt comfortable with the techniques and incorporated the strategies into their lessons, in an effort to encourage students to be more mindful and thus reduce behavioural problems in the classroom. Providing teachers with enjoyable, simple, stress management techniques could assist with reducing the occurrence of burnout.

References

Aloe, A. M., Amo, L. C., & Shanahan, M. E. (2014). Classroom management self-efficacy and Burnout: A multivariate meta-analysis. *Educational Psychology Review*, 101 - 126. https://doi.org/10.1007/s10648-013-9244-0

Anderson, V. L., Levinson, E. M., Barker, W., & Kiewra, K. R. (1999). The effects of meditation on teacher perceived occupational stress, state and trait anxiety, and burnout. *School of Psychology Quarterly, 14*(1), 3 - 25. https://doi.org/10.1037/h0088995

Ashiedu, J., & Scott-Ladd, B. (2012). Understanding teacher attraction and retention: Drivers addressing teacher shortages. *Australian Journal of Teacher Education, 37*(11), 17 - 35. https://doi.org/10.14221/ajte.2012v37n11.1

Berard, W.-D., Hallam, A., Geiwitz, A., & Kerzner, M. (2009). Meditation as teaching and learning tool. *Journal of the Sociology of Self-Knowledge, 2*(1), 105 - 113.

Braun, V., & Clarke, V. (2009). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77 - 101. https://doi.org/10.1191/1478088706qp063oa

Brown, R., & Gerbarg, P. (2005). Sudarshan Kriya yogic breathing in the treatment of stress, anxiety, and depression: Part II - Clinical applications and guidelines. *The Journal of Alternative and Complementary Medicine, 11*(4), 711 - 717. https://doi.org/10.1089/acm.2005.11.711

Chiesa, A., Calati, R., & Serretti, A. (2011). Does mindfulness training improve cognitive abilities? A systematic review of neuropsychological findings. *Clinical Psychology Review, 3*, 449 - 464. https://doi.org/10.1016/j.cpr.2010.11.003

Chong, C., Tsunaka, M., Tsang, H., Chan, E., & Cheung, W. (2011). Effects of Yoga on stress management in healthy adults: A systematic review. *Alternative Therapies in Health and Medicine, 17*(1), 32 - 38.

Cohen, L., Manion, L., & Morrison, K. (2007) *Research methods in education* (6th ed.). London: Routledge.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*, 385-396. https://doi.org/10.2307/2136404

Fimian, M. (1988). Teacher stress inventory. *Psychology in Schools, 25*(2), 110 - 118. https://doi.org/10.1002/1520-6807(198804)25:2<110::AID-PITS2310250203>3.0.CO;2-J

Flook, L., Goldberg, S., Pinger, L., Bonus, K., & Davidson, R. (2013). Mindfulness for teachers: A pilot study to assess the effects on stress, burnout, and teaching efficacy. *Mind, Brain, and Education, 7*(3), 182 - 195. https://doi.org/10.1111/mbe.12026

Fullan, M. (2000). The three stories of education reform. *Phi Delta Kappa, 81*(8), 581 - 584.

Geng, G., Midford, R., & Buckworth, J. (2015). Investigating the stress levels of early childhood, primary and secondary pre-service teachers during teaching practicum. *Journal of Teacher Education for Sustainability*, 35 - 47. https://doi.org/10.1515/jtes-2015-0003

Given, L., & Saumure, K. (2008). Trustworthiness. In L. Given, *The Sage Encyclopedia of Qualitative Research Methods* (pp. 896 - 897). Thousand Oakes, Canada: SAGE Publications. https://doi.org/10.4135/9781412963909.n470

Goddard, R., O'Brien, P., & Goddard, M. (2006). Work environment predictors of beginning teacher burnout. *British Educational Research Journal, 32*(6), 857 - 874. https://doi.org/10.1080/01411920600989511

Gold, E., Smith, A., Hopper, I., Herne, D., Tansey, G., & Hulland, C. (2010). Mindfulness-based stress reduction (MBSR) for Primary School teachers. *Journal of Child and Family Studies, 19*(2), 184-189. https://doi.org/10.1007/s10826-009-9344-0

Gronn, P. (2003). Leadership as greedy work. In P. Gronn, *The new work of educational leaders: Changing leadership practice in an era of school reform.* (pp. 147 - 156). London: SAGE Publications Ltd. doi:http://dx.doi.org.ezproxy.library.uq.edu.au/10.4135/9781446216347

Haesler, D. (2012, August 6). Mass exodus of the educators. *The Sydney Morning Herald*. Sydney, New South Wales, Australia. Retrieved May 31, 2014, from http://www.smh.com.au/national/education/mass-exodus-of-the-educators-20120805-23no4.html

Hansford, B., & Ehrich, L. (2006). The principalship: how significant is mentoring? *Journal of Educational Administration, 44*(1), 36 – 52. https://doi.org/10.1108/09578230610642647

Hargreaves, A. (1994). *Changing Teachers, Changing Times : Teachers' Work and Culture in the Postmodern Age* . London: Bloomsbury Publishing.

Hargreaves, A., & Fullan, M. (2000). Mentoring in the New Millennium. *Theory into Practice, 38*(1), 50 – 56. https://doi.org/10.1207/s15430421tip3901_8

Harris, G. (2011). Individual stress management coursework in Canadian teacher preparation programs. *Canadian Journal of Education, 34*(4), 104-117.

Hayes, M., & Chase, S. (2010). Prescribing Yoga. *Primary Care: Clinics in Office Practice, 37*(1), 31 - 47. https://doi.org/10.1016/j.pop.2009.09.009

Howard, S., & Johnson, B. (2004). Resilient teachers: resisting stress and burnout. *Social Psychology of Education, 7*, 399 - 420. https://doi.org/10.1007/s11218-004-0975-0

Huag, F.-J., Chien, D.-K., & Chung, U.-L. (2013). Effects of Hatha Yoga on stress in middle-aged women. *The Journal of Nursing Research, 21*(1), 59 - 65. https://doi.org/10.1097/jnr.0b013e3182829d6d

Hughes, G. D. (2012). Teacher retention: teacher characteristics, school characteristics, organisational characteristics, and teacher efficacy. *The Journal of Educational Research, 105*, 245 - 255. https://doi.org/10.1080/00220671.2011.584922

Jennings, P. A., Brown, J. L., Frank, J. L., Doyle, S., Oh, Y., Davis, R., . . . Greenberg, M. T. (2017). Impacts of the CARE for teachers program on teachers' social and emotional competence and classroom interactions. *Journal of Education Psychology*, 1-20. https://doi.org/10.1037/edu0000187

Jindal, V., Gupta, S., & Das, R. (2013). Molecular mechanisms of meditation. *Molecular Neurobiology, 48*(3), 808 - 811. https://doi.org/10.1007/s12035-013-8468-9

John, P., Sharma, N., Sharma, C., & Kankane, A. (2007). Effectiveness of yoga therapy in the treatment of migraine without aura: A randomized controlled trial. *Headache, 47*(1), 654 - 661. https://doi.org/10.1111/j.1526-4610.2007.00789.x

Kabat-Zinn, J. (1991). *Full catastrophe living: using the wisdom of your body and mind to face stress, pain, and illness.* New York: New York: Dell Publishing.

Lee, E.-H. (2012). Review of the psychometric evidence of the Perceived Stress Scale. *Asian Nursing Research, 6*(4), 121 - 127. https://doi.org/10.1016/j.anr.2012.08.004

Liu, S., & Onwuegbuzie, A. J. (2014). Teachers' motivation for entering the teaching profession and their job satisfaction: a cross-cultural comparison of China and other countries. *Learning Environments Research, 17*, 75 - 94. https://doi.org/10.1007/s10984-013-9155-5

Martin, N. K., Sass, D. A., & Schmitt, T. A. (2011). Teacher efficacy in student engagement, instructional management, student stressors, and burnout: A theoretical model using in-class variables to predict teachers' intent-to-leave. *Teaching and Teacher Education, 28*, 546 - 559. https://doi.org/10.1016/j.tate.2011.12.003

McCall, M. (2013). High might yoga work? An overview of potential underlying mechanisms. *Yoga and Physical Therapy, 3*(1), 1 - 6. https://doi.org/10.4172/2157-7595.1000130

McCall, M. C., Ward, A., Roberts, N. W., & Heneghan, C. (2013). Overview of systematic reviews: Yoga as a therapeutic intervention for adults with acute and chronic health conditions. *Evidence-Based Complementary and Alternative Medicine*(1), 1-18. https://doi.org/10.1155/2013/945895

McCormick, J., & Barnett, K. (2011). Teachers' attributions for stress and their relationships with burnout. *International Journal of Educational Management, 25*(3), 278 - 293. https://doi.org/10.1108/09513541111120114

McMillen, A. (2013, August 6). School's out early for overworked and undersupported young teachers. *The Guardian*. Melbourne, Victoria, Australia. Retrieved May 30, 2014, from http://www.theguardian.com/education/2013/aug/06/teachers-leave-profession-early

Michalsen, A., Grossman, P., Acil, A., Langhorst, J., Ludtke, R., Esch, T., . . . Dobos, G. (2005). Rapid stress reduction and anxiolysis among distressed women as a consequence of a three-month intensive yoga program. *Focus on Alternative and Complementary Therapies, 11*(2), 555 - 561.

Moore, A., & Malinowski, P. (2008). Meditation, mindfulness and cognitive flexibility. *Consciousness and Cognition, 18*(1), 176 – 186. https://doi.org/10.1016/j.concog.2008.12.008

Oman, D., Shapiro, L., Thoresen, C., Plante, T., & Flinders, T. (2008). Meditation lowers stress and supports forgiveness among college students: A randomised controlled trial. *Jounral of American College Health, 56*(5), 569 - 578. https://doi.org/10.3200/JACH.56.5.569-578

Parker, P. D., Martin, A. J., Colmar, S., & Liem, G. A. (2012). Teachers' workplace well-being: Exploring a process model of goal orientation, coping behaviour, engagement, and burnout. *Teaching and Teacher Education, 28*, 503 - 513. https://doi.org/10.1016/j.tate.2012.01.001

Pilkington, K., Kirkwood, G., Rampes, H., & Richardson, J. (2005). Yoga for depression: the research evidence. *Journal of Affective Disorders, 89*(1), 13 - 24. https://doi.org/10.1016/j.jad.2005.08.013

Richards, J. (2012). Teacher stress and coping strategies: A National snapshot. *The Educational Forum, 76*(3), 299 - 316. https://doi.org/10.1080/00131725.2012.682837

Rosen, R. (2002). *The Yoga of breath - A step by step guide to Pranayama.* Colorado: Shambhala Publications Inc.

Schaufeli, W., Leiter, M., & Maslach, C. (2009). Burnout: 35 years of research and practice. *Career Development International, 14*(3), 204 - 220. https://doi.org/10.1108/13620430910966406

Schreiner, I., & Malcolm, J. (2008). The benefits of mindfulness meditation: Changes in emotional states of depression, anxiety, and stress. *Behaviour Change, 25*(3), 156 - 168. https://doi.org/10.1375/bech.25.3.156

Shonin, E., Van Gordon, W., & Griffiths, M. (2013). Meditation Awareness Training (MAT) for improved psychological well-being: A quantitative examination of participant experiences. *Journal of Religion and Health, 53*(3), 840 - 863. https://doi.org/10.1007/s10943-013-9679-0

Skaalvik, E. M., & Skaalvik, S. (2010). Teacher job satisfaction and motivation to leave the teaching profession: Relations with school context, feelings of belonging, and emotional exhaustion. *Teaching and Teacher Education, 27*(1), 1029 - 1038.

Skinner, E., & Beers, J. (2016). Mindfulness and teachers' coping in the classroom: A developmental model of teacher stress, coping, and everyday resilience. In K. A. Schonert-Reichl, & R. W. Roeser (Eds.), *Mindfulness in Behavioral Health: Handbook of Mindfulness in Education: Integrating Theory and Research into Practice* (pp. 99-118). New York: Springer New York. https://doi.org/10.1007/978-1-4939-3506-2_7

Smith, C., Hancock, H., Blake-Mortimer, & Eckert, K. (2007). A randomised comparative trial of yoga and relaxation to reduce stress and anxiety. *Complementary Therapies in Medicine, 15*(1), 77 - 83. https://doi.org/10.1016/j.ctim.2006.05.001

Smith, M., & Bourke, S. (1992). Teacher stress: Examining a model based on context, workload, and satisfaction. *Teaching and Teacher Education, 8*(1), 31 - 46. https://doi.org/10.1016/0742-051X(92)90038-5

Stahl, B., & Goldstein, E. (2010). *A mindfulness-based stress reduction workbook.* Oakland: New Harbinger Publications Inc.

Taylor, J. M. (2014). Psychometric analysis of the ten-item perceived stress scale. *Psychological Assessment*, 1 - 12. https://doi.org/10.1037/a0038100

Tett, R. P., & Meyer, J. P. (1993). Job satisfaction, organisational commitment, turn-over intention, and turnover: path analysis based on meta-analytic findings. *Personnel Psychology, 46*, 259 - 293. https://doi.org/10.1111/j.1744-6570.1993.tb00874.x

White, L. (2012). Reducing stress in school-aged girls through mindful yoga. *Journey of Paediatric Healthcare, 26*(1), 45 - 56. https://doi.org/10.1016/j.pedhc.2011.01.002

Zeidan, F., Johnson, S., Diamond, B., David, Z., & Goolkasian, P. (2010). Mindfulness meditation improves cognition: Evidence of breif mental training. *Consciousness and Cognition, 19*(2), 597 - 605. https://doi.org/10.1016/j.concog.2010.03.014