

2020

Recovery in Teachers: Barriers, Facilitators and the Relationship to Physical Stress Symptoms

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Recovery in Teachers: Barriers, Facilitators and the Relationship to Physical Stress
Symptoms

by

AMBER A. BLATCHFORD

A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in Industrial Organizational Psychology
in the College of Sciences and in the Burnett Honors College
at the University of Central Florida
Orlando, Florida

Spring Term 2020

Thesis Chairs: Kristin Horan, Ph.D. and Crystal Maraj, Ph.D.

ABSTRACT

Previous research has shown that teachers are at risk of experiencing significant work-related stress. Recovery is seen as a way to unwind from work stress caused by a myriad of stressors. This study examines the mechanisms of teacher recovery and their relationship to physical stress symptoms. Fifty high school teachers were recruited to participate from schools in South Florida. Physical stress symptoms were measured using a self-report survey called the Physical Symptoms Inventory (PSI) , which took place directly after the open-ended question portion of the survey. A multiple linear regression analysis was conducted to assess any connection between the appearance of barrier and facilitator related words in the open-ended questions to the rating of physical symptoms. The analysis showed that facilitators did not significantly predict PSI scores ($\beta = -.17$, ns). However, barriers did significantly predict PSI scores ($\beta = .49$, $p < .001$). Grounded theory was used alongside theoretical sampling to develop themes related to the barriers and facilitators of recovery from participant open-ended question answers. Data was analyzed and coded using constant comparison tactics. After data analysis, data showed that the most prevalent barriers described by teachers were workload, off-job workload, the constant need to plan, and constant rumination. These results can help pave the way for future research in this area, as well as the development of comprehensive intervention programs used to assist in promoting recovery in teachers.

Keywords: Recovery, Occupational stress, Teachers, Well-being

DEDICATION

I would like to dedicate this study to my mother, Robin Blatchford. Without her instilling the importance of education and the value of knowledge in me I would not be where I am today.

Thank you, Mom.

ACKNOWLEDGEMENTS

I would like to recognize the unwavering support that Dr. Kristin Horan has provided throughout this entire project. Without your willingness to go above and beyond what is expected of a thesis chair, this study would not have been possible. Additionally, I would like to thank Dr. Crystal Maraj for seeing the potential in me and supporting me throughout this process. Without the skills I gained and the guidance I was provided while working in the RAPID Lab, I would not have been able to complete this project with the level of confidence I have now. Thank you both for believing in me and for giving me the opportunity to express my passion through research.

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INTRODUCTION

Over the past several decades, research has established that high teacher stress is associated with high psychological stress and low physical well-being. Recovery in teachers is considered an essential aspect of reducing the impacts of organizational stress (e.g., low job satisfaction). One main reason for the continued study of teacher recovery is that there has been a considerable increase in absenteeism and turnover rates in educators. There has also been a disconcertingly high number of teachers seeking alternative employment or premature retirement due to organizational stress. Research on recovery has shown a relationship between recovery rates and lower stress levels, lower turnover rates, and lower rates of absenteeism. This study aimed to investigate what mechanisms teachers participate in that underlie the recovery process; and how perceived barriers and facilitators of recovery correlate with physical symptoms of stress.

LITERATURE REVIEW

Background

Extensive research has been conducted surrounding the occupation of teaching and the stress that comes with being a teacher. In fact, teaching has been identified as a particularly stressful occupation in a multiplicity of countries (Montgomery & Rupp 2005). Teacher stress is seen as a negative emotional experience triggered by the teacher's perception that their work situation threatens their self-esteem or well-being (Kyriacou & Sutcliffe, 1978). Past research has shown teaching to be an exceedingly stressful occupation in many aspects, including maintaining discipline, coping with change, teacher evaluation, etc. (Kyriacou, 2001). In a study of numerous occupations, teaching ranked among the top six most stressful occupations regarding physical and psychological well-being (Johnson *et al.*, 2005). Furthermore, compared to similar "client-centered" professions (e.g., doctors, dentists, and nurses) teachers demonstrate higher levels of stress manifestations (Travers & Cooper, 1993). Educators are also more vulnerable to developing feelings of chronic emotional exhaustion, loss of feelings of accomplishment, and negative attitudes towards their students (Maslach and Jackson, 1986).

Additionally, previous research has shown the negative association between stressful work situations, poor psychological well-being, and increased health risks (Kahn & Byosiere, 1992; Sonnentag & Frese, 2003). The belief that work stress is a causal agent in physical and mental health issues, as well as poor organizational outcomes, has gained widespread acceptance. Studies have also shown that stress may negatively influence an individual's job performance (Sonnentag & Frese 2003). Moreover, organizational stress is related to low organizational commitment, high turnover rates (Sonnentag & Frese, 2003), and low job satisfaction (Johnson *et al.*, 2005). This

research shows further evidence that occupational stress not only leads to poor psychological and physical well-being but also impacts how teachers view their jobs.

Recovery

Recovery is defined as the process of psychophysiological unwinding that counteracts the strain process triggered by job demands and other stressors (Sonnentag & Geurts, 2009). Recovery is considered an especially important concept in the context of job stress and strain. The process related to recovering and unwinding from job stressors is seen as relevant for individuals' health, well-being, and job performance (Eden 2001). In addition, researchers have argued that failure to rest and recover from work might have adverse effects on worker's psychological and physical well-being (Eden, 2001; McEwen, 1998). Recovery activities can be broken down into two broad categories. First, there are recovery activities related to job tasks, such as finishing a work project or organizing for the next day. These activities are also grouped in with tasks related to household chores and childcare. Second, there are activities that help replenish resources, such as low effort activities (e.g., watching TV), social events, and physical exercise (Sonnentag, 2001). These different activities all have varying levels of recovery outcomes. It has also been shown that higher levels of recovery are related to multiple well-being outcomes such as; lower levels of fatigue (Sonnentag, & Fullagar, 2012), increased work engagement (Sonnentag, 2003), and improved health (Sonnentag, Binnewies, & Mojza, 2008). Some research suggests that employees who engage in recovery from work experience higher levels of motivation and productivity when returning to work (Sonnentag, Binnewies, Mojza, 2008).

Barriers and Facilitators

Barriers and facilitators are relevant concepts to study as they relate to recovery. Barriers are defined as the potential negative consequences or costs associated with taking action to improve health. Barriers to a specific action can be an assortment of things such as cost, convenience, pain, and embarrassment. The concept of barriers is seen at work in the Health Belief Model (See Figure 1); this model is used both to explain change and maintenance of health-related behaviors and as a guiding framework for health behavior interventions. In this model, perceived barriers were the most powerful single predictor of health behaviors across all studies, further endorsing the idea that discovering barriers to health behaviors is pertinent to research.

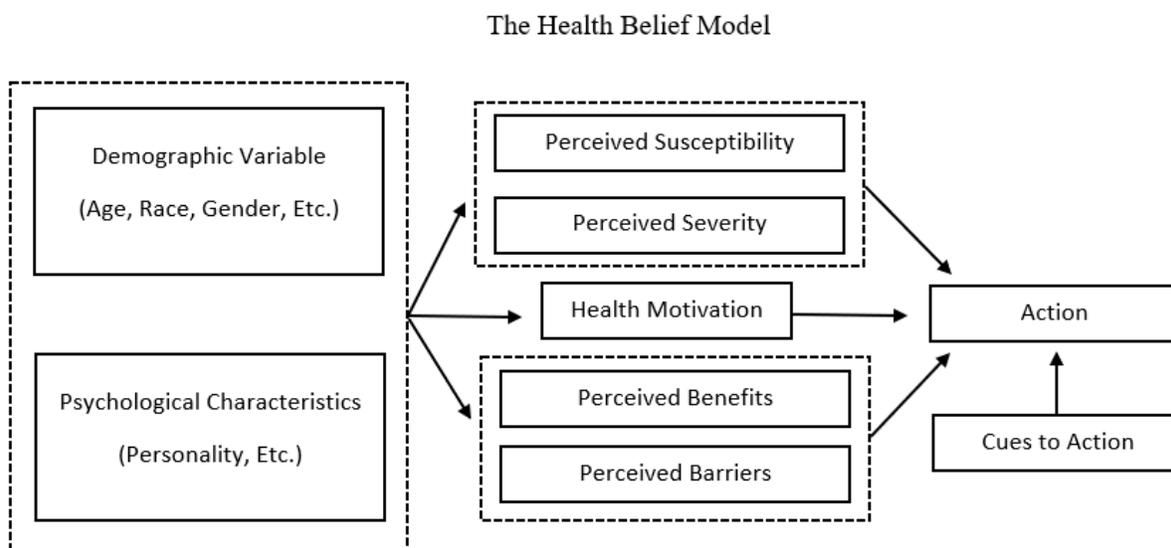


Figure 1. Health Belief Model

On the flip side, facilitators are equally as important to study. Simply put, facilitators to recovery promote the formation of recovery preferences and encourage participation. Facilitators are simply resources for recovery but using the term "facilitators" provides theoretical consistency with an already well-developed body of literature. The concept of "barriers and facilitators" has been used in many fields to examine a myriad of topics, such as nutrition (Shepherd *et al.*, 2006),

exercise (Rimmer *et al.*, 2004), mental health (Staudt, 1999) and preventative health screenings (Amonkar, Madhavan, Rosenbluth & Simon, 1999). Similar to eating healthy, exercising, and seeking preventative medical care, recovery is a volitional behavior. Therefore, it is important to understand factors that encourage or discourage participation in this volitional behavior.

Physical Stress Symptoms

Physical Stress Symptoms are defined as a condition or state about which a person would likely be aware (i.e., headache) that is thought by researchers to be associated with psychological distress (Spector, Jex, 1998). Physical symptoms and their relation to work stress is a well-studied topic within psychology. Important health implications have been identified that are caused by work-related stress. For example, the Health and Safety Executive (2001) describes how ill health can result if stress is intense or prolonged. Some of the adverse side effects of stress include heart disease, back pain, anxiety, and gastrointestinal issues.

Additionally, stress can lead to addictive behaviors such as smoking, drinking, and skipping meals, all of which can also contribute to health issues. A meta-analysis conducted by Nixon *et al.* (2011) further solidifies the assumed relationship between work stress and physical illness. In the study, the relationship between seven stressors (e.g., organizational constraints, interpersonal conflict, role conflict, role ambiguity, workload, work hours, and lack of control) and eight physical symptoms (e.g., backache, headache, eyestrain, sleep disturbance, dizziness, fatigue, appetite, and gastrointestinal problems) was analyzed. Results concluded that all of the occupational stressors were significantly related to physical symptoms in cross-sectional analyses, further proving the causal relationship between stress and the manifestation of physical symptoms.

Theory

Several theories are relevant to recovery. The effort-recovery model describes that spending effort during work leads to specific load reactions in the individual (Meijman & Mulder, 1998). Load reactions can be behavioral, psychological, or subjective interactions. These reactions are considered reversible under the right conditions; that is when an individual is no longer confronted with work demands, psychobiological systems return to their prestress levels and, recovery occurs (Sonnentag, 2001). The conservation of resources (COR) theory claims that individuals are motivated to build their resources over time, and the loss of resources can lead to negative stress (Hobfoll, 1989). Diminished health and performance in teachers can be described as a lack of individual resources that can be restored during recovery time (e.g., time when an employee is no longer confronted with work demands). Resources are characterized as either internal (e.g., an employee's mental approach to job demands) or external (e.g., organizational support, rewards). Recovery experiences can be considered as processes that shield and promote such resources, as they have the potential to mitigate physiological and psychological costs (Kinnunen *et al.*, 2011).

Moreover, if teachers are not reestablishing their resources through off-job recovery, they are more likely to deplete other resources as well. In short, COR theory assumes that recovery is promoted by building up depleted or new resources, such as energy and a positive mood. Similarly, the effort-reward imbalance model can also be linked to recovery research. In this model, effort is described as employee's perception of the strain caused by various demands required by the job (e.g., overtime), while reward is defined as opportunities that jobs offer (e.g., salary, job security) (Siegrist, 1996). The concept behind the model is that if an employee perceives a mismatch

between high effort and low rewards in the workplace, then that employee will be at risk of reduced health. This connects to recovery because according to the effort-reward imbalance model when an individual is no longer confronted with work demands, reactions to stress such as fatigue and tiredness are reversed, and recovery will take place (Feldt *et al.*, 2013)

Overview

The majority of studies on recovery in teachers have used quantitative methods, including rating scales with fixed responses. This study focused on using open-ended questions to foster teacher elaboration on their perspective of the recovery process. Looking at recovery from the teachers perspective has the potential to provide a more in-depth understanding of the teacher's recovery experience. To that end, understanding the barriers and facilitators of recovery from the teachers perspective can be intuitive toward the development of effective intervention and coping strategies. With these issues in mind, this research aimed to investigate barriers and facilitators of the process of recovery in teachers, as well as investigate the relationship between said barriers/facilitators and physical stress symptoms in teachers.

Qualitative Research Question

Research Question: What barriers and facilitators will teachers report for participating in recovery?

Quantitative Research Hypotheses

Hypothesis 1: There will be a positive relationship between the frequency of barrier-related words and physical stress inventory scores.

Hypothesis 2: There will be a negative relationship between the frequency of facilitator-related words and physical stress inventory scores.

METHOD

Participants

Fifty participants were recruited from a variety of high schools in Central and South Florida. The inclusion criteria for the study mandated that participants must be currently working as a high school teacher and must be between the ages of 18 and 65. Of the fifty participants, 15 were male (30%), and 35 were female (70%); the mean participant age was near 44 years old. The male's mean age was 44.40, and the standard deviation was 9.82; the female's mean age was 45.20, and the standard deviation was 12.68. Forty-three participants (86%) identified as Caucasian, four participants (8%) identified as Hispanic, and three participants (6%) identified as African American.

Measures

The research survey was used to determine barrier frequency, facilitator frequency, and overall PSI scores. Additionally, the survey included a demographics questionnaire that was administered to participants. Descriptions of each survey are presented in the following paragraphs.

Open-ended Questionnaire. Data collection began with the open-ended questions portion of the survey. This portion contained five questions; These questions were appraised by a review of recovery literature and were designed to elicit teachers' perceptions of the recovery process. Researchers employed the critical incident technique. Questions were geared specifically towards provoking information on the barriers and facilitators of recovery experiences. Questions began with general questions such as "Within the past 30 days has there been a time where it was difficult for you to detach from work even though you were at home, if so please describe what was

happening?". Open-ended probes were used to elicit unfiltered and unstructured responses, allowing the investigator to gain a deeper understanding of the recovery process.

Physical Symptoms Inventory-13. To measure physical stress symptoms, participants filled out the PSI-13 (Spector, Jex, 1998). The PSI-13 was designed to assess physical symptoms that are known to the participant, such as discomfort or pain (e.g., headache, upset stomach) rather than physical symptoms that participants are not directly experiencing, such as high blood pressure or cholesterol level. There are 13 items on the scale; each item is a physical symptom. Participants were asked to indicate if they have experienced each symptom in the past 30 days. Answers are on a 5-point Likert scale ranging from "1. *Not at all*" to "5. *Every day.*" Participant answers were tallied up to create a final score ranging between 13 and 65. Higher scores indicate a more significant number of symptoms. In order to test the survey reliability for the current study, the researchers conducted a Cronbach's alpha test which yielded .88. This value is considered acceptable and therefore the survey was deemed reliable (Pallant, 2016).

Demographics. As control variables, participant age, race, gender, number/age of children, education level, tenure, elder care, and annual household income were assessed with single-item measures.

Procedure

To recruit teachers for participation, researchers contacted the heads of schools and explained the overall goal of the study. Subsequently, researchers sent a mass email out to the list of teachers provided by the school head. This email included the goal of the study, information on what participation in the study entails, and an email address to be used as a contact point for

interested participants. The email sent emphasized voluntariness, anonymity, and confidentiality of all responses. No personal identifiable information was collected from participants in the study.

After sending out the initial mass emails to teachers, researchers monitored the email account for any replies or questions. If participants express interest, they were able to open the link to the survey provided to them in the email. Participants then read the informed consent document. Once the participant finished reading the informed consent, they answered the demographics portion of the survey. Participants then moved on to the open-ended questionnaire portion of the survey. The open-ended question portion began with a set of instructions on how to answer the questions that follow. Immediately following the open-ended questions, participants answered a short section containing the PSI-13. After the participant completed all portions of the survey, the survey was submitted, data collection concluded for that participant.

Analytic Strategy

For this study, data analysis consisted of two main parts. First, a multiple linear regression was conducted using Statistical Package for the Social Sciences (SPSS) to see the relationship between the frequency of barrier and facilitator related words and the overall physical symptom scores of participants. Once the quantitative analysis concluded, a qualitative analysis of the data was conducted. The open-ended survey questions were analyzed and coded using grounded theory application. Researchers used middle-range coding, meaning the concepts came from both the data and relevant literature. The primary researcher worked along-side one research assistant to prevent coding bias in the data. Both researchers used the coding program Nvivo 12 to assist in qualitative coding. During this phase of analysis, researchers coded all data separately and held frequent meetings to compare coding concepts. Throughout the entire coding process, constant comparison

techniques were used to ensure all data that was coded into similar concepts were relevant to each other. The steps of the coding process will be discussed in detail below:

Step One: Open Coding. Open coding is the process of breaking down the data into distinct units of meaning. In this phase, the primary researcher, along with the research assistant, were employed to analyze text line by line in an attempt to identify keywords or phrases which connect the teacher's account to the recovery experience. Open coding acts as a foundation for larger codes as researchers decided what was important and moved from initial descriptions to analytical priorities. This procedure, as Spiggle (1994) describes it, is associated with primary concept development, which consists of "identifying a chunk or unit of data as belonging to, representing, or being an example of some more general phenomenon."

Step Two: Axial Coding. Coding is similar to a hierarchical scale, starting at the base with open-coding, then moving up and refining codes and data. The next phase of coding is axial coding. In this phase, systematic analysis and constant comparison of data were used to reduce the number of codes. The researchers also used this stage to collect codes together in a way that shows a relationship among them, leading to the creation of concepts. Concepts are a progression from merely describing what is happening in the data, to explaining the relationship between and across incidents. The researcher is seeking to find one or more "core concepts" within the data. A "core concept" is a central phenomenon around which all the other categories are related (Strauss & Corbin, 1990). During this phase, the primary researcher chose to differentiate between the barriers and facilitators of recovery and recovery activities themselves. Recovery activities are activities that teachers can participate in to recover from work, such as physical exercise, watching TV, or eating a meal with friends. These are different from barriers and facilitators because barriers and

facilitators themselves do not provide recovery, only promote or deter it. For example, having access to a gym is a facilitator of recovery, whereas exercising is a recovery activity. For this study, the primary researcher chose only to code barriers and facilitators of recovery and not recovery activities themselves. This decision was made by the primary researcher to stay true to the research question and hypotheses, which state interest in the relationship between barriers and facilitators of recovery to the manifestation of physical stress symptoms.

Step Three: Selective Coding. The final stage of data analysis is selective coding. Selective coding can be described as the process by which concepts are related to the core concept, ultimately becoming the basis for the grounded theory (Babchuk, 1997). This can also be described as the process by which all concepts are unified around a “core” concept, and concepts that need further explication are filled-in with descriptive detail (Strauss & Corbin, 1990).

RESULTS

Qualitative Results

Teacher's perceptions of recovery clustered around two major themes: barriers and facilitators. The text was analyzed and coded into one of the two main categories, either as a barrier (i.e., a characteristic that inhibits teacher recovery) or a facilitator (i.e., a characteristic that assists in teacher recovery). The results of the qualitative data analysis performed in Nvivo 12, which are portrayed in Table 2, revealed several barriers and facilitators teachers described as pertaining to their recovery.

Barriers. The most common barrier coded was off-job workload. Thirty eight percent of teachers reported experiencing stress related to having too much to do within scheduled work hours, meaning they would need to complete job-related tasks outside of work hours, often at home. Workload within scheduled hours was also reported as a source of stress by many teachers. One participant stated, "It is always hard to detach because the job is endless. There is always something that has been left undone." Barriers pertaining to workload repeatedly overlapped with barriers related to time pressure. Twenty four percent of teachers reported feeling a lack of time to get all job-related tasks done, whether that be at home or on the job. One teacher discussed how time pressure impacted their ability to complete job-related tasks "demands on time at school, meetings daily, took all the time away from that and therefore I had to do it at home in order to be successful at work."

Other job-related barriers for teachers included the constant need to plan and prepare. Thirty six percent of teachers reported feeling the constant pressure and need to be prepared. This

code encompasses everything from preparing for an important meeting, the upcoming weeks' lessons, or a district exam. One teacher stated, "Tweaking the lessons for the next day to either catch students up or create new material because students are moving faster than expected is part of everyday life."

Moreover, twenty eight percent of teachers in the sample identified a lack of administrative support and administrative pressure to do well as significant sources of stress. Lack of administrative support encompassed several areas, including a lack of communication in times of transition, task uncertainty, and a lack of direction for correcting poor student behavior. One teacher stated that a majority of their stress came from "Multiple transitions with little guidance, support, or communication provide." Correspondingly, administrative pressure surrounding job performance and student district testing scores were stress-inducing for numerous teachers. Teachers described feeling responsible when students perform poorly on exams and felt pressure to create innovative ways of encouraging student learning. One teacher revealed, "There is a prevailing culture of what we do is never enough and in constant need of improvement or justification."

Teachers frequently reported issues relating to personal attributes that caused them stress. The most prevalent code regarding individual characteristics was the feeling of constant rumination. Thirty two percent of teachers in the sample described their inability to stop thinking about work as a source of stress. Statements regarding rumination ranged from "I just could not turn off my brain" to "I am always thinking about lessons and plans for my class. I specifically think about it while resting or sleeping." As mentioned in the previous quote, teachers repeatedly

recalled constant thinking as being disruptive to their lives outside of work. Various teachers stated that constant rumination was both a cause and side effect of occupational stress.

Facilitators. When compared to barriers, facilitators of recovery appeared far less frequently in the teachers' responses. Within the facilitator category, there were many codes, the most prominent of which being breaks from work. Thirty two percent of teachers in the sample cited breaks from work (i.e., summer break, winter break, spring break) as a source of stress relief. Since teachers only work during the time of year students are in school, they have an extended period of time off during the summer months. Teachers cited using this time for vacation, home improvement projects, and even expanding their education with college courses. One teacher recalled, "Over the summer when school is out is the only time I can truly detach. This is because I don't have grades, reports, plans, etc. left undone that I need to still attend to until the new year begins." Whilst summer break was the most frequent break mentioned, not working on weekends was also mentioned repeatedly as a facilitator of recovery.

Several teachers reported facilitators pertaining to habits, or aspects of one's personality, that promoted recovery. The most prominent code in this category was a strong sense of work-life balance. Work-life balance is defined as a state of equilibrium in which the demands of both a person's job and personal life are equal (Lockwood, 2003). Teachers who exhibited this quality made statements such as "I want to enjoy my family and that means leaving work at work" and "I try to make sure I keep things as balanced as possible."

According to teachers in the sample, spending time with family was noted as one of the most impactful ways to recover from work. Twenty eight percent of all facilitators coded fit into this category. Several teachers regarded spending time with family as the only way they were able

to recover and relax after work. One teacher stated, “I am distracted by two five-year-old twin grandchildren who have my complete attention and adoration when they are in my presence.” Several teachers described having to keep up and spend time with young children as a welcome distraction from work.

Quantitative Results

The data was analyzed using the Statistical Package for the Social Sciences (SPSS) version 24. A Kolmogorov–Smirnov (KS) test was conducted to test for normality, results of the KS test showed that the data violated the assumptions of normality. Additionally, a test for homogeneity of variance, as well as an analysis for outliers, was conducted. However, no outliers were removed from the data set. Since the data violated assumptions of normality, the dependent variable (PSI scores) were transformed using a logarithmic transformation to normalize data for use in a parametric statistical analysis. Descriptive statistics and correlations for study variables can be found in Table 1.

A multiple linear regression analysis was conducted to examine the relationship between PSI scores and barriers and facilitators. It was found that barriers and facilitators explain a statistically significant amount of the variance in the PSI scores ($F(2, 46) = 10.80, p < .001, R^2 = .32$). The analysis showed that facilitators did not significantly predict PSI scores ($\beta = -.17, ns$). However, barriers did significantly predict PSI scores ($\beta = .49, p < .001$).

DISCUSSION

The goal of this study was to investigate barriers and facilitators of the process of recovery in teachers, as well as investigate the relationship between said barriers and facilitators and physical stress symptoms in teachers. Teachers reported the main barrier of recovery, as it pertains to this study, as off-job workload. Similarly, workload during scheduled hours was also one of the most common barriers reported by teachers. Workload refers to the amount, and complexity, of work that an employee has to compete (Rossi, Quick, & Perrewe, 2009). Fifty-eight percent of teachers cited workload, off-job workload, or both as barriers to recovery. These findings are consistent with much of the prior research regarding teacher stress. Hakanen, Bakker, and Schaufeli (2006) found that excessive workload was significantly and positively associated with unfavorable outcomes such as emotional exhaustion. In a study focused on directions of future research on teacher stress, Kyriacou (2001) cited workload as being one of the leading sources of stress for teachers. Additionally, researchers have noticed an increasing number of work assignments resulting in less time for rest and recovery for teachers (Hargreaves, 2003).

Due to the immense complexity of issues that lead to the excessive workload for teachers, finding a way to decrease workload can be equally as complicated. Often, schools have financial challenges that lead to the inability to hire additional staff to assist in easing teacher workload. Due to this, previous research has outlined several changes to assist with coping. Richardson, Goodman, Flight, and Richards (2018), focused on reducing written grading by implementing methods of on-the-spot verbal feedback to students. Whereas Kyriacou (2001) emphasized social support from colleagues, clearly defined policies, and management decisions based on the consultation of teachers. Similarly, Pithers and Fogarty (1995) suggested that to reduce the stress

associated with excessive workload, an on-going management strategy needs to be implemented for all teachers, instead of only those who are new to the profession.

Regarding individual coping strategies for teachers, Stein and Cutler (2002) suggested taking up a relaxing hobby such as gardening, listening to music, or playing an instrument. These strategies go hand in hand with coping strategies emphasized by recovery researchers. Sonnentag (2001) states that low effort activities, such as watching TV or listening to music, assist in recovery by replenishing resources (e.g., mental well-being, physical health, and ability to function in other life domains.) Stein and Cutler (2002) suggests implementing coping strategies such as knowing your limitations, assertiveness, and the ability to say ‘no’ when job demands become overwhelming.

Moreover, the constant need to plan was described as a source of stress by several teachers in the study. Planning encompasses many tasks, including creating lesson plans, planning for district exams, and for some teachers making individual education plans for special needs students. Traditionally, teachers plan in isolation, meaning they rely on themselves and course material to develop lesson plans (Thousand, Villa, & Nevin, 2006). Research conducted on methods of teacher planning shows that teachers can make significant improvements to student performance by swapping isolation planning for working in collaborative teams with other teachers (Leonard & Leonard, 2003).

Additionally, further research emphasizes the benefits of collaborative planning for both students and teachers. Schwab Learning (2003) conducted a study that showed the impact of collaborative planning and co-teaching, overall, both activities increased student achievement, decreased disruptive problems, decreased paperwork, and decreased referrals for behavioral

problems. Planning collaboratively may not only lead to increased collegiality but also possibly decreased adverse impacts on student behavior, and a decreased workload due to shared responsibility.

In addition to the constant need to plan, constant rumination was a key barrier cited by various teachers in the sample. Rumination, as it pertains to occupational stress, is not a new concept and has been researched for decades. Rumination is commonly defined as repetitive and consistent self-focused negative thinking about past experiences or mood (e.g., Lyubomirsky & Nolen-Hoeksema, 1993; Papageorgiou & Wells, 2003). Of three thousand workers interviewed for Employment Survey of Britain, 72% reported worrying about their job after work (Gallie, White, Cheng, & Tomlinson, 1998). Further research indicates that levels of rumination are only increasing (Felstead, Gallie, & Green, 2002). Rumination has been shown to delay recovery (Roger & Jamieson, 1988) and increase physical symptom reporting (Hazlett & Haynes, 1992). Since rumination is a personal attribute that varies widely, there is no one way to reduce rumination that works for everyone.

Previous research has shown that individuals are likely to ruminate when on their own compared to being with family or friends (Cropley & Millward, 2003), which means that social support and spending time with family could assist in decreasing some feelings of rumination in teachers. Other research suggests that Mindfulness-Based Stress Reduction (MBSR) programs can be a beneficial way to reduce rumination. In a study of twenty-nine working professionals, an 8-week MBSR intervention program reduced rumination by thirty percent (Martín-Asuero, & García-Banda, 2010). Further research suggests that it is the type of work-related rumination, not rumination per se, that is important (Querstret & Cropley, 2012). This study suggested that

focusing on a problem-solving rumination style could be effective in adverse reactions to rumination, such as fatigue and poor sleep quality.

For quantitative analysis, barrier and facilitator frequency was evaluated alongside PSI scores to determine the relationship between the variables. Results showed that barriers and facilitators explain a statistically significant amount of variance in physical symptom inventory scores. The results show support for hypothesis 1, which stated that barrier frequency has a statistically significant positive impact on PSI scores. These results confirmed the extensive research previously done on stress regarding the occupation of teaching. Decades of research has shown teaching to be an exceedingly stressful occupation (Betoret, 2009; Kyriacou, 2001; Montgomery & Rupp 2005; Kyriacou & Sutcliffe, 1978). Research shows that educators are more vulnerable to developing feelings of chronic emotional exhaustion and loss of feelings of accomplishment (Maslach and Jackson, 1986). A exploration into the literature shows that teachers, more so than other “client-centered” professions, demonstrate high levels of stress manifestation (Travers & Cooper, 1993). The Health and Safety Executive (2001) described how ill health can result if stress is intense or prolonged. With the cumulation of through research done on teacher stress, and correspondingly, how stress can manifest as physical symptoms, findings of this study are supported. Teachers frequently experience stress and exhibit stress-related symptoms; therefore, a positive relationship was found between barrier frequency and PSI scores.

While regression results show that barriers have a statistically significant positive relationship with PSI scores, facilitators do not have a statistically significant negative relationship with PSI scores. The results do not support hypothesis 2, which stated that facilitator frequency has a statistically significant negative impact on PSI scores. A nonsignificant negative relationship between facilitators and PSI scores could be due in part to negativity bias. Negativity bias is the

concept that there is a tendency for negative information to have a stronger impact on psychological processes than positive information (Rozin & Royzman, 2001; Norris, Gollan, Berntson, & Cacioppo, 2010). According to Kahneman and Tversky (2013), when making judgments, people weigh the negative aspects of an event more heavily than the positive aspects. Perhaps, when making judgments regarding recovery, teachers in the sample weighed aspects that negatively influenced their recovery (i.e., barriers) more heavily than aspects that positively influenced recovery (i.e., facilitators). Overall, the emphasis on negative influences of recovery could have led to a lack of reporting of facilitators by teachers. Thus, explaining the nonsignificant results regarding the negative relationship between facilitators and PSI scores. Due to the lack of statistical significance regarding facilitators as it pertains to this study, it is important to focus on the reduction of barriers, rather than the emphasis of facilitators, when designing an intervention program for teachers.

Limitations

One limitation of the study is the inability to ask teachers additional questions regarding recovery experiences. Due to the limited nature of the open-ended survey questions, there was no option to ask follow up questions to elicit further discussion surrounding the teacher's recovery experiences. Perhaps the study could have benefited from a semi-structured interview format where researchers would have been able to ask participants additional questions. Additionally, performing a longitudinal study regarding teacher stress may have provided researchers with a more in depth look at teacher's recovery experiences. A second limitation includes the possibility that findings may reflect the unique way in which researchers coded data. However, to prevent, or limit bias, researchers were trained, coded data independently, and used constant comparison

tactics to ensure barriers and facilitators were coded appropriately. Furthermore, due to a small and centralized sample, it is unclear the extent to which the results can be generalized to a broad population of teachers.

Implications and Directions for Future Research

The results of this study have implications in both recovery and occupational stress literatures. These results lay a foundation for future research testing more comprehensive models of employee recovery, and teachers' recovery specifically. Future researchers could improve upon this study by implementing a longitudinal study. This approach would allow researchers to see how teacher stress interacts with recovery and physical symptom manifestation over an extended period of time. This could provide insight on how teacher stress and recovery changes throughout the academic year. Perhaps teachers exhibit lower rates of recovery around the end of the academic year when exams take place versus at the beginning of the school year right after they have enjoyed summer break. Understanding the barriers and facilitators of recovery from this perspective can provide valuable insight in the development of coping strategies and effective intervention programs. Furthermore, future research could focus on developing and testing a comprehensive intervention model that could be employed in schools to reduce teacher stress and promote recovery. This would involve developing and testing the effectiveness of a variety of intervention programs on educators to see which one not only promotes recovery but is also preferred by teachers. For example, some companies use mindfulness-based stress reduction (MBSR) programs as a means to help employees deal with stress. Several research studies show various types of MBSR's have been successful in reducing teacher stress (Taylor *et al.*, 2016; Frank, Reibel, Broderick, Cantrell & Metz, 2015; Gold *et al.*, 2010).

CONCLUSION

Recovery is seen as an especially important concept in the context of job stress and strain, as lack of recovery is one process through which stressors may translate into poor well-being, health, and job performance. The goal of the present study was to understand better the factors that may encourage and deter recovery. High school teachers were chosen as the sample for this study due to decades of research showing the teaching profession to contain many stressors. This study used a mixed methods design to investigate the barriers and facilitators to recovery in teachers and their relationship physical stress symptom manifestation. A multiple linear regression analysis was conducted to assess any connection between the appearance of barrier and facilitator related words in the open-ended questions to the rating of physical symptoms. The analysis showed that facilitators did not significantly predict PSI scores. However, barriers did significantly predict PSI scores. This indicates that it is important for future researchers to focus on the reduction of barriers rather than the implementation of facilitators when promoting recovery. After analysis, qualitative data showed that the most prevalent barriers described by teachers were workload, off-job workload, the constant need to plan, and constant rumination. These results can pave the way for the development of a comprehensive intervention program to assist in promoting recovery in teachers as well as decreasing occupational stress. MBSR's have proven to be successful in reducing teacher stress, but not through the reduction of barriers as suggested by this study. This implies that future research in the area is needed, and researchers could benefit from focusing on finding ways to work with schools to implement barrier reduction.

Table 1.
Descriptive Statistics and Bivariate Correlations.

Variable	Mean	SD	1	2	3	4	5	6
1. Barriers	2.70	1.27						
2. Facilitators	1.40	0.72	-.30*					
3. Overall PSI Score	28.80	9.00	.51*	-.32*				
4. Nausea	1.93	1.00	.27	-.32*	.75**			
5. Backache	2.63	1.27	.35*	-.23	.65**	.53**		
6. Trouble Sleeping	3.22	1.25	.45**	-.07	.61**	.50**	.34*	
7. Headache	2.71	1.20	.31*	-.33*	.67**	.46**	.34*	.37**
8. Heartburn	2.02	1.23	.16	-.38*	.58**	.51**	.22	.17
9. Eye Strain	2.63	1.40	.60**	-.28	.71**	.42**	.40**	.46**
10. Diarrhea	1.51	0.82	.33*	-.04	.49**	.46**	.18	.44**
11. Stomach Cramps	1.50	0.80	.49**	-.20	.73**	.66**	.46**	.52**
12. Constipation	1.61	0.93	.28*	-.06	.55**	.25	.35*	.24
13. Ringing in Ears	1.90	1.34	.10	-.20	.42**	.25	.12	-.02
14. Loss of Appetite	1.53	0.91	.20	.01	.60**	.51**	.44**	.30*
15. Dizziness	1.80	1.10	.28*	-.26	.82**	.56**	.49**	.38**
16. Fatigue	4.00	1.10	.39*	-.35*	.64**	.39**	.45**	.45**

Note: N= 50 for barriers and facilitators. N= 49 for Overall PSI scores and individual physical symptoms. Mean and SD were calculated using PSI scores prior to logarithmic transformation. * Correlation is significant at the 0.05 level. ** Correlation is significant at the 0.01 level.

Table 1. (Continued)
Descriptive Statistics and Bivariate Correlations.

Variable	7	8	9	10	11	12	13	14	15
1. Barriers									
2. Facilitators									
3. Overall PSI Score									
4. Nausea									
5. Backache									
6. Trouble Sleeping									
7. Headache									
8. Heartburn	.47**								
9. Eye Strain	.38**	.40**							
10. Diarrhea	.13	.20	.35*						
11. Stomach Cramps	.31*	.32*	.52**	.70**					
12. Constipation	.27	.26	.36*	.21	.29*				
13. Ringing in Ears	.37**	.19	.20	-.07	.09	.20			
14. Loss of Appetite	.18	.12	.29*	.33*	.53**	.34*	.34*		
15. Dizziness	.54**	.44**	.60**	.22	.46**	.45**	.57**	.57**	
16. Fatigue	.57**	.37**	.44**	.37**	.42**	.35*	-.00	.21	.41**

Note: N= 50 for barriers and facilitators. N= 49 for Overall PSI scores and individual physical symptoms. Mean and SD were calculated using PSI scores prior to logarithmic transformation. *Correlation is significant at the 0.05 level. ** Correlation is significant at the 0.01 level.

Table 2.
Results of Qualitative Data Analysis

	Codes	Percentage of Participants
<i>Barriers</i>		
Off-Job Workload	19	38%
Constant Need to Plan	18	36%
Constant Rumination	16	32%
Time Pressure	12	24%
Concern for Student Development	11	22%
On-Job Workload	10	20%
Constant Change	8	16%
Administrative Pressure	8	16%
Work Disrupts Family Time	7	14%
Lack of Administrative Support	6	12%
Task Uncertainty	3	6%
Lack of Resources	3	6%
Poor Student Behavior	3	6%
Worrisome	3	6%
New Job or Position	2	4%
Neglect Household Duties	1	2%
<i>Facilitators</i>		
Work Breaks	16	32%
Time with Family	14	28%
Values Work-Life Balance	14	28%
Access to Gym	4	8%
Social Support	3	6%
Attentive to Detail	2	4%
Love for Job	1	2%
No Electronics at Home	1	2%

Note: N = 50; Percentages will not add up to 100% because participants may have specified more than one barrier and facilitator in open-ended questions.

References

- Amonkar, M. M., Madhavan, S., Rosenbluth, S. A., & Simon, K. J. (1999). Barriers and facilitators to providing common preventive screening services in managed care settings. *Journal of Community Health, 24*(3), 229-247.
- Babchuk, W. A. (1996). Glaser or Strauss? Grounded theory and adult education. In *Proceedings of the 15th Annual Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education* (pp. 1-6).
- Cooper, C. L., & Marshall, J. (1976). Occupational sources of stress: A review of the literature relating to coronary heart disease and mental ill health. *Journal of occupational psychology, 49*(1), 11-28.
- Cropley, M., Dijk, D. J., & Stanley, N. (2006). Job strain, work rumination, and sleep in school teachers. *European Journal of Work and Organizational Psychology, 15*(2), 181-196.
- Demerouti, E., Bakker, A. B., Sonnentag, S., & Fullagar, C. J. (2012). Work-related flow and energy at work and at home: A study on the role of daily recovery. *Journal of Organizational Behavior, 33*(2), 276-295.
- Eden, D. (2001). Vacations and other respites: Studying stress on and off the job. *Well-being in organizations, 305-330*.
- Feldt, T., Huhtala, M., Kinnunen, U., Hyvönen, K., Mäkikangas, A., & Sonnentag, S. (2013). Long-term patterns of effort-reward imbalance and over-commitment: Investigating occupational well-being and recovery experiences as outcomes. *Work & Stress, 27*(1), 64-87.
- Felstead, A., Gallie, D., & Green, F. (2002). *Work skills in Britain 1986–2001*. Nottingham: DfES Publications.
- Frank, J. L., Reibel, D., Broderick, P., Cantrell, T., & Metz, S. (2015). The effectiveness of mindfulness-based stress reduction on educator stress and well-being: Results from a pilot study. *Mindfulness, 6*(2), 208-216.
- Gallie, D., White, M., Cheng, Y., & Tomlinson, M. (1998). Restructuring the employment relationship. *OUP Catalogue*.
- 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.
- Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of school psychology, 43*(6), 495-513.

- Hargreaves, A. (2003). *Teaching in the knowledge society: Education in the age of insecurity*. Teachers College Press.
- Health and Safety Executive (2001), *Tackling Work-related Stress*, HSE Books, London.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American psychologist*, 44(3), 513.
- Johnson, S., Cooper, C., Cartwright, S., Donald, I., Taylor, P., & Millet, C. (2005). The experience of work-related stress across occupations. *Journal of managerial psychology*, 20(2), 178-187.
- Kahn, R. L., & Byosiére, P. (1992). Stress in organizations.
- Kahneman, D., & Tversky, A. (2013). Choices, values, and frames. In *Handbook of the fundamentals of financial decision making: Part I* (pp. 269-278).
- Kinnunen, U., Feldt, T., Siltaloppi, M., & Sonnentag, S. (2011). Job demands–resources model in the context of recovery: Testing recovery experiences as mediators. *European Journal of Work and Organizational Psychology*, 20(6), 805-832. 27-35.
- Kyriacou, C., & Sutcliffe, J. (1978). Teacher stress: Prevalence, sources, and symptoms. *British journal of educational psychology*, 48(2), 159-167.
- Leonard, L., & Leonard, P. (2003). The continuing trouble with collaboration: Teachers talk. *Current Issues in Education*, 6(15).
- Lockwood, N. R. (2003). Work/life balance. *Challenges and Solutions, SHRM Research, USA*.
- Lyubomirsky, S., & Nolen-Hoeksema, S. (1993). Self-perpetuating properties of dysphoric rumination. *Journal of personality and social psychology*, 65(2), 339.
- Martín-Asuero, A., & García-Banda, G. (2010). The mindfulness-based stress reduction program (MBSR) reduces stress-related psychological distress in healthcare professionals. *The Spanish journal of psychology*, 13(2), 897-905.
- Maslach, C., & Jackson, S. E. (1981). *The Maslach Burnout Inventory*. Palo Alto, CA: Consulting Psychologists Press
- McEwen, B. S. (1998). Protective and damaging effects of stress mediators. *New England journal of medicine*, 338(3), 171-179.
- Meijman, T. F., & Mulder, G. (1998). Psychological aspects of workload. In *Handbook of work and organizational psychology. Vol. 2: Work psychology* (pp. 5-33). Psychology, Hove, England.

- Montgomery, C., & Rupp, A. A. (2005). A meta-analysis for exploring the diverse causes and effects of stress in teachers. *Canadian Journal of Education/Revue canadienne de l'éducation*, 458-486.
- Norris, C. J., Gollan, J., Berntson, G. G., & Cacioppo, J. T. (2010). The current status of research on the structure of evaluative space. *Biological psychology*, 84(3), 422-436.
- Nixon, A. E., Mazzola, J. J., Bauer, J., Krueger, J. R., & Spector, P. E. (2011). Can work make you sick? A meta-analysis of the relationships between job stressors and physical symptoms. *Work & Stress*, 25(1), 1-22.
- Pallant, J. (2016). *SPSS survival manual* (6th ed.). McGraw-Hill Education (UK).
- Papageorgiou, C., & Wells, A. (2003). An empirical test of a clinical metacognitive model of rumination and depression. *Cognitive therapy and research*, 27(3), 261-273.
- Pithers RT, Fogarty GJ (1995). Symposium on teacher stress: Occupational stress among vocational teachers. *British Journal of Educational Psychology* 65: 3–14.
- Querstret, D., & Cropley, M. (2012). Exploring the relationship between work-related rumination, sleep quality, and work-related fatigue. *Journal of occupational health psychology*, 17(3), 341.
- Richardson, R., Goodman, P., Flight, S., & Richards, G. (2018). Reducing teacher workload.
- Rimmer, J. H., Riley, B., Wang, E., Rauworth, A., & Jurkowski, J. (2004). Physical activity participation among persons with disabilities: barriers and facilitators. *American journal of preventive medicine*, 26(5), 419-425.
- Rossi, A. M., Quick, J. C., & Perrewe, P. L. (Eds.). (2009). *Stress and quality of working life: the positive and the negative*. IAP.
- Rozin, P., & Royzman, E. B. (2001). Negativity bias, negativity dominance, and contagion. *Personality and social psychology review*, 5(4), 296-320.
- Schwab Learning. (2003). Collaboratively speaking. A study on effective ways to teach children with learning differences in the general education classroom. *The Special EDge*, 16(3). Retrieved from <http://www.schwablearning.org/articles.asp?g=4&r=693>
- Shepherd, J., Harden, A., Rees, R., Brunton, G., Garcia, J., Oliver, S., & Oakley, A. (2006). Young people and healthy eating: a systematic review of research on barriers and facilitators. *Health education research*, 21(2), 239-257.
- Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions. *Journal of occupational health psychology*, 1(1), 27.

- Sonnentag, S., Binnewies, C., & Mojza, E. J. (2008). "Did you have a nice evening?" A day-level study on recovery experiences, sleep, and affect. *Journal of Applied Psychology*, 93(3), 674.
- Sonnentag, S., & Frese, M. (2003). Stress in organizations. *Comprehensive handbook of psychology*, 12, 453-491.
- Sonnentag, S., & Geurts, S. A. (2009). Methodological issues in recovery research. In *Current perspectives on job-stress recovery* (pp. 1-36). Emerald Group Publishing Limited.
- Spector, P. E., & Jex, S. M. (1998). Development of four self-report measures of job stressors and strain: interpersonal conflict at work scale, organizational constraints scale, quantitative workload inventory, and physical symptoms inventory. *Journal of occupational health psychology*, 3(4), 356.
- Spiggle, S. (1994). Analysis and interpretation of qualitative data in consumer research. *Journal of consumer research*, 21(3), 491-503.
- Staudt, M. (1999). Barriers and facilitators to use of services following intensive family preservation services. *The Journal of Behavioral Health Services & Research*, 26(1), 39
- Stein F, Cutler S (2002). *Psychosocial Occupational Therapy: A Holistic Approach* (2nd edn.) San Diego: Singular Publishing.
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research*. Sage publications.
- Taylor, C., Harrison, J., Haimovitz, K., Oberle, E., Thomson, K., Schonert-Reichl, K., & Roeser, R. W. (2016). Examining ways that a mindfulness-based intervention reduces stress in public school teachers: A mixed-methods study. *Mindfulness*, 7(1), 115-129.
- Travers, C. J., & Cooper, C. L. (1993). Mental health, job satisfaction, and occupational stress among UK teachers. *Work & Stress*, 7(3), 203-219.
- Thousand, J. S., Villa, R. A., & Nevin, A. I. (2006). The many faces of collaborative planning and teaching. *Theory into practice*, 45(3), 239-248.