SOCIAL WORKERS FACING STRESS AND THE COPING STRATEGIES THEY USE: A SECONDARY ANALYSIS

by

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Abstract

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In the immense literature on stress in healthcare, social workers have been poorly represented. This dissertation examines the relationship between stress, perception of stress at work (PSW), and coping strategies through the analysis of a secondary data gathered from a national sample of social workers participating in the NASW 2007 national survey. Several coping strategies (i.e., complimentary alternative medicine (CAM) or meditation/yoga, exercise, therapy/medication and avoidance) are examined as potential moderators of the relationship between stress and PSW. Results indicate that over 50% of social workers in this study report the experience of stress on the job and that the stress is significantly related to perceived organizational stressors and safety concerns at work. The literature in mindfulness based stress reduction (MBSR) research supports engagement in meditation and yoga as a means to reduce levels of overall stress. However, this was not supported by the current study. Bi-variate and multivariate analyses were conducted to explore the relationship between these variables and their association to stress. At the multivariate level, hierachical binary logistic regression indicated that CAM did not moderate the relationship between stress and PSW at a

statistically significant level. However, an analysis of main effects did reveal that exercise held a negative association to stress while considering PSW. However, when safety concern was controlled for in the model, exercise no longer provided a buffering effect to stress in the presence of PSW. This study supports the notion that stress related to work conditions does indeed exist for practicing social workers and that the coping strategies they use are not providing enough of a relief from this stress. Further research related to organizational interventions and individual strategies to cope with stressors needs to be conducted in order to insure a healthier workforce.

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Chapter One

Problem Statement

Introduction

This secondary data analysis study, utilizing a national survey conducted by National Association of Social Workers (NASW) in 2007, explores the relationship between work related stress, perception of stress at work (PSW) and the coping strategies of yoga/meditation, exercise, therapy/ medication use and avoidance. In the model analyzed, coping strategies are treated as the moderating variable in the relationship between stress and PSW. The original intent of this writer was to explore if coping via yoga/meditation use would influence mindfulness states and ultimately reduce stress. Yoga and meditation are considered to be part of complimentary alternative medicine (CAM). Interventions that derive from CAM have been found to enhance one's capacity to be mindful, and increased state of mindfulness has been proven to significantly reduce both the physical and emotional impact of stress (Kabat-Zinn, 1990). However, the data set analyzed did not provide information directly related to mindfulness, as a result what was studied included the relationship between overall coping strategies in relation to experienced stress. As effective coping in relation to stress among health care providers is an understudied area (Lloyd, King & Chenoweth, 2002) this chosen study holds the potential to contribute valuable knowledge to the field.

Most jobs, along with various life experiences, can impact one's generated stress level to a certain degree. This stress level appears to be exacerbated or intensified among individuals who work in emotionally demanding environments, such as the various helping professions (Dillenberger, 2004). Within these professions (i.e. health care,

human services, and education), the experience of chronic stress is termed burnout. Social Work has been identified as one such field where the prevalence of burnout and stress is high (Dillenberger 2004, Siebert, 2005 and NASW Center for Workforce Studies, 2006). Burnout is a stress syndrome characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach & Jackson, 1986) and other potential physical or emotional health issues (Jaffe-Gill, Smith, Larson, and Segal, 2007). Research in the area of stress and coping engagement, such as CAM, is lacking. And, as stress could lead to not only burnout but also impact ones overall physical and mental health it would be worthwhile to identify possible techniques that could reduce its impact on the healthcare professional.

Not all individuals in stress filled work environments, who do people work, experience the symptoms of chronic stress. Some become challenged verses depleted in the same stressful environment (Jaffe-Gill, Smith, Larson, and Segal, 2007). Selye, a noted psychologist, defined stress as "the non specific response to any pressure or demand" (Kabat-Zinn, 1990 pp. 235-36). This definition of stress is neutral, so stress can lead to either a 'good' or 'bad' emotional response depending on the environment, and the individual's perception of the situation. Robbins and Judge (2010) define perception as "a process by which individuals organize and interpret their sensory impressions in order to give meaning to their environment" (p. 32). Individuals who perceive their environment as challenging and cope well under stressful conditions are known to be stress resistant, and research has defined specific character traits, such as hardiness, to identify those who perceive stressful environments as motivating verses depleting (Koeske, Kirk & Koeske, 1993; Linley & Joseph, 2007).

There is no clear evidence to date in the literature that identifies the impact of engagement in CAM or other coping strategies on experienced stress. And, even though the literature on experienced stress in the healthcare field is immense, social work has been poorly represented and studies that do exist do not assess how to address this problem. Also empirical research on effective interventions for the reduction of stress is not well presented in the literature. Given that experienced stress can lead to chronic stress and/or burnout, which could have such grave consequences on the worker, client and agency, assessing the principles impacting wellbeing could prove to be highly beneficial to social workers exposed to stress. The data used for this study was originally reported on by the NASW Center for Workforce Studies (2009). However, as noted by Chaiklin (2010) they did not provide findings beyond the univariate level in their published work. This study is the first that identifies significant relationships and their implications among specific study variables. Several questions will be answered through this secondary study analysis. First, what is the relationship between yoga and meditation to experienced stress levels in one's physical and mental health? Understanding how yoga and meditation practices are related to experienced stress could provide direction pertaining to effective interventions in this area. Next, what is the relationship between experienced stress, and perceived work conditions (i.e., feelings toward employer, satisfaction with work and one's perception of stress) with CAM practices present? Given that not much is known about the relationship between CAM practice engagement and social workers' experienced stress, understanding these relationships might contribute to viable interventions that could reduce suffering for those

engaged in client centered social work. Other coping strategies such as exercise, avoiding and more western practices (i.e. therapy/medication use) will also be assessed.

Health Care and stress

People who work in the helping professions, such as health care, have been identified as being more likely to be exposed to high levels of stress (Dillenburger, 2004, Robinson et al., 2003, Gueritault et al., 2000, Penson, 2000, Shanafelt et al, 2002, Visser et al., 2003, Fothergill et al., 2004, Torrado Oubina et al, 1997). Health care professions noted to be at risk for high stress levels are psychiatric nurses (Robinson et al., 2003), nurses providing AIDS care (Gueritault et al., 2000), oncology (Penson, 2000), medical residents (Shanafelt et al. 2002), medical doctors (Visser et al., 2003), psychiatry (Fothergill et al., 2004) and psychotherapists (Torrado Oubina et al., 1997; Austad et al., 1992). The literature points to several interrelated factors that can lead to an increase in perceived stress among health care professionals. These include the interplay of individual, organizational and societal factors (Acker, 1999). Individual characteristics can include age (Lloyd & King, 2004), gender (Brown et al., 2003, Dillenburger, 2004), high motivation level with low return (Visser, et al., 2003; Pines, 1993), low self esteem, past personal experience with trauma, and one's perception that work is stressful (Siebert, 2005; Pauline & Walter, 1993). Organizational factors, or the nature of the human service work setting leading to higher experienced stress include lack of autonomy, role conflict, number of hours worked, increased caseloads (Um & Harrison, 1998), lack of organizational resources, lack of social support (Siebert, 2005; Pauline & Walter, 1993; Pines & Kafry, 1978; Brown et al., 2003; Visser et al., 2003; Um & Harrison, 1998, Dillenburger, 2004), providing concrete services, and relationship interactions with

chronic complex clients (Lloyd & King, 2004; Acker, 1999). Societal factors include the impact of health care reform, which has placed significant restrictions on the amount of time and quality of time a healthcare professional can allot to his or her relationship with a client while still attending to agency specific paperwork requirements (Abramovitz, 2001; Arches, 1991). The Social Work Profession is particularly susceptible to these factors.

In 2002, a British health report on stress in the workplace listed the twenty most stressful jobs; social work and medicine were in the top seven, social work being the third listed (Agnew, 2002). Jonhson et al. (2005) note that social workers, like nurses, experience high levels of emotional labor as they do front line work and are in direct contact with their client groups. Jones (2001) notes that social workers, unlike other healthcare professions, do not serve those that represent a cross-section segment of the population, they instead work almost exclusively with "those groups in which levels of need and social exclusion are highest." The above comparison is particular to social workers that are employed in the public or nonprofit sector as opposed to those in private practice (Schwartz, Tiamiyu & Dwyer, 2007). Social workers are working with disenfranchised clients in an environment most lacking in resources. Work-related stress can be debilitating and place the overall health of the health care provider at risk (Kaplan, 1990, Robinson et al., 2003, Bosman, et al., 1998; Toppin-Tanner et al., 2005).

Understanding stress reactivity can help to identify how perceived stress actually impacts on both a physical and emotional level. Stress reactivity, according to Kabat-Zinn (1990) is a series of physical responses our body goes through when faced with perceived stress. These physical responses impact our central nervous system and over

time can cause harm to our overall physical and mental health (Toppinen-Tanner et al., 2005, Hobson and Delunas, 2001). The physical impact of stress reactions includes a multitude of ailments ranging from headaches to heart disease (Toppin-Tanner, et al., 2005, Bosma, et al., 1998 & Landsbergis, et al., 1993). The mental health impacts of stress reactions can include irritability and depression, anxiety, apathy, low self-esteem (Dillenburger, 2004, Robinson et al., 2003) and other health complications (Jaffe-Gill, Smith, Larson, and Segal, 2007). Toppin-Tanner et al. (2005) in a Finnish study found that absenteeism, due to physical or psychological illness, was high among those that reported increased levels of chronic stress.

Not only do social workers deal with a more complex and chronic client population (Acker, 1999) that tend to be more ostracized in society (Jones, 2001) they are also significantly impacted by the changes in the delivery of health care. These changes in health care have placed more burdens on social workers, particularly those working in nonprofit settings (Abramovitz, 2001). They experience larger caseloads, more demands for documentation, loss of autonomy and a decrease in resources (Lynch, 1999; CDC, 1986). Controls are placed on organizations by funding sources thereby limiting the autonomy experienced by the worker (Arches, 1991). Bureaucratization for the healthcare worker is said to resemble the "worker in industry" (Fabricant, 1985 & Karger, 1981), which attempts to dehumanize a process that counts on understanding and connection. Fabricant (1985) describes this process: "social workers in schools, family agencies, child welfare settings, hospitals, and communities were expected to flexibly apply their judgment to enrich their understanding of the whole work process, enhance their skills, and assure the delivery of a quality service. Such a process and outcome was

at least possible as long as social workers maintained control over their craft…" p. 390. Arches (1991) agrees that within the bureaucratic system the worker is responsible to multiple funding agencies (local, state and federal government as well as corporations and private investors), which increases outside controls over their "craft" and further reduces their autonomy. Arches (1991) describes this processes as promoting isolation for the social worker, which is noted to be one of the factors increasing chronic stress and burnout (Corrigan et al., 1994, Stanley, Manthorpe and White, 2007).

Impact of Mindfulness

Research has indicated that mindfulness may play a strong role in reducing experienced daily stresses (Greene, 2004, Langer, 1989, Kabat-Zinn, 1990). Mindfulness holds the potential to bring equilibrium in the current moment. Mindfulness involves paying attention to and being present in each moment as it unfolds without judgment or attachment (Langer & Moldoveanu, 2000; Bishop et al., 2004; Kabat-Zinn, 2003). As awareness unfolds in the current context, mindfulness makes experiencing the novelty in each moment more possible. It directly speaks to what is in the present moment, therefore what is more likely in one's control. Mindfulness allows for a greater connection to one's body and cognition. The tension being experienced or emotion and thoughts associated to this emotion are within one's awareness, thereby allowing space for the decision to be made about whether he or she wants to hold onto the tension and assumptions or let them go. One is also more prone to perceive the situation before oneself more accurately, therefore not reacting based on false or past assumptions. By contrast mindlessness is grounded in the past or future. It is what the mind routinely does (Krasner, 2004) as one compares and contrasts what he/she experiences now to

experiences of the past. One can then project cognitions and emotions based on past experiences onto the here and now or into the future. This can lead to a stance of robbing one's senses of the novelty in the current moment, therefore the choices he or she could have in that moment. This can lead to one's perception of the environment as unmanageable therefore increase stress reactivity leading to a significant impact on one's health (Langer, 1992; Kabat-Zinn, 1990).

Mindfulness: The Practice

A mindfulness or meditation "practice" can be implemented once one becomes aware of the benefits that mindful awareness holds. Kabat-Zinn (2004) suggests that these practices are "merely launching platforms or particular kinds of scaffolding to invite cultivation and sustaining of attentions in particular ways"p.6. These practices are derived from complimentary and alternative modes of treatment and can include yoga, sitting or walking meditation, progressive muscle relaxation and following the breath. The opportunity to cultivate this level of awareness along with tools to guide the process can have a positive impact not only on one's quality of work, but can also reduce stress and improve overall health (Goleman & Schwartz, 1976; Shapiero, Astin, Bishop & Cordova, 2005; Rosenzweig, Reibel, Greenson, and Brainard, 2003; Schure et al, 2008). Environments where high levels of stress exist could potentially benefit from incorporating such techniques (Kabat-Zinn, 2004, Demick, 2000).

Informing Theories

Appraisal Theory

Theories that help inform this study include Appraisal theory and mindfulness theory. These theories borrow from the fields of psychology and social psychology.

Appraisal theory highlights how one's cognitions are related to one's emotions, and that stress and emotions should be treated as a single topic because stress always implies emotion, therefore it is part of the process (Lazarus & Cohen-Charash, 2001). The process associated with categorical appraisals is impacted by past learned experiences which lead to recurring patterns based on how one perceives a situation as either a threat or a challenge (Lazarus & Folkman, 1984). This can lead one to react to his or her environment in a way that is not goal-congruent, therefore yielding potentially undesired results.

Mindfulness Theory

The second theory informing this study, mindfulness theory, lends a perspective on how both stresses related to individuals, the relationship, and environment lead one to act in a mindless nature. This mindless nature leads one to be caught up in categories, act without thought and from a one sided perspective (Langer, 1989). It increases exposure to stress reactivity (Kabat-Zinn, 1990) and in turn, chronic stress. According to mindfulness theory, accessing one's awareness of the context as it exists in the reality of the here and now, opens one up to choices that could lead to goal attainment in the face of multiple stresses.

Relevance to Social Work

The purpose of this study is to identify what relationships exist between experienced stress and engagement in such CAM practices as yoga and meditation and other coping strategies such as exercise, avoidance and use of therapy/medication. The relevance of such knowledge would fill a gap in the field as no research to date has explored the relationship of CAM and other practices among a national sample of

practicing social workers. If engagement in CAM practices proves to have a negative impact on experienced stress, then incorporating such practices into social work academia, organizations, or social worker self study can have a lasting impact on effective work with one's clients and the emotional and physical health for the 75% of those who perceive and respond to stress in a negative way (Siebert, 2005). Siebert's (2005) study shows that 25% of social workers do not report experiencing burnout, so it would be worthwhile to identify factors that maintain this segment of the social work populations' wellbeing.

Methodology

This study will assess how engagement in various coping strategies, including CAM, is related to experienced stress for social workers. It will also explore how these practices moderate the relationship between experienced stress and job/employer satisfaction and job dissatisfaction or perceived stress among a national selected sample of NASW members.

This quantitative study is based on a secondary analysis of a national survey conducted by the NASW Center for Workforce Studies in 2007. The survey assesses NASW members' experienced stress and ways of coping. Key variables addressed in this survey include stress and how it is experienced (physical, emotional), coping styles (i.e. yoga, meditation, absenteeism, exercise, therapy/medication use, and alcohol use), level of employer and co-worker/supervisor support and perception of stress at work.

Chapter 2

Theoretical Framework

Introduction

Two theories inform this project. The first is Appraisal Theory (Lazarus, 2001), and the second is Mindfulness Theory (Langer, 1989). Appraisal Theory underscores how an individual perceives their surroundings and ultimately relates to what is before them based on these perceptions. This theory supports some of the literature on stress and hardiness, which identifies 'one's perception of situations as stressful' as the most significant factor in determining positive or negative consequences (Siebert, 2005; Pauline & Walter, 1993). Mindfulness Theory highlights how its antithesis, mindlessness, is learned and then impacts one's ability to be present in the context of reality as it exists in the here and now. Kabat-Zinn (1990) calls this "unawareness" and when it dominates the mind it can affect everything we do. This theory informs how the individual social worker may, through the process of mindlessness, build up stress reactions which without awareness lead to chronic stress.

Appraisal Theory and Affect

In assessing individual differences associated with chronic stress it may be beneficial to understand if individuals more resilient to this syndrome are higher in positive affect (PA) as opposed to negative affect (NA). Watson and Clark (1984) note that individuals high in PA tend to be more positive in their range of mood states (i.e. cheerful, excited, energetic, alert, confident). It is further noted that individuals high in PA will tend to respond more positively to life situations. Those low in PA are reported

to feel sluggish and disinterested in their environment. Those high in NA tend to be more negative in their mood states (i.e. anxious, depressed, hostile) (Watson & Clark, 1984). NA individuals are noted to feel more dissatisfied, discouraged and irritable in general. Whereas those low in NA describe themselves as calm and relaxed.

An affective trait is one's overall disposition or character, whereas one's affective state can be related to discrete emotions or overall moods. A discrete emotion is noted to be preceded by and event and lasting for only a short time (Davidson, 1994). When a discrete emotion leads to and overall way of feeling or mood then there is no longer an object that the experiencer can identify related to how they are feeling. A mood can last from hours to several days (Ekman, 1994). Dispositional affect can lead to the predisposition to negative emotions and therefore negative moods if high in NA traits. If higher in PA traits there is more of a predisposition to positive emotions and therefore positive moods. This has a direct impact not only on individual physical health but on overall organizational life.

According to Staw and Cohen-Charash (2005) the work environment is indeed experienced as a different place for those with NA as opposed to PA. Their work indicates that people higher in PA will be more likely to not only do well at the level of the interview process but also obtain more fruitful benefits throughout their work life. Whereas those high in NA were found to experience more stress while at work (Brief et. al., 1988). The assumption that people's dispositional tendency will lead them to experience varying degrees of emotional states is discussed by Staw and Cohen-Charash (2005) who focused their work on job satisfaction. The disposition of high PA may lead to appraisals based on positive experiences therefore more positive emotions. Whereas

high NA may lend itself to appraise work situations based on negative experiences leading to negative emotions and behaviors or action tendencies associated with this recall and ultimately an overall negative mood. High NA lends itself to the experience of stress reactivity, which could trigger chronic stress or burnout.

According to Appraisal Theory, emotions arise as a result of one's interpretation or appraisal of an event (Roseman & Smith, 2001). As a result of one's appraisal an emotion such as joy, sadness, fear or anger might arise. A specific characteristic action tendency such as approach, inaction, avoidance or attack is associated with an emotion. Should one appraise an event based on an unrealistic premise while at work it will lead to an intense emotion that then promotes an action tendency, which could either jeopardize or promote the work that they do. For example if one's supervisor asks to speak with him or her and the event triggers the appraisal of 'I am being given more work and this is unfair treatment, how am I going to make time to see my clients?' this may lead the individual to get angry and attack This type of a categorical appraisal of the situation could indeed lead to unfavorable results. A categorical appraisal question related to this would be: Is the event emotive-inconsistent versus emotive-consistent (Roseman, et al., 1990)? If the event is emotive-inconsistent (as is true in the prior example provided) then the individual believes that he or she has minimal control over the event, as others are the cause of the change occurring, and the change is divergent from their own goals, causing an increase in stress reactions.

The adaptive value of emotions is another element of appraisal theory. One's appraisals will influence what emotion will be elicited, which in turn will allow for one to adapt (or behave) accordingly in the situation at hand (Lazarus, 2001). In the above

example perceiving the event as unfair, getting angry and possibly attacking could lead to non-adaptive consequences (i.e. carrying the negative attitude over to clients, being possibly viewed as insubordinate by supervisor, and if a series of these events build up it could impact physical health). Perhaps inaction would have been a more effective action tendency, as the manager may have wanted to talk about the effective work being done. However, if more work was being distributed, taking a step back and engaging in the action tendency of approach via problem solving could have led to a sense of control in the situation therefore an emotive-consistent response where the change would appear congruent with one's own goals.

One's ability to maintain full awareness as close to the event as possible and recognize that action tendencies arise but do not necessarily need to be acted on can greatly improve stress levels and standing at work. Lazarus et al. (1994) notes that the saliency between the person and environment exists and that "to some extent people select, or find themselves confronting again and again, an environment context that is salient for their goals and beliefs, thereby recurrently making that environmental context an emotional one" (pg. 82). The context of emotive consistent and adaptive responses here is understood as essentially emotional and recurring. Being aware of the interaction between appraisal and action (and in particular the individuals' emotional responses to this interaction) has the potential to reduce stress by improving overall coping. Coping strategies are more possible if one can become increasingly aware of one's own internal process. This allows for alternative ways of responding, separate from, but perhaps informed by one's emotion. Mindfulness practice may be a way to continually bring

oneself back to this level of awareness so that the adaptive value of emotions can provide their full benefit.

Mindfulness Theory

Langer (1989), a social psychologist, notes that her field seeks to explore ways in which behavior relies on context. However, she began to study the concept of mindlessness, which is the antithesis to the focus of her field. She notes that mindlessness treats information as context free; true regardless of circumstances. Personal experience led her to the field of study. Langer (1989) explains that her grandmother died of a brain tumor because doctors diagnosed her complaint of feeling as if a snake was in her head causing headaches, as senility. The consensus was that senility comes with old age, which explained the nonsensical nature of her complaint. When her grandmother became more depressed they convinced her family to approve electroconvulsive therapy. Not until she died and an autopsy was conducted did they realize that her grandmother suffered from a brain tumor. She notes that not only the doctors reacted mindlessly, but her family did as well as they blindly went along with the doctors' advice, believing them to be the experts. Langer (1989) notes that mindlessness leads to one blindly following routine, "automaton" type behavior, which results in "potentially grave consequences for ourselves and others" p. 4. She and her colleagues call this level of engagement in ones environment mindlessness, which is noted to be the opposite of mindfulness. This state of mindlessness has the potential to explain how a social worker might fall into the trap of emotional exhaustion leading into experienced stress or the burnout syndrome.

Mindlessness is believed to develop through the process of being trapped by categories, engaging in automatic behaviors and acting as if there is only one single perspective (Langer, 1989). In the above example, the doctors categorized the patient as an elderly person and diagnosed her with senility, which cost her undue pain in the latter days of her life. Social work as a "craft" is a dynamic process (Fabricant, 1985). However, social workers are required to categorize their clients utilizing the diagnostic statistical manual (DSM). Likewise, managed care along with the push for evidence based practice, further demands for control over this process. This system seems to be fertile ground for a state of mindlessness in terms of entrapment in categories. Categorizing can easily lead to routine or automatic behaviors in terms of how one might treat clients. An example of the risk of automated response on the part of a practitioner is illustrated in panic disorder. Panic disorder, according to evidence-based treatment, can be resolved with medications and four to fifteen sessions of Cognitive Behavioral Therapy (Ham, Waters and Olivery, 2005). The social work profession has been forced to utilize an outcome-based model of treating such diagnosis, instead of paying attention to process in order to build the needed therapeutic alliance and appropriate holding environment. According to Langer (1989) this orientation applied to social situations leads to mindlessness because if one believes she knows how to handle a situation then she does not feel it is necessary to pay attention. Mindlessness tends to lead to "mechanically employing cognitively and emotionally rigid, rule-based behaviors" (Fiol and O'Connor, 2003, p. 58), which robs the process needed to better understand the human condition.

Mindfulness Theory promotes the belief that one can access more personal control by adopting the alternative worldview that recognizes much of our reality as being socially constructed. Distinctions can more easily be made (both implicitly and explicitly) between past and present so environmental cues no longer lead to routinized behavior. Engaging in daily routines and habits still occurs in a mindful state, however one is increasingly aware of this occurrence, therefore it is possible to make changes as needed. Mindfulness is defined as a state that can lead to being: (1) open to novel ideas, (2) alert to distinctions, (3) sensitive to different contexts, (4) aware of multiple perspectives, and (5) oriented to the present (Langer, 1997). Sensitivity to new and different contexts allows for one to be alert to the particular characteristics that one faces, which is a precursor to being able to notice when characteristics of a situation change. When working with people and within the field of healthcare, change is not only inevitable but comes fast and furious. This holds true particularly when working with clients who deal with high levels of hardship. Being able to hold multiple views is pivotal within social work. One must be able to recognize the varying perspectives of one's clients, the clients' families, social service agencies and the greater political environment impacting everyone involved. Finally, those who are oriented to the present time are able to devote more of their energy to their immediate situation (as opposed to contemplating future possibilities or ruminating about the past). By remaining oriented to one's experience of the client, the agency, or the greater political environment, one is more likely to have a sense of control over one's internal and external world. Knowing what we do not have control over can allow for problem solving to occur in an effective

way in the areas that we do have control. This may mean acceptance of the things we can not change in order to focus efforts on the things we can.

Mindfulness can be understood as a trait which holds the capacity for enhancement. Sternberg (2000) likens this capacity of mindfulness to capabilities or cognitive styles. He specifically reasons that mindfulness can interface in the areas of cognition and personality, to have both state and trait characteristics, and to be value free (i.e. mindfulness is not always superior to mindlessness). Perkins et al. (1993) notes that together these may be "considered a disposition because it has to do with how disposed people are to process information in an alert, flexible way" p. 75.

Mindfulness does seem to have a trait-like aspect. However, as noted earlier, mindful cognition and behavior are also context-dependent and can be enhanced or inhibited in a variety of ways. Mindful thinking can be impacted by the social context one finds oneself in, one's background, ability and relationships with others, and the nature of available information. Langer (1989) proposes that mindful states can be induced or made available to us when "familiar situations require more effortful processing, when situation factors disrupt the initiation or completion of automatic routines and when consequences differ substantially from expectations" p 23. Langer is proposing that mindfulness states can be accessed through the unfamiliar, which leads to having to pay closer attention (be more mindful) to understand the event/situation presenting itself. Kabat-Zinn (1990) theorizes that through specific CAM practices one can increase one's mindful abilities. Research has supported both (Shapiro et al., 2005; Rosenzweig et al., 2003; Chang et al., 2004, Bodner & Langer, 2001; Langer & Rodin, 1976; Langer & Imber, 1980). Viewing mindfulness as a type of cognition or behavior

then makes mindfulness possible to learn. Theoretically as well as empirically it seems to be a strong contributor to a more healthy way of overall living.

The following chapter will review the historical perspective and empirical literature related to CAM, mindfulness and stress.

Chapter 3

Literature review

Components of Mindfulness: A Historical Perspective

Both Kabat-Zinn and Langer look at how mindful awareness can reduce one's perceived and experienced stress thereby improving overall physical and mental health. Kabat-Zinn comes at the concept of mindfulness from a more traditional perspective related to Buddhist meditation practices, whereas Langer describes the social-psychological construct of the term. It is important to note that the roots of mindfulness are located in contemplative practices connected to both Eastern and Western spiritual disciplines. The scope of this paper does not allow for this aspect of mindfulness to be explicated upon, however, it is important to acknowledge that spirituality hold a strong influence in the study of mindfulness.

Relevance of Mindfulness

Langer (1997) defines the elements of mindfulness to include: being open to novelty; being alert to distinctions; being sensitive to different contexts; being aware of multiple perspectives; and being orientated to the current moment. One's heightened propensity towards these aspects can lead to a reduction in experienced stress, improved intrapersonal and interpersonal relationships, as well as improved overall emotional and physical health (Bormann, 2005; Change et. al., 2004; Monk, 2003; Houts, 1999; Shapiro et al., 2005). Mindful practice, derived from Complementary and Alternative Medicine (CAM) can improve one's overall capacity in this area. Mindfulness practice can include exercises such as following the breath, imagery, yoga, energy work etc. all noted to be part of CAM practice in the United States (Mehling, 2005; Lindquist, et al., 2005). These

practices are said to be “launching platforms” for cultivating mindful awareness (Kabat-Zinn, 2004).

Langer comes to the cultivation of mindfulness through the awareness of the negative impact of unacknowledged mindlessness. She therefore studies how a shift in cognitive attention can influence more mindful states. Langer (1989) conducted studies where subjects were given direction on how to use their discretion in making daily choices within the here and now context. Experimental groups improved overall compared to the control groups. Langer does not utilize specific CAM practices. Instead, she notes that by increasing awareness of one’s context, as it exists in the present reality, subjects are alerted to choices available that are rooted in the here and now. This type of awareness in the here and now will reduce stress reactivity. Langer and Bodner (2001) developed one of the first mindfulness scales measuring the propensities of both mindfulness and mindlessness. This scale not only assesses one’s propensity to be in the present moment, but also cognitive flexibility, how prone one is to seek out novel ideas as well as how prone one it to produce more novel situations, thus not being caught up in routine.

Kabat-Zinn (1990) developed a program consisting of CAM derivative practices, which has been empirically tested and shows positive results in terms of improved overall health and life involvement. This program includes such practices as following the breath, use of imagery, yoga practices, and sitting meditation. It was also noted that 40% of American adults use at least one form or more of CAM therapies (Houts, 1999). These therapies are based on healing through awareness of the body, which could also increase one’s awareness of stress reactivity, therefore building mindfulness. These practices

have grown to be more acceptable within the United States and among health care professionals (Ford-Martin, 2005).

The first attempts to professionalize Complementary Alternative Medicine (CAM) treatments in the United States began in the 1960's. From 1960-1970 CAM was ridiculed and the risks of its use were exaggerated. Winnick (2005) refers to this as the "condemnation phase." From mid 1970 to 1990, an increase in consumer usage of CAM prompted the healthcare profession to question consumer dissatisfaction with conventional healthcare. Thus began the push for scientific scrutiny as a means of controlling alternative treatments as well as quality peer review publications in CAM (Sierpina, 2005). There are now a growing number of National Institute of Health (NIH) and National Center for Complimentary and Alternative Medicine (NCCAM), funded studies examining the efficacy of CAM treatments (DeNiccu, 2005, Sierpina, 2005).

The numbers of those turning to CAM practices has grown significantly in the United States. The inclusion of such practices over the past 20 years speaks both to increased acceptance in orthodox medicine and within the lay public (Furnham, 2000). Eisenberg conducted a seven-year study which noted that more than 40% of American adults had used at least one form or more of CAM therapies (Houts, 1999). The prevalence of the use of mindfulness practice is not known to date. Though in the 2007 survey conducted by NASW 35% of those in mental health, 27% in health care and 24% in child welfare practiced meditation; and 19% in mental health, 19% in health care and 16% in child welfare practiced yoga (Arrington, 2008). So a trend toward CAM practices making it into social work can be seen here.

Complimentary Alternative Practices

Alternative means of stress reduction such as breath therapies (Scheingold, 2004) yoga and meditation (Gregutt, 2005), relaxing the major muscle groups of the body, imagery, and creating repetitive thoughts or motions, are believed to have a cumulative effect on mood, energy, anxiety, and long-term sense of well-being if practiced once or twice daily for 10-20 minutes (Scheingold, 2004 & Littman, 2001). The Rosen method is body-work conducted on a message table. Gentle, direct, non-manipulative touch is used to bring awareness to chronically tight muscles in the body allowing the client to recognize memories and feelings which are thought to have been unconsciously held down by muscle tension (Chrisman, 2005). According to the center for complimentary and alternative medicine (CAM, 2002) the following interventions can also impact stress and well being: Mind-body interventions (i.e. patient support groups, cognitive-behavioral therapy; meditation, prayer, mental healing); therapies that use creative outlets (i.e. art, music, or dance); and body-based methods using manipulation and/or movement of one or more parts of the body (i.e. chiropractic or osteopathic manipulation, and massage).

Energy therapies involve the use of energy fields. One such modality is qi gong ("chee-GUNG") which is a component of traditional Chinese medicine. Multiple energy modalities are also listed in CAM. Electromagnetic fields (EMFs) come from the earth's core as well as thunderstorms. These invisible lines of force also surround all electrical devices and can purportedly be manipulated via specific therapies. Energy therapies combine movement, meditation, and regulation of the breath to enhance the flow of qi (an ancient term given to what is believed to be vital energy) in the body. Benefits of such

energy therapies are noted to be improved blood circulation, and enhanced immune function. There are two types of energy therapies: biofield therapies and bioelectromagnetic-based therapies. The former includes gi gong, Reiki and therapeutic touch and the latter "involves the unconventional use of electromagnetic fields, such as pulsed fields, magnetic fields, alternating-current or direct-current fields." Through gi gong, Reiki and therapeutic touch it is believed that energy fields that surround the human body can be penetrated by either applying pressure and/or manipulating the body by placing the hands in, or through, these fields (CAM, 2002).

According to Lindquist, et al (2005) the most commonly used CAM therapies are: exercise, diet, massage, prayer, spiritual direction, relaxation techniques, and counseling/psychotherapy. The least commonly used are gi gong, Native American medicine, environmental medicine, hypnotherapy, traditional Chinese medicine, tai chi, and acupuncture. They also note that CAM provides significant health impact in terms of alleviation of back pain, sleep deficits, nausea, stress and anxiety. The benefits of relaxation, increased life satisfaction, and reduced stress and anxiety can be experienced not only by the patients but also by their families and the health professional administering the treatment (Lindquist, et al., 2005). A Canadian research study found that stress and hypertension were reduced as well as healthcare costs by teaching transcendental meditation (TM) to heart patients (Ruggle, 2005).

Exercise as a CAM practice

Exercise, the first listed CAM therapies, has been linked to reduce cellular aging which is caused by stress. Putermat et al (2010) found that telomere length, noted to be a biological marker associated to the wear and tear of living, genetic make-up, life style

behaviors and stress is protected with even a moderate amount of vigorous exercise. Smits & Otto (2009) conducted an analysis of dozens of population based studies, clinical studies and meta-analytic reviews related to exercise and health. They found that those who exercise report fewer symptoms of anxiety and depression along with lower levels of stress and anger. They believe that exercise should be more widely prescribed by mental health providers as a means to promote overall health.

Therapy as a CAM practice

Pope (1994) conducted a national survey involving members of the American Psychological Association's (APA) related to therapists' use of therapy. No literature was found related social workers in therapy. However, in Pope's research a large majority of psychologists who responded to the survey found therapy helpful. An increase in self-awareness or self knowledge and improved skills as a therapist was reported. However, some reported that their experience with therapy had been somewhat harmful. This was found to be related to issues of confidentiality and keeping secrets from therapists.

Resistance to CAM

There is still much resistance to welcoming CAM treatments into the world of science. An example from the New York Times (2005) noted the Dalai Lama being asked to speak about meditation and its impact on emotional control, promoting peace and compassion at the annual meeting of the Society for Neuroscience in November of 2005 initiated conflict. Some researchers recognize this field is in its infancy stages in terms of research, but are open to teachers, such as the Dalai Lama, who are proficient in its practice. Others, who signed a petition to stop the Dalai Lama from attending,

denounce this practice as they feel that it attempts to use neuroscience to support "transcendent views of the world." It appears that more and more CAM therapies are being brought into an unwelcoming environment with hopes that others will be open to as well as question the benefits that are being experienced on a daily basis.

MBSR

CAM therapy research suggests that mindfulness theory has the potential to positively affect our "workplace lives"; the place we spend perhaps the greatest amount of time (Demick, 2000). One model that has, in the last two decades, incorporated mindfulness concepts in a standardized manner is Jon Kabat-Zinn's Mindfulness-Based Stress Reduction Model (MBSR). This standardization allows for these techniques to be learned. Several studies have investigated this treatment for its effectiveness in reducing stress in health care professionals and medical students (Shapiro et al., 2005; Cohen-Katz et al., 2004; Rosenzweig et al., 2003) and for reduction of stress and improving positive states of mind (Chang et al., 2004). These studies have shown positive results. Medical students who engaged in the MBSR intervention experienced lower psychological distress compared with controls (Rosenzweig et al., 2003). In a study conducted by Shapiro (2005) results indicated decreased perceived stress and greater self-compassion in the MBSR group as compared to control. They also conclude that MBSR interventions may have a potential to enhance patient care.

MBSR Research

Cohen-Katz, Wiley, Capuano, Baker and Shapiro (2004) explain the rationale for offering MBSR to nurses, and the process of developing and implementing a program within a hospital system. In their first of three publictions, they describe MBSR as the

intervention chosen to lower burnout and improve the wellbeing among nurses in a hospital setting. They point out the daily experienced stresses nurses face as: long work hours, providing emotional support on a daily basis to patients who are suffering, negotiating within a physician-controlled work environment, and shortages within their field leading to chronic stress and burnout. Mindfulness practice was chosen, according to the authors, because it promotes qualities associated with those embedded within the nursing profession (i.e. nonjudgment, acceptance, patience, stability and kindness). The hospital staff experienced the benefits of the MBSR program through the channel of patient perspectives. They found the benefit of offering a general MBSR program for hospital patients and various providers ("physicians, nurses, residents, etc.") to include providers being more present with their patients, enjoying their work more, and experiencing periods of time in which they felt they were functioning at a higher level of competence. This study is the first to report on the use of MBSR program for practicing nurses.

Authors explain that the MBSR program consists of an eight-week meditation-based stress management program, which includes the teaching of such formal practices as mindfulness meditation, mindful yoga, and the body-scan meditation. Mindful meditation is a sitting meditation in which the subject continually brings their awareness or focus to the present moment, noticing what arises in their field of awareness. Mindful yoga is about conscious movement and stretching to facilitate awareness of the body as well as build balance, strength, and flexibility. In the body scan meditation the practitioner pays close attention to what is happening inside his/her body, without trying to change or alter what is noticed. It also includes classes on stress reactivity,

communication skills, and self-acceptance all the while keeping mindfulness at the core of each session as each subject is asked to remain mindfully aware of physical sensations, thoughts, and feelings.

Next, Cohen-Katz et al. (2005) explain the quantitative aspect of the study. They conducted a pretest-posttest control group design with randomization describing the effects of MBSR for nurses with some social work involvement. They sought out to answer the question: Does MBSR decrease burnout and psychological distress, while increasing mindful awareness and attention? The treatment group was composed of 12 subjects. The control group included 13 subjects, and the second cohort group included 11 subjects. Subjects had a mean age of 46, they were all women, 96% were Caucasian, 65% married, children with a mean of 1 (range 0-3), 62% held a bachelors degree, with an average time in the field being 21 years (range 2-41). Inclusion criteria was being a hospital employee, maintaining regular patient contact, being English speaking and over eighteen years of age. Exclusion criteria included reported active problem with substance use and/or suicidal ideation.

The research design was a pretest-posttest, wait-list control group design, with random assignment to treatment or control (wait list) group. Time one (T1) included pre-intervention measures, time two (T2) post intervention measures, and time three (T3) measures three-months post intervention. Measures included the Maslach Burnout Inventory (MBI; Maslach and Jackson, 1989) utilizing all three subscales. Each component of the measure was treated independently, and independent *t* tests were used to test differences in means between the experimental and control groups at T1 and T2. The Brief Treatment Inventory (BSI) (Derogatis, Melisaratos, 1983) a 53-item, self-

report symptom inventory a Likert-type scale measuring levels of psychological distress (somatization, obsessive-compulsive disorder, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism). A Global Severity Index (GSI) score was computed for the BSI by summing all item responses and dividing them by the total number of responses. The GSI was then converted into a standard T score. T scores of 63 or greater indicate a positive case of elevated psychological distress. The Mindfulness Attention Awareness Scale (MAAS, Brown and Ryan, 2003) measures mindfulness, and is a Likert-type 15-item self-report inventory. The MAAS assesses mindfulness states over time. This measure centers on presence or absence of attention and awareness of what is occurring at the present time. A sample item is, "I do jobs or tasks automatically without being aware of what I am doing." A total mindfulness score is computed by summing all item responses and dividing them by the total number of responses. An evaluation questionnaire was completed by the experimental group, which included both Likert-type questions and open-ended, narrative questions.

An independent t test of the MAAS (Brown and Ryan, 2003) indicated no significant findings between the control and treatment groups pre-intervention, and highly significant differences on the means post intervention ($P = .001$). Group analysis found significant changes in the treatment group between pre-intervention and post intervention, and between pre-intervention and three-month post intervention ($P = .002$). The second cohort group (wait-listed control group) showed significance within group changes once they received the intervention ($P = .04$) from pre- to post- intervention.

The MBI between group analyses indicated no significant differences between the two groups on any of the subscales at T1. However, at T2 emotional exhaustion was found to hold a significant difference (P = .050), the treatment group showed a greater reduction in this score than the wait-listed group. In the area of personal accomplishment, the treatment group also reduced their score around feelings of lack of personal accomplishment compared to the wait-list group (P = .014). A trend toward significance was found in the depersonalization subscale (lower depersonalization for treatment group compared to control group) (P = .063).

Within group analysis of the treatment group over time revealed significant reductions from initial levels of emotional exhaustion between (T2) (P = .001) and (T3) (P = .01). A trend toward significance in comparing personal accomplishment in T1 and T2 was noted for the experimental group, but this trend dropped in T3. Depersonalization scores reduced between T1 and T2 (P = .08) and T1 and T3 (P = .09). The second cohort also demonstrated significant within group changes following the intervention for emotional exhaustion (P = .01) and personal accomplishment (P = .07), and no significant changes were found in this group for the depersonalization subscale (P = .71).

GSI scores (comparison of elevated global scores pre- and post- intervention) were used when analyzing the BSI. The number of people showing elevated psychological distress decreased in both experimental (out of the 12 subjects there were three at T1 and one at T2) and control group (out of the 13 subjects there were seven at T1 and four at T2) post MBSR intervention. The Fisher exact test and the McNemar change test of association did not reveal a pre-post statistically significant difference in either experimental or control group.

The limitations of the study include the small sample size and the use of the BSI, which authors point out may not be sensitive enough to pick-up levels of stress among higher functioning subjects. The burnout syndrome is a separate construct from psychopathology. However, findings do point to MBSR having a significant influence on emotional exhaustion, which to some is reported to be the gateway to eventual depersonalization and decreased personal accomplishment. Another interesting finding is that the wait-list group improved on the MAAS prior to intervention. Several factors highlighted were; passage of time (nurses at the time of interest may have been experiencing higher levels of stress which could have diminished or which they learned how to cope with), initial measures were taken in the winter and the second during spring, an exposure to mindfulness during the introduction while obtaining subjects for the study (expectations that a stress reduction program would be helpful could have effected their experience of stress and symptomology around it).

The last of the three articles reported the qualitative data analysis of the nurses' participation in the MBSR program (Cohen-Katz, et al., 2005). Forty-six documents were analyzed which included "getting to know you" forms, weekly evaluation forms, final evaluation forms, sixteen unsolicited e-mails, in-depth interviews (two types: 4 graduates interviewed by a journalist for the hospital news letter, and two interviews with forth author who was the Vice President of Clinical Services), and a focus group (including seven of the twenty-five members).

Grounded theory provided the guide for the data analysis. Collaborative efforts by the research team resulted in an initial 32-item codebook. It was tested using a random sample of five interview documents. Content and theme for each of these

documents was separately coded by three different individuals, and through a consensus process (two of the three researchers had to agree on the coding for each paragraph of the five "test transcripts") leading to a new 6-item codebook. NVivo (Gibbs, 2002) software was used for analyzing data. There were six final MBSR codebook items, which included:

1) Reasons for participating in the MBSR program (broken down into family and work stressors)

2) Challenges of participating in the MBSR program (these included restlessness, physical pain and/or medical issues, dealing with difficult emotions, work related issues (logistics), weather and driving, finding time to do the homework, feeling distracted by other group members and guilt)

3) Benefits of participating in the MBSR program (increased relaxation/calmness, self-acceptance/self-compassion, self-awareness, self-care, feeling more self-reliant, decreased physical pain, improved sleep)

4) Impact of MBSR on relationships (feeling more connected to others in the group, wanting to fix others in the group, communication, increased presence in relationships, able to be less reactive/defensive in relationships, increased self-confidence in relationships, teaching techniques to others, and increased empathy/appreciation of others

5) Overall value of the course (sample quote: "I totally enjoyed being part of the stress management program. It's a very effective method to help healthcare workers. Patients and coworkers benefit from the change in me. I hope many others get to do this class!" pg. 82)

6) How to obtain the practice over time (sample quote: "I want you to know I just bought a book on mindfulness and am enjoying it tremendously!" pg. 82)

Findings of this study (Cohen-Katz, et al., 2005) indicate that MBSR not only can transform individual relationships (being able to remain more fully present with others, being less reactive at work and at home, listening) but the work environment as well (one nurse supervisor had become fairer and more consistent, another nurse became less interested in gossiping and complaining, and others noted becoming more present with their patients).

Another study evaluating the impact of MBSR on health care professionals (medical students) reports the benefits of this technique on reducing stress. Rosenzweig, Reibel, Greenson, and Brainard (2003) conducted a prospective, nonrandomized, cohort-controlled study to examine the effectiveness of MBSR intervention with medical students. Subjects consisted of all second year medical students (n=302). Less than half (n=140) were randomly assigned to a ten week MBSR training seminar, the remainder (n=162) or the parallel cohort controls were assigned to a didactic seminar on complimentary medicine. The group status was the independent variable for the study.

The Profile of Mood States (POMS) was administered pre and post seminar. It is a factor analytically derived inventory measuring six identifiable mood or affective states: Tension-anxiety, depression-dejection, anger-hostility, vigor-activity, fatigue-inertia, and confusion-bewilderment (these were the dependent variables in the study). In addition to these six subscale scores on a total mood disturbance (TMD) can be obtained form the POMS as a single, global measure of affective state. The POMS was noted to exhibit

good internal consistency (0.84 for confusion, to 0.95 for depression) and test-retest reliability (0.65 for vigor to 0.74 for depression).

A Multivariate analysis of variance (MANOVA) for repeated measure design was used to examine pretest-posttest changes in each group on all six POMS subscales simultaneously. Univariate analysis of variance (ANOVA) was used to detect significance of TMD and also to examine within group differences in the POMS subscale scores. Effect size estimates were calculated using standardized mean pretest-posttest differences in MBSR, and control groups to determine clinical significance of observed changes. MANOVA revealed significant group x time interaction indicating difference in pre-seminar to post-seminar between the two groups ($p < .01$). This finding led researchers to perform a univariate ANOVAS to test for group x time interaction effects on each individual POMS scale. Statistical significance found between MBSR and the control groups TMD scores ($p<.0001$), ($p < .001$) for tension-anxiety and vigor-activity scores, ($p = .0006$) for fatigue-inertia and ($p = .02$) for confusion-bewilderment. Pretest-posttest differences within groups univariate ANOVA revealed tension-anxiety ($d = -.23$, $p = .009$) and confusion-bewilderment ($d = -.24$, $p = .009$) subscales across the ten-week observation period in the MBSR group whereas a statistical increase was found on the vigor-activity subscale ($d = .25$, $p = .006$). Subject TMD scores decreased by about seven points in the MBSR group ($d = -.18$, $p = .05$). Tension-anxiety ($d = .28$, p - .0008), fatigue-inertia ($d = .49$, $p<. 0001$), TMD ($d = .30$, $p = .0003$). It is noted that even though the effect size estimates are small, and small in magnitude they still suggest that involvement in MBSR program can improve ones overall psychological health during a time in which mood disturbance is more likely to increase**.** At the conclusion of the

seminar 98% (130) of the subjects stated they would recommend MBSR to other medical students and their patients and 60% to 80% rated themselves as better able to deal with stress. This study holds several limitations. First, there was no randomization of subjects, and tasks were not equal for each group, as the control group did not require a 20-minute take home assignment and the MBSR group did. A mindfulness measure was not used in this study, so even though there was overall improvement reported with the MBSR intervention, the reason is not clear.

Chang et al. (2004) studied the effects of MBSR intervention on pain, positive states of mind, stress, and mindfulness self-efficacy. Measures of each of the variables were collected at two time intervals: one prior to participants engaging in an 8-week MBSR program and the other following program completion. Forty-three participants (college students) were recruited for this study and twenty-eight completed it. Of these twenty-eight over half were women (57.1%), with a mean age of 46.52 (range 21-74), SD = 12.17), and 93% self-identified as Caucasian. No significance was found between completers (n = 28), and those who did not return for study (n = 15) in terms of above demographics as well as other measures.

Four self-report measures were used to collect data for the study. The pain rating scale (Koopman, Hermanson, Diamond, Angell, & Spiegel, 1998; Spiegel and Bloom, 1983) which evaluates the frequency, duration, and attribution of pain. Two questions were used for this study (1) “how much pain are you experiencing at the moment?” and (2) “how much suffering and hurt are you experiencing at the present moment?” The Positive states of mind (PSOM; Horowitz, Adler, and Kegeles, 1988) scale is a sixteen-item measure examining one’s experience of different positive states of mind during the

previous week and shows acceptable internal consistency (0.77 to 0.81**).** The perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) measures perceived levels of stress in the past month using a five-point Likert-type scale from 0 (never) to 4 (very often), and displayed strong internal consistency in previous research (Cohen et. al., 1983). The Mindfulness self-efficacy (MSE; Luskin & Abramson) is a fifteen-item scale assessing whether subjects can maintain non-judgmental awareness during different situations (e.g. being hungry and reaching out for junk food; when a significant other is criticizing a bad habit; when experiencing pain of eight on a scale of 1 to 10). This measure uses percentages on a scale with 0 per cent representing 'no confidence,' 50 per cent representing 'moderate confidence,' and 100 per cent representing 'complete confidence.' Mean score is computed by averaging the percentage of the 15 items. The MSE displayed good internal consistency (0.82) in this study.

ANOVA was used to assess changes between baseline and post-intervention scores on the PSOM, PSS, and MSE totals. The Wilcoxon matched pairs signed-ranks test was used to measure the differences in pain and suffering related to the violation of normality in the distribution of the pain and suffering variables.

There was a significant reduction in perceived stress scores [F (1.27) = 7.29, p = 0.012], significant improvement in positive states of mind scores [F (1.27) = 17.98, p = 0.001] and meditation self-efficacy scores [F (1.25) = 14.32, p = 0.001] following the intervention. PSS total scores were negatively associated with those on the MSE (r = -0.72, $p < 0.001$) and PSOM (r = -0.59, p = 0.001). While the PSOM scores were positively associated with those on the MSE (r = 0.59, p = 0.002). The different scores for both the PSOM and the MSE from baseline were significantly correlated (r = 0.48, p

= 0.013**).** Findings point to the effectiveness of MBSR in reducing stress perception, maintaining a non-judgmental awareness in difficult situations, and experiencing higher levels of positive states of mind. No significant reduction in participants' experience of pain and suffering was found from baseline to post-intervention.

The study does have several limitations in that there is no control group so it is difficult to determine if findings are indeed related to the intervention as opposed to other factors, and the small sample size does not allow for generalization to be made. Attrition in the study was reported to be associated with the time commitment required of MBSR participation. It is unclear exactly how much time is required for the benefits of a practice to be experienced, and since time commitment might negatively influence an already busy health care professional to participate, Greene (2004) sets out to address this issue.

Greene (2004) assessed the directionality of the relationship between meditation and stress via a path analysis. In particular, this study examines stress reactivity (conceptualized as the extent of one's reaction to an individual stressor) and its role in meditation's healthful effects. Author also assessed the importance of the various aspects of meditation practice, including length and frequency of meditation.

The study sample included 180 members who practiced meditation in seventeen different Shambhala Centers located across the United States. Subjects who practiced this form of meditation were chosen for several reasons, one of which being that the practice is similar to those practices found in MBSR or the relaxation response. The sample was 41% male, 59% female, they ranged in ages from 23 to 84 (mean of 46.2, SD

= 11.47), with an average number of years of education of 17.9 (SD = 2.55), and the sample was 33.9% single, 46.1% married, and 20% divorced or widowed.

Recruitment was conducted utilizing both e-mail and postal services. Data was collected at two time periods (two weeks apart) in order to establish causality in the relationship between stress reactivity and recent meditation. Study assessments included: the Weekly Stress Inventory (WSI); the SF-36V, a health questionnaire adopted from the SF-36; and a brief meditation questionnaire developed by the author.

The WSI is an 87-item self-administered questionnaire yielding three scores: an event score (E), indicating number of stressful events in one week; an impact score (I), utilizing a 7-point scale totaling the perceived stress ratings; and a reactivity score, which is the impact score divided by the event score, or the average impact per minor stressor (I/E, or stress reactivity). Each of the items is a minor stressor, or hassle (e.g., "worked late or overtime") and respondents indicate which happened to them over the past week along with level of stress on a 7-point Likert-type scale.

The meditation questionnaire addressed how much the respondents had meditated recently, how often, and for how long per session, along with years of meditation practice, time spent on meditation retreats, time spent with a spiritual teacher, and type of meditation practiced (which could be related to stress reactivity). The meditation questionnaire and the WSI were administered at time 1 and time 2.

The SF-36V (Kazis, Wilson, Rogers, & Lee, 1998) is a self-report questionnaire containing eight subscales, all measuring on 5-point response scales (adding up to 37 items): 1) physical limitations due to health problems; 2) social limitations due to health problems; 3) limitations in usual role activities because of physical health problems; 4)

bodily pain; 5) mental health (psychological distress); 6) limitations in usual role activities due to emotional difficulties; 7) vitality; and 8) general health**.**

As hypothesized, a negative correlation was found between stress reactivity and amount of recent meditation. Spearman's *r s* was used for these correlations. It is noted that the correlation was weak, but significant at the .10 alpha level (*r s* = -.12, *p* = .115) when frequency of recent meditation was examined. A strong negative association was found between stress reactivity and health. Additionally, when examining the differential importance of recent meditation verses lifetime meditation experience, recent meditation was associated with emotional health (*r s* = .18, *p* = .023), and vitality (*r s* = .16, *p* = .033), whereas lifetime meditation experience was relatively unimportant. Also, the number of meditation sessions per week correlated more significantly with the mental health subscale of the SF-36V (*r s* = .18, *p* < .05), whereas the total time spent meditating in the past week did not (*r s* = .08, *ns*).

Results of this study (Greene, 2004) indicate that one does not need to spend long periods of time meditating at one time. Shorter periods, more often throughout the week were found to be beneficial to one's health. However, recent practice proved to be more beneficial on experienced daily stress than did life long practice, pointing to the need to engage in a mindfulness practice as important to this process. Benefits of such practice was also reported in and inner city program among minority patients.

MBSR showed success when provided for an inner city program comprising of minority patients living with emotional, physical and environmental stress (Roth, 1997). Those that participated reported "dramatic personal changes in a relatively short period of time." Changes included "greater peace of mind; more patience; less anger and fewer

temper outbursts; better interpersonal communication; more harmonious relations with family members; improved parenting skills; more restful sleep; decreased use of medications for pain, sleep, and anxiety; decrease or cessation of cigarette smoking; weight loss; greater acceptance of aspects of life over which they have no control; greater self-knowledge; and a marked improvement in overall sense of well-being" (Roth, 1997).

In a review of the literature of MBSR, Bishop (2002) lists sixteen studies (four controlled and eleven uncontrolled) that report reduction of stress and symptoms related to the following conditions: cancer; depression; anxiety; chronic pain (mostly muscle skeletal); emotional distress; fibromyalgia; binge eating disorder; diabetes and; hypertension. Bishop notes the need for an approach that is a "psychosocial treatment approach that can effectively assist patients to self-manage their stress and emotional distress, and/or treat mood and anxiety disorders commonly associated with chronic illness, would be highly valued in most treatment settings (pg. 8)." This would hold true for the professionals providing care for said patients. According to Ludwig & Kabat-Zinn (2008) many health care professionals have been exposed to mindfulness as interest in the topic has grown in the past thirty years. In 2007 alone, more than 70 scientific articles were published on mindfulness (Ludwig & Kabata-Zinn, 2008).

The concept of mindfulness has clearly made its way into science. Mindfulness is a personality construct related to cognition and behavior that all human beings posses. It, therefore, has the potential to be enhanced. The prevalence of the propensity for mindfulness among social workers is not known to date, and neither is the percentage of social workers participating in some form of CAM practice. Research to answer this

question is necessary; enhancing one's mindful capacity could hold the potential to reducing experienced stress and in turn reducing burnout.

The literature points to emotional exhaustion as being the most experienced symptom of burnout within the field of social work. Chronic burnout can lead to psychosocial and physical problems, which impact patient care and self-awareness. As the environment of health care is going through significant changes it is expected that levels of stress will be present and at times severe, resulting in chronic stress and burnout syndrome for a majority of practicing social workers.

Stress and burnout

Lloyd, King & Chenoweth (2002) also conducted a literature review to answer two questions: are social workers more exposed to levels of stress than other health professions and what are the factors that contribute to stress and burnout among social workers? The author's findings were similar to the conclusions as those of Soderfeldt & Soderfeldt, (1995); no clear evidence was found indicating that the social work profession carries with it higher levels of stress or burnout than other related fields. Research conducted by Lloyd & King (2004) support this finding when comparing occupational therapists to social workers. Lloyd, King & Chenoweth (2002) also conclude that demographic variables as well as individual social worker characteristics do not relate significantly to burnout. However, other studies conclude that demographic variables such as age, gender and marital status do influence burnout (Brown, Prashantham and Abbott, 2003; Pauline and Walter, 1993). Organizational variables such as, work pressure, workload, role ambiguity, and relationship with supervisor were identified as predictors of burnout (Lloyd, King & Chenoweth, 2004, Brown,

Prashantham and Abbott, 2003) with the exclusion of role ambiguity in one study (Um and Harrison, 1998). In conclusion, authors note that development of strategies to alleviate stress is needed as the literature review proved to be lacking in this area.

One of the first studies on the health care professionals' chronic stress called the phenomena "tedium." Pines and Kafry (1978) studied the subjective experience of physical, emotional, and attitudinal exhaustion in 129 subjects working in the field of social services while they were in attendance at a workshop on occupational burnout. They called the phenomena "tedium", which they report to be characterized by feelings of strain and "burnout." This study is relevant to review, as it is one of the first to assess what characteristics led to the experience of burnout or tedium. Demographics of the subjects involved in this study included; 84% female subjects out of at total subject base of 129, 73% caseworkers, 13% homemakers and 14% supervisors. The data was collected prior to the workshop commencing.

They studied two specific characteristics of stress in social work, which included internal (intrinsic properties of working conditions) and external characteristics (social aspects in terms of properties of one's work environment) as they related to the tedium framework. Organizational variables (pay, caseload, job level, and work schedule) as they relate to tedium and satisfaction were also looked at. Internal work characteristic variables included variety, autonomy, significance, success, and feedback (from the work itself). External characteristics included work relations, work sharing, support from co-workers, time-out from work, and feedback from colleagues and supervisors.

Tedium was measured on a 5-item questionnaire which included variables of feelings "depressed", "burnout", "run-down", "tired", having "good days" (reversed), all

measured on a 7-point scale. Correlations with this measure ranged from .58 to .81. The Hackman and Oldham's Job Diagnostic Survey (JDS) measured internal characteristic variables of variety, significance, success and feedback. The Kunin's Faces Scale (Kunin, 1955) was administered to measure overall job satisfaction. The authors developed a 7-point scale to measure the other variables (i.e. work sharing, support as well as "various attitudinal questions") and discretionary time was measured on a 17-point logarithmic time scale, which ranged from 7.5 minutes to 16 months. Organizational variables were based on the participants report.

Results indicate that high levels of tedium ("most extreme forms") were experienced by 11% of the social workers in the study. Authors note "Tedium was significantly ($p < .001$) and negatively correlated with such job satisfaction indices as work attitudes (-.46), overall job satisfaction (-.58), liking the job (-.65), liking the caseload (-.34), and liking the agency (-.30)" (Pines and Kaffry, 1978, p. 502). Tedium was conversely positively correlated with a desire to leave the job (.58) and developing a negative attitude toward clients (.48).

A regression analysis was performed to better understand the higher degree of tedium experienced. The overall multiple correlation (R) for the internal characteristics was .33 ($p < .03$) with each variable as follows, variety (-.14), autonomy (-.15), success (-.16), significance (-.13) and feedback (-.31). For the external characteristics it was .44 ($p < .001$) with each variable as follows; social feedback (-.36), work relations (-.32), work sharing (-.28), support (-.29) and time out (-.29). Authors conclude that the multiple correlation analysis supports the tedium framework for both characteristics, though the external characteristics appear to contribute more to tedium experience for

subjects than internal characteristics. Of the internal characteristics only feedback -.31 ($p < .05$) was significantly correlated with tedium. In terms of the organizational variables pay satisfaction (.01) showed no correlation with tedium or any other indices of job satisfaction, though it did correlate positively with agency evaluation (.26). Caseload (.21) was positively correlated with tedium and with the development of negative attitudes toward the client (.24) as well as wanting to leave the agency (.25). It had a negative correlation with liking the job (-.28), liking the agency (-.21) and overall job satisfaction (-.29). The highest mean value for satisfaction was for direct contact with clients and interaction with co-workers. While the lowest mean value for satisfaction was paperwork and time devoted to it.

Limitations, which warrant caution in interpreting and generalizing results of this study, include subjects being sampled through a nonrandom convenient sample, and results relied solely on subjects' retrospective reports, which are subject to recall and social desirability biases. Results of this study represent associations between the variables only as it is a cross-sectional design study. However, it does contribute, as one of the first studies, to some of the dimensions related burnout, one of which being working with clients and social support of co-workers as reducing it, and amount of paperwork as contributing to it.

A study conducted among Indian human service employees while in attendance at a continuing education conference (Brown, Prashanthan and Abbott, 2003) many years later found the similar result related to social support being strongly related to burnout. Brown, Prashantham and Abbott (2003) studied the relationship between perceived social support, burnout and anxiety with human service professionals in India. Anxiety, noted

to predict vulnerability to stress, was controlled for in this study, and they predicted that perceived social support would relate negatively to burnout.

By using convenient sampling they asked for voluntary participation of 151 professionals who were attending a continuing education clinical training in Vellore, India. One-hundred-and-thirty- seven subjects (42 males and 95 females) completed the study protocols. A variety of human service disciplines were represented, they included social workers (10.1%), nurses (10.1 %), counselors (9.4%), child welfare workers (12.3%) and educators (17.4%).

The study protocols included a demographic questionnaire, the 16 Personality Factor Test, the Social Network Assessment Profile (SNAP) which captures information about four different types of relationships (family, work, social and other) (Brown, Prashantham & Abbott, 2003) and the Maslach Burnout Inventory (MBI). A hierarchical regression analysis was conducted and results indicated a significant inverse relationship between perceived social support and burnout, even after controlling for anxiety. The percentage of variance in burnout accounted for by social support with anxiety taken into account was done through an examination of square semi-partial correlation for perceived social support ($r\ 1(2.3) = 0.04$, $p < 0.018$). Results indicate that both anxiety (10%) and perceived social support (4%) contribute to the variance of burnout. A further analysis was conducted to ascertain which burnout subscales were most strongly associated with perceived social support. Results indicate that perceived social support predicted emotional exhaustion and depersonalization after taking anxiety into account.

Through further analysis Brown, Prashantham and Abbott (2003) assessed which part of the subjects' social network contributed most to the inverse relationship between

social support and burnout. Findings suggested that support from colleagues and other non-familial/non-social relationships predicted greater amount of variance in burnout, and perceived social support from family and social subgroups held no significance. The variable of gender was also found to have some significance in this study. Males tended to hold a stronger effect size in the relationship among personality, social support and burnout. For males, social support accounted for approximately 13% of the variance of burnout after anxiety was controlled for suggesting that for Indian males social support is more closely related with burnout than Indian females.

A similar sampling method (convenient sampling) as that of that the latter two studies, was applied among social workers in New York area agencies. Acker (1999) looked at the impact of working with a high caseload of severely mentally ill (SMI) patients. She examined job satisfaction and burnout as it related to degree of involvement with clients with severe mental illness (SMI). Social workers associated with outpatient mental health settings in NY in both rural and urban areas (n=128) were chosen through convenience sampling procedures. Ninety-three of the subjects were female and the age ranged between 40 and 49, eighty were married, twenty-three single, twenty divorced, and 92 had at least one or more children. Median length of time holding a MSW degree was 4 to 9 years and twenty-five had recently graduated from a MSW program.

Four hypothesis were tested which predicted (1) a negative correlation between involvement with clients with SMI and job satisfaction, (2) a positive correlation between involvement with clients with SMI and emotional exhaustion, (3) a positive correlation between involvement with clients with SMI and depersonalization and (4) a negative

correlation between involvement with clients with SMI and a feeling of personal accomplishment. Measurements used included the MBI, the Job in General Scale (JIG) measuring job satisfaction, and a scale developed by author measuring extent to which social workers worked with SMI clients. It was a six-item, seven point Likert-type scale and the items included categories that SMI clients might fall into such as schizophrenia spectrum disorders, major affective disorders, and poor functioning in areas of daily living. The alpha coefficient for this scale is reported to be .81.

Data for this study was analyzed using Pearson's product moment correlation coefficient multiple regression, performed with several predictor variables that included percentage of time providing psychotherapy, percentage of time providing concrete services, and adequate mechanisms of support. ANOVA was conducted.

Results indicate that social worker involvement with SMI clients correlated positively with two of the burnout syndrome subcategories of emotional exhaustion ($r = .34$, $p < .01$) and depersonalization ($r = .21$, $p < .05$). Social worker involvement with SMI clients did not correlate with job satisfaction and personal accomplishment. A multiple regression analysis indicated that the set of predictor variables which included percentage of time providing concrete services, percentage of time doing administrative and supervisory work, adequate mechanisms of support and involvement had significant relationship with emotional exhaustion. Social workers with jobs requiring devoting a higher percentage of time doing concrete services were more emotionally exhausted and expressed lower levels of personal accomplishment. Adequate levels of support were associated significantly with higher scores on the job satisfaction scale ($r = .35$, $p <0 .01$) and with lower scores on the emotional exhaustion scale ($r=-.23$, $p<0.01$). Also found

was a negative low correlation between involvement with clients with SMI and adequate support ($r = -.21$, $p < 0.05$), and recent graduates with less work experience and less family responsibilities were more likely to consider quitting their job. The percentage of time devoted to doing concrete services was correlated significantly with intentions to quit the job. Satisfaction with salary correlated negatively with intentions to leave the job. Author notes that recent graduates do more concrete services than older and more experienced social workers and they were also less satisfied with their salaries than older social workers. These findings indicate that social workers are impacted negatively by the type of work they do. Level of work engagement, social support, and age of workers all impact burnout, especially the subscale of emotional exhaustion, which can lead to a damaged therapeutic alliance and poor health for the worker.

The next study to be reviewed uses a random selection sampling of clinicians working in the state of Florida. Um and Harrison (1998) evaluated Koeske and Koeske's (1989, 1983) stress-strain (burnout)-outcome model of burnout. This model posits that there is a relationship among specific variables, and linked stressors with outcomes. Strain or burnout was perceived as being a mediating factor arising from perceived job stress predisposing one to negative outcomes noted to be job dissatisfaction and intent to quit one's job. According to the model negative outcomes were to be exhibited by those "who are burned out under conditions of perceived stress" (Um & Harrison, 1998, p. 104). Both exogenous (independent, external to the model such as role ambiguity, unclear or incomplete expectations of one's work position regarding one's role performance), role conflict and social support, and endogenous factors (caused by

variables in the model) such as coping strategies, burnout (or job strain), and job dissatisfaction were explored in this study.

Subjects were chosen through random selection. Out of 2,780 registered clinical social workers in Florida 506 were selected using a table of random numbers. Ultimately there were 166 valid responders 91 % of whom were primarily white, with a mean age of 45.8 (SD = 10.05, median = 43), 75% were female and 67% married.

A packet of sixteen surveys were mailed to subjects. These included a self-report questionnaire measuring role conflict and ambiguity (Rizzo, House, and Lirtzman, 1970). Role conflict items were divided into three groups and role ambiguity into two groups to take measurement errors into account. Coefficients of internal consistency ranged from .92 to .72. Burnout was measured utilizing the emotional exhaustion subscale of the MBI (authors note this to be the measure Koeske and Koeske's (1986) used) and only the frequency response was used. This scale carried an internal consistency reliability of .90. A twelve item measure developed by Caplan, Cobb, French,Van Harrison, and Pinneau (1980) was used to measure the moderating variable of social support. This measure looked at supervisors, coworker and spousal/friends support. The supervisor support data carried a reliability coefficient alpha of .92, the coworker support data was .82 and significant other's support was .87. Coping strategy was measured using Latack's (1986) Job Stress Coping Scale (JSCS). It was divided into two parts consisting of actions (external control) and cognitive reappraisals (internal control). Alphas for this data were .77 and .78 respectively. Finally job dissatisfaction was measured using a subscale of the Job Descriptive Index (JDI) (Smith, Kendall, and Hulin, 1969). The work itself (WI)

subscale was used which specifically measures intrinsic job dissatisfaction of one's work environment. The WI carried a coefficient alpha of .78 for the data.

The LISREL 7 (Joreskog & Sorbom, 1989) was used to examine the causal relationships between the various variables as it allows for statistical analysis on two levels (1) overall model fit by providing chi-square goodness-of-fit test, goodness of fit index (GFI) or adjusted goodness-of-fit index (AGFI), and (2) assessment of individual components' fit measures. The proposed model represented a good fit with a chi-square of 48.69 and 44 degrees of freedom ($p = .290$). The GFI was .955, and the AGFI was .920, both representing a good fit. Gammas (Gamma s) and betas (Beta s) used as tests of statistical significance. Role conflict was found to positively affect both burnout (Gamma11 = .570) and job dissatisfaction (Gamma31 = .333) with a .05 level of significance. Social support was found to negatively affect burnout (Gamma13 = -.331 and coping strategy negatively affected job dissatisfaction (Beta32 = .263). In terms of the theorized model, social support was found to be positively effected by coping strategies, and role ambiguity was found to have a positive effect on job dissatisfaction while social support negatively affected job dissatisfaction (Gamma33 = -.27, $p < .10$). Burnout was found to have a negative impact on coping strategy, and a positive impact on job dissatisfaction (Beta31 = .189, $p < .10$). Interestingly, role ambiguity, which was expected to hold a positive relationship to burnout, ended up having a negative one (Gamma12 = -.119).

This study (Um and Harrison, 1998) found that burnout increased when perceived role conflict increased, role ambiguity did not have a significant effect on burnout, and social support held a negative significant effect on burnout (burnout decreased when

social support increased). Coping strategy was not significantly impacted by burnout, though it did have a significant, negative, direct effect on job dissatisfaction ($p < .05$). With increase in coping, a perceived decrease in job dissatisfaction was experienced. Burnout (emotional exhaustion) was not found to impact job dissatisfaction. Social support did significantly impact job dissatisfaction, particularly related to coworker support. The authors conclude that any focus on change within the individual social worker will be pointless as findings indicate that individual coping held little effect on burnout. What did develop as relevant to burnout and job dissatisfaction are the stressors related to such organizational variables as role conflict and conflict within organizational policy. Authors conclude that change must come from within the work system related to actions taken to reduce stress and improve supervision. These are important findings, as we cannot ignore the impact the organization has on the process of burnout. However, if social support is positively impacted by coping strategies and an increase in social support resulted in a decrease in burnout, then wouldn't coping strategies be relevant, as they could influence burnout indirectly via increasing support?

In a study conducted by Vissser et al. (2003) organizational stressors (as with Um & Harrison, 1998 study) were found to contribute to burnout more than difficult patients, and social support remained steady in terms of its negative relationship with burnout. Vissser et al. (2003) sought out to investigate the actual levels of job stress and job satisfaction among Dutch medical specialists, the factors contributing to each and the effects of each on burnout. A random, nonstratified sample of 2400 Dutch medical specialists was selected from 14, 540 who worked mostly in hospitals. A questionnaire was mailed consisting of the following instruments: Consultants' Mental Health

Questionnaire (to assess work-related stress consisting of 5-point rating scales); the MBI to assess burnout; the Multidimensional Perfectionism Scale (shortened, 8-item version) to measure perfectionism; the 4-item communicative responsiveness scale (assessing ability to listen and communicate with those experiencing distress); VOS-D measuring social support from all areas of ones life (friends, family, partner, social, colleagues, supervisors); Consultants' Job Stress and Satisfaction questionnaire measuring stressful and motivating job aspects. Ad hoc questions were included assessing how subjects relaxed (sports, hobbies, relaxing activities) as well as questions pertaining to life event such as illness or death of someone close. Personal characteristics assessed included gender, age, relationship status, and having children younger than age 18. Job characteristics were also assessed, they included; type of employment and hospital, specialty, hours worked weekly, being in charge of colleagues, administrative responsibilities, and experiencing merges or reorganizations. In terms of perceived working conditions authors assessed degree to which one experienced control over the work environment. Six items were used related to assess degree of control; amount of work, department policy, availability of support, leave, manner of carrying out the job and arrangement of the job.

Representativeness was tested using χ^2 tests to compare study data with that of those registered nationally. χ^2 tests for reporting specialty and gender also utilized to compare the respondents and non-respondents, while t-tests utilized for age, stress and satisfaction. Effect sizes, as opposed to p values were used as main outcome values due to the large sample. Stepwise linear regression analysis was performed to determine the contribution of personal characteristics, job characteristics and perceived working

conditions to prediction of stress and satisfaction. Also all selected variables were combined in an overall analysis. Logistic regression analysis was used to calculate odds ratios (ORs) for selected variables. Three dimensions of burnout were considered as dependent variables and the independent variables were stress and satisfaction.

High or very high levels of stress were reported by 55% of the respondents, whereas high or very high levels of satisfaction were reported by 81%. Stress and satisfaction were found to be inversely related ($r = -0.25$; $p < 0.001$). Personal and job characteristics explained only 2%-6% of the variance in stress and satisfaction, whereas perceived working conditions explained 24% of the variance in stress and 34% of the variance in satisfaction.

In this study Visser et al. (2003) also found that emotional exhaustion was impacted by both job stress and job satisfaction (41% of variance explained). Emotional exhaustion is likely to emerge when stress was found to be high (OR 4.94, 95% confidence interval 3.09-6.26) and satisfaction low (OR 3.02, 95% confidence interval 2.39-3.81). Depersonalization and personal accomplishment were less impacted by stress and satisfaction (13% and 11% of variance explained). Findings suggest that high stress levels and low satisfaction levels will most likely lead to emotional exhaustion, the central aspect of the burnout syndrome. Time pressures in terms of work intruding into one's personal life and a pressured workload impacted one's ability to work to one's standards, which in tern contributed to job stress. Job satisfaction depended on how well managed and resourced they felt. These findings point to organizational stressors (long hours, not being able to work to one's standards due to increased caseloads, lack of

perceived support by colleagues and organization and decrease in autonomy) as contributing factors to burnout verses “emotional-laden patient contacts” (p. 273).

Lloyd and King (2004) concur with Visser’s results, as they also found that organizational variables contribute to the relationship of burnout more so than personal variables. This study looks at the prevalence of burnout in two fields, social work and occupational therapy, as well as possible contributors to burnout. The focus of their study (a cross-sectional survey design) on experienced burnout of two fields within mental health, social work and occupational therapy, hypothesized that social workers would experience higher levels of burnout and those working in community settings would also report higher levels of burnout than practitioners in inpatient settings. The study subjects included 304 Australian mental health occupational therapists and social workers. The full MBI was used in this study. Explanatory variables measured were; work activity, level of experience, time in current position, profession, demographic variables (age, gender), client groups, and type of service team. Subjects included 196 (64.4%) occupational therapists (91% were women) and 108 (35.6%) social workers (64% female). Occupational therapists had a significantly greater percentage of females than did social work (χ^2 (1) = 33.14, p = 0.001). There was also a significant age difference between occupational therapists and social work, 117 (59.7%) occupational therapists were between the ages of 20-30 compared to 18 (16.7%) of social work.

Mean scores of the MBI were calculated to identify the levels of burnout in the two allied health fields. For the sample as a whole the MBI mean scores were 22.7 (SD = 9.9, range = 2-52) for emotional exhaustion, 6.1(SD = 4.9, range = 0-26) for depersonalization, and 36.4(SD = 5.9, range = 19 – 48) for personal accomplishment. No

statistical significance was found between the two groups after comparing the two means using a t-test for independent samples. The scores for each of the burnout subscales for the subjects as a whole include; 173 (57%) positive for emotional exhaustion, 98 (32.7%) were positive for depersonalization and 26 (8.9%) were positive for low personal accomplishment. Differences in burnout scores between professions were investigated using Chi-square tests, no significant differences were found. Higher levels of activity in general clinic work was associated with higher personal accomplishment ($F = 16.0$, $df = 1$, $p < 0.001$). Evidence was also found that younger age ($F = 7.8$, $df = 1$, $p < 0.006$), and greater amount of time spent in case management ($F = 7.6$, $df = 1$, $p < 0.00$) were associated with a higher score on the level of depersonalization.

Findings indicated that high levels of emotional exhaustion were present in each profession along with moderate levels of depersonalization and diminished levels of personal accomplishment. Age as well as greater percentage of time spent doing case management was associated with higher levels of depersonalization, while increase activity in a general clinic increased one's sense of personal accomplishment. Authors do note that the nature of the Australian mental health systems includes an integrated model of practice, which indicates that more interdisciplinary support exists for workers in this study.

To address the matter of burnout specifically among social workers, Siebert (2005) is the first to utilize a large representative sample of social workers. Her study identifies the rate of burnout among social workers in North Carolina, as well the as the factors related to burnout. The author expected that occupational as well as personal factors would be associated with burnout. Data was collected via an anonymous, cross-

sectional mailed survey design. Subjects included 1,000 active, professional NASW chapter members living and practicing in North Carolina. These included ethnically diverse, urban, suburban, small town and rural practice areas. The sample was created using a systematic probability sampling strategy, selecting every 6th name after beginning with a randomly selected starting point. Survey completion was 75.1%, 751 out of the 1000 subjects returned their surveys. As demographic statistics were not available for a comparison of samples with North Carolina NASW members, national statistics from NASW were used. Of the respondents 84% were female (compared to 79% for NASW membership), 88% were white (88% NASW), and 59% were between the ages of 41 and 60 years (51% NASW). The mean personal income was $40,000 per year (45,000 for NASW), 41% practiced in the mental health field (40% for NASW), and 86% held a masters degree (90% for NASW). NASW comparisons were not available for marital status or live in partner status (73% for current study). More respondents lived in cities or suburbs (58%) than small towns or rural areas (42%).

The questionnaire in Siebert's (2005) study included 84 items. The first was burnout, measured with the emotional exhaustion scale of the MBI showing an alpha of .92. One-single item on the burnout measure was also included to check on the quantitative measure, and to allow respondents to report past problems with burnout. This item asked respondents which statement best described their current situation, "I have never had problems with burnout; I currently have problems with burnout; I had problems with burnout in the past, but not currently." Personal variables were each scored as single-item yes/no questions. These variables included; personal histories of trauma, alcohol or other drug abuse by parents/current spouse or partner/close family

friend or friends, history of abuse (physical, sexual, and emotional), family trauma or loss (i.e. death of a parent or sibling when a child, having a chronically ill parent or primary care giver when a child, and experienced divorce of parents when a child). Personal characteristics items were scored from strongly disagree (1) to strongly agree (10). They included; asking for help, being a high achiever in school, having a strong need for approval, being a perfectionist, and feeling overly responsible for clients. Occupational variables were fill in the blank numerical responses and included; the number of clients seen in an average week, number of hours worked per week, percentage of time spent on paper work, direct client contact, managerial supervision duties, number of days on call in the previous 30 days and the number of vacation days taken in previous year. Occupational items related to experience and preparation for work items included; degrees held, years experience since first social work degree, and professional designations (e.g., LICSW, BCD). Also included were workplace resource items (these were singe-item questions from strongly disagree (1) to strongly agree (5), which included; sufficient material resources, supervisory support, and co-worker support. Work stress single-item questions with response options ranging from strongly disagree (1) to strongly agree (5) included; percentage of clients that are extremely stressful to work with, days of work missed due to illness in previous 30 days (fill in number), facing ethical compromises in the past year, and my workplace is stressful. Questions related to respondent's career included identifying workplace setting, area and function as well as if respondent was feeling successful in their professional work (strongly disagree to strongly agree). Lastly respondents were asked if social work was their first career.

Chi-square tests were utilized for discrete categorical variables such as ethnicity, marital status, and sexual identification. ANOVAs were utilized for continuous variables such as age, income, and years of social work experience. A hierarchical regression analysis was conducted, and all variables significantly related to burnout were entered into the preliminary regression equation. The demographic, personal, and workplace variables were entered in stage format in order to test their relative influence (i.e. change in R2) in the variance of burnout.

All cases were filtered to create a summary frequency of those self-reporting current burnout along with those scoring above the burnout threshold on the scale; 291 (36%) of the sample experienced burnout, and 39% self-assessed as experiencing burnout, but did not score so on the scale, while 25% reported never having experienced burnout. A total of 75% did report having experienced burnout some time in their career. Those who scored higher on the burnout measure felt less successful and were more likely to agree that they had difficult clients, faced ethical compromises, and had a stressful workplace. In steps 3 and 4 of the regression analysis four personal variables that remained influential throughout, and were positively related to burnout include; having a troubled parent (Beta .08. $p < .05$) or having experienced emotional abuse as a child (Beta .09, $p < .01$), feeling very responsible for one's clients (Beta .11, $p < .01$), and having difficulty asking for help (Beta .10, $p < .01$). Those experiencing greater burnout reported feeling less successful at their work (Beta -.12, $p < .001$). Those reporting receiving supportive supervision (Beta-.14, $p < .001$) were less likely to report burnout, as were those with a lower percentage of extremely stressful clients (Beta .18, $p < .001$).

One's general perception that they were working in a stressful workplace was the strongest predictor of burnout (Beta .35, $p < .001$).

Personal history variables, personal characteristics along with workplace circumstances were found to contribute to burnout in this study. Limitations include social desirability bias as respondents may have played down their personal trauma histories or experiences of burnout. Seibert does not use the full MBI measure and as per Maslach et al. (2001) the full phenomenon of burnout cannot be captured. As the study is cross-sectional in nature it provides statistical associations but cannot demonstrate causality, and the high number of single-item questions makes it difficult to provide an adequate measure of a construct. However, Seibert's study is one of the first to assess burnout over a large sample of social workers, and she ultimately suggests that it would be difficult to construct an intervention that directly deals with the strongest relationship to burnout, the perception of working in a stressful workplace.

Dillenburger (2004) conducted a cross-sectional study of sixteen child care social workers who were equally broken up into three statutory child care teams from similar small towns and worked with a rural client base. One of the teams consisted of mainly short-term work, the other long-term work, and the third team worked with both long-term and short-term cases. In terms of experience 25% were in practice less then one year, the remainder longer with 50% having over 5 years of experience. Male respondents comprised of 25% of total sample with 50% of the total sample being over 35 years old; two workers were over 50. Participants were equally divided in terms of marital status among teams.

Dillenburger (2004) administered a questionnaire to each individual team with a 100% return rate. The questionnaire consisted of three sections. The first included demographics and worker attitude toward their work. The second was comprised of rating scales, rating the causes of stress on a three point scale with a focus on stress levels regarding their work and personal life. In this section a question was also included on how stress could be alleviated for respondent. The third and final section of the questionnaire included the validated and widely used General Health Questionnaire (GHQ; Goldberg, 1978). In the analysis, four-way responses were coded in a bi-model scale and Goldberg's (1978) threshold of 4/5 was used to identify respondents that experienced "just significant clinical disturbance."

A Pearson Correlation was calculated for all the variables in the study. Those holding significance include: age and marital status ($r = 0.50$, $p < .05$) where fewer of the younger childcare workers were married; gender and experience ($r = 0.58$, $p < .05$) males held more years of experience; age and team membership ($r = 0.57$, $p < .05$) workers in the intake team were younger; years of experience and team membership ($r = 0.67$, $p < .05$) those in the intake team held less experience than those in the generic team. Overall stress levels for respondents were; 25% very stressful, 75% stressful; and 0% noted no stress. The satisfaction rate included 56% being very satisfied with their work, 25% neither satisfied nor dissatisfied, and 19% dissatisfied or very dissatisfied. Job satisfaction and levels of stress were related ($r = 4.6$, $p < .05$) in that respondents who found their work satisfying experienced lower levels of stress.

The GHQ results indicated that 37.5% of the respondents scored 5 or more points, which according to Goldberg's definition these respondents would be considered "cases"

in need of further psychological assessment. The mean overall GHQ score was 5.8; for those in the intake team it was 5.0 (4.0 with senior social worker excluded); for those in the longer-term team it was 4.9 (1.2 when senior social worker excluded); and for the generic team it was 7.6 (9.1 with the senior social worker excluded). Significance was found between the GHQ and stress levels ($r = 0.55$, $p < .01$) so with increased levels of stress there was increased levels of psychological disturbance as well. Significance was also found between job satisfaction and GHQ ($r = 0.86$, $p < .001$) where a lower rate in job satisfaction indicated a higher experience of psychological distress.

The factor noted to most contribute to stress for 100% of the respondents was heavy work load, and the most desired means of alleviating stress for 94% of respondents was more support/appreciation from seniors, followed by reduced workload (75%) and increased resources (69%).

Dillenberger (2004) then identified characteristics in each team to answer the question pertaining to individual learned behaviors versus work environment contingencies in the experience of stress. The short-term team included younger, unmarried with less years experience in the field. The cause of overall stress for this team was high workload and crisis intervention work. The GHQ resulted in a score above threshold causing some concern for their overall psychological health. Results for reducing stress for this team included reduction in workload (via more staff) and flexibility in time management. The long-term team respondents were older with more years experience. Causes of stress for this team included record keeping and taking children into care. Their overall psychological health did not reach level of concern, and pertaining to alleviation of stress team stability in leadership along with suitable

accommodations to meet with clients. For the generic team the workers were older with more years experience than the other two teams, and included a higher percentage of males (n=3); the psychological health of this team was most compromised with a GHQ score well above threshold. Alleviation of stress for the generic team included improved supervision, better team management, reduced workload and more recognition of difficulties within the team. In taking into account both individual learned behaviors based on historical context that might impact perception of the work environment leading to stress behaviors versus the contingencies of the current child care work environment contributing to stress, Dillenburger (2004) concludes, that for those who choose child care work, the contingencies in the work environment contribute more to stress versus individual stressful history. She also concludes that if the contingencies that cause stress are addressed (problem outside of individual) then the skillful implementation of contingency management plans addressing occupational stress could alleviate counterproductive coping mechanisms used by workers. She addresses the need for management to be trained in stress management and notes that for both respondents and managers the issue of care for the care giver is a concern. There are limitations to this study which include: small sample size and convenience sampling; cross-sectional design; and that Dillenberger (2004) did not measure personal characteristics of sample therefore could not assess contribution of personality traits to experienced stress.

The prior reviewed studies do identify that stress and burnout does indeed exist (in varying degrees) among health care providers, including social workers. Pauline and Walter (1993) go onto research the prevalence of burnout along with the consistency of the syndrome over a one-year time period.

Pauline and Walter (1993) conducted a longitudinal study, to better understand the course of burnout over time, using 879 nationally selected social workers working in the field of gerontology. Subjects were randomly chosen and were either members of NASW or the Gerontological Society of America or both. They completed a questionnaire mailed out in 1989 and then again in 1990. Variables studied followed Courage and William's (1987) multimatrix model of burnout which incorporates client factors, social worker characteristics as well as organizational factors. Client factors include caseloads, high number of chronic clients on ones' case load, and workers' negative attitude toward their clients. Social worker characteristics include self-esteem, age and gender. Organizational factors include job stress, job autonomy, organizational resources and supervisory support.

A total of 1,196 subjects returned usable questionnaires from the 1989 survey and 879 were usable the following year. One-way analysis of variance was examined to note differences between responders and non-responders and the authors report no significant differences between the groups, suggesting the study was not biased. Subjects who participated (N=879) were predominately female (89.7%) with an average age of 41.8 years with 58.7% between 30 and 49 years old. Most reported to be in good health, had completed college with 78.2% completing masters program or higher. Most were employed full-time (77.9%) and worked with the elderly (88.7) primarily.

Burnout was measured using the Emotional Exhaustion Index (Maslach and Jackson, 1981). Using Cronbach's alpha the scale carried a .90 reliability coefficient in 1989 and .91 in 1990. Change in burnout was determined by coding the 1989 and 1990 scales into low, medium and high groups (frequency distribution of each scale was

divided into approximately equal thirds). Medium burnout respondents were excluded from analysis.

Independent variables used to predict burnout were the organizational, client and personal variables (listed above). The organizational variables measured 18 items covering the four variables of job stress, supervisor support, job autonomy and organizational resources. Each index held a reliability coefficient index score between .73 and .91 for both years. Client measures included; severity of client problems, satisfaction with client (both measured with single-item five-point rating scales) and percentage of time spent with clients was measured as the proportion of work time spent in direct contact with clients. And finally, the four personal factors were analyzed as follows: self-esteem was measured using a 10-item index (Rosenber, 1965) and both years carried reliability coefficients of .88, and a four-point scale, ranging from 1 = poor to 4 = excellent, assessed health status.

The study found that those subjects who had high levels of burnout (emotional exhaustion) in 1989 tended to remain at the same level in 1990. Emotional exhaustion remained the same throughout indicating that burnout (emotional exhaustion) is "a relatively stable phenomenon." The level of perceived job stress was a strong predictor of burnout (r= .53, Beta = .3), along with supervisor support (r = -.31, Beta = -.12) and organization resources (r = -.37, Beta = -.09). Change in job stress (Beta = .16), was also found to be significantly related to burnout. Subjects' satisfaction with their clients had a significant inverse association with burnout (r = -.34, Beta = -.35), as did change in satisfaction with clients (Beta =-.09). Self-esteem (r = -.38, Beta = -.12) and age (r = -.32, Beta = -.14) were both found to be significantly associated with burnout. Hours

worked (r = .35, Beta = .15) was also found to be associated with burnout. Overall these nine variables associated with organizational, client and personal indexes explained about 56% of the variance between the low and high burnout groups. Severity of client problems and change in severity of client problems were not found to be associated with burnout after accounting for influences of other variables.

This longitudinal study (Pauline & Walter, 1993) allows for better understanding of the course of burnout (EE) within a one year period, and random selection along with large sample size allows for generalizability within social work and in particular those in the field of gerontology.

One study, looking at how burnout impacts one's physical health was conducted in Finland. The sample is not taken from the human service sector, but the underlying impact of stress/burnout would naturally hold the same impact in terms of its physical implication.

A longitudinal prospective Finnish study by Toppinen-Tanner et al. (2005) was the first study using objective measures of illness to identify the impact of burnout on future illness. The study sample included all personnel working for a multinational forest industry corporation who gave their consent (3,895 out of 9,075) for authors to collect sick-leave records from company records. Subjects consisted of (56%) blue-collar workers (production or maintenance tasks) and (44%) white-collar workers (company management and supervisors, office personnel and personnel from research and development). The mean age for all respondents was 44 years, and there were 24% women with 76% men. Sick leave was measured via the company-computerized registry and included data from the beginning and end of each sick leave. Long sick leave

episodes (four days or more) were selected and a medical diagnosis for these leaves by a physician was required.

Burnout was measured using the Maslach Burnout Inventory-General Survey (MBI-GS) with subscales measuring exhaustion (Cronbach's ∂ = .87), cynicism (Cronbach's ∂ = .83), and lack of professional efficacy (Cronbach's ∂ = .83). A Poisson Regression analysis was used as it relates to linear regression in absence studies. Age, gender, and occupation were controlled for in all the models. Absences one-and-a-half years prior to questionnaire survey were used as baseline.

Results of the Poisson Regression models indicated that future sick-leave episodes were associated with the three components of burnout as well as overall burnout. This study found diseases of the circulatory system, the musculoskeletal system, and the respiratory system to be most commonly noted as reasons in absences for those experiencing higher levels of burnout. Exhaustion had the most impact on sick leaves even when baseline absence was controlled for. Separating out the three components of burnout, this study found that exhaustion highly increases the risk related to future diseases of the circulatory system (RR = 2.58) and the digestive system (RR = 1.88), whereas cynicism was strongly related to future diseases of the digestive system (RR = 3.94-4.35). This study indicates that burnout could lead to deterioration of one's physical health leading to compromised work ability and overall individual wellbeing.

A significant variable influencing burnout on the two large-scale studies in social work found that one's perception of stress is significantly related to levels of burnout (Seibert, 2005 & Pauline & Walter, 1993). Also, all of the above studies related to the human service field hold one common denominator: the level of perceived social support

(particularly from supervisors) is related to one's experienced burnout. This has held true even with the passing of time (Pines and Kafry's 1978 study to Siebert's 2005 study). This result within their study led Um and Harrison (1998) to conclude that change must come from within the work system by improving supervision practices, and that focusing on change within the individual would hold no impact as coping strategies held no relationship with burnout. However, Rowe (1997 & 1999) found that coping strategies verses hardiness have a positive influence on experienced burnout for health care workers as well as one's perception of stress as contributing to burnout.

Rowe (1997) found that a coping intervention would have positive results on diminishing experienced burnout. She examined the relationships among burnout, stress, temperament, coping, and hardiness in a sample of 448 health care professionals. Subjects included health care professionals who were taking classes or who worked within a large American metropolitan area hospital located in the northeast. Instructors who were teaching allowed for researchers to take fifteen minutes out of each class so questionnaires could be handed out. Subjects working in area hospitals were contacted and given the questionnaire to complete during their shift. Professions included; nurses, hospital/clinical staff (laboratory/testing specialists), physicians/surgeons, health administrators, psychologists/counselors/social workers, and health educators. Employment settings included hospitals (small, medium, and large in size, as well as teaching and non-teaching), public/community and private clinics, medical offices, nursing homes, and wellness centers.

The questionnaire packets included: demographic characteristics using a self-report questionnaire obtaining variables such as age, sex, marital status, type of education

completed, specific occupation, years in present position, and years in the profession. A 30-item Cognitive Hardiness Scale (CHS, Nowack, 1989 and Nowack, 1990) noted to yield scores of the three formerly stated dimensions of hardiness, and including items such as "most of life is wasted in meaningless activity." The CHS is a third generation measure of hardiness, noted to be more advantages than the scale constructed by Kobasa. Items in the CHS are worded to reduce negative language, the three scores can be combined into a total hardiness score, validity and reliability are strong (r = .80), and items and instructions are readily available. The State-Trait Inventory (STAI) was administered to assess one's emotional state during the data collection process in order to control for the prolonged anxiety state referred to as negative affectivity. Stress was assessed through the Stress Assessment Inventory (SAI, Speilberger, 1983). It is based on the Hopkins Symptoms Checklist and measures perceptions of recent life and work stress of workers within health care organizations (Nowack, 1990). Personal temperament was determined using the RATS. This measure assesses dimensions with nine subscales, for the present study the 6-item subscale of Adaptability and 7-item subscale of Approach/Withdrawal were completed by subjects. Burnout was measured using the 22-item MBI (Maslach & Jackson, 1986), and coping style was measured through The Ways of Coping Scale (Nowack, 1990), this scale measures the ways that one attempts to cope with difficult situations. Items in this scale reflect "adaptive coping" verses "non-adaptive coping."

There were three phases to this study. The question completion phase included handing out the packet to be completed either in class or at work, instructions were included. During this phase all respondents were asked if they would consider

participating in “job stress training,” and 71% (317 out of 448) expressed interest. The intervention was added to assess if functional coping would impact one’s experience of burnout. Out of the 317 subjects willing to receive the training 25% (n = 80) were randomly selected and assigned to either an experimental group (n = 40) or the control group (n = 40). The experimental group was exposed to a six-week series of weekly 1 1/2 hour lectures, discussions or group activities. An independent instructor trained on techniques related to relaxation techniques with guided visual imagery, how to utilize one’s supports when feeling very stressed, and coping strategies in order to better deal with experienced daily stressors (i.e. developing a proactive plan).

Current participants were found to be slightly “more hardy” ($x = 84.26$) in comparison to the normative sample ($x = 76.21$). Results of descriptive data utilizing Pearson product-moment correlations and one way analysis of variance indicated no significant relationships between demographic variables and burnout. As with Rowe’s other studies, a significant relationship was found between total burnout and its three components of emotional exhaustion, depersonalization, and lack of personal accomplishment to most of the psychological predictors of burnout. To control for potential effects of personal and situational factors separate hierarchical multiple regressions were conducted. Demographic variables were entered first, followed by the predictor variables of anxiety, stress, adaptability, approach/withdrawal, control, commitment, challenge, and coping. Results indicate the predictors of total burnout to be stress ($b = .31$, $p < .001$), adaptability ($b = .27$, $p < .001$), commitment ($b = .21$, $p < .01$), and coping ($b = -.18$, $p < .05$). Predicting emotional exhaustion were stress ($b = .43$, $p < .001$), and coping ($b = -.27$, $p < .001$). Depersonalization was predicted by stress ($b =$

.24, $p < .001$), and coping ($b = .22$, $p < .05$). Lack of accomplishment was predicted by challenge ($b = .34$, $p < .001$), approach/withdrawal ($b = .26$, $p < .001$), commitment ($b = .14$, $p < .05$), and coping ($b = .13$, $p < .05$).

Following the intervention separate repeated-measures one-way analysis of variance between pre and post treatment scores were conducted on both the experimental and control group. Compared to the control group, participants in the experimental group scored significantly lower on lack of personal accomplishment [$F(1,77) = 4.23$, $p < .05$], depersonalization [$F(1,77) = 26.25$, $p < .001$], and higher on coping [$F(1,77) = 9.56$, $p < .01$]. No significance was found for emotional exhaustion [$F(1,77) = 3.84$, $p < .054$], and total burnout [$F(1,77) = 3.81$, $p < .054$].

None of the demographic variables contributed to burnout in this study. Perceived stress was found to most significantly influence psychological burnout. No buffering effect was observed for hardiness once variables such as temperament style and coping were factored into the regression equation. The instruction (via the intervention) of proactive strategies allowed for a more effective ability to cope with stressors and a greater sense of personal accomplishment with less depersonalization. In her following study Rowe (1999) found that continued teaching of ways of coping is needed for lasting change, as a one-time course is not enough to maintain gains made.

In a third study Rowe (1998) explored the relationships between hardiness, stress, anxiety and burnout in healthcare professionals who worked in three medical hospitals in Philadelphia. The analysis provided by the univariate statistical tests identified that subjects experiencing burnout reported greater stress and diminished hardiness. However, when the multivariate statistical analysis was conducted it did not support this

relationship. Instead, hardiness was found to hold no significant relationship to burnout once stress and anxiety were entered into the equation. Those subjects low in hardiness held a greater correlation in the relationship between stress and burnout. This relationship was not found to be significant. The mediating effect of hardiness on stress and burnout was only modestly found. Perceived stress held a stronger correlation to this relationship.

Rowe (1987) found that 'one's perceived stress' leads to a stronger correlation with burnout and, Seibert (2003) also concludes that it would be very difficult to find an intervention which could impact this strong indicator (Visser et al., 2003; Pauline and Walter, 1993). However, Change et al. (2004) found that subjects exposed to mindfulness practice did experience a reduction in overall perceived stress. This relationship requires further assessment through future research.

Summary

Mindfulness has been found to promote aspects of overall wellbeing and reduce experienced stress (Shapiro et al., 2005; Cohen-Katz et al., 2004). Burnout was found to impact a high number of social workers in a study conducted by Siebert in 2005. This study found that 75% of practicing social workers reported experiencing burnout some time during their career. Burnout holds severe implications not only for the social worker, but their client and overall organizational wellbeing as well (Dillenburger, 2004, Acker, 1999, Visser et al., 2003). Stress is significantly related to burnout and needs to be understood and addressed so episodes of chronic stress and burnout in healthcare can be reduced.

Chapter 4

Methods

Research Design

This current dissertation employs secondary data analysis of existing data collected through a national survey of the NASW Center for Workforce Studies (2007). Washington, DC: National Association of Social Workers (Appendix A). The purpose of this original survey was to identify why a shortage of licensed social workers existed in the field and what factors might contribute to the shortage. A 2004 benchmark national study of licensed social workers in the United States identified this trend (Center for Health Workforce Studies & NASW Center for Workforce Studies, 2006). This study was based on a stratified random sample of more than 10,000 (out of 254,000) licensed social workers in the United States and District of Columbia. The response rate for the 2004 study was 49.4%.

The sample for the current dissertation was gathered through the NASW online membership site from August 30, 2007, to November 30, 2007. Members were invited to participate through electronic Memberlink newsletters, Specialty Practice Section alerts, mailed copies of the NASW News, and the NASW Web site. Respondents totaled 3,653. NASW allowed for the use of 3,555 survey respondents for this current study.

2007 Survey dimensions

Five sections were included in the original 2007 survey. These five dimensions include: 1. Who we are; 2. Where we work; 3. Professional development; 4. Career planning and; 5. Employee attitude & work-related stressors/concerns. Only three sections were allowed to be purchased by NASW from the total survey. Sections three

and four were excluded, though a question in section four on job satisfaction was allowed to be included in the dimensions of this study.

Other dimensions relevant to this study chosen by this writer from the current Survey include:

- Section 1: Who are the respondents? (i.e. place of residence, gender, age, ethnic/racial origin, year earned social work degree and years of experience)
- Section 2: Where respondents work and what they do (i.e. type of organization respondent employed in, sector employed in, practice area, percentage of time spent in specific social work tasks, salary and benefits).
- Section 4: One question from this section which was granted permission to be included in the current research relates to how satisfied respondents were in their primary position. This question includes 11-items and is set up as a Likert-type scale ranging from 1 very dissatisfied to 6 very satisfied. Some of the items in this scale include workload, autonomy, supervision)
- Section 5: Employee attitudes and stressors/concerns related to work (i.e. work safety, attitude toward employer and factors influencing stress at work (these three dimensions are set up as Likert scales and include 9, 12 and 22 items respectfully), and yes or no questions related to health indicators or specific physical or psychological responses related to experienced work stress and coping mechanisms)

Data of these dimensions obtained from NASW Workforce studies needed to be fully recoded by this writer so analyses could be conducted. SPSS version 15.0 was used to analyze data. Some of the items were recomputed in order to collapse numerous items into a format that could be analyzed further (McCall & Appelbaum, 1991). For example work safety was recoded into all concerns being coded as “yes” or “one” and all other (including non-applicable) as “no” or “two”. Another variable that was recoded is the dependent variable: experienced stress.

The dependent variable is stress, which is indicated by health indicators that survey respondents report experiencing directly related to work stress. Independent variables include significant demographic variables, job satisfaction, satisfaction with employer, and factors influencing stress at work. Coping styles will be treated as the moderating

variable. Each of these variables will be further discussed in this and the following chapters.

Research Questions

1) What are the predictors of stress?
2) What are the moderating influences of coping strategies on stress and perception of stress (PSW)

Data Analysis

There are several steps involved in the data analysis plan, which were conducted using the statistical software SPSS version 16.0. First, an initial series of chi-square for discrete categorical variables (i.e. marital status, gender) were conducted to determine if experienced stress differed by demographic and professional characteristics. Second, a second series of bivariate statistical tests was conducted to determine if the independent variable is significantly related to the outcome variables. A Pearson's moment-correlation coefficient was used to identify potential clusters within each scale in the analysis. Third, a factorial analysis was conducted on one of the questions containing a high number of items (PSW-22-item scale) to determine potential latent variables. Fourth, multiple regression was employed for analyzing the survey data related to independent variables, various coping strategies (CAM, Exercise, avoidance and therapy/medication) as they relate to the dependent variable stress.

The final step in the data analysis plan was to examine: 1) potentially significant main effects between the independent and moderating variables with the outcome variable; and 2) the potentially significant moderating effect of the four coping strategies on the relationship between the independent variable with the outcome variable.

Therefore, for each research question, a two-step hierarchical binary logistic regression model was conducted. As both the stress and coping variables are categorical, a logistic regression analysis was chosen to examine the relationship between the dependent and independent variables. Demographic and/or professional characteristics found to hold an effect size of 10% or greater were controlled for in the final analysis. Checks for multicollinearity or collinearity were indicated (Kachigan, 1991) and no significant problems were found. In terms of the theorized model stress was considered as the dependent variable and the independent variables were coping strategies, job satisfaction, perception of stress at work (PSW) and employer satisfaction.

Human Subjects Protection

All human subjects reviews have been completed through the institutional review board of Hunter College (IRB number- HC-120914897 Approval dates- 12/17/09 to 12/17/10) (Appendix B). Additionally, the current dissertation was granted IRB exemption by the Hunter College IRB Committee under federal regulation §46.101(b)4. This federal regulation states that a study researching of existing data may be exempt from IRB review if: Research, involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available, or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. Thus, as current dissertation is a study of secondary analysis of completely anonymous existing data, in which the dataset contains no identifying information and data cannot be linked to the subjects, this study was exempt IRB review.

Findings

A wide distribution of respondents throughout the United States participated in the study. Respondents totaled 3,555 from 50 states and the District of Columbia, as well as Germany participated in the 2008 NASW survey, suggesting a wide geographic distribution in social worker responses (Table 1). New York with a frequency of 370 (10.4%) was the state with the highest number of respondents. California respondents represented the next highest number at 195 (5.5%) with Illinois, Massachusetts and Texas individually representing five percent of total response.

Table 1

Place of residents

	Frequency	Valid Percent
Germany	2	0.1
Alabama	49	1.4
Alaska	10	0.3
Arizona	53	1.5
Arkansas	24	0.7
California	195	5.5
Colorado	41	1.2
Connecticut	67	1.9
Delaware	9	0.3
District of Columbia	20	0.6
Florida	137	3.9
Georgia	70	2.0
Hawaii	21	0.6
Idaho	24	0.7
Illinois	177	5.0
Indiana	84	2.4
Iowa	66	1.9
Kansas	40	1.1
Kentucky	37	1.0
Louisiana	69	1.9
Maine	35	1.0
Maryland	112	3.2
Massachusetts	180	5.1
Michigan	165	4.6
Minnesota	75	2.1
Mississippi	16	0.5
Missouri	74	2.1

(Table 1 continues)

(Table 1 continued)

	Frequency	Valid Percent
Montana	17	0.5
Nebraska	28	0.8
Nevada	20	0.6
New Hampshire	.5	0.5
New Jersey	186	5.2
New Mexico	28	0.8
New York	370	10.4
North Carolina	98	2.8
North Dakota	9	0.3
Ohio	107	3.0
Oklahoma	34	1.0
Oregon	53	1.5
Pennsylvania	132	3.7
Rhode Island	27	0.8
South Carolina	43	1.2
South Dakota	7	0.2
Tennessee	61	1.7
Texas	176	5.0
Utah	18	0.5
Vermont	12	0.3
Virginia	73	2.1
Washington	63	1.8
West Virginia	12	0.3
Wyoming	12	0.3
Total	3555	100.0

Table 2 presents the demographic characteristics of the 3,555 study participants. Respondents hold a wide range in ages, from twenty years old to eighty-eight years old. The median age is 47.0 and the mean age is 45.6 (SD = 12.9). Eighty-two percent of the responding sample is female. A majority of the respondents identify as Caucasian/White (3018, 84.9%) then African American (242, 6.8%) with less than 2% identifying as either Asian American, Chicano/Mexican American, Native American/Alaskan Native, Other Hispanic/Latino, Puerto Rican, Pacific Islander (Native Hawaiian) and other. A majority of the subject respondents identify as married or in a domestic partnership 2324 (65.5%), 718 (20.2%) identify as not being married, 413 (11.6%) as divorced and 61 (1.6%) as widowed.

Table 2

Respondent Demographic Characteristics (N=3,555)

Variable	n	%
Gender		
Female	2929	82.4
Male	586	16.5
Race/Ethnicity		
African American/Black	242	6.8
Asian American	62	1.7
Chicano/Mexican American	59	1.7
Pacific Islander (Native Hawaiian)	6	0.2
Puerto Rican	30	0.8
Other Hispanic/Latino	53	1.5
Native American/Alaskan Native	57	1.6
Caucasian/White	3018	84.9
Other	76	0.8
Marital status (N=3516, Missing=39)		
Married/Domestic partner	2324	65.5
Never married	718	20.2
Divorced	413	11.6
Widowed	61	1.6

Respondent Professional Characteristics

Table 3 represents the professional characteristics of the study participants. Having obtained a degree in social work is reported by 94.3%, of respondents, and of these respondents 29.3% hold more than one degree in social work. Dates of obtaining one's first social work degree range from 1993 to 2007 with the median being 1993, however 2619 of the respondents did not respond to this question. Dates of obtaining one's second social work degree range from 1951 to 2007 with the median being 1994. The mean number of years of experience since earning first social work degree is

between10-14 years. The mean number of years of experience participants report having worked since earning their second social work degree is between 10-19 years.

Fifty percent or more of time spent providing direct clinical practice to clients is reported by 1883 of the respondents, and 1692 of the survey respondents spent 50% or more of their time in administrative/managerial practice (Table 3).

Table 3

Professional Characteristics (N=3555)

Variable	n	%
Has more than one degree in social work		
Yes	1043	29.3
No	2309	65.0
First social work degree		
BSW	847	23.8
MSW (or equivalent)	177	5.0
DSW/PhD	0	0
Years experience since first social work degree	N=3344 Missing 211	
Less than 2 years	81	7.8
2-4 years	135	13
5-9 years	190	18.2
10-14 years	172	16.5
15-19 years	111	10.7
20-24 years	91	8.7
25 years or more	262	25.1
Most recent social work degree		
BSW	239	6.7
MSW (or equivalent)	2917	82.1
DSW/PhD	123	3.5
Years of social work experience since having earned most recent social work degree		
Less than 2 years	579	16.3
2-4 years	508	15.2
5-9 years	603	18.0
10-14 years	472	14.1
15-19 years	329	9.8
20-24 years	307	9.2
25 years or more	546	16.3

(Table 3 continues)

(Table 3 continued)

Variable	n	%
Direct clinical practice (N=3072)		
Yes	1883	> 50%
No	1189	
Administrative/managerial practice		
Yes	1692	> 50%
No	1380	

Organizational characteristics

Table 4 represents the organizational characteristics of the study participants. A majority of the respondents work in the private sector (24.2% and 27.2%). The public sector is underrepresented in this sample. Sectors in social work that most respondents report working in include; mental health (11.1%), Private practice – solo (10.7%), social services (8.6%), health–inpatient (5.5%), school settings (5.5%) among others. Practice settings vary as well, with most respondents reporting working in mental health (30.8%). Working at the micro level (59.7%) of social work was most representative of these respondents, while mezzo (15.8%) and macro (12.6%) level is less-representative of the total respondents.

Table 4

Organization Characteristics (N=3580)

Variable	n	Valid %
Type of organization providing primary social work employment (or self-employment)		
Mental Health- Outpatient	393	11.0
Private Practice-Solo	379	10.6
Social Service Agency	306	08.5
Health- Inpatient	195	05.4
School - elementary, middle, high	195	05.4
College/University	185	05.2
Health- Outpatient	181	05.1
Other	176	05.0

(Table 4 continues)

(Table 4 continued)

Variable	n	Valid %
Government Agency/Military	166	04.9
Business or Industry 9	153	04.3
Behavioral Health- Outpatient	139	03.9
Hospice	119	03.3
Private Practice-Group	98	02.8
Nursing Home	73	02.1
Mental Health- Inpatient	62	01.7
Criminal Justice System -Adults	46	01.3
Behavioral Health- Inpatient	40	01.1
Managed Care Organization (Domestic)	38	01.1
Residential Facility -Children (group home, etc)	37	01.0
Residential Facility - Adults (group home, etc)	31	00.9
Professional/Trade Association	29	00.8
Juvenile Justice System	23	00.6
Employee Assistance Program /Company	18	00.5
Public Assistance Agency	16	00.5
Foundation	14	00.4
Assisted Living Facility	5	00.1
Managed Care Organization (International)	1	00.0
Organizational Sector providing primary social work employment (or self-employment)		
Private - For Profit	860	24.7
Private - Nonprofit/Other	968	27.
Private - Nonprofit/Sectarian	371	10.4
Public/Government - Federal (Non-Military)	86	2.4
Public/Government - Local	311	8.7
Public/Government - Military	47	1.3
Public/Government - State	484	13.5
Major practice area in primary social work employment		
Addictions	127	3.6
Adolescents	144	4.1
Aging	268	7.5
Child Welfare/Family	328	9.2
Community Development	23	.6
Criminal Justice	41	1.2
Developmental Disabilities/Rehabilitation	56	1.6
Displaced Persons/Homeless/Refugees	35	1.0
Health	432	12.2
International Social Work	4	.1

(Table 4 continues)

(Table 4 continued)

Variable	n	Valid %
Mental Health	1095	30.6
Occupational Social Work/EPA	22	.6
Other	252	7.1
Philanthropy	10	.3
Political Social Work	11	.3
Public Health	28	.8
School Social Work	195	5.5
Violence	38	1.1
Level of social work practice that best describes practice		
Macro	448	12.6
Mezzo	562	15.8
Micro	2123	59.7

Salary and benefits

Survey respondents report a household total gross annual income range from 69,999 to $79,999 (this represents both the median and mean range), and social work based income alone as $40,000 to $49,999 (represents both mean and median range). Fifty-seven percent (1774) of the total respondents report that their wages are adequate to more than adequate compared to forty-four percent (1346) who report their salary is limited to very limited. Fifty-nine percent (1716) of total respondents report their benefits being adequate to more than adequate compared to forty-two percent (1226) who feel their benefits are limited to very limited**.** Of the total respondents (n=1329) making more than 50,000, 1030 (40%) of them are female compared to 299 (59%) male. Also, debt incurred to finance social work education was reported by 69% of the total respondents. Of these a higher percentage (8.2%) are female and (7.6%) are without a partner.

Work-related safety issues/experiences

Respondents were asked if they had a) experienced (within 6 months of survey) or b) were concerned about any work-related safety issues. These issues include the following:

Violence from adults
Violence from child/adolescent clients
Fear of neighborhood where you work or see clients
Physical assault from non-clients
Robbery
Theft of vehicle
Car accidents
Vandalization of vehicle

Nineteen percent (690) report having experienced a work –related safety issue within six months of survey. Fifty-seven percent (2032) report being concerned about work-related safety issues. Survey respondents were then asked if they believed their employer adequately addressed safety issues. This item was recoded to include not applicable and no into one category. Of the total respondents (2536) answering this question, seventy percent (1777) feel that their employers adequately addressed safety issues compared to thirty percent (759) who report their employers did not adequately address safety issues.

Based on the 2004 bench mark NASW study (Center for Health Workforce Studies & NASW Center for Workforce Studies, 2006) 44% of the survey respondents answered yes to having been faced with personal safety issues in their primary position. And, 30% did not feel their employers addressed this issue adequately.

How the former identified demographic variables and organizational contributions relate to the dependent variable of stress is of interest to this writer. Stress and other

relevant survey variable will be identified and further explored, and then bivariate analyses will be conducted to identify relationships among these variables.

Chapter 5

Stress

Introduction

In the following chapter the dependent variable of stress will be further operationalized, and the stress index explained. Bivariate analyses will then be conducted in order to better understand the relationship between stress and possible predictor variables. The predictor variables include: work characteristics, personal characteristics, job satisfaction, perception of stress at work, and employer satisfaction.

Dependent Variable: stress

Participants were asked to identify health indicators that were directly related to work stress by choosing "yes" or "no" answers to having experienced each item listed (Table 5). Health indicators will be labeled stress as the presence of any one of the health indicators identifies that stress is present for the respondent in relation to their social work position. Among the health indicators fatigue (1423, 40.2%) is reported as being the highest experienced by respondents. Psychological disorders defined as depression, burnout, anxiety, etc. is also experienced by a high percentage of the total respondents (783, 22.1%). Sleep disorders are experienced by 13.8% (491) of the total respondents. Other stress indicators related to work stress reported by respondents include; irritability/aggression 411 (11.6%), musculoskeletal disorders (i.e., upper/lower back and extremity problems) 396 (11.2), impaired immune functions 214 (6.0%), cardiovascular problems 132 (3.7), impaired cognition by 121 (3.4%), and psychosomatic complaints 118 (3.3%).

Of importance is that the greatest number of respondents report fatigue (40.2). This is important because fatigue can impact how energy is directed causing a build up of stress under ordinary life conditions (Shomon, 2003). For those experiencing high levels of stress, namely fatigue, one could expect that work performance might be impacted.

Table 5

Stress frequencies (N= 3543, Missing=12)

Stress	n	%
Fatigue	1423	40.2
Psychological disorders	783	22.1
Sleep disorders	491	13.8
Irritability/aggression	411	11.6
Decrease in work performance	403	11.3
Musculoskeletal disorders	396	11.2
Impaired immune functions	214	06.0
Cardiovascular problems	132	03.7
Impaired cognition	121	03.4
Psychosomatic complaints	118	03.3
Work place injury	33	0.09

Stress Index

Bivariate analyses were conducted to determine the relationship between the various stress index items in order to identify the dimensions of this measure and screen out any possible items that were not measuring stress. A Pearson's product-moment correlation coefficient was used to identify potential clusters of stress (Table 6). Fatigue, being the health indicator most experienced by the study respondents holds a moderate and positive relationship, at the .01 significance level, to the items of; psychological disorders ($r = .29$), poor sleep ($r = .22$), and irritability/aggression ($r = .25$). These findings, representing from 7% to 4% of the total variance, indicate that these four items may be a good representative of a stress indicator indexes. A Cronbach's alpha was then run to identify if these four items are testing the same variable, that of stress. The

internal consistency of this 4-item scale yielded a Cronbach's alpha of 0.52. This alpha indicates that the internal reliability of the 4-item measure is low. The low alpha could be due to the instrument being relatively short (Rubin, 2005) or a function of yes/no variables utilized in this scale.

Table 6

Between item correlations of the stress index

Variable	Fatigue	PD	Sleep	IA.	MD	IIF	CP	IC	PC
	r	**r**	**r**	**r**	**r**	**r**	**r**	**r**	**r**
Fatigue	---	.29**	.22**	.25**	.16**	.19**	.09**	.15**	.11**
PD	---	---	.22**	.29**	.20**	.15**	.09**	.16**	.16**
Sleep	---	---	---	.18**	.09**	.14**	.08**	.15**	.15**
IA	---	---	---	---	.07**	.12**	.02	.14**	.13**
MD	---	---	---	---	---	.07**	.07**	.08**	.06**
IIF	---	---	---	---	---	---	.06**	.15**	.16**
CP	---	---	---	---	---	---	---	.06**	.01

Note. PD = Psychological disorders; Sleep = Sleep disorders; IA = Irritability/ aggression; MD. = Musculoskeletal disorders; IIF = Impaired immune functions; CP = Cardiovascular problems; IC = Impaired cognition; PC = Psychosomatic complaints

* $p < .05$

**$p < .01$

Individually the stress measure looks more like an index than a scale. As an index the frequency of experiencing one stress is 998 (28.2) of the total respondents, two stressors 537 (15.2), three stressors240 (6.8) and all four stressors 79 (2.2) (Table 7).

Table 7

Frequencies of 4-item stress index (N = 3555, Missing = 12)

Items	n	valid %
One stress	998	28.2
Two stressors	537	15.2
Three stressors	240	06.8
Four stressors	79	02.2
None	1689	47.7
Total	3543	100

Due to the low number of respondents choosing the items of sleep disorder (13.8%) and irritability/aggression (11.6%) using a stress/no stress index was considered to be best representative of the stress variable in this study. The frequency of the 4-item index, when broken down answers "yes" for these four items and "no" for the rest, is 1689 (47.6) reporting none of these 4-stress items and 11854 (52.4) reporting at least one of these 4-stress items.

The items remaining; musculoskeletal disorders (r = .10), impaired cognition (r = .11), psychosomatic complaints (r = .13), cardiovascular problems; and immune function (r = .11) all hold a positive and significant relationship (p = .01) with fatigue as well (Table 6). However, these findings lower than the other items, only represent a little over 1% of the total variance. As they hold some significance with fatigue a reliability analysis was conducted and a 9-item scale consisting of the four prior noted items and these five items was constructed. This 9-item scale yielded a Cronbach's alpha of .56, which is not much better in internal validity than the 4-item scale alone indicating that perhaps the low alpha score could be do to the function of the yes/no variables used in this question.

Table 8 indicates the comprehensive frequencies of the 9-item stress scale. In the 9-item scale 918 (25.9) of respondents experience at least one stress indicator, 495 (14.0) at least two, 346 (9.8) three stress indicators, 161 (4.5) experience four, 67 (1.9) experience five, 17 (0.5) experience six, and less then 0.1% experienced seven or more.

Table 8

Comprehensive frequencies of 9-item stress index (N = 3555, Missing = 12)

Items	n	valid %
One stress	918	25.9
Two stressors	495	14.0
Three stressors	346	09.8
Four stressors	161	04.5
Five stressors	67	01.9
Six stressors	17	00.5
Seven stressors	4	00.1
Eight stressors	2	00.1
Nine stressors	2	00.1
None	1531	43.1
Total	3543	100

Not much of a difference is found in representing the stress indicator between these two measurement tools. The closest to representing distinct indicators of stress in this study will therefore be measured via the 4-item stress index. This index will then be computed as low stress (0 from list), medium stress (at least one stress) and high stress (two or more stresses).

Survey respondents' experience of stress based on various demographic variables will be explored in the following section.

Stress and Predictor Variables

Fifty-two percent (1854) of the total survey respondents report experiencing stress. This is a significant number in that over 50% of licensed social workers in this study are experiencing a negative emotional or physical response related to their overall social work employment. Factors that may contribute to experienced stress were analyzed and explored. The following will answer the hypothesis question: What are the predictors of stress?

Work Characteristics

Factors holding the highest significant relationship with stress in this survey include: safety concerns at work (r = .11), satisfaction with workload (r =-.25), and heavy workload (r = .38). The latter two variables are also found in the two scales of job satisfaction and perception of stress at work (PSW), each of which are also moderately to highly correlated with stress: -.23 and .38 respectfully. As such these two items will not be individually part of any further analysis; instead they will be identified as items in their perspective scales. The two variables of job satisfaction and PSW will be further addressed in this chapter.

A chi-square analysis was conducted to test the relationship between safety concerns at work and stress (Table 9). A moderate significant relationship was found (χ^2 =355.6, df=2, p < .01). For those respondents reporting safety concerns at work higher levels of stress is present. Having safety concerns is clearly associated with overall experienced stress level. The strength of this relationship is measured using Kendall's tau-c and a 33% positive association is observed between stress and safety concerns at work with a total effect size of 11%. .

Table 9

Stress by safety concerns at work

Stress	Safety concerns			
	None		at least one	
	n	%	n	%
Low	993	65.7	696	34.3
Medium	315	20.8	683	33.6
High	203	13.4	653	32.1
Total:	1511	100	2032	100

χ^2 =355.6, df=2, p<.01, τ -c = .33

Personal Characteristics

Demographic variables that hold a significant relationship with stress include; gender, marital status, and age. Chi-square and Pearson product-moment correlation coefficient statistical tests were used to assess these relationships.

A significant though weak relationship was found between gender and stress (χ^2 =24.95, df = 2, p< .01), with a total effect size of less than 0.5%. Female respondents reported higher levels of medium and high stress, whereas male respondents reported higher levels of low stress.

Table 10

Stress by gender

Stress:	Male		Female	
	n	%	n	%
Low	331	56.5	1340	45.7
Medium	133	22.7	860	29.4
High	122	20.8	729	24.9
Total:	586	100	2929	100

X2=24.95, df=2, p<.01

Again, a chi-square analysis was used to analyze the relationship between marital status and stress. Marital status holds a weak, though significant relationship with stress (χ^2 =16.4, df = 2, p< .01, τ -c = .06) (Table 11). Single respondents report more low and high stress levels and partnered respondents report slightly higher low and medium stress levels.

Table 11

Stress by marital status

Stress:	Single		Partnered	
	n	%	n	%
Low	526	44.1	1144	49.2
Medium	330	27.7	665	28.6
High	336	28.2	515	22.2
Total:	1192	100	2324	100

X2 = 16.4, df = 2, p<.01, τ -c = .06

A Pearson product-moment correlation coefficient was used to assess the relationship between age and years of experience with stress. Age ($r = -.10$, $p < .01$) and years in practice ($r = -.06$, $p < .01$) both hold a weak inverse significant relationship with stress. This indicates that younger respondents and those with fewer years in practice report higher levels of stress.

Study respondents engaged in 50% or more of direct clinical practice did not experience more stress than those engaged in 50% or more of administrative practice. Significant relationships were also not found between stress and income, and major practice areas.

Job Satisfaction

Job satisfaction was measured in an 11-item Likert type scale that was developed specifically for the NASW 2007 survey. On a scale of 1 (very dissatisfied) to 6 (very satisfied) respondents were asked to rate their satisfaction with salary, workload, and supervision (among other variables) from their primary social work position. This 11-item scale holds good internal validity (Cronbach's alpha=0.82).

The lowest possible score for this scale is 11 and 3 (0.1) scored a 0. The highest possible score is 66, 13(0.4) scored the highest. The distributions for the scale include a median score of 46, mean score of 45.7 (SD=9.8). The percentages are based on valid responses as 2863 answered the question with 692 missing.

Participants were asked how satisfied they felt with each of the following in their primary position: salary, interesting work, career mobility, opportunities for training/education, location, workload, autonomy, level of responsibility, supervision, flexible schedule, and benefits package. A Pearson product-moment correlation

coefficient was used to assess the items on this scale. Most all of these items are highly correlated at a significance level of .01 (Table 12). Benefits package is the least correlated with the 11-items and has a negative relationship with three of them; autonomy, responsibility, and flexible schedule. Removing this one-item from the scale increases the scales internal validity by only one point (α =0.83). As an α of 0.82 is considered to be good, meaning that this scale is a good indicator of the variable job satisfaction, this scale will be used in its entirety.

Table 12

Between item correlations of job satisfaction measure

Variable	Salary r	Work r	Mobility r	Training r	Location r	Workload r	Autonomy r	Responsib. r	Superv. r	Flex r	Benefits r
Salary	-	.20**	.33**	.27**	.17**	.29**	.20**	.23**	.13**	.12**	.31**
Work	-	-	.42**	.38**	.33**	.30**	.40**	.48**	.31**	.30**	.02
Mobility	-	-	-	.53**	.24**	.35**	.36**	.39**	.41**	.35**	.10**
Training	-	-	-	-	.31**	.33**	.31**	.34**	.41**	.29**	.20**
Location	-	-	-	-	-	.37**	.36**	.35**	.25**	.26**	.07**
Workload	-	-	-	-	-	-	.51**	.47**	.32**	.40**	.05*
Autonomy	-	-	-	-	-	-	-	.70**	.42**	.57**	-.04
Responsib.	-	-	-	-	-	-	-	-	.47**	.51**	-.00
Superv.	-	-	-	-	-	-	-	-	-	.37**	.03
Flexible	-	-	-	-	-	-	-	-	-	-	-.15**

Note. *p < .05
**p <01

Perception of Stress at Work (PSW)

Respondents were asked to indicate in what way various factors influenced their level of stress at work. This scale was developed for the original survey and is a 22-item measure. This is a unidimensional scale measuring one construct: perceived organizational stresses. A factor analysis was conducted and all but one item were found to be related at the minimum of a .47 level. The one item that factored in at .32 (Difficult/challenging clients) was removed from the analysis (this is interesting as

current literature points to this variable being one of the strongest influence on burnout for social workers). As a single item difficult/challenging clients is positively and significantly correlated with stress ($r=.18$, $p<.01$). The removal of this item left the scale at 21-items with a Cronbach's alpha of .87. This scale contains factorial validity (Rubin and Babbie, 2005). These 21-items follow the question: please indicate to what degree the following factors have influenced your stress at work:

Lack of time to do job as well as I would like
Heavy workload
Unrealistic deadlines
Long work hours
Routine tasks that have little meaning
Lack of autonomy/sense of no control
Conflicting or uncertain job expectations
Too much responsibility/ "wear too many hats."
Job insecurity
Lack of opportunity for growth, advancement, and/or promotion
Unpleasant or dangerous physical working conditions
Lack of support from co-workers and/or supervisors
Salary is not comparable to salaries of colleagues who do similar work
Lack of resources to adequately accomplish work tasks/duties
Unrealistic client expectations
Lack of employer feedback on my performance
Conflict with other staff/poor relationships with employer and/or colleagues
Inadequate compensation
Inability to balance professional and personal life
Abuse/threats of violence from clients
Work is too closely monitored

Each of these 21-items was related on a linear scale from 0 being "no influence," 1 being "somewhat of an influence." and 2 being "influence a great deal". The lowest possible score for this scale is 0 and 65 (2.4) scored a 0. The highest possible score is 44, 6(0.2) scored the highest. The distributions for the scale include a median score of 14, mean score of 14.8 ($SD=8.38$). The percentages are based on valid responses as 2787 answered the question with 768 missing.

For the purpose of clarification in the continued analysis this scale will be called the perception of stress at work measure (PSW) as it indicates level of work stress study participants perceive in their social work position.

Employer Satisfaction

Respondents' perception of employer is measured via a 12-item scale. As with the prior two scales employer satisfaction scale was also developed for the original survey. Each of the twelve-items is rated on a linear scale from 1 = strongly agree to 6 = strongly disagree. The scale holds strong internal reliability (alpha = .96).

The lowest possible score for this measure is 12 and 26 (1.0) scored here. The highest possible score is 72, 144(5.3) scored here. The distributions for the scale include median score of 47, a mean score of 46.2 (SD=15.5). The percentages are based on valid responses as 2709 answered the question with 846 missing.

The respondents were asked to indicate their agreement with the following twelve statements:

I feel honored to work for my organization/employer.
My employer acknowledges my contributions.
My employer gives me credit for my work.
My employer offers incentives/rewards for my good work.
My employer provides positive feedback regarding my work performance.
My employer encourages my participation in professional development activities.
My employer offers suggestions for my improvement.
My employer solicits feedback from me.
My employer encourages me to develop new and better ways to accomplishing work tasks.
When I have workplace grievances, my employer addresses my concerns in a timely fashion.
When I have workplace grievances, my employer assists me in resolving them.
I feel honored by my employer.

Stress by Job Satisfaction, Employer Satisfaction and PSW

Each of the measures that were developed for this survey was then assessed as to their relationship to the dependent variable, stress using a Pearson product-moment correlation coefficient (Table 13). The measure of perception of stress at work (PSW) was most related to stress ($r = .38$, $p < .01$ and effect size of 14%). PSW explains 14% of the variance in stress. So issues such as perceived lack of time, heavy workload, lack of resources, among others are closely and positively related to the experience of work stress for the respondents in this study. Even though this relationship is the highest correlated among the scales it is still considered to be weak as the correlation coefficient, $r = .38$, is less than 0.5.

The next two measures address positive influences at work; job satisfaction and employer satisfaction. Each of these measures holds a negative relationship with work stress ($r = -.23$ and $r = -.21$ respectfully) with a significance level of $< .01$. This suggests, even though there is a weak relationship here as well, that levels of stress have some form of impact on how the respondents viewed their work and their employer based on how stressed they are. These two scales explain less than 0.5% of the total variance.

Table 13

Between item correlations of stress and PSW, job satisfaction and employer satisfaction measures

Variable	PSW r	Job satisfaction r	Employer satisfaction r
Stress Indicator index	.38	-.23	-.21

Note. All coefficients are significant at p <01

Specific variables that might influence the relationship between stress and the variables of job satisfaction, employer satisfaction and PSW will be addressed further. The various coping styles extracted from current survey dimensions will now be discussed.

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Chapter 6

Coping

Introduction

The moderating variable of coping with its various forms will now be reviewed. In this study the forms of coping being analyzed are exercise, CAM, therapy/medication use and avoidance coping. Through bivariate analysis the relationship these various forms of coping hold to demographic variables and the variables of job satisfaction, employer satisfaction and PSW will be explored. Finally, the strength and direction each coping strategy holds with the dependent variable of stress is identified.

Coping strategies

Respondent use of stress coping strategies was measured via a single item that asked study participants if they participated in various efforts to cope with work related stress. The coping strategies/efforts included the option for respondents to indicate if they participated in exercise, meditation, yoga, therapy, alcohol use, absenteeism, prescribed medication, illicit-substances and other (Table 14). Most respondents report using exercise (n=1923, 54.3%) as a means to cope with work related stress. Following exercise is meditation (n=801, 22.6%), therapy (n=690, 19.5%) and use of prescribed medication (n=572, 16.1%), which was the 4th most utilized form of coping with work related stress. Other methods included; yoga (n=501, 14.1%), alcohol use (n=431, 12.2%), absenteeism (n=165, 4.7%), use of illicit-substances (n=20, 0.6%), and other (n=514, 14.4%).

Table 14

Coping Strategies used for Work Related Stress (N=3543, Missing=12)

Variable	n	Valid %
Exercise	1923	54.3
Meditation	801	22.6
Therapy	690	19.5
Prescribed Medication	572	16.1
Other	514	14.5
Yoga	501	14.1
Drink Alcohol	431	12.2
Absenteeism	165	04.7
Illicit Substances	20	00.6

A Pearson product-moment correlation coefficient was conducted to identify potential clusters between above noted coping strategies. Between-item correlations for these coping variables point to several different clusters that can be extracted and identified as specific coping strategies (Table 15). As exercise is the most commonly identified mode of coping for many of the respondents it will be identified as one coping strategy on its own. The next index identified consists of the two-item therapy and medication, together they hold a positive and moderately correlated relationship ($r = .29$, $p > .01$). Yoga and meditation, two CAM strategies are also positively and moderately related items ($r = .27$, $p < .01$) and will be considered a two-item index. Lastly, three items related to avoidance (alcohol use, illegal drug use and absenteeism) is identified as another coping index in this study. These three items are significantly related at a p level less than .01, however a weaker relationship exists among them ($r = .10$ and .11) as compared to the other coping indexes.

Table 15

Between item correlations of coping strategies

Variable	Exercise r	Therapy r	Meditation r	Yoga r	Absenteeism r	Medication r	Alcohol r	Drug use r
Exercise	_	.12**	.19**	.21**	-.01	.04*	.13**	.00
Therapy	_	_	.17**	.13**	.08**	.29**	.08**	.03
Meditation	_	_	_	.27**	-.01	.05	.00	.03
Yoga	_	_	_	_	.01	-.03	.07**	.01
Absent	_	_	_	_	_	.10**	.10**	.11**
Meds	_	_	_	_	_	_	.08**	.00
ETOH	_	_	_	_	_	_	_	.11**

Note. *p < .05
**p <01

The four coping indexes identified in this study are then exercise coping, CAM coping, therapy/medication coping and avoidance coping. A Pearson product-moment correlation coefficient was run to assess the relationship between these variables. Table 16 highlights the findings. Each coping strategy is positively and significantly related to stress at a .01 significance level. The strongest of these relationships (though still considered weak with an effect size of less than 10%) is between stress and therapy/meditation coping (r = .31), next is with avoidance coping (r = .22) with an effect size of 5%, and finally for both exercise and CAM coping an even weaker direct relationship exists (r = .11). CAM was not negatively associated with stress as initially hypothesized by this writer, though as with exercise it holds a weaker relationship to stress. This finding suggests that the experience of stress is related to engaging in all of the present coping strategies for the social workers in this study. Of the four strategies available the presence of stress is related more to therapy/mediation use followed by avoidance and finally by CAM or exercise coping.

Table 16

Correlations between stress and coping strategies of therapy/medication, avoidance, CAM and exercise (N = 3543, Missing = 12)

Variable	Therapy/medication	Avoidance	CAM	Exercise
	r	r	r	r
Stress	.31	.22	.11	.11

Note. All coefficients are significant at p <01.

As coping strategies are an important variable in this study further analysis of this variable will be reviewed in the following section.

Coping and Respondent Demographics

Stress, related directly to respondents' social work positions exists among a high percentage of the total respondents in this study. Close to sixty percent of study respondents report experiencing anywhere from low to high stress. This indeed is an issue as stress can directly impact not only one's professional engagement but their overall wellbeing. In this next section coping strategies that are employed by study respondents will be further analyzed.

Exercise as a form of coping with work related stress is reported to be utilized by 1923 (54.3%) of the total respondents. CAM coping is reportedly used by 1050 (29.6%), while therapy/medication as means of coping by 1001 (28.3) and avoidance coping is used by 557 (15.7%). Who the respondents are that use each form of coping will now be addressed in this section. Also, the relationship between coping with demographic variables and with the variables of job satisfaction, employer satisfaction and PSW will be further explored.

Exercise coping

Exercise as a form of coping is the most utilized by respondents in this study. This variable is set up as a yes/no item, and while 54.3% (1923) engage in exercise, 45.7% (1620) reportedly do not.

CAM Index

The CAM coping index is comprised of meditation (second most utilized coping strategy) and yoga. These two forms of coping are considered to be characterized as part of complimentary alternative treatments. This variable is measured on a three point scale where 1 is no use, 2 designates low-use (one of the two coping strategies), and 3 as high-use (both of the strategies). Seventy percent (2943) of the total respondents report not engaging in either of the CAM coping strategies, while 798 (23%) report engaging in either meditation or yoga and 252 (7%) report the use of both.

Therapy/medication index

Therapy/medication coping consists of the stated two items. A total of 1001 (28.3%) of the participants engage in this form of coping to deal with work related stress. Of the total respondents in the survey 2542 (71.7%) do not engage in this form of coping, 740 (20.9%) either are in therapy or are taking medications to cope with work stress, and 261 (7.4%) are in therapy and taking medications to cope with work stress. This variable is measured on a three point scale where 1 is no use, 2 designates low-use and 3 is high-use.

Avoidance index

Avoidance coping with work stress is indicated by the following items; absenteeism, alcohol use or drug use. It is the least used coping strategy among survey

respondents. The avoidance index consists of three items (absenteeism, alcohol use and drug use). This variable is measured on a four point scale where 1 is no use, 2 is low use, 3 is moderate use and 4 is high use. Eighty-four percent (2986) report not engaging in this form of coping, while 502 (14%) engage in at least one of the three items in the index, a little over 51 (1.4%) engage in at least two of these items and 4 (0.01%) engage in all three.

Now that a better understanding of each of these four coping strategies has been explicated, identifying the demographics of the study participants engaging in each will be reviewed. Tables 20 and 21 identify these characteristics for each of the four coping strategies.

Bi-variate analysis: Coping and Demographic Variables

Gender

A chi-square analysis was run to test the relationship between gender and coping strategies. A weak significant relationship was found between gender and CAM coping ($\chi^2 = 6.16$ df = 2, $p<.05$). A slightly higher percentage of female respondents report the use of both low and high CAM to cope with work related stress as compared to male respondents. A weak significant relationship was found between gender and therapy/medication coping ($\chi^2 = 6.76$, df = 2, $p < .03$). Female respondents report the use of therapy/medication coping slightly more than male respondents, again this relationship weak. Total effect size for both is less than 0.5%.

No significant relationship was found between exercise coping and avoidance coping with gender for these study respondents.

Age

A Pearson product-moment correlation coefficient was run to test the relationship between age and coping. A weak inverse relationship was found between age and avoidance coping ($r = -.15$, $p < .01$). The effect size in this relationship is 2%. This indicates that younger respondents use avoidance as a means of coping with work related stress. A weak positive relationship was found between age and CAM coping ($r = .06$, $p < .01$) with an effect size of almost 0.5%. This indicates that older study respondents use CAM as a means of coping with work related stress. No significant relationship was found between age and exercise and age and therapy/medication coping with work related stress.

Marital Status

A chi-square analysis was run to test the relationship between marital status and coping strategies. A significant, but weak relationship (total effect size is less than .5%) was found between therapy/medication coping and marital status ($\chi^2 = 36.9$, $df=6$, $p<.01$, $\tau -c = .03$). Married respondents report lower levels of therapy/medication coping compared to widowed, divorced and never married respondents. It appears that being married for these study participants is associated with less therapy/medication use when dealing with work related stress. A significant, but weak relationship (total effect size is less than .5%) was found between avoidance coping and marital status ($\chi^2 = 69.4$, $df=9$, $p<.01$, $\tau -c = .05$). Single respondents report highest levels of avoidance coping as compared to married, divorced and widowed respondents. Those respondents who reported having never been married report higher levels of avoidance coping use.

No significant relationship was found between exercise coping and CAM coping with marital status for these study participants.

Years of Experience in the Field of Social Work

A Pearson product-moment correlation coefficient was run on various coping with years of experience in the field. The only one indicating significance, though quite weak ($r2 = .01$), is avoidance coping ($r = -.11$, $p < .01$). Exercise ($r = .03$, $p<.13$), Therapy/Medication ($r = -.03$, $p<.06$) and CAM ($r = .00$, $p<.96$) coping are found to have a non significant relationship with years of experience in the field.

Coping and Job Satisfaction, Employer Satisfaction, and PSW

Table 17 reviews the relationship between coping and the three variables of; PSW, employer satisfaction and job satisfaction. A Pearson product-moment correlation coefficient analysis was run to assess these relationships. No significant relationship was found between exercise and two of these variables (PSW and employer satisfaction). A weak, yet significant relationship was found between exercise and satisfaction with work ($r = .044$, $p < .05$). This relationship represents less than 1% of the total variance. No significant relationship was found between CAM and any of these variables.

Significance was found between therapy/medication coping and avoidance coping with these three variables. The strongest relationship, though still weak, is with PSW. For therapy/medication ($r = .17$, $p<.01$) this relationship represents 3% of the total variance, closely followed by avoidance coping ($r = .14$, $p<.01$), which represents 2% of the total variance. Another pattern found with a negative though weak relationship and representing less than 1% of the total variance is between therapy/medication and employer satisfaction and job satisfaction (for both $r = -.09$, $p < .01$). The relationship

between job and employer satisfaction is also negative with avoidance coping (r = -.07, p<.01). Both represent less than ½% of total variance.

It appears that PSW is directly correlated with therapy/medication (r = .17, p < .01) and avoidance (r = .14, p < .01) coping strategies. Whereas there is an inverse relationship between these two forms of coping and employer satisfaction and job satisfaction (r = -.07, p < .001).

Table 17

Coping by PSW, employer satisfaction and job satisfaction

Coping	PSW	Employer satisfaction	Job satisfaction
	r	r	r
Exercise	.01	.04*	.04*
CAM	.03	.03	.03
Ther/med	.17**	-.09**	-.09**
Avoid	.14**	-.07**	-.07**

Note. *p < .05
** p <01

As most of the variance in both stress and coping, indicated in the prior analyses, is accounted for by PSW the remaining analyses will include only this scale.

Stress and Coping

The following will address the hypothesis question: What are the moderating influences of coping strategies on stress and PSW?

The strongest relationship with stress is found with therapy/medication coping (χ^2 = 381, df (8), p<.001; τ -c = .23). Those respondents that reported the highest levels of stress reported higher levels of therapy/medication coping, this is explained by 5% of the total variance. Exercise coping holds a significant but weak relationship to levels of stress with a total effect size of 2% (χ^2 = 69, df (4), p<.001; τ -b = .14). When

respondents reported stress they also reported use of exercise coping. A significant but weak relationship is found with levels of stress and avoidance coping (χ^2 = 199.1, df(12), p<.001 τ -c = .12). This relationship is explained by only 1.5% of the total variance. Those respondents that reported stress also engaged in avoidance coping. Finally, a significant but again weak relationship with stress is found with CAM coping (χ^2 = 59.4, df (8), p < .001; τ -c = .09), which explains less than 1% of total variance. Some of the respondents that reported stress engaged in CAM coping.

Of further interest to this writer is how stress and the three variables of job satisfaction, PSW, and employer satisfaction are mediated by the presence of the various coping strategies. The following chapter will apply multivariate analysis to explore these relationships further.

Chapter seven

Multivariate Analysis

Introduction

The following chapter further explores specific models contributing to stress using the statistical procedures of multiple regression. In the first model the coping strategies are listed as predictor variables and stress as dependent variable. In this model all the coping strategies contribute to the prediction of stress to some degree. In the second model PSW, job satisfaction and employer satisfaction are entered as predictors with stress as dependent variable. Of these variables the only one contributing to the prediction of stress is PSW. Further analysis imploring a hierarchical logistic regression analysis of stress with the predictor variable of PSW and each coping strategy assesses the interaction effect of coping on PSW with stress. Exercise and therapy/medication use were the only two coping strategies found to hold a moderating effect between PSW and stress in the individual models. Each of these analyses will now be presented.

Coping Variables Predicting Stress

Multiple-regression was employed for analyzing the survey data related to the independent variables of coping strategies (CAM, exercise, avoidance and therapy/medication) as they relate to the dependent variable stress. The model employing these four independent variables in contribution to stress was found to be statistically significant (Multiple R = .37($F = 139.3$, $df = 4$, $p < .001$) among these variables. A medium effect size is found (R=.37), and this model explains 14% of the total variance. Coping strategies that most contribute stress in this analysis include; therapy/medication ($\beta = .28$, $p < .001$), followed by avoidance coping ($\beta = .18$, $p < .001$). Exercise coping ($\beta = .05$,

p<.005) and CAM coping (β =.04, p<.02) contributed the least to the model. The inference can then be made that those who engage in coping strategies are experiencing greater levels of stress, especially if they are engaged in therapy/medication or avoidance coping (Table 18).

Table 18

Summary of Contribution for coping variables predicting Stress (N = 3543)

Variable	B (*SE*)	β	p	R	R2
Therapy/Meds	.48 (*.03*)	.28	.001		
Avoidance	.44 (*.03*)	.18	.001		
Exercise	.10 (*.03*)	.05	.005		
CAM	.06 (*.03*)	.04	.02		
Variables combined				.37	
Variance explained					.14

Model=F=139.30, df=3542, p<.001.

PSW, job satisfaction, employer satisfaction variables in predicting stress

The second multiple regression model analyzed the survey data related to job satisfaction, employer satisfaction and PSW as they relate to the dependent variable of stress (Table 19). The multiple R between these three independent variables combined and "stress" is .37(F = 126.6, df = 3, p <.001). A medium effect size is found (R=.37), and this model explains 14% of the total variance. PSW is the strongest predictor of the outcome variable as it holds the larger standardized Beta (β = .35) and is statistically significant (p < .001). Also, findings indicate that for every unit increase in PSW the outcome variable increases by .05 as indicated by the un-standardized Beta. Employer satisfaction and satisfaction with one's job were found to not be significant, though the

relationship of each was negative (β =-.02 and -.03 respectfully). So it appears that the variable of PSW is related to the experience of greater levels of stress in this model.

Table 19

Summary of contribution of PSW, job satisfaction and employer satisfaction variables in predicting stress (N = 3555)

Variable	B (*SE*)	β	p	R	R2
PSW	.05 *(.00)*	.35	.001		
Job Satisfaction	-.00 *(.00)*	-.03	.25		
Employer Satisfaction	-.00*(.00)*	-.02	.55		
Variables combined				.37	
Variance explained					.14

Model=F=126.64, df=2347, p<.001

Hierarchical Binary Logistic Regression analysis

The final step in the data analysis plan was to examine: 1) potentially significant main effects between the independent and moderating variables with the outcome variable; and 2) the potentially significant moderating effect of the four coping strategies on the relationship between the independent variable with the outcome variable. Therefore, for each research question, a two-step hierarchical binary logistic regression model was conducted. As both stress and coping variables are categorical measures, a logistic regression analysis was chosen to examine the relationship between the independent and dependent variables.

Stress with CAM and PSW

In step 1, perception of stress at work (PSW) (IV) and CAM (moderating variable) were entered as predictors of the outcome variable stress (representing a health indicator is present). In this step, the moderating variable was dummy coded by group, so that each CAM category could be compared to one another in relation to experiencing the outcome variable. Among the three dummy coded variables, each reflecting separate categories of CAM use (no CAM, 1 CAM & 2 CAM) no CAM was left out of the logistic regression model in step 1 in order to make this category the reference group. Note also that in step 1 the odds ratio's for PSW is not interpretable, as these are continuous variables. The p value is indicative of the significance level for the variable in step 1.

In step 2, the independent and moderating variables were entered together as predictors with an added interaction term (the independent variable X the moderating variable). In step 2, the moderating variable was entered as a categorical variable with all categories represented.

Results:

The results of the first binary hierarchical logistic regression model are summarized in Table 20. Though the overall model was statistically significant in both step 1 [X^2 (3, N = 2787) = 348.92, p<.001] and step 2 [X^2 (3, N = 2787) = 348.79, p<.001], 1 CAM and 2 CAM in reference to the no CAM group was found to have no statistical significance to stress for these study participants. The overall model significance is explained by the variance in the dependent variable however, the contribution of CAM alone did not influence it.

Table 20

Hierarchical logistic regression of stress with PSW and CAM coping (N = 3555)

Variable	B(SE)	Wald (X^2)	Odds ratio	95%CI	P
Step 1					
PSW	.10 (.01)	286.27	1.10	1.09-1.11	.00
No CAM (reference group)					
CAM 1	.12(.10)	1.62	1.13	.94-1.37	.20
CAM2	.15 (.16)	.92	1.16	.86-1.58	.43
Step 2					
PSW	.10 (.01)	200.89	1.10	1.09-1.12	.00
Total CAM (1+2)	.06 (.14)	.22	1.06	.81-1.40	.64
PSW by Total CAM	.00 (.01)	.06	1.00	.98-1.02	.81

Step 1 $X^2 = 348.92$, df = 3, $p < .001$
Step 2 $X^2 = 348.79$, df = 3, $p < .001$

Stress with Exercise and PSW

Table 21 summarizes the results of the hierarchical logistic regression of stress with PSW and exercise coping. Results from the analysis indicate that the model was statistically significant in step 1 [$X^2(1, N = 3543) = 66.01$, p<001], step 2 [$X^2(1, N = 2787) = 347.09$, p<001] and step 3 1 [$X^2(1, N = 2787) = 352.93$, p<001]. The strength of the association of the individual variables with the outcome variable was examined by evaluating the statistical significance of individual coefficients and their odds ratios.

Within step 1, data indicated that exercise was associated with an increased likelihood of experiencing stress at a statistically significant level [β =.55; SE = .07, p<.001]. Specifically, those that responded “yes” to exercise, were almost two times

(OR=1.74, 95% CI=1.52-1.99) more likely to indicate stress. In step 2, exercise coping was no longer related to stress [β =-.05, SE = .09, p=.54]. However, perception of stress at work did explain stress at a statistically significant level [β =.10, SE = .01, p<.001]. In step 3, the findings indicate a significant interaction effect where exercise coping moderated the relationship between PSW with stress [β =-.03, SE = .01, p=.02].

Table 21

Hierarchical logistic regression of stress with PSW and exercise coping (N = 3555)

Variable	B(SE)	Wald (X^2)	Odds ratio	95%CI	P
Step 1					
Exercise	.55 (.07)	66.01	1.74	1.52-1.99	.00
Step 2					
Exercise	-.05(.09)	0.37	.95	.81-1.12	.54
PSW	10 (.01)	287.05	1.10	1.09-1.11	.00
Step 3					
Exercise	.33(.18)	3.32	1.38	.98-1.96	.07
Perception of Stress	.11(.01)	144.83	1.12	1.10-1.14	.00
Perception of Stress by Exercise	-.03 (.01)	5.74	.97	.95-1.00	.02

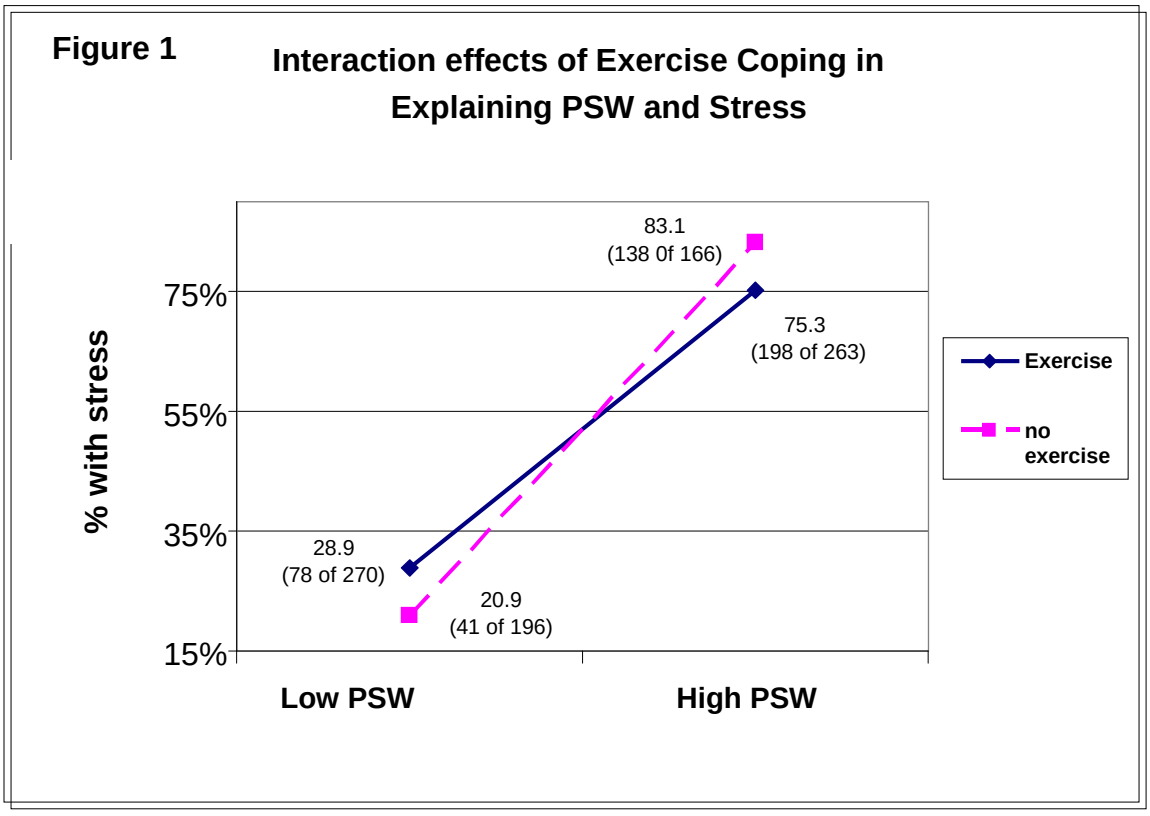
Step 1 X^2 = 66.61, df = 1, p < .001
Step 2 X^2 = 347.09, df = 2, p < .001
Step 3 X^2 = 352.93, df = 3, p < .001

Figure 1 presents a chart toward examining the interactive relationship identified in Step 3. Within this chart, high and low levels of PSW were identified where cases 1SD above mean value score for PSW were coded as high and 1SD below the mean value score were coded as low.

In this model results indicated differences between participants who do not use exercise coping and with those who do. Of the study participants that did exercise and experience low PSW about 1/3 (28.9%) of them met the criteria for stress. Where as, those study participants who did not exercise and held low PSW about 20.8 % of them experienced stress. In the presence of low PSW engaging in exercise coping increases the rate of experienced stress by 8.1% for these study participants.

Of the study participants that did exercise and held high PSW a lower rate of them (75.3%) meet criteria for stress as related to those that did not exercise (83.1%). So in the presence of high PSW study participants that do not exercise hold a higher rate of stress as related to study participants that do exercise.

Figure 1



Stress with therapy/medication and PSW

Table 22 summarizes the results of the hierarchical logistic regression of stress with perception of stress at work (PSW) and therapy/medication coping. Results from the analysis indicate that the model was statistically significant in step 1 [X^2(1, N = 3543) = 277.88, p<001], step 2 [X^2(2, N = 2787) = 418.91, p<001] and step 3 [X^2(3, N = 2787) = 431.49, p<001]. The strength of the association of the individual variables with the outcome variable was examined by evaluating the statistical significance of individual coefficients and their odds ratios.

Within step 1, data indicated that therapy/medication coping was associated with an increased likelihood of experiencing stress at a statistically significant level [B =1.31; SE = .08, p<.001]. Specifically, those that responded "yes" to PSW, were almost four times (OR=3.71, 95% CI=3.16-4.36) more likely to indicate stress. In step 2, therapy/ medication coping was also found to be related to stress [B =.79, SE = .10, p<.001]. In this model PSW and the use of therapy/medication together explain stress among the study participants. In step 3, the findings indicate a significant interaction effect where therapy/medication coping moderated the relationship between PSW with stress [B =-.05, SE = .01, p=.00].

Table 22

Hierarchical logistic regression of stress with PSW and Therapy/Medication Coping (N = 3555)

Variable	B(SE)	Wald (X^2)	Odds ratio	95%CI	P
Step 1					
Therapy/ Medication	1.31 (.08)	251.93	3.71	3.16-4.36	.00

(Table 22 continues)

(Table 22 continued)

Variable	B(SE)	Wald (X^2)	Odds ratio	95%CI	P
Step 2					
Therapy/ Medication	.79(.10)	69.17	2.21	1.83-2.66	.00
PSW	.09(.01)	252.62	1.10	1.08-1.11	.00
Step 3					
Therapy/medication	1.42(.20)	49.58	4.15	2.79-6.16	.00
PSW	.10(.01)	223.45	1.11	1.09-1.12	.00
PSW by therapy/Med	-.05 (.01)	12.93	.96	.93-.98 .	.00

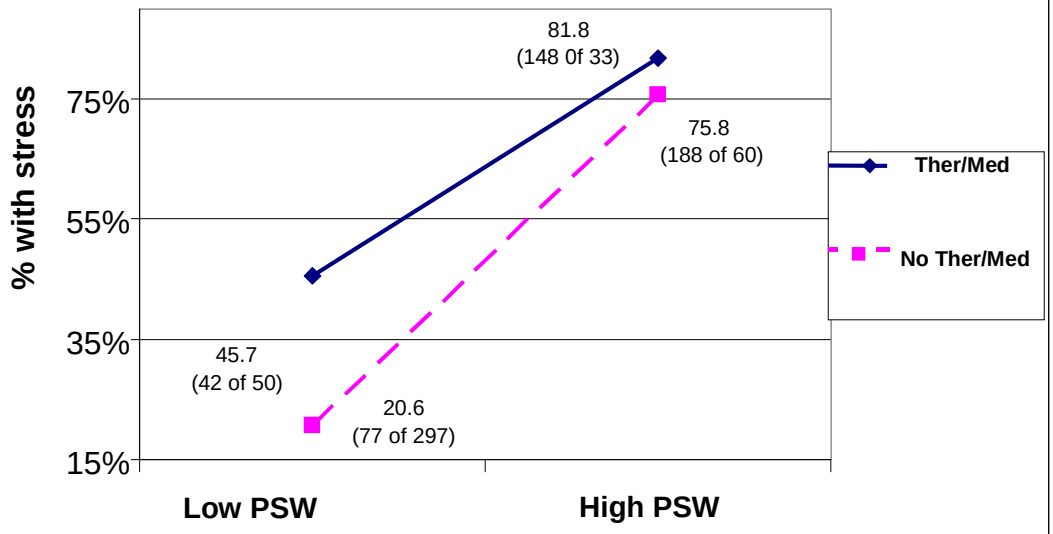
Step 1 $X^2 = 277.88$, df = 1, $p < .001$
Step 2 $X^2 = 418.91$, df = 2, $p < .001$
Step 3 $X^2 = 431.49$, df = 3, $p < .001$

Figure 2 presents a chart toward examining the interactive relationship identified in Step 3. Within this chart, high and low levels of PSW were identified where cases 1SD above mean value score for PSW were coded as high and 1SD below the mean value score were coded as low.

Results indicated differences between participants who do not use therapy/medication coping and with those who do. Of the study participants that did use therapy/medication coping and experience low PSW about 1/2 (45.7%) of them met the criteria for stress. Where as, those study participants who did not engage in therapy/medication coping and held low PSW about 20.6 % of them experienced stress. In the presence of low PSW participants that engage in therapy/medication use hold a higher rate of stress related to study participants that do not engage in therapy/ medication coping.

Of the study participants that did engage in therapy/medication coping and held high PSW a higher rate of them (81.3%) meet criteria for stress as related to those that did not engage in therapy/medication coping (75.8%). In the presence of high PSW study participants that do engage in therapy/medication coping hold a higher rate of stress as related to study participants that do not engage in therapy/medication coping. So in the presence of PSW, be it low or high, engaging in therapy/medication coping for these survey participants is related to a higher rate of stress.

Figure 2 **Interaction effects of Therapy/Medication Coping in explaining PSW and Stress**



Stress with avoid coping and PSW

Table 23 summarizes the results of the hierarchical logistic regression of stress with PSW and avoid coping. Results from the analysis indicate that the model was statistically significant in step 1 [$X^2(1, N = 3543) = 131.44, p<001$], step 2 [$X^2(1, N =$

2787) = 375.22, p<001] and step 3 [X^2(1, N = 2787) = 378.37, p<001]. The strength of the association of the individual variables with the outcome variable was examined by evaluating the statistical significance of individual coefficients and their odds ratios. Within step 1, data indicated that avoidance coping was associated with an increased likelihood of experiencing stress at a statistically significant level [B =1.12; SE = .10, p<.001].

In step 2, when PSW was controlled for, avoid coping continued to be related to stress [B =.61, SE = .12, p<.001], however to a weaker degree. The odds ratio dropped from 3x's [OR=3.08, 95% CI=2.51-3.77] as likely to contribute to stress to less than 2x's [OR=1.83, 95% CI=1.46-2.30] as likely. In this model PSW and the use of avoidance coping together explain stress among the study participants.

In step 3, the findings do not indicate a significant interaction effect where avoidance coping does not appear to moderate the relationship between PSW with stress [B =-.03, SE = .02, p=.07]. The overall model was found to be significant due to the strength of the contributing relationship avoidance coping and PSW have with stress among study participants. It is important to note that respondents in the avoid group alone were almost 3x's as likely (OR=2.80, 95% CI=1.67-4.70) to report stress.

Table 23

Hierarchical logistic regression of stress with PSW and Avoid Coping (N = 35555)

Variable	B(SE)	Wald (X^2)	Odds ratio	95%CI	P
Step 1					
Avoid	1.12 (.10)	117.85	3.08	2.51-3.77	.00

(Table 23 continues)

(Table 23 continued)

Variable	B(SE)	Wald (X^2)	Odds ratio	95%CI	P
Step 2					
Avoid	0.61(.12)	27.15	1.83	1.46-2.30	.00
PSW	0.09(.01)	256.65	1.10	1.09-1.11	.00
Step 3					
Avoid	1.03(.26)	15.17	2.80	1.67-4.70	.00
PSW	0.10(.01)	245.54	1.10	1.09-1.12	.00
PSW By avoid	-0.03 (.02)	3.26	0.97	0.94-.1.00	.07

Step 1 $X^2 = 131.44$, df = 1, $p < .001$
Step 2 $X^2 = 375.33$, df = 2, $p < .001$
Step 3 $X^2 = 378.37$, df = 3, $p < .001$

Safety concerns

As the safety concern variable was most related to stress it was controlled for in the final analysis model. Therapy/mediation coping continued to explain the outcome variable, in a statistically significant level, throughout the models.

However, for exercise coping in terms of the main effects model (step 2) where safety concerns, exercise and PSW were added, safety concerns and PSW were significantly related to the outcome variable where exercise was not, in spite of earlier significance in step 1(Table 24).

Table 24

Hierarchical logistic regression of stress with PSW and Exercise Coping controlling for safety issue concerns (N = 3555)

Variable	B(SE)	Wald (X^2)	Odds ratio	95%CI	P
Step 1					
Safety	1.24(.07)	291.13	3.46	3.00-3.99	.00

(Table 24 continues)

(Table 24 continued)

Variable	B(SE)	Wald (X^2)	Odds ratio	95%CI	P
Exercise	0.33(.07)	21.17	1.39	1.21-1.61	.00
Step 2					
Safety	0.35(.09)	16.03	1.42	1.20-1.69	.00
Exercise	-.07(.09)	0.71	0.93	0.79-1.10	.40
PSW	0.09 (.01)	241.64	1.10	1.08-1.11	.00
Step 3					
Safety	0.45(.11)	17.12	1.56	1.27-1.93	.00
Exercise	0.04(.11)	0.14	1.04	0.83-1.31	.71
PSW	0.10(.01)	192.28	1.10	1.09-1.12	.00
PSW by Safety by Exercise	-0.01 (.01)	2.30	0.99	0.97-1.00	.13

Step 1 $X^2 = 370.35$, df = 2, $p < .001$
Step 2 $X^2 = 363.03$, df = 3, $p < .001$
Step 3 $X^2 = 365.33$, df = 4, $p < .001$

The coping strategies of therapy/medication use and exercise contribute most to the model including PSW and stress. Therapy/medication use, even when controlling for safety concerns continues to add to the increase in experienced stress levels. For exercise coping in the presence of high PSW stress levels are reduced, however, in the presence of low PSW stress levels are increased. When safety concern is controlled for, exercise no longer contributes to this model, indicating that safety concern reduces the effect of exercise.

Chapter 8

Discussion

Introduction

The data being re-analyzed for this study was originally reported on by the NASW Center for Workforce Studies (2009); however as Chaiklin (2010) points out their published findings did not provide any "cross-tabulation of the data and little interpretation of its significance or implications" p. 295. The present study represents a first attempt at providing such in-depth analysis with interpretations and implications of findings. More specifically, this secondary analysis focused on the relationship between physical and emotional stress, coping strategies and organizational factors that promote stress at work among a national sample of social workers based on the 2007 NASW Center for Workforce survey. Demographic predictors were also analyzed for their association with the foregoing stress within the respondent population.

This chapter begins with a discussion of the specific findings of this study and their place within the existing literature on stress and burnout. Next, the limitations of this study will be examined considering the study design, sampling, and instrumentation. Finally, the implications of these findings for social work practice, policy formulation and future research will be reviewed.

Interpretation of Findings

More often than not, when conducting a secondary analysis a researcher must alter his or her initial research questions and hypotheses to fit the available data (McCall & Appelbaum, 1991). Such was the case with this writer. Originally, individual concepts such as mindfulness, hardiness and burnout syndrome were driving the study interest.

Although the available survey data did not lend itself to this end, it contained enough related variables to justify further analysis for this study. Based on the data available the first question and several implicit hypotheses that could be answered with the available data are: What are the predictors of stress among study respondents? And the second question containing several embedded hypotheses is: What are the moderating influences of coping strategies on stress and perception of stress at work (PSW)?

Over 50% of the total study respondents reported experiencing stress as a result of their work environment. Stress for the respondents includes the indicators of fatigue, psychological disorder, sleep disorder and irritability/aggression. In the analysis low stress is indicative of none of these stress indicators, medium stress indicates at least one and high stress indicates two or more. Predictor variables in the study include the four coping strategies of exercise, CAM (yoga and meditation), therapy/medication, and avoidance (absenteeism, alcohol use, drug use). Among the demographic variables safety concern at work was the most significantly related to stress (with an effect size of 11%), as such it was controlled for in the final analysis.

As the study survey is asking respondents to identify the physical or psychological responses they experience when faced with job stress, a review of stress reactivity may be helpful when interpreting results. Stress reactivity is related to the physical responses our body goes through when faced with perceived stress (Kabat-Zinn, 1990). It is associated with the fight-or-flight response which increases muscle tension, increases heart rate, blood pressure and heightens the nervous system's response. Lazarus (1966) indicates that stress includes a stimulus (stressor) which elicits a response based on how the stressor is interpreted (cognitive appraisal). This response initiates

various coping styles based on psychological defenses and the environment in which the stressor is located. The longer one's physiological response is elevated, the greater the potential damage is to the individual. The physical response (stress) is the principle dependent variable in the study and variables that contribute to stress are predictor or independent variables (PSW, job satisfaction, employer satisfaction, safety concerns at work, and other demographic variables). How one responds to appraisals based on the environment and/or internal stimuli is represented by the moderating variable of coping (CAM, exercise, therapy/medication and avoidance) in this study. Discussion of findings related to the first question will now be reviewed.

1.) What are the predictors of stress among the study respondents?

Several work and professional characteristics (safety concerns, organizational factors that predict stress and/or the PSW, years of experience in the field, and personal characteristics) were significantly associated with stress among study participants. Bi-variate analysis indicated that the strongest predictors related to overall stress were safety concern at work and PSW. The overall effect size for both was 11% and 14% respectfully. Further discussion of each of these predictor variables follows.

Years of experience and age

In further bi-variate analyses, an inverse relationship was found between levels of stress with years of experience in the field and also with age. Younger respondents and those with fewer years of experience in social work are at a higher risk of experiencing stress. It is important to note however, that these associations are weak, explaining less than 1.5% of the total variance. While the associations are weak, they are consistent with previous studies. For example, Acker (1999) found that recent graduates with less work

experience were more likely to consider leaving their jobs. Lloyd & King (2004) found that being younger was associated with an increased score on depersonalization (Maslach & Jackson, 1986), a syndrome related to burnout. Finally, among a nationally selected sample of social workers working in the field of gerontology, Pauline & Walter (1993) also found that age was inversely associated with burnout.

One possible explanation for the negative relationship between years of experience and stress could be attributed to an increase in exposure to safety issues among social workers entering the field. In the 2004 NASW workforce bench mark study 26% of the respondents reported facing safety issues within their first 5 years of employment with a steady decrease as years increased (Center for Health Workforce Studies & NASW Center for Workforce Studies, 2006). Perhaps with experience comes the ability to notice subtle cues from clients of when to approach and when to ask for help or keep a good distance from a situation. Alternatively, as Dillenberger (2004) found, those new to the field may be assigned the more difficult client who require case management and who may not be amicable to being in treatment. As noted, safety concern is found to be most predictive of stress irrespective of age and career longevity in this study.

In regard to age and stress, this study finding also supports the 2004 NASW workforce study report. Specifically, in the 2004 NASW workforce study report social worker age was found to be positively related to perception that respondents improved quality of life for their clients, helped them meet objectives as well as respond effectively to the number of requests for help. Older social workers also reported being more satisfied with their ability to address complex problems, and to work with cultural

differences. This could be related to the experience of skill and effectiveness accrued over time in the field.

Nonetheless, that same study found that younger social workers reported feeling more able to help family respond to client needs (Center for Health Workforce Studies & NASW Center for Workforce Studies, 2006). One could hypothesize that younger workers feel effective in family sessions due to having more recent educational experience and therefore information learned. The newly learned information may be shared with client families who are more likely voluntarily seeking assistance or understanding related to the illness of their loved one. In this one area younger social workers may feel valued in that they have something unique to contribute.

Considering the relationship between years of experience and overall satisfaction, we do not have information on those who have left the field. It may be that respondents remaining in social work possess specific coping styles or are hardier allowing for acclimation to the job stressors. Therefore years in the field could be an indication of adaptive coping patterns of those entering at a younger age. Instead, those who can't cope may leave social work. Alternately, social work may be becoming more stressful related to healthcare reform (Abramovitz, 2001; Arches, 1991). In order to test these hypotheses more research is required, particularly related to social workers who leave the field early on in their career.

Gender and marital status

Gender and marital status were significantly associated with stress among the study participants. Being female and single were both found to be directly related to higher degrees of stress. Though statistical significance is found, here again the strength

of these relationships is quite weak, each explaining less than 1% of the total variance in stress. Being female was positively associated with higher reports of high and medium stress. So to some degree it appears that gender does play a role in the experience of stress among study respondents. Though the association is weak, being female in this study is directly related to a higher degree of stress.

Some possible explanations for the gender difference could be related to income, debt and coping strategies. Female respondents in this study earn lower wages and carry a higher educational debt. According to Drentea and Lavrakas (2000) debt is associated with worsening physical health and self-reported health. Therefore, carrying the added burden of financial debt could explain the higher degree of stress experienced by female respondents.

Arrington reported that females were more likely to report higher use of therapy and use of prescribed medication then males (NASW Center for Workforce Studies, 2009). The same positive association is found in the current study. This is important in that results of this study indicate that in the presence of PSW, therapy/medication coping contributes to respondents' experience of stress, even when controlling for safety concerns. The combination of fiscal concerns and mode of coping could contribute to female respondents experienced higher stress levels.

Single study respondents reported experiencing 5% more of high stress levels than partnered respondents. Therefore, being in a relationship appears to provide some sort of buffering effect as those study participants who report being in a relationship experience lower levels of overall high stress. One explanation of this could also be related to debt. This study found that single people are more likely to have higher debt

than married people. This was also reported in the NASW 2009 report (NASW Center for Workforce Studies, 2009). As formerly noted debt can impact one's overall health negatively, this provides one possible explanation of single respondents higher stress levels.

Another study examining burnout suggests that being in a relationship provides a buffering effect to stress. Brown, Prashantham and Abbott (2003) found that social support was more closely related to burnout for Indian males than females. This implies that having some form of support at home (at least for Indian males, according to the aforementioned study) could provide a buffering effect from work stressors for those in relationships. Again, not enough information is known based on this study design to provide plausible explanations of why married versus single respondents hold this association to stress.

Direct clinical practice

One predictor of stress and or burnout indicated in the literature is engagement in direct clinical work with difficult clients (Acker, 1999). In the initial analysis this predictor was found to be predictive of stress as well (explaining less than 1% of variance) for these study respondents. Though when a factor analysis was conducted on the variables related to factors influencing stress at work (PSW scale), work with difficult/ challenging clients was not as influential as organization-related factors. It appears that even though clients may be experienced as difficult/challenging this variable is not the major influence on the respondents' stress at work. Social workers may be entering the field with an expectation of challenges related to clients. When faced with organization-related challenges (perhaps not fully prepared for these challenges within

their social work education) respondents may be reacting to perceived stress more strongly leading to a series of stress reactions and ultimately higher levels of experienced stress. In this study social workers report more stress when faced with organizational factors.

In addition, no difference was found in respondent levels of stress when percentage of time spent in administrative practice and percentage of time spent in direct clinical practice was analyzed. This could be related to an increase in organizational stressors at work due to changes in healthcare for all workers in the field regardless of percentage of time spent in clinical or administrative practice (Abramovitz, 2001; Arches, 1991). These findings are supported by Vissor et al. (2003) and Lloyd and King (2004) who both found that organizational factors contributed to burnout more than personal variables or work with clients. It seems that regardless of time spent in administrative or clinical work stress related to organizational demands exists and needs to be addressed.

PSW, Job satisfaction and Employer satisfaction

The present study supports the finding that one of the strongest predictors of stress is perception of stress at work related to organizational factors. This finding is also supported by others (Siebert, 2005; Rowe, 1987; Visser et al., 2003; Pauline & Walter, 1993; Vissor et al., 2003 & Lloyd and King, 2004, Dillenberger, 2004).

Other predictor variables (i.e. job satisfaction and employer satisfaction) are found to hold an inverse and significant relationship with stress. However, through multivariate analysis (including the predictors of PSW, job satisfaction and employer satisfaction) both job satisfaction and employer satisfaction are not found to contribute to

stress at a level of significance. PSW is the only variable contributing to stress in this model.

What seem to contribute most to stress are the negatively loaded perceptions (i.e. lack of time to do job, heavy workload, unrealistic deadlines, long work hours). Even though being satisfied with one's job and one's employer hold an inverse relationship with stress, once the negative organizational perceptions are accounted for these relationships no longer contribute to this model on a significant level. Perhaps negative perceptions or appraisals are more strongly felt on a physical level. Greene (2004) found that a strong negative association existed between stress reactivity and health. The stress index specifically addresses unhealthy physical responses, which could explain the more influential relationship between stress and PSW. Given that PSW is directly associated to levels of stress, identifying moderating influences to this relationship could be beneficial. The relationship coping has to stress and how this relationship provides a moderating influence between PSW and stress follows.

Coping strategies

In terms of coping styles, those that were the most influential and positively related to stress were therapy/medication and avoidance coping; followed by exercise and CAM coping. It is logical that in the presence of stress some form of coping is being employed. For these respondents a stronger relationship is noted between therapy/medication use and avoidance in the presence of stress. Why might this be? One might hypothesize that western culture values therapy/medication to a greater degree in order to deal with physical/mental health issues. The stronger relationship with this form of coping makes sense in this context.

For respondents who experience stress, some form of coping is being applied in an attempt to deal with perceived stressors at work. Out of these analyses was born the second, and more focused research question.

2.) What are the moderating influences of coping strategies on stress and PSW?

To better understand the relationship between stress, PSW, and the coping variables a logistic multiple regression analysis was conducted. The moderating effects of the coping strategies between PSW and stress were tested. The only two coping strategies that contributed to the overall model as moderators between PSW and stress are therapy/medication and exercise coping.

Therapy/medication coping

In the presence of PSW, engaging in therapy/medication coping is related to a higher rate of stress. Engaging in therapy/medication coping, even when controlling for safety issues, contributes to the respondent's experience of overall stress. This is interesting in that it might seem that social workers who are in the helping profession would utilize therapy and medication to their benefit. Instead it appears that for these study participants, when faced with PSW, engaging in this mode of coping does not promote as beneficial a buffering effect to the physical and emotional implications of stress. According to Pope and Tabachnick (1994) psychologists in therapy that either avoided speaking about difficult issues or had concerns related to confidentiality did not find that therapy helped. This could be one explanation as to why therapy/medication coping is not providing the buffering effect in study respondents.

Alternatively, without the use of therapy/medication the experience of stress might be even greater. It might be that respondents entering therapy are experiencing

extremely high levels of stress and the use of therapy/medication could have brought these levels down. This remains unknown as we do not have respondent stress levels prior to entering therapy and/or taking medication.

There is not enough information known about the relationship between these variables for each study subject to make any firm conclusions. What this finding does promote are more questions in regard to study respondents' specific emotional and/or physical diagnoses, when therapy and or medication is used and when the respondent actually began treatment. Is engagement in treatment for these subjects voluntary? What type of therapy, medication is being used? What is the duration of this treatment? The difference between positive affect (PA) individuals and negative affect (NA) individuals related to perception of work and how this impacts use of therapy. More needs to be known in order to form educated conclusions as to why the therapy/medication coping strategy is strongly associated with experienced stress in the presence of PSW. Since no other studies on the use of therapy/medication for social workers were found in the literature search, there is much that needs to be understood about this relationship in light of the fact that respondents who are experiencing stress engage in a higher percent of therapy/medication coping compared to other coping strategies in the study.

Exercise coping

Exercise was found to be weakly related to stress in the initial bi-variate analysis with an effect size of 1%. This is surprising in that more than 50% of respondents chose exercise as one of the ways to cope with work related stress. Might this mean that for those who exercise, stress is experienced to a lesser degree? Perhaps in some respect

exercise is providing a moderating or buffering relationship to stress. This relationship was further analyzed in the study.

The relationship between exercise coping, PSW and stress is more complicated. With exercise as the moderating influence, an inverse relationship exists between stress and presence of high PSW. However, exercise no longer provides the same effect for those with low PSW. Instead, for this group those who exercise report more stress. It seems that stress is reduced for those who exercise and perceive their work environment as highly stressful. However, stress levels increase for those who exercise and perceive their work environment as less stressful.

As with therapy/medication coping, these results produce many questions. There is not enough information regarding study participants, nor the type, duration and the quality of exercise they are engaging in.

Studies indicate that engaging in exercise can promote overall health (Smits & Otto, 2009), and physiology has been proven to be positively influenced through exercise (Putermat et al, 2010). The fact that those study subjects with high PSW and exercise report the experience of less overall stress could be explained by this. However, why would this not also be true for those who perceive low PSW and exercise? Could it be that those in high perceived stress filled environments are more motivated to exercise and therefore gain higher benefits from the positive implication of this coping strategy? Perhaps if one is less impacted by their environment in a negative way they may be less inclined to exercise consistently or at an intensity that will promote health. So for these study respondents the reason they are exercising may be important. It could be that they

are motivated by the high negatively charged environment in a way that is promoting health benefits when they choose exercise as their way of coping.

Safety concern was controlled for in the model where stress was the outcome variable and exercise and PSW were the predictor variables. In step 2 of the model, exercise (in the presence of safety concerns and PSW) no longer explains stress. When respondents are concerned about safety and perceive stress, exercise does not have the same effect. Ultimately then safety concern holds a stronger relationship to stress. Exercise no longer provides a buffering effect in the presence of PSW and stress with the presence of safety concerns. It appears that when a heightened fear of lack of safety is present the physical benefits that exercise contributes to the experience of stress are significantly reduced. Possibly fear might increase the amount of tension held in the body and trigger higher levels of stress beyond what can be moderated by exercise.

CAM

Understanding the relationship between CAM and stress is one of the original interests of this researcher. Based on the literature search I originally had hypothesized that this relationship would be a negative one. Interestingly the CAM practices of meditation and yoga are found to be positively and significantly associated with stress in the initial bi-variate analysis. Most respondents that experience stress are also using CAM. However when the Logistic Regressions were conducted, CAM was no longer found to moderate the relationship between PSW and stress. These findings are surprising to this writer based on the research supporting meditation and yoga as a means of promoting overall health. Perhaps the study participants turned to these practices as a way to combat stress that had already built up (series of stress reactivity over time). Also

the type, quantity and quality of CAM are not available in the data to be analyzed. Clearly, more research is needed to understand this set of findings.

The MBSR studies that support the use of CAM strategies to positively impact one's overall heath included some form of training that alert the subjects to stress reactivity (increasing their self awareness) and guided instruction with reasons why the application of yoga, meditation, breathing practice etc. positively impact this process (Shapiro et al., 2005; Cohen-Katz et al., 2004; Chang et al., 2004; Rosenzweig, Reibel, Greenson, & Brainard, 2003). As no information is known about how study participants were introduced to meditation or yoga it is difficult to answer why, for these study participants, CAM did not moderate the relationship between stress and PSW.

It is also possible that CAM does not provide helpful effects for all individuals in health care. None of the studies based on MBSR were conducted with a social work sample exclusively.

Limitations of study

Although this is the largest study of its kind, there are certainly limitations that must be taken into account in generalizing from the foregoing findings. Some of the issues related to the limits of the study are inherently associated with secondary analysis, others with sampling and study design. Each of these will now be reviewed.

Secondary Analysis

Though conducting a secondary analysis is cost effective, takes less time than doing an original survey, and is not intrusive into the subjects' lives, there are several drawbacks to this form of research (Grinnell, 1997). First, the original research question posed by this writer could not be answered using the data. Instead questions needed to be

simplified and ultimately developed as the data was analyzed. This is expected when using secondary data (McCall, 1991).

Next, the quality of the data was also out of the control of this researcher and therefore contributed to compromised validity and reliability of study instruments. First, all scales used in the study were developed for the 2007 NASW study. Reliable and validated instruments were not used for the assessment of stress, job satisfaction, or coping; this makes it difficult to compare these results to other studies. Also, with the information in the survey we are able to discern if respondent exercised or practiced CAM but the quality, quantity, and time doing so is not specified. The same goes for therapy/medication use; the type, duration and quality of each are not made available. Thus descriptive quality related to the relationships in question is superficial at best.

Finally, data of interest to this researcher was not available in the data set. The individual traits of respondent related to PA and NA, level of mindfulness, hardiness, and the burnout syndrome is unknown. This data would allow for a richer understanding of how the individual qualities of respondents may contribute to the experience of their work environment. Information about individual respondent personality traits was not included in the original study.

Sample

The social worker respondents in the study uniformly constitute NASW members who have access to on-line resources. Respondents volunteered to fill out the survey and thus were not randomly selected from the total NASW membership. As the sampling is solely based on those who self-selected to participate, sampling error estimates cannot be calculated. This limits the possibility of generalizing results to other populations. It also

does not include individuals who have left the profession for stress related reasons and under represents social workers in the public sector.

Design

The cross-sectional design of this study provides statistical associations but cannot demonstrate cause-effect relationships.

Potential Benefits

In light of the limitations of this study the potential benefits that do exist require cautious interpretation. First, a high percentage of experienced stress exists among this nationally selected sample of NASW social workers. Second, a greater understanding of what may contribute to stress is presented; the most important variables are safety concerns on the job and perception of organizational stressors (PSW). Finally, coping methods studied do not seem to provide enough of a buffering effect in the presence of stress and perceived organizational stress.

First, the fact that almost 60% of study respondents are reporting stress related to their social work position is alarming. These individuals are providing support, education, resources, and guidance to clients who are most in need of care related to emotional and/or physical ailments. If the social workers are not able to care for their own physical and emotional health, this relationship will be significantly compromised. Research related to social worker stress is extremely lacking, especially related to the maintenance of a healthier work force. This could be well used within education to better prepare new social workers entering the field with tools to combat stress.

Second, having an understanding that safety concerns are related to a compromised workforce might aid employers in setting organizational policies. Employers may want to

identify what factors lead to safety issues for their workers and provide an environment where workers feel supported via supervision and support networks and encouraged to engage in a type of self-care plan when faced with such issues. These employers might ultimately work toward effective problem solving to reduce the issue of safety concerns at work. The present study highlights that policy change addressing safety issues at work are imperative or at least discussions need to take place to meet this end. Research identifying the effectiveness or lack of effectiveness of these strategies would need to be conducted.

In terms of perceived organizational stressors employers may want to assess which might be most detrimental to their work environment. Asking for feedback and involvement in the identification of possible problem solving solutions may increase a sense of control among employees and reduce some of the perception of organizational stress. However, as stress levels are similar for administrators and direct service staff this implies a need for overall restructuring in addressing the level of stress. Such policies may need to address this issue on a state level, for if administrators also experience high stress levels they may need resources in order to be able to positively combat safety concerns and organizational stressors. This may also speak to social services being a devalued place in society where financial support is significantly lacking.

Third, the results of this study indicate that when faced with perceived organizational stressors engaging in therapy/medication use as a form of coping is more strongly related to ones' experience of stress. It is unclear if perhaps those with more physical and emotional stress are seeking therapy/medication as a form of coping. This relationship requires further understanding for if therapy/medication is not associated

with a reduction in stress and healthier responses then the individual social worker (along with those providing said treatment) need to understand why and what can be done differently to make this coping more effective. Perhaps workers may need to utilize another means of coping in conjunction with therapy/medication or another coping strategy all together.

Of all the coping strategies examined, exercise in the presence of perceived stress seems to contribute to the reduction of experienced stress; it provides some buffering effect between high perceived organizational stressors and stress. These findings may be of interest to the clinician providing therapy for therapists. Smits & Otto (2009) believe that incorporating exercise within treatment strategies may be more effective than talk therapy alone.

Interestingly a majority of the questions in the survey pertain to organizational variables, however, both stress and coping strategies are related to individual variables. A dichotomy exists that significantly limits the potential for results that would lead to effective change in either organizational or individual characteristics. Therefore, there is a strong need for research pertaining to how policies, impacting how organizations are managed (a type of organizational coping), are set and how they can be geared toward the reduction of perceived stress and safety concerns. Alternatively studies related to individual characteristics (hardiness, mindfulness, PA and NA individuals) related to work experience and stress are also needed, especially within social work.

Conclusion

The major findings of this analysis include safety and one's perception of organizational stressors at work as the strongest contributors to stress among a nationally

selected sample of NASW social workers. Interestingly the use of therapy/medication did not have an impact on stress in the presence of PSW. Instead, stress, in the presence of therapy/medication and PSW was increased. Exercise provides some form of buffering in this relationship when faced with high perceived organizational stressors only. However, for those who are concerned about safety at work this relationship no longer lowers stress. And, finally CAM was directly related to stress in the bi-variate analysis, and in the multivariate analysis did not provide a moderating effect to the relationship between stress and PSW.

Further research explicating upon each variable and taking into account personal traits of the study subjects is needed to provide a better understanding among these relationships. First what is the relationship between the social worker, internal states/traits, stress/burnout, and specific coping strategies when faced with work stress? Understanding personal qualities that lead to hardier ways of handling stress among social workers faced with stressed environments could provide better insight into more effective coping strategies to enhance these qualities. Next how does the organization contribute to stress and what are the organizational responsibilities to this process? What can employers do to promote safer and more supportive working environments? Are there organizations that already exist, where worker satisfaction is high and stress is low? If so, identifying what they may be doing could provide some answers on an organizational level. As such it seems that this study produces more questions than it does answers. What is known as a result of this study is that respondents are experiencing stress, that this stress is related to organizational factors and safety concerns at work. In the theorized models exercise seems to be somewhat helpful in contributing

to the reduction of stress in the presence of organizational factors, but faced with safety concerns none of the forms of coping outlined provide a buffer to the experience of stress.

Appendices

Appendix A

2007 NASW Membership Workforce Study

SECTION 1: WHO WE ARE

*Mandatory questions**

SECTION 4. CAREER PLANNING

1. *When did you first think about becoming a social worker?*

- ○ During elementary school
- ○ During high school
- ○ During college
- ○ After college

2. *What most influenced your decision to become a social worker*? (Please rank the top 3)

- ☐ Interest in helping people
- ☐ Desire to change society
- ☐ Personal experiences with social workers
- ☐ Desire to influence policy decisions
- ☐ Desire to advocate on behalf of disadvantaged populations
- ☐ Interest in providing mental health services
- ☐ Other

3. *Who most influenced your decision to become a social worker*? (Please rank the top 3)

- ☐ Teacher (elementary, high school, college)
- ☐ Relative
- ☐ Mentor
- ☐ Social worker
- ☐ Media
- ☐ Other

4. *Did you work in another career before social work?**

- ○ Yes
- ○ No (skip to 49)

5. *In which employment sector did you work before becoming a social worker?*

- ○ Private—For Profit
- ○ Private—Nonprofit/Sectarian
- ○ Private—Nonprofit/Other
- ○ Public/Government—Military
- ○ Public/Government—Federal (Non-Military)
- ○ Public/Government—State

- ○ Public/Government—Local

6. *How satisfied are you with each of the following in your primary position?*

	Very Dissatisfied					Very Satisfied
Salary	○	○	○	○	○	○
Interesting work	○	○	○	○	○	○
Career mobility	○	○	○	○	○	○
Opportunities for training/education	○	○	○	○	○	○
Location	○	○	○	○	○	○
Workload	○	○	○	○	○	○
Autonomy	○	○	○	○	○	○
Level of responsibility	○	○	○	○	○	○
Supervision	○	○	○	○	○	○
Flexible schedule	○	○	○	○	○	○
Benefits package	○	○	○	○	○	○

7. *Do you expect to work in the social work field . . .*

	Yes	No	Unsure
5 years from now?	○	○	○
10 years from now?	○	○	○

8. *How does the media portrayal of social work affect your desire to remain in the profession?*

- ○ Affects positively
- ○ Affects negatively
- ○ Does not affect

9. *How satisfied are you with your choice of a social work career?*

- ○ Very satisfied
- ○ Satisfied
- ○ Somewhat satisfied
- ○ Somewhat dissatisfied
- ○ Dissatisfied
- ○ Very dissatisfied

10. *What is your primary career plan in the next two years?**

- ○ Remain in current position
- ○ Pursue additional social work degree
- ○ Pursue additional non-social work degree
- ○ Seek new opportunities/promotions as a social worker

- ○ Leave social work field, but continue working (skip to 54)
- ○ Retire
- ○ Stop working
- ○ Other

11. *If you are planning to leave social work, what job/career will you pursue?*

SECTION 5. EMPLOYEE ATTITUDE & WORK-RELATED STRESSORS/CONCERNS

12. *Please identify any work-related safety issues that a) you have encountered in the last six months or b) you are concerned about.* (Please mark all that apply)

	Experienced in the last six months	Concerned about	N/A
a) Violence from adult clients	☐	☐	☐
b) Violence from child/adolescent clients	☐	☐	☐
c) Fear of the neighborhood where you work or see clients	☐	☐	☐
d) Robbery	☐	☐	☐
e) Physical assault from non-clients	☐	☐	☐
f) Vandalization of vehicle	☐	☐	☐
g) Theft of vehicle	☐	☐	☐
h) Car accidents	☐	☐	☐
i) Other	☐	☐	☐

13. *Does your employer adequately address safety issues?*

- ○ Yes
- ○ No
- ○ Not Applicable

14. *Please indicate your agreement with the following statements.*

	Strongly Disagree					Strongly Agree
I feel honored to work for my organization/employer.	○	○	○	○	○	○
My employer acknowledges my contributions.	○	○	○	○	○	○
My employer gives me credit for my work.	○	○	○	○	○	○

My employer offers incentives/rewards for my good work.	○	○	○	○	○	○
My employer encourages my participation in professional development activities.	○	○	○	○	○	○
My employer provides positive feedback regarding my work performance.	○	○	○	○	○	○
My employer offers suggestions for my improvement.	○	○	○	○	○	○
My employer solicits feedback from me.	○	○	○	○	○	○
My employer encourages me to develop new and better ways to accomplishing work tasks.	○	○	○	○	○	○
When I have workplace grievances, my employer addresses my concerns in a timely fashion.	○	○	○	○	○	○
When I have workplace grievances, my employer assists me in resolving grievances.	○	○	○	○	○	○
I feel valued by my employer.	○	○	○	○	○	○

15. *Please indicate to what degree the following factors have influenced your stress at work.*

	No influence	Somewhat of an influence	Influence a great deal	Not Applicable
Lack of time to do job as well as I would like.	○	○	○	○
Heavy workload.	○	○	○	○
Unrealistic deadlines.	○	○	○	○
Infrequent breaks.	○	○	○	○
Long work hours.	○	○	○	○
Routine tasks that have little meaning.	○	○	○	○
Lack of autonomy/sense of no control.	○	○	○	○
Conflicting or uncertain job	○	○	○	○

expectations.				
Too much responsibility/ "wear too many hats."	○	○	○	○
Job insecurity.	○	○	○	○
Lack of opportunity for growth, advancement, and/or promotion.	○	○	○	○
Unpleasant or dangerous physical working conditions.	○	○	○	○
Lack of support from co-workers and/or supervisors.	○	○	○	○
Difficult/challenging clients.	○	○	○	○
Salary is not comparable to salaries of colleagues who do similar work.	○	○	○	○
Lack of resources to adequately accomplish work tasks/duties.	○	○	○	○
Unrealistic client expectations.	○	○	○	○
Lack of employer feedback on my performance.	○	○	○	○
Conflict with other staff/poor relationships with employer and/or colleagues.	○	○	○	○
Inadequate compensation.	○	○	○	○
Inability to balance professional and personal life.	○	○	○	○
Abuse/threats of violence from clients.	○	○	○	○
Work is too closely monitored.	○	○	○	○

16. *From the above list of work-related stressors, please identify the 3 most problematic stressors/concerns that you face in your current job.*

_____
_____
_____

17. *Have you experienced any of these health indicators that you think are due to work-related stress?* (Please mark all that apply)

- ☐ Cardiovascular problems
- ☐ Heart palpitations
- ☐ Musculoskeletal disorders (i.e., upper/lower back and extremity problems)
- ☐ Psychological disorders (i.e., depression, burnout, anxiety)
- ☐ Impaired cognition
- ☐ Fatigue
- ☐ Sleep disorders

- ☐ Psychosomatic complaints
- ☐ Impaired immune functions
- ☐ Irritability/aggression
- ☐ Decrease in work performance
- ☐ Work place injury
- ☐ Other (please specify)_____

18. *Do you engage in any of the following to cope with work-related stress?* (Please mark all that apply)

- ☐ Drink alcohol
- ☐ Absenteeism
- ☐ Exercise
- ☐ Meditation
- ☐ Yoga
- ☐ Therapy (i.e., mental health, relaxation training, etc.)
- ☐ Use of prescription medication
- ☐ Other (please specify)_____

19. *Do you smoke cigarettes?**

- ○ Yes (skip to 62)
- ○ No

20. *On average, how many cigarettes do you smoke in a work day?*

- ○ 1 to 5
- ○ 6 to 10
- ○ 11 to 15
- ○ 16 to 20
- ○ More than 20

Appendix B

Committee for the Protection of Human Subjects from Research Risks

HUNTER COLLEGE

INSTITUTIONAL REVIEW BOARD
695 PARK AVENUE, ROOM E1426
NEW YORK, NY 10021
PHONE (212) 650-3053 ◆ FAX (212) 650-3055
http://www.hunter.cuny.edu/irb

To: Nilde Leo
Irwin Epstein
Social Work

From: Darrell Wheeler, Chair DW

Date: 12/17/2009

Re: Human Subjects Review

Federalwide Assurance Number: FWA00003623

IRB Registration Numbers: IRB00004471 and IRB00000136

Protocol #: HC-120914897

Project: "Implicatios of CAM Practices for Practicing Social Workers Facing Stress"

The Hunter College Committee for the Protection of Human Subjects has declared your project exempt under 45 CFR 46.101(b)(4). If any changes are made to the study, the Committee must be notified. If your project is still running twelve months after the date of this memo, please be advised that we will need an update for our files.

Good luck with your work!

By signing below, I acknowledge that I have received this letter and am aware of and agree to abide by all of its stipulations in order to maintain active approval status, including prompt reporting of adverse events/serious problems and annual continuing review. I am aware that it is my responsibility to be knowledgeable of all federal and state regulations including CUNY's Federalwide Assurance (FWA) with the U.S. Department of Health and Human Services (HHS) Office for Human Research Protections (OHRP)

Signed: Nilde Leo

Nilde Leo
Irwin Epstein
Social Work

SIGN AND RETURN ONE COPY OF THIS MEMO TO CAROLYNN JULIEN,
INSTITUTIONAL REVIEW BOARD, 695 PARK AVENUE, NEW YORK, NY 10065.

YOUR PROJECT WILL NOT BE APPROVED UNTIL WE RECEIVE THE SIGNED COPY.

References

Ablett, R. J. and Jones, R. S. P. (2007). Resilience and well-being in palliative care staff: A qualitative study of hospice nurses' experience of work. *Psycho-Oncology, 16*, 733-740.

Abramovitz, M. (2001). A heavier lift: running up hill trying to fix the problems created by welfare. *In jeopardy: the impact of welfare reform on human service agencies in New York City* (Rep.Final No. IV, pp. 27-38). NY: NASW/United Way.

Acker, G. M. (1999, May). The impact of clients' mental illness on social workers' job satisfaction and burnout. *Health & Social Work, 24*(2), 112-1d18.

Adams, R., Boscarino, J., & Figely, C. (2004). Compassion fatigue and psychological distress among social workers. *A validation study, in publication.*

Agnew, T. (2002, November). *The workplace stress epidemic*. Retrieved September 15, 2005, from 4 Health from channel 4 database: http://www.lhc,org.uk/members/pubs/books/hl/hl02_01

Alternative therapies. (2004, November). Integrating complementary and alternative medicine. *Nursing Management, 11*(7), 32-37.

Antonovsky, A. (1987). Unraveling the Mystery of Health: How People Manage Stress and Stay Well, Jossey Bass, SanFrancisco.

Arches, J. (1991, May). Social structure, burnout, and job satisfaction. *Social Work, 36*(3), 202-206.

Arrington, P. (2008). Stress at work: How do social workers cope?. NASW membership Workforce Study. Washington, DC: National Association of Social Workers.

Austad, C. S., William, S. O., Morgan, T., & Holstein, L. (1992). The psychotherapist and teh managed care setting. *Professional Psychology: Research and Practice, 23*(4), 329-332.

Bartone, P.T. (1995, July). A short hardiness scale. Paper Presented at the 103rd Annual Convention of the American Psychological Association, New York, NY.

Biestek, F. (1957). The case work relationship. Chicago: Loyola University Press.

Bishop, S. (2002). What do we really know about mindfulness-based stress reduction? *Psychosomatic Medicine, 64*, 71-83.

Bohnert, P. & Anne, O. (Jan. 2008). How to avoid burning out and keep your spark. Current Psychiatry, 5(1), 31-41.

Bodner, T.E. & Langer, E.J. (2001). Individual differences in mindfulness: the mindfulness/mindlessness scale. Paper presented at the 13th Annual American Psychological Society Conference, Toronto, Ontario, Canada.

Boyle, A, Grap M, Younger, J and Thornby, D. (1991). Personality hardiness, ways of coping, social support and burnout in critical care nurses. *Journal of Advanced Nursing, 16*, 850-857.

Brandell, J. R. & Ringel, S. (2004). Psychodynamic perspectives on relationships: Implications of new findings from human attachment and neurosciences for social work education. *Families in Society, 4*, 549-56.

Brown, N. C., Prashantham, B. J., & Abbott, M. (2003). Personality, social support and burnout among human service professionals in India. *Journal of Community & Applied Social Psychology, 13*, 320-324.

Carey, B. (2005, October). Lecture plan for Dalai Lama has some scientists bridling. *The New York Times*, p. A14.

Centers for Disease Control (Ed.). (1986, October 3). *MMWR Weekly, 36*(39).

Center for Health Workforce Studies & NASW Center for Workforce Studies. (2006). *Licensed social workers in the US., 2004, Volume 2 Supplement*. Washington, DC: NASW.

Chaiklin, H. (2010). The Results are in: What social workers say about social work. (Book review). Social Work, 55 (3), 285.

Change, V., Caldwell, O., Glasgow, N., Abramson, M., Luskin, F., Gill, M., et al. (2004). The effects of mindfulness-based stress reduction program on stress, mindfulness self-efficacy, and positive states of mind. *Stress and Health, 20*, 141-147.

Chang, V. Y., Palesh, O, Caldwell, C. Glasgow, N., Abramson, M., Luskin, F., Gill, M., Burke, A. and Koopman, C. (2004). The effects of a mindfulness-based stress reduction program on stress, mindfulness self-efficacy, and positive states of mind. *Stress and Health, 20,* 141-147.

Chrisman, L. (Ed.). (2005). *The Gale Encyclopedia of Alternative Medicine* (2nd ed.). Farmington Hills, MI, Gale group: Jacqueline L. Long.

Cohen-Katz, J., Wiley, S., Capuano, T., Baker, DM., Deitrick, L. and Shapiro, S. (2004, November-December). The effects of mindfulness-based stress reduction on nurse stress and burnout: a qualitative and quantitative study. *Holistic Nursing Practice, 18*(6), 302-8.

Cohen-Katz, J., Wiley, S., Capuano, T., Baker, DM., Kimmel, S., L. and Shapiro, S. (2005, January-Febuary). The effects of mindfulness-based stress reduction on nurse stress and burnout: a qualitative and quantitative study, part II. *Holistic Nursing Practice, 19*(1), 26-35.

Cohen-Katz, J., Wiley, S., Capuano, T., Baker, DM., Deitrick, L. and Shapiro, S. (2005, March-April). The effects of mindfulness-based stress reduction on nurse stress and burnout: a qualitative and quantitative study, part III. *Holistic Nursing Practice, 19*(2), 78-86.

Cohen, S., Doyle, E., Skoner, D., & Rabin, B. (1998). Types of stressors that increase susceptibility to the common cold in healthy adults. *Healthy Psychology, 17*(3), 214-223.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). Perceived Stress Scale. *Journal of Health and Social Behavior, 24*, 385-393.

Davis-Sacks, M. L., Jayaratne, S., & Chess, W. A. (1985, May/June). A comparison of the effects of social support on the incidence of burnout. *Social Work, 30*(3), 240-244.

Demick, J. (2000). Toward a mindful psychological science: theory and application. *Journal of Social Issues , 56*(1), 141-159.

Derogatis, L. R. (1993). *BSI: Administration, scoring and procedures manual* (3rd ed). Minneapolis, MN: National Computer Systems.

Derogatis, L. R., & Melisaratos, N. (1983). The Brief Symptom Inventory: An introductory report. *Psychological Medicine, 12*, 595-605.

Dembroski, T. M. (1978). Reliability and validity of methods used to assess coronary-prone behavior. In T. M. Dembroski, S. M. Weiss, J. L. Shields, S. G. Haynes, & M. Feinleib (Eds.), Coronary-prone behavior (pp. 95-106). New York: Springer-Verlag.

Dichter, B. (1972). The relationship between psychopathy and empathy. Undergraduate honors' thesis, Harvard University.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment, 49,* 71-75.

Dillenburger, K. (2004, July). Causes and alleviation of occupational stress in childcare work. *Childcare in Practice, 10(3),* 213-224.

Dillman, D. A. (2000). *Mail and Internet Surveys: the tailored design method.* New York: John Wiley & Sons.

Drentea, P., & Lavrakas, P. J. (2000). Over the limit: The association among health, race and debt. *Social Science and Medicine, 50,* 517-529.

Ellen, D. M. (2005, July/August). Energy Healing. *Orthopedic Nursing, 24*(4), 259-269.

Eysenck, H. J., & Eysenck, S. B. G. (1968). Manual for the Eysenck Personality Inventory. San Diego, CA: Educational and Industrial Testing Service.

Fabricant, M. (1985, September/October). The industrialization of social work practice. *Social Work, 30,* 389-395.

Fiol, C. M., O'Connor, E. J. (2003) "Waking up! Mindfulness in the face of bandwagons." *Academy of Management Review,* 28(1), 54-70.

Fothergill, A. (2004). Stress, burnout, coping and stress management in psychiatrists: findings from a systemic review. *Internal Journal of Social Psychiatry, 50*(1), 54-65.

Freudenberger, H. J. (1977, July). Speaking from experience: burnout the organizational menace. *Training and Developmental Journal*, 26-27.

Furnham, A. (2000, August). Attitudes towards homoeopathy in particular and beliefs about complementary medicines in general. *Psychology, Health & Medicine, 5*(3), 327-342.

Gardner, A.-M. (1989). Burnout: the effect of psychological type on research findings. *Journal of Occupational Psychology, 62*, 223-234.

Gibbs, GR. (2002). *Qualitative Data Analysis, Explorations With NVivo*. Philadelphia: Buckingham

Goleman, D. J., Schwartz, G. E. (1976). Meditation as an intervention in stress reactivity. *Journal of Consulting and Clinical Psychiatry, 44*(3), 456-466.

Gomez, J. S., & Michaelis, R. C. (1995, January/February). An assessment of burnout in human service providers. *Journal of Rehabilitation*, 23-26.

Gregutt, P. (Ed.). (2005). *The Gale Encyclopedia of Alternative Medicine* (2nd ed.). Farmington Hills, MI: Gale group: Jaqueline L. Long.

Grinnell, R. M. (1997). Social Work Research & Evaluation Quantitative and Qualitative Approaches. Itasca, Illinois, F.E. Peacock Publications, Inc.

Gueritault-Chalvin, V. (2000, April). Work-related stress and occupational burnout in AIDS caregivers: test of coping model with nurses providing AIDS care. *AIDS CARE, 12*(2), 149-161.

Ham, P., Waters D.B. and Olivery, M. N. (2005, February 15). *American Family Physician, 71*(4). Retrieved March 2, 2008 Web Site: http://www.aafp.org/afp/20050215/733.html

Hard Labor. (1994). Section 1. In *Stress and Health* (part 2). Retrieved September 15, 2005, from http://www.lhc.org.uk/members/pubs/books/hl/hl102_01

Health. (2001, June 25). *Stress the effects*. Retrieved September 15, 2005, from BBC News database: http://news.bbc.co.uk/1/hi/health

Hobson, C. J. & Delunas, L. (2001). National norms and life-event frequencies for the Revised Social Readjustment Rating Scale. *International Journal of Stress Management*, 8(4), 299–314.

Holmes, T. H., & Rahe R. H. (1967). The social readjustment rating scale. *Journal of Psychosomatic Research, 11*, 213-218.

Honda, K., & Jacobson, J. S. (2005, January). Use of complementary and alternative medicine among United States adults: the influences of personality, coping strategies, and social support. *Preventative Medicine, 40*(1), 46-53.

Horowitz, M., Wilner, N., & Alvarez, W. (1979). Impact of Events Scale: A measure of subjective stress. *Psychosomatic Medicine, 41(3*), 209-218.

Houts, P. S., & Herman, J. F. (1999, September). Educational needs related to complementary and alternative therapies. *Cancer Practice, 7*(5), 262-265.

Jaff-Gill, E., Smith, M., Larson, H., & Segal J. (2007). Understanding stress: Signs, symptoms, causes and effects. Retrieved September 14, 2009, Helpguide.org Web site: http://www.helpguide.org/mental/stress_signs.htm

Janice, G. S., & Michaelis, R. C. (1995, January/February). An assessment of burnout in human service providers. *Journal of Rehabilitation*, 23-26.

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), 178-87.

Jones, C. (2001). Voices from the front line: State Social Workers and New Labor. *British Journal of Social Work, 31*(4), 547-62.

Jones, M. (1993, March). Role conflict: Cause of burnout or energizer? *Social Work, 38*(2), 136-141.

Kabat-Zinn, J. (1990). Full Catastrophe Living, Delacorte Press, NY

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: past, present, and future. *Clinical Psychology: Science and Practice, 10*(2), 1-22.

Kamya, H. A. (Spring/Summer, 2000). Hardiness and spiritual well-being among social work students: Implications for social work education. Journal of Social Work Education, 36(2), 231-240.

Kaplan, R. M. (1990). Behavior as the central outcome in health care. *American Psychologist*, 45(11), 1211–1220

Karger, H. (1981). Burnout as alienation. *Social Service Review, 55*, 268-283.

Kleiber, D., & Enzmann, D. (1990). Burnout: 15 years of research: An international bibliography. Gottingen: Hogrefe.

Krantz, D. S., Glass, D. C., & Snyder, M. L. (1974). Helplessness, stress level, and the coronary-prone behavior pattern. *Journal of Experimental Social Psychology, 10*, 284-300.

Krasner, M. (2004). Mindfulness-based interventions: a coming of age? *Family Systems, & Health, 22*(2), 207-212.

Kobasa, S.C. (1979). Stressful life events, personality, & health: An inquiry into hardiness. *Journal of Personality and Social Psychology, 37*(1), 1-11.

Kobasa, S.C. (1988). Conceptualization and measurement of personality in job stress research In Occupational Stress Issues and Developments in Research (Hurrell Jr., J.J., Murphy, L.R, & Sauter, S.L. eds), Taylor & Francis, New York, pp 100-109.

Kobasa S.C., Maddi S.R., & Kahn, S. (1982). Hardiness and Health: a prospective study. *Journal of Personality and Social Psychology, 42*(1), 168-177.

Kushnir, T., & Milbauer, V. (1994, December). Managing stress and burnout at work: A cognitive group intervention program for directors of day-care centers. *Pediatrics, 94*, 1074-7.

Landsbergis, P. A., Schurman, S. J., Israel, B. A., Schnall, P. L., Hugentobler, M. K., Cahill, J., et al. (1993, Summer). *Job stress and heart disease: evidence and strategies for prevention*. Retrieved September 15, 2005, from Job Stress Network Web site: http://www.workhealth.org/prevention/prjscvd.html

Langer, E. J. (1997). *The Power of Mindful Learning*, Perseus Publishing, Cambridge, MA.

Langer, E. J., & Moldoveanu, M. (2000). The Construct of Mindfulness. *Journal of Social Issues, 56*(1), 1-9.

Lazarus, R. & Folkman, S. (1984). Stress, Appraisal and Coping, Springer Publishing , New York.

Licensed Social Workers in the U. S., Supplement. (2006). Perspectives of social work practice, Ch. 5. Center for Health Force Studies & NASW Center for Work Force Studies.

Lindquist, R., Tracy, M. F., Savik, K., & Watanuki, S. (2005, April). Regional use of complementary and alternative therapies by critical care nurses. *Critical Care Nurse, 25*(2), 63-75.

Linley, P.A., and Joseph, S. (2007). Therapy work and therapists' positive and negative well-being. *Journal of Social and Clinical Psychology, 26* (3), 385-403.

Littrell, J. (2008). New developments in understanding cardiovascular disease and the implications for Social Work. Social Work in Health Care, 46(2), 35-49.

Lloyd, C., & King, R. (2004, September). A survey of burnout among Australian mental health occupational therapists and social workers. *Social Psychiatry & Psychiatric Epidemiology, 39*(9), 752-757.

Lloyd, C., King, R., & Chenoweth, L. (2002). Social work, stress and burnout: a review. *Journal of Mental Health, 11*, 255-265.

Ludwig, D.S. & Kabat-Zinn, J. (2008). Mindful Medicine. *JAMA, 300* (11), 1350-1352.

Lykken, D. T., & Katzenmeyer, C. (1960). *Manual for the Activity Preference Questionnaire*. Minneapolis: University of Minnesota Press.

Mansky, P. (1999, Summer). Issues in the recovery of physicians from addictive illness. *Psychiatric Quarterly, 70*(2), 107-122.

Maslach, C. (1978). The client role in staff burn-out. *Journal of Social Issues, 34*, 107-122.

Maslach, C. (2003, October). Job burnout: new directions in research and intervention. *Current Directions in Psychological Science, 12*(5), 189-192.

Maslach, C. & Jackson, S. E. (1986). *Maslach Burnout Inventory: Manual*. Palo Alto, CA: Consulting Psychologists Press.

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2000). Job burnout. *Annual Review of Psychology, 52*, 397-422.

McCall, R.B., & Appelbaum, M. I. (1991). Some issues of conducting secondary analyses. Developmental Psychology, 27(6), 911-917.

McCubbin, H. I., & Thompson, A. I. (1991). Family assessment interventions for research and practice. Madison, WI: Family Stress, Coping and Health project.

Mehling, W. E., DiBlasi, Z., & Hecht, F. (2005). Bias control in trials of bodywork: A review of methodological Issues. *The journal of alternative and complementary medicine, 11*(2), 333-342.

Merton, R. K. (1968). Social structure and anomie . In *Social theory & social structure* (1968 Enlarged Edition ed., pp. 185-260). New York: Robert K. Merton. (Original work published 1949)

Monk-Turner, E. (2003). The benefits of meditation: experimental findings. *The social journal, 40*(3), 465-470.

National Association of Social Workers (NASW) (Approved 1996, revised 1999) Code of Ethics for Social Workers, Washington D.C.: NASW.

NASW Center for Workforce Studies. (2009). The results are in: What social workers say about social work. NASW Press: Washington DC.

Neff, K. D. (2003). The development and validation of a scale to measure self-compassion. *Self and Identity, 2*, 223-250.

Nowack, K.M. (1991). Psychosocial predictors of health status. *Work Stress 5*, 117-131.

Oubina, M. V., Calvo, M. C., & Fenandez-Rios, L. (1997). Occupational stress and state of health among clinical psychologists and psychiatrists. *Psychology of Spain, 1*(1), 63-71.

Otto, M. W., Smits, J. A. & Reese, H. E. (2006, Spring). Combined psychotherapy and pharmacotherapy for mood and Anxiety disorders in adults: Review and analysis. *Focus, 4*, 204-214.

Penson, R., Dignan, F., Canellos, G., Picard, C., & Lynch, T. (2000, Summer). Burnout: caring for the caregivers. *The Oncologist, 5*(5), 425-434.

Perkins, D. N., Jay, E., and Tishman, S. (1993). Beyond abilities: a dispositional theory of thinking. *Merrill-Palmer Quarterly,* 39(1),1-21.

Pfiferling, J. H., & Gilley, K. (2000). *Overcoming compassion fatigue*. Retrieved September 18, 2005, from AAFP Annual Clinical Focus on Mental Health database: http://www.aafp.org

Pines, A., & Kafry, D. (1978, November). Occupational tedium in the social services. *Social Work, 23,* 499-507.

Pope, K. S. (August 1994). Therapists as patients: A national survey of psychologists' experiences, problems, and beliefs Professional Psychology: Research and Practice, (25) 3, 247-258.

Poulin, J., & Walter, C. (1993, December). Social worker burnout: a longitudinal study. *Social Work Research & Abstracts*, *29*(4), 5-11.

Putermat et al (2010). *The Power of Exercise: Buffering the Effect of Chronic Stress on Telomere Length*. Retrieved August 30, 2010, from PloS ONE Web site: http://www.plosone.org/article/info:doi/10.1371/journal.pone.0010837

Rippon, T. J. (2000). Aggression and violence in health care professions. *Journal of Advanced Nursing, 31*(2), 452-460.

Robinson, R., Clements, K., & Land, C. (2003). Stress among psychiatric nurses: prevalence, distribution, correlates, & predictors. *Journal of Psychosocial Nursing, 41*(4), 33-41.

Robbins, S. & Judge, T. (2010). Essentials of Organizational Behavior. Prentice Hall

Rosenman, R. H. (1978). The interview method of assessment of the coronary-prone behavior pattern. In T.M. Dembroski, S.M. Weiss, J.L. Shields, S. G. Haynes, & M. Feinleib (Eds.), Coronary-prone behavior (pp. 55-69). New York: Springer-Verlag.

Rosenzweig, S., Reibel, D., Greeson, J., Brainard, G., & Hojat, M. (2003). Mindfulness-based stress reduction lowers psychological distress in medical students. *Teaching and Learning in Medicine, 15*(2), 88-92.

Roth, B. (1997, Fall). Mindfulness-based stress reduction in the inner city. *The Journal of the Mind---Body Health, 13*(4), 50-59.

Rowe, M. M. (2000, Fall). Skills training in the long-term management of stress and occupational burnout. *Current psychology, 19*(3), 215-225.

Ruggle, M. (2005, July/August). Mainstreaming complementary therapies: New directions in health care. *Health Affairs, 24*(4), 980-990.

Rutter, M. (1985). Resilience in the face of adversity: protective factors and resistance to psychiatric disorder. British Journal of Psychiatry, 147, 598-611.

Schaufeli, W., Maslach, C., & Marek, T. (Eds). (1993). Professional burnout: Recent development in theory and research. Washington DC: Taylor & Francis.

Scheingold, L. (2004, January 1). Relaxation techniques. *Clinical Reference Systems*, 2595.

Schure, M., Christopher, J. & Christopher, S. (2008). Mind-body medicine and the art of self-care: teaching mindfulness to counseling students through yoga, meditation and qigong. *Journal of Counseling and Development, 86*, 47-56.

Schwartz, R. H., Tiamiyu, M. F., Dwyer, D.J. (2007). Social worker hope and perceived burnout: The effects of age, years in practice, and setting. *Administration in Social Work, 31(4)*, 103-119.

Shanafelt, T., Bradley, K., Wipf, J., & Back, A. (2002). Burnout and self-report patient care in an internal medicine residency program. *Annals of Internal Medicine, 136*, 358-367.

Shapiro, L. S., Astin, J. A., Bishop, S. R., & Cardova, M. (2005). Mindfulness-based stress reduction for health care professionals: results from a randomized trial. *Internal Medicine of Stress Management, 12*(2), 164-176.

Siebert, D. C. (2005). Personal and occupational factors in burnout among practicing Social Workers: Implications for researchers, practitioners and managers, *Journal of Social Service Research, 32*(2), 25-44.

Sierpina, V. S. (2005, March). Introduction. *Southern Medical Journal, 98*(3), 280-281.

Soderfeldt, M., & Soderfeldt, B. (1995). Burnout in social work. *Social Work, 40*(5), 638-646.

Soderfeldt, M., Soderfeldt, B., Ohlson, C.-G., Theorell, T., & Jones, I. (2000). The impact of sense of coherence and high-demand/low-demand job environment on self-reported health, burnout and psychophysiological stress indicators. *Work & Stress, 14*(1), 1-15.

Spielberger, C. D., Gorsuch, R. L., & Lushene, R. E. *STAI manual*. Palo Alto, CA: Consulting Psychologists Press, 1970.

Stanley, N., Manthorpe J. and White, M. (2007) 'Depression in the Profession: Social Workers' Experiences and Perceptions', British Journal of Social Work, 37, 281-298.

Sternberg, R. J. (2000). Images of mindfulness. *Journal of Social Issues,* 56(1), 11-26.

Taylor, E. (2003, Fall). On the psycho- in psychophysiology: Notes for a history of the mind-body effect. *Advances, 19*(3/4), 17-23.

Thomson, W.C. & Wendt, J.C. (1995, May/June). Contribution of hardiness and school climate to alienation experienced by student teachers. *The Journal of Educational Research, 88* (5), 269-274.

Toppinen-Tanner, S., Ojajarvi, A., Vaananen, A., Kalimo, R., & Jappinen, P. (2005, Spring). Burnout as a predictor of medically certified sick-leave absences and their diagnosed causes. *Behavioral Medicine, 31*(1), 18-27.

Torrado Oubina, V. M., Calvo, C. M., & Fernandez-Rios, L. (1997). Occupational stress and state of health among clinical psychologists and psychiatrists. *Psychology in Spain, 1*(1), 63-71.

Um, M.-Y., & Harrison, D. (1998, June). Role stress. burnout, mediators, and job satisfaction: a stress-strain-outcome model and an empirical test. *Social Work Research, 22*(2), 100-115.

Visser, M., Smets, E., Oort, F., & de Haes, C. J. (2003, February). Stress, satisfaction and burnout among Dutch medical specialists. *Canadian Medical Association Journal, 168*(3), 271-276.

What is complementary and alternative medicine (CAM)? [Data file]. (2005). Retrieved October 30, 2005, from National Center for complementary and Alternative Medicines Web site: http://nccm.nci.nih.gov/health/whatiscam

Whitaker, T. (2008). *Who wants to be a social worker? Career influences and timing.* ?. NASW membership Workforce Study. Washington, DC: National Association of Social Workers.

Whitaker, T. (2008*). In the red: Social workers and educational debt.* NASW Membership Workforce Study. Washington, DC: National Association of Social Workers.

Whitaker, T., Weismiller, T. & Clark, E. (2006). Assuring the sufficiency of a front line workforce: Executive summary. Washington, DC: National Association of Social Workers.

Winnicott, D. W. (1963). Psychiatric disorders in terms of infantile maturational processes. *In The maturation process and the facilitating environment* (pp. 230-241). New York: International Universities Press.

Winnick, T. A. (2005, February). From Quackery to “complementary” Medicine: The American Medical profession confronts alternative therapies. *Social Problems, 52*(1), 38-61.

Wright, B. (2000). Compassion fatigue. *Palliative Medicine*, *18*, 3-4.

Zuckerman, M. (1960). The development of an affect adjective check list for the measurement of anxiety. *Journal of Consulting Psychology*, *24*, 457-462.