

# **BURNOUT AMONG ACADEMIC CLINICIANS**

**BURNOUT AMONG ACADEMIC CLINICIANS AS IT CORRELATES WITH  
WORKLOAD AND DEMOGRAPHIC VARIABLES**

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**Abstract:**

**Background & Rationale:** Burnout syndrome (BOS) is a psychological state resulting from prolonged exposure to job stressors. It is commonly observed in occupations with human interaction. The most visible impact of burnout is a decrease in work performance and the overall quality of service, and within healthcare professionals, BOS correlates with reported medical errors. Academic healthcare workers are particularly predisposed to experience BOS given the high level of work-related stress that characterizes their jobs. There is a scarcity of studies investigating burnout in academic clinicians.

**Objective:** The goal of this study is to identify the prevalence of burnout in academic clinicians in the Faculty of Health Sciences at McMaster University and investigate potential demographic and workload variables that contribute to self-reported measures of burnout.

**Methods:** A novel modification to the MBI (Maslach Burnout Inventory) scale was distributed to all academic clinicians at McMaster University through an internet-based survey. The MBI scale was modified to reflect three hypothesized sources of burnout for academic clinicians: interactions with students/trainees, interactions with patients and interactions with administration. The scale comprised of three dimensions of burnout: Emotional Exhaustion (EE), Depersonalization (DP) and Personal accomplishment (PA). Demographic and workload data were also collected.

**Results:** Factor analysis and internal consistency showed that the modified MBI scale was associated with valid and reliable scores, respectively, within this population. Results showed that academic clinicians experienced high levels of burnout due to administration

interactions relative to that attributed to patients and students. The prevalence of burnout for the EE subscale are: administration = 51.8%;, patients = 26.4%, students = 11.7%); for the DP subscale: administration = 44.8%, patients, = 24.5%, students, = 9.8%); and the PA subscale: administration =16.3%, patients = 33.4%, students =33.7%). Regression analyses suggested that young age, surgical specialty, low academic rank, academic main practice, female gender, numerous night shifts and living alone contribute to EE and DP subscales. Meanwhile, high number of patients under their care was shown to contribute to increasing PA.

**Conclusion:** Burnout Syndrome is prevalent among academic clinicians at McMaster University. The major source of burnout was attributed to interactions with administration. Surgical specialties and young faculty staff members correlated with burnout. Further studies are needed to further characterize the nature of administrative interactions that contribute to burnout and to solidify other contributing variables.

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**List of abbreviations and symbols**

BO	Burnout
CBI	Copenhagen Burnout Inventory
CME	Continuous Medical Education
DP	Depersonalization
EE	Emotional Exhaustion
ICU	Intensive Care Unit
KMO	Kaiser Meyer Olkin
MBI	Maslach Burnout Inventory
MBI-HSS	Maslach Burnout Inventory-Human Health Services
OLBI	Oldenburg Burnout Inventory
W.H.O	World Health Organization
PA	Personal Accomplishment
PhIS	Physician Activity Information System
SBI	Spanish Burnout Inventory

## **Chapter 1: Introduction**

Employment is not just a way to make a living; it is an essential element of the overall well-being of an individual (Iacovides, 2002). Individuals spend a substantial amount of their time at their work, with various human interactions. Burnout is associated with specific occupation groups that involve human contact (Innstrand et al., 2011) and is associated with work related stress (Weber & Jaekel-Reinhard, 2000). Burnout reduces the productivity of workers and has numerous psychosocial implications (Tennant, 2001). Understanding the factors that contribute to burnout is essential to creating a healthy and productive workplace.

### **1.1-Burnout Syndrome:**

Although there is no internationally validated and accepted definition (Kaschka, 2012; Epp, 2012), burnout as a psychological–psychiatric term was coined by H.J. Freudenberger, who defined burnout as "the extinction of motivation or incentive, especially where one's devotion to a cause or relationship fails to produce the desired results" (Freudenberger, 1974). This definition of burnout was first applied by Californian poverty lawyers to describe other colleagues who showed symptoms of gradual exhaustion, cynicism (i.e., a negative, unresponsive attitude toward relevant social others) and loss of commitment in their colleagues (Maslach, 1976). At the same time, Maslach, a social psychologist, became interested in how workers in the human services cope with stressors on the job (Maslach, 1976). Subsequently, Maslach and colleagues

conceptualized burnout along three subscales or dimensions: emotional exhaustion, depersonalization, and personal accomplishment (Maslach & Jackson, 1986). Emotional Exhaustion (EE) refers to feelings of being emotionally drained by one's work. Depersonalization (DP), commonly known as cynicism, refers to exhibiting unfeeling and inhumane responses towards recipients of one's service. Finally, Personal Accomplishment (PA) refers to achievements and success in one's work, which interpreted inversely to EE and DP (Maslach, 1986).

Burnout is commonly observed in individuals who work with people, particularly in healthcare workers whose careers are characterized by high levels of work-related stress (Maslach, 1982 & 1991). Workers suffering from burnout have lost the meaning of work due to prolonged response to the emotional, physical, and mental exhaustion that they experience (Lacovides, 2003; Maslach, 1982). One of the most visible impacts of burnout is a decrease in work performance. In a healthcare context, this decrease in work performance has clear implications on the quality of service provided to patients. Consequently, burnout syndrome is a significant concern to healthcare professionals and licensing bodies, as it can have considerable impacts on patient safety as well as decreased patient satisfaction (Shanafelt, 2010).

## **1.2- Prevalence of Burnout**

The World Health Organization (WHO) considers burnout a major problem in the professional world (WHO, 2008). In the last decade, several epidemiological studies have found a high prevalence of burnout in the Western and developing countries (Maslach et al., 2001). For example, in North America and Europe, burnout syndrome is ranked next

to cardiovascular disease and diabetes in prevalence (Akerstedt, 2004; Weber & Jaekel-Reinhard, 2000). Burnout is a global concern with deleterious effects on individual's psychological and physical health and on an organization as a whole (Bährer-Kohler, 2013). Burnout has been examined in various occupational settings and groups, including white-collar (civil servants), blue-collar (manual workers) and the "helping" professions (health care workers, caregivers, and teachers) (Felton, 1998). Burnout syndrome occurs mainly among "helping" professionals such as healthcare workers whose work is characterized by constant demands and intense interactions with people that have physical and emotional needs (Bährer-Kohler, 2013).

### **1.3- Symptoms of Burnout:**

It is widely accepted that the three components of burnout are emotional exhaustion, depersonalization or cynicism, and lack of personal accomplishment (Kanste et al., 2006). Burnout usually runs an insidious course, starting with intrapersonal factors related to the context of work (Maslach, 1986).

Burnout often begins when workers have unrealistic expectations of themselves, others and their career development. The failure to meet these expectations leads to maladaptive coping strategies, which subsequently results in chronic job stress and eventually burnout (Rella et al., 2009; Maslach, & Jackson, 1982; Cherniss, 1980; Maslach, 1976).

Burnout symptoms can be categorized into physical, affective, cognitive, behavioural and motivational components (Schaufeli & Enzmann, 1998).

### **1.3.1- Physical Symptoms:**

Those suffering from burnout report greater levels of physical health deterioration over a one-year period (Kim et al., 2011). Diseases such as diabetes (Melamed et al., 2006) and cardiovascular disease (Honkonen et al., 2006) have been associated with burnout. Various theories exist to explain the psychosomatic link between burnout and other diseases, including dysregulation of the hypothalamic–pituitary–adrenal axis (Kudielka et al., 2006), impaired immunity, systemic immune response or poor health habits (Melamed et al., 2006). Individuals affected with burnout syndrome often present with headaches, restlessness, sexual dysfunction, tachycardia and hypertension (Melamed et al. 2006). Sleep disturbance is considered one of the main features of burnout syndrome (Brand et al., 2010; Ekstedt et al., 2006; Melamed et al., 2006).

### **1.3.2- Affective and Cognitive Symptoms:**

Burnout is a response to chronic job related stress (Maslach et al., 2001) and is the building block to other psychiatric illnesses including anxiety, chronic fatigue syndrome, fibromyalgia, adjustment disorder and clinical depression (Von Kanel, 2008; Peterson et al., 2008; Roelofs et al., 2005; Schaufeli & Enzmann, 1998; Kahill, 1988). Specifically, studies have shown burnout to be an intermediate stage between job stress and exacerbation of depressive symptoms (Zhong et al., 2009).

On an interpersonal level, burnout results in a dehumanizing perception of others, lessened empathy, stereotyping, blaming, hostility, suspicion, projection, paranoia, feeling of not being appreciated and losing trust in the administration (Schaufeli & Enzmann, 1998). Perceived memory impairment has been associated with burnout

(Peterson et al., 2008), as well as significant reductions in non-verbal memory as well as auditory and visual attention in the burnout group (Sandström et al., 2005).

### **1.3.3- Behavioural Symptoms:**

At an individual level, burnout sufferers are predisposed to hyperactivity, procrastination, withdrawal from recreational activities, and increased alcohol consumption (Peterson et al., 2008). In a study done by Williams et al. (2007), physicians suffering from burnout reported more medical errors and more frequent delivery of suboptimal patient care. Of the sample that reported suboptimal patient care, 40% were related to anger and irritability dealing with patients and colleagues and 7% were associated with serious medical errors, two of which resulted in patient death. Another study of members of the American College of Surgeons found that a one point increase in depersonalization and emotional exhaustion was associated with an 11% and 5% increase in self reporting medical errors (Shanafelt et al., 2009). At an organizational level, burnout can predict sick leave and absenteeism (Borritz et al., 2006). In addition, burnout is also related to employee turnover (Zhang & Feng, 2011; Van Bogaert et al., 2010; Lee & Ashforth, 1996) and reduced commitment to their organization (Lee & Ashforth, 1996).

### **1.3.4- Motivational Symptoms:**

Failure caused by workers' unrealistic expectations leads to reduced motivation, which can subsequently increase individuals' dissatisfaction within their personal lives and job (Tokuda et al., 2009; Sarmiento et al., 2004). Declines in work productivity have



been linked to avoidance of the work environment (Schaufeli & Enzmann, 1998; Takeda et al., 2005).

#### **1.4- Stages of Burnout:**

Burnout is an insidious process that does not occur overnight. Experts in the field have proposed several different stages to the process. One of the most popular models of burnout is Freudenberger and North's (2006) 12-stage burnout cycle. According to this model, the 12 stages are not necessarily in chronological sequence. Some individuals might skip several stages or find themselves in several stages at the same time.

According to Freudenberger and North's model, the *first* stage of burnout is characterized by a compulsion to prove one's self. This compulsion begins with excessive ambition, whereby individuals feel the need to demonstrate to themselves and their colleagues that they are almost perfect in what they do. The *second* stage is working harder, where individuals take on more work to demonstrate that they are irreplaceable. This increased workload leads them to neglect their needs and enter the *third* stage. With increasing workload they leave no time for their basic (e.g., sleeping, eating, exercising) and social (e.g., family and friends) needs. The *fourth* stage is displacement of conflicts. During this stage of burnout, individuals realize that something is wrong but cannot pinpoint the problem. It is during this stage when individuals first begin to experience the physical symptoms of stress. Revision of values is the *fifth* stage, where social isolation leads individuals to experience emotional blunting and conflict avoidance, along with self-denial of their basic physical and social needs. During this stage, individuals become fixated on their job and it becomes their only standard of success and achievement. This

stage is followed by the *sixth* stage, which is characterized by the denial of emerging problems. Individuals experience intolerance of social contact with other colleagues, who subsequently perceive the individual as lazy and undisciplined. During this stage of burnout, individuals experience increasing cynicism and lack of sympathy. Subsequently they are led into the *seventh* stage of burnout, withdrawal, whereby individuals increasingly isolate themselves to minimize social contact. They adhere to strict work rules, and substance abuse may be employed as a coping strategy. The *eighth* stage is characterized by obvious behavioural changes, whereby individuals change from energetic and engaging to fearful, shy and apathetic. The *ninth* stage is depersonalization, whereby people lose contact with themselves. They no longer perceive their own needs. The hallmark of the *tenth* stage is inner emptiness. Their inner emptiness expands relentlessly. They attempt to overcome this with increasingly impulsive activity such as exaggerated sexuality, over-eating and drug or alcohol use. The onset of depression is the *eleventh* stage. In this phase, burnout syndrome corresponds with depression. Any signs and symptoms of depression may manifest as individuals perceive life as losing its meaning. The *twelfth* phase is burnout syndrome. At this stage almost all burnout victims have suicidal ideations. This progresses to physical and mental collapse. At this phase, immediate medical attention is warranted.

### **1.5- Risk Factors of Burnout in Healthcare Professionals:**

There are certain factors that can increase the risk of developing any given disease. Risk factors are internal and external causes that increase an individual's chances of developing a disease (Bährer-Kohler, 2013). Internal or individual risk factors are

inherent traits within a worker's nature while external factors are outside influences that can impact a person's productivity.

### **1.5.1- Individual Factors:**

Individual factors include demographic variables as well as personality traits. A variety of demographic variables have been associated with burnout, including age, workload, specialty, marital status, living situation and educational level (Garrosa, 2006; Nassar, 2014). However, the results of such studies have been inconsistent (Schaufeli & Enzmann, 1998). In addition, the multitude of demographic variables confounds researchers and makes interpretation difficult (Maslach & Leiter, 2008).

Numerous studies have suggested that neuroticism is associated with burnout (Deary et al., 1996; Hills & Norvell, 1991; Zellars et al., 2000). Neurotic individuals are emotionally labile, making them more prone to occupational stress and burnout (Maslach & Leiter, 2008). In addition, EE is positively related to openness to experiences and is negatively related to extroversion and emotional stability. PA however, is positively related to extroversion, conscientiousness, and agreeableness (Ghorpade et al., 2007).

Another important organizational risk factor that has been consistent throughout the literature is job-person incongruity, which could be classified as both individual and organizational factors. Job-person incongruity is often described as a misfit between the individual and the workplace. A better fit is assumed to predict better adjustment and less strain (Maslach & Leiter, 1997).

### **1.5.2- External Factors:**

In addition to important individual variables, six key organizational risk factors have been identified in research across many occupations (Maslach & Leiter, 2008).

#### **1.5.2.1. Workload:**

From an individual perspective, workload refers to time and energy; from an organizational perspective, workload relates to productivity (Maslach & Leiter 1997). To increase productivity, workers are expected to work longer hours and try to keep up with increasing work demands with shorter breaks. Furthermore, staff are expected to take on more roles and multitask (Maslach & Leiter 1997). Workload has a linear relationship with burnout, especially the emotional exhaustion dimension (Cordes & Dougherty, 1993; Maslach et al., 2001; Schaufeli & Enzmann, 1998). In a multidisciplinary cancer team, increasing job related stress linked to excessive office work, time pressure and physical workload (Sehlen et al., 2009). Providing further evidence for the relation between workload and burnout, data from the Physician Work Life study showed that the odds for burnout increased by 12-15% for each additional five hours worked per week (McMurray et al., 2000). Long work hours were associated with burnout and job dissatisfaction in internal medicine physicians (Linzer et al., 2001).

#### **1.5.2.2. Control:**

The demand-control theory of job stress emphasizes the importance of personal control in the workplace (Karasek & Theorell, 1990). This theory emphasises two important parameters: Job Demands (work demands) and Job Decision Latitude (room to manoeuvre, and autonomy at work). According to the demand-control theory, strong

workplace strain arises when work demands are high but individuals have little flexibility on how to address work demands due to a lack of autonomy (Bakker et al., 2003).

This key domain highlights the significant importance of role conflict, a type of role demand. Role conflict occurs at a workplace when an individual is expected to perform more than one role and one of these roles hinders the accomplishment of the others (Kahn et al., 1964). Numerous studies have demonstrated a strong relationship between role conflict and the emotional exhaustion dimension of burnout (Cordes & Dougherty, 1993; Maslach et al., 1996). Furthermore, role ambiguity (the absence of direction in work) is associated with increasing burnout (Rizzo et al., 1970).

#### **1.5.2.3. Reward:**

Absence of reward leads to intrinsic dissatisfaction, which promotes cynicism, exhaustion and eventually burnout (Maslach & Leiter, 1997). Numerous studies have indicated that the lack of reward (financial, social or institutional) increases vulnerability to burnout (Chappell & Novak, 1992; Glicken, 1983; Maslanka, 1996). For example, the lack of overtime compensation has been linked to burnout in cancer healthcare workers (Sehlen et al., 2009).

#### **1.5.2.4. Community:**

Within the burnout literature, community refers to social support in the workplace, whether from a supervisor or from peers. Social support at the workplace has been found to be closely associated with work engagement (Leiter & Maslach, 1988; Schnorpfeil et

al., 2002). Burnout is less likely to occur in a positive and supportive workplace environment (Buunk & Schaufeli, 1993).

#### **1.5.2.5. Fairness:**

Fairness is the extent to which decisions at work are perceived as being just and equitable. Research has found that the lack of reciprocity or imbalanced social exchange processes (i.e, imbalance between what is put in a relationship and what is received) is predictive of burnout (Bakker et al., 2000; Schaufeli et al, 1996). This is true for most professions; however in a highly competitive health care environment fairness becomes more important.

#### **1.6 Administration and Job stress:**

Administration within the scope of this study refers to all levels of administrative interactions in the hospital and academic center or university. Administration refers to a group of people who manage a university, hospital or any other organization <http://libguides.scu.edu.au/content.php?pid=161580&sid=1594178>. Administration represents the supervisor in the workplace who exerts a direct influence on subordinate behaviour (Kozlowski & Doherty, 1989).

Numerous models have been proposed to explain the moderating effects of leadership practices on employee behaviour (Roney & Cahoon, 1988; Misumi, 1985; McCormick & Powell, 1988; Stordeur et al., 2001). According to one school of thought, administration can help employees cope with stress factors and prevent the occurrence of burnout (Roney & Cahoon, 1988). Previous research has shown that relative to co-

workers' or family and friends' support, administrative support alleviated the deleterious effects of work related stress (House, 1977). A supportive leadership is able to buffer the negative effects of stress factors on emotional exhaustion (Stordeur et al., 2001).

On the other hand, administration can increase stress if it is tyrannical and too control-oriented. An administrator who continuously urges workers to be more productive and effective without encouragement or a reward system generates detectable physiological symptoms of stress among staff (e.g., increased levels of systolic and diastolic blood pressure) (Misumi, 1985; McCormick & Powell, 1988). Based on this and our observations, we have hypothesized that administration is a crucial aspect of day-to-day interaction for academic clinicians and that is a potential source of burnout.

### **1.5.3- Physician Risk Factors:**

For physicians, several risk factors have been linked to burnout syndrome, including decreased autonomy, increased administrative workload, less time spent with patients, and difficulty balancing personal and professional responsibilities (Shanafelt et al., 2003; Pathman et al., 2002; Konrad, 1999). A recent study conducted in South Africa found that the main source of occupational stresses for physicians was understaffing, lack of resources, lack of control, difficult work schedules, inadequate security, poor career advancement and low salaries (Thomas & Valli, 2006).

Academic physicians are at a higher risk of developing burnout due to the additional workload they carry which includes clinical and non-clinical roles (research, teaching and administration). Understanding risk factors would help in implementing preventative measures for burnout.

### **1.7- Burnout in Healthcare Workers:**

Physicians are privileged in caring for the sick, promoting public health, advancing the science of medicine and passing the torch of knowledge to the next generation of physicians (Shanafelt, 2009). Unfortunately, there is an increasing body of literature showing alarming rates of physician burnout and low job satisfaction (Spickard, 2002; Campbell, 2001; Konrad, 1999).

Interactions with other staff members, patients, their families and administration have been associated with occupational stress in several healthcare related professions (Carod-Artal & Vazquez-Cabrera, 2013). The healthcare specialties that have been reported to be at risk of professional burnout are: Physicians; Oncologist, Surgeons, Anaesthesiologists, AIDS unit physician, Intensive care unit physician, Neonatal intensivists, Rehabilitation practitioners, Dentists, Nurses, Social workers, Mental health workers, Psychologists, Occupational therapists and trainees in medicine (Bährer-Kohler, 2013; Nassar et al., 2014).

In developed countries, severe burnout syndrome is present in 25% - 70% of physicians (Roth et al., 2011). For example, burnout within a Canadian-based intensive care unit ranged from 36% - 65%, with the highest level of burnout amongst critical care fellows, followed by nurses, respiratory therapists and ICU physicians (Nassar et al., 2014). In France, approximately 35% of nursing staff and almost half of the physicians reported high levels of burnout in the intensive care unit (Kilfedder et al., 2001). More recently, research reported that close to half of the nurses and intensive care physicians wished to quit their jobs (Embriaco et al., 2007).



Developing countries also report high levels of burnout syndrome in healthcare professionals. For example, across Africa, up to two thirds of healthcare workers suffer from burnout, mostly due to emotional exhaustion (Thorsen et al., 2011; McAuliffe et al., 2009; Olley, 2003). Burnout syndrome across healthcare workers in Brazil showed a wide range from 7.5% - 71%, with the lower scores being among physicians and higher scores among the nursing staff (Da Silva & Menezes, 2008; De Moreira et al., 2009). In Asia, Singaporean nurses show high levels of work-related stress related to organizational issues, patient-related difficulties and conflict with colleagues (Lim et al., 2010). In Saudi Arabia, levels of burnout syndrome among foreign nurses was high, with up to 71% reporting a sense of low personal accomplishment and 45% reporting high emotional exhaustion. Emotional exhaustion was found mostly among young nurses with fewer years of experience and in those who worked in the intensive care units and emergency department (Al-Turki et al., 2010). Turkish studies showed similar patterns but with burnout mostly related to childcare (Demir et al., 2003). These studies demonstrate that burnout syndrome is widely prevalent across several healthcare professions and occupations.

### **1.8- Academic Clinicians Workload Challenges and Burnout**

Academic clinicians comprise a unique subpopulation of clinicians. In addition to facing the high expectations of providing tertiary care and clinical performance, they are also expected to carry out other non-clinical academic activities such as research, teaching, supervision of trainees and additional administrative responsibilities.

Accomplishments in research and teaching are essential for academic promotions. This heavy workload must also be balanced delicately with clinicians' personal lives.

Workload measurement systems to quantify clinicians' workload are not well developed in clinical fields (Hilton, 1997). This is in contrast to allied healthcare professionals who have had systems in place for decades due to the salaried nature of their roles and accountability requirements (Howell, 2002). In Canada, physician-funding models for most of the faculty medical departments are fee-for-service, equating more work to more income. The ability to act as a clinician, educator, researcher and administrator means that they will need to sacrifice more time into direct patient care to reach the same income of non-academic physician (Conlon & Tharani, 2009). These fee-for-service systems may generate more workload, especially for junior faculty and staff members, adding more stress to their new roles.

The workload of academic clinicians falls into two main categories: clinical and non-clinical (i.e, teaching, research and administration). It is difficult to compartmentalize the amount of work in each category, but a recent study reported that 70% to 75% of a physician's time is spent on clinical activities, leaving 25% to 30% on non-clinical activities (Conlon & Tharani, 2009). This study also found that male academic physicians spent more time on direct patient contact, research, and teaching, while female physicians spent more time on indirect clinical activities such as report writing, continuous medical education activities, and maternity leave. In addition, junior physicians spent more time on total clinical activities than both the mid-career and senior physicians, although senior

physicians spent more time on non-clinical activities than both junior and mid-career physicians.

Lately, the progressive scarcity of resources combined with growing patient population and resident work hour restrictions has led to increased patient-to-attending physician and patient-to-resident ratios. This change has been associated with greater perceptions of insufficient time for patient care, increased occupational stress, burnout and more negative perceptions by clinicians regarding time for teaching and trainee satisfaction (Ward et al., 2012).

The multiple clinical and non-clinical roles of academic clinicians may lead to role conflict and role ambiguity. Role conflict exists when there are several roles for the same person, requiring different or incompatible behaviours (Rizzo et al., 1970). Role ambiguity arises when individuals are uncertain about their duties, authority, allocation of time, and relationships with others (Rizzo et al., 1970). Role conflict and role ambiguity can result in increased work-related stress, decreased productivity, and impaired organizational efficiency (Rizzo et al., 1970; Lambert & Lambert, 2001). Both role conflict and ambiguity have been shown to be significant causes of work-related stress and correlate to burnout (Katz et al., 1977; Lambert & Lambert, 2001). Role conflict applies to academic clinicians as they must balance non-clinical activities on top of their regular clinical responsibilities. Role ambiguity in academic clinicians maybe due to the fact they do not receive structured training on how to teach, which can lead to role confusion.

Despite the numerous studies looking at burnout in various professions, few studies have looked at burnout specifically in clinical faculty members. Academic clinicians are expected to perform additional roles compared to non-academic physicians. The roles are clinical (i.e., directly related to patient care) and non-clinical (i.e., indirectly related to patient care) such as education, research and administration. As outlined in the previous section, these conditions would create work overload, role conflict and role ambiguity and may be associated with additional chronic occupational stress and burnout.

Burnout is well studied in a variety of educators including elementary (Antoniou, 2009; McCarthy, 2009; Skaalivik, 1999), middle school (Skaalivik, 1999), high school (Antoniou, 2009) and university teachers (Azeem, 2008). Similarly, a large amount of research has been directed towards the prevalence and effect of burnout within residents (Shanafelt, 2002) and staff physicians (Spickard, 2002). Combining the two roles of being an educator and a physician might increase the likelihood of burnout in academic physicians.

Burnout can start with the commencement of medical training or residency and can be carried over to the attending level. A study of United States medical students showed that 50% of medical students experienced burnout and 10% experienced suicidal ideation, with a correlation being reported between burnout and suicidal ideation (Dyrbye et al., 2008). Another North American study reported high levels of emotional exhaustion and depersonalization in approximately 50% of internal medicine residents. International medical graduates (IMG's) showed lower levels of burnout compared to US medical graduates. A possible explanation was that IMG's have more resilient personality traits

and have a lower tendency for burnout, since they were able to successfully make it through the highly competitive selection process (McMahon et al, 2004). Burnout is also correlated with higher levels of educational debts (West et al., 2011).

Clinician faculty educators may be at significant risk for burnout since many are practicing clinicians and researchers and are expected to simultaneously handle the pressures associated with multiple roles. Little is known about job satisfaction, stress, and rates of burnout in academic hospital medicine or how these factors affect scholarly success and productivity (Glasheen, 2011).

The relationship between clinician educators' duties and burnout was recently examined by Dembitzer (2012) on a sample of internists, paediatricians and family physicians practicing in an urban and underserved setting. They found that clinically burned-out faculty had less confidence in their teaching skills and had fewer life-long learning habits. These results suggest that burnout may not only influence quality of care, but also the quality of training provided to others. Another study found that 23% of academic hospitalists had some degree of burnout, 67% reported high levels of stress, and 75% were satisfied with their jobs (Glasheen, 2011). Predictors of low overall job satisfaction included training in a medical subspecialty, practicing at a non-university hospital, low satisfaction with the amount of personal/family time, amount of control over work schedule and the level of support from their division chief. Predictors of burnout included low satisfaction with the amount of personal/family time and low satisfaction related to perceived control over work schedules (Glasheen, 2011).

There is a paucity of studies that specifically delineate the sources of burnout to patient load, educational load or administrative responsibilities. An exception is a recent study by Shanafelt et al. (2009), which looked at career fit and burnout among 556 faculty physicians in the Department of Internal Medicine at an academic center. This study demonstrated a 34% rate of burnout among faculty physicians, which was consistent with prior literature. The majority (68%) reported that patient care was most meaningful to them, with the fewest reporting administration (3%) as being meaningful. The time spent on the most meaningful activity was the largest predictor of burnout, whereby the more time faculty physicians focused on this aspect of work, the lower their risk of burnout. In addition, burnout was associated with intent to leave academic medicine. However, this study focused only on a single profession (Internal Medicine) working at a single institution, which makes it difficult to generalize to other specialties and other institutions. Furthermore, other unmeasured factors (e.g. workload, autonomy and administrative demands) may have contributed to burnout and intent to leave academic medicine (Shanafelt et al., 2009).

Using creative modifications of Maslach's Burnout Inventory, the present study aims to identify potential etiological factors for burnout that may be attributable to either patient care, working with trainees or interacting with administration in a tertiary care center. It also explores potential correlations with demographic and workload variables. Identifying potential variables contributing to burnout syndrome in clinician faculty educators can be used to render the work environment less stressful, more productive and to ultimately lead to better patient care.

### **1.9- Study Objective:**

The goal of this study is to measure the pervasiveness of burnout within the Faculty of Health Sciences at McMaster University. We aim to identify which type of interaction serves as the principle source of burnout: students/trainees, patients or administration. In addition, we aim to investigate potential demographic and workload variables that contribute to self-reported measures of burnout.

Highlighting the source of burnout within this high-risk population can aid us in recommending targeted modifications in the work environment of academic physicians. This will ultimately transpire to more productive and effective academic and patient-care environments.

## Chapter 2: Materials and Methods

Data for this study was collected through a questionnaire administered online from February to July 2014.

### 2.1- Sample:

The study population was comprised of the Health Sciences Faculty staff members in clinical specialties working at McMaster University in the departments of: Medicine, Critical Care, Surgery, Family Medicine, Obstetrics and Gynaecology, Paediatrics, Anaesthesia, Psychiatry, Emergency Medical Oncology, Radiology and Pathology (**Table 1**). The survey was completed by 326 clinical faculty staff members. Despite our best efforts, we were unable to get the exact number of academic clinicians in each department due to numerous factors, which will be outlined in the discussion chapter under limitation. The highest response rate was in Surgery (60%), lowest in Medicine, (38%). The total population was approximately 900 while our sample that responded was 326. In general the survey response rate was approximately 36.2%.

Female respondents made up 43% of the sample The average age was 47 years (range =29-83, SD= 9.44) (**Table 1**). Majority of respondents were married and living with a partner and family.

The specialties of the study participants are listed in **Table 1**. For the purpose of our study and to increase the power of our sample size and the related statistical analysis, we polarized the specialties into two main categories: surgically focused specialties (Surgery, Obstetrics and Gynecology and Anesthesia) which represents 35%, and non-surgically focused specialties (Medicine, Critical Care, Family Medicine, Paediatrics,



Psychiatry, Emergency Medicine, Pathology, Radiology and Medical/Radiation Oncology) representing 65%. Through this compartmentalization, our goal is to increase the power of our sample size, which is reflected in the power of our statistical analysis. This helps focus our findings and make recommendations across surgical vs. non-surgical categories, rather than for each specialty, which might be redundant.

As for the highest educational level achieved, 46.8% held only an M.D degree without higher education, 23.2% had a Masters degree, 2.29% had an MBA, and 11.11% had a Ph.D. (Table 1).

**Table 1: Study Demographics**

<b>Gender</b>	
Male	56.21%
Female	43.46%
<b>Marital Status</b>	
Single	11.37%
Married	80.60%
Separated/divorced	8.03%
<b>Base Specialty</b>	
Medicine	31.15%
Critical Care	2.95%
Surgery	20.33%
Family Medicine	3.61%
OBGYN	4.26%
Paediatrics	6.56%
Anaesthesia	9.18%
Psychiatry	7.87%
Emergency Medicine	5.25%
Medical/radiation Oncology	3.28%
Radiology	1.64%
Pathology	3.93%
<b>Academic Appointment</b>	

Professor Emeritus	0.99%
Professor	10.60%
Associate Professor	29.80%
Assistant Professor	23.51%
Associate Clinical Professor	12.25%
Assistant Clinical Professor	20.20%
Clinical Scholar	2.65%
Locum	0.00%
<b>Living Situation</b>	
Alone	11.30%
With Partner	27.57%
With family	61.13%
Shared Accommodation	0.00%
Hotel or Guesthouse	0.00%
<b>Highest Level of Education</b>	
Ph.D.	11.11%
MBA	2.29%
M.Sc.	23.20%
Diploma	5.88%
M.D. (only)	46.08%

**2.2- Instrument:**

To date, there is no objective biomarker blood test that can diagnose burnout syndrome (Danhof-Pont et al. 2011). In addition, burnout syndrome is not described in the DSM-V or IDC-10 and there are no clinical criteria for the diagnosis of burnout. Hence, self-reported measures are the most commonly used techniques to measure burnout. **Table 2** outlines the five major instruments used in measuring burnout among health related staff workers. The most popular of those is Maslach and Jackson’s Burnout Inventory (MBI), which is used in the present study, and will be described in detail.

**Table 2: Major Instruments Used in Measuring Burnout Among Healthcare Workers (modified from Bährer-Köhler et al., 2013)**

<b>Name</b>	<b>Maslach Burnout Inventory (MBI)</b> (Maslach and Jackson, 1986)	<b>Copenhagen Burnout Inventory (CBI)</b> (Kristensesen et al., 2005)	<b>The Oldenburg Burnout Inventory (OLBI)</b> (Demerouti et al., 2003)	<b>Spanish Burnout Inventory (SBI)</b> (Gil-Monte et al., 2013)
<b>Content</b>	22 items 7 response categories	19 items 5 response categories	8 items, 2 subscales	20 items in 4 dimensions
<b>Domains</b>	Emotional Exhaustion (EE)  Depersonalization (DP)  Personal Accomplishment (PA)	Personal burnout, work-related burnout, and client-related burnout	Exhaustion and disengagement (from work)	Enthusiasm for the job Psychological exhaustion  Indolence  Guilt

### **2.2.1- Maslach Burnout Inventory (MBI):**

This is the most widely used scale in the literature, specifically pertaining to human services and education. The MBI was first developed by Maslach & Jackson in 1986, and has since been translated into several languages throughout the world. Factor-analysis of several items was used in tool development, in which the items aggregated around three subscales or dimensions: emotional exhaustion (EE), depersonalization (DP) and personal accomplishment (PA) (Maslach & Jackson in 1986, 1996). EE occurs when an individual's emotional resources are critically reduced. DP is characterized by cynicism and negativism about clients. Workers with high levels of DP have dehumanized perceptions of their clients, viewing them as impersonal objects (Ryan, 1971). PA arises when workers feel unsatisfied with their job accompanied by a low sense of accomplishments and projecting that onto their clients (Maslach, 1986). The original MBI-HSS (MBI-Human Services Survey) comprises of 22 items, each employing a seven-point rating scale indicating the frequency of such an experience.

Burnout is not conceptualized as a dichotomous variable that is either present or absent but rather as a continuous variable ranging from a low, average or high degree of burnout (**Table 3**). A low level of burnout is reflected by a low average rating on EE and DP but with high scores on the PA subscales. Conversely, the opposite pattern of data (i.e., high scores on EE and DP but low scores on PA) indicates high levels of burnout (Maslach, 1986).

**Table 3: Categorization of EE, DP and PA subscales for MBI-HSS (MBI-Human Services Survey) Modified from (Maslach, 1986)**

Burnout Level	Frequency		
	EE	DP	PA
<b>High</b>	27 or over	13 or over	0-31
<b>Moderate</b>	17-26	7 to 12	32-38
<b>Low</b>	0-16	0-6	39 or over

In this study, we modified the MBI scale with permission from the publisher (Mind Garden®). Our study investigated the three broad categories of major human interactions in an academic center for academic clinicians: Trainees, patients and administration. Therefore, we decided to conceptualize a scale that would include these three main human interactions without the need to administer the scale on three different occasions (e.g., one scale related to interactions with trainees, another related to interactions with patients, and a third related to interaction with administration). The modification of this scale allows us to examine the three main sources of human interactions (trainees, patients and administration) for an academic clinician and to determine whether they are a source for burnout in one administration. **Figure 1** is a section of the adapted MBI-scale; the full scale is listed in the appendix.

**Figure 1: A section of the Modified MBI scale (with permission):**

**\* 1. I feel emotionally drained from my work.**

**How often:**

	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
due to students/trainees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
due to patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
due to administration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**\* 2. I feel used up at the end of the workday.**

**How often:**

	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
due to students/trainees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
due to patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
due to administration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**2.3- Data Collection:**

Survey Monkey<sup>®</sup>, a web based survey platform, was used for data collection. The gold addition of survey monkey provides enhanced security (SSL) for data collection. The survey link was distributed to participants via email by their corresponding department chairs. In addition, a recruitment poster was distributed to each department. The measures that were implemented to increase the response rate were extending the collection period and sending several follow up emails, which increased our sample size to 326.

**2.4- Ethical Considerations:**

Research Ethics Board (REB) approval was obtained prior to study commencement for the study protocol, survey, recruitment email and poster. Consent was waived with permission from REB since the participation was completely voluntary. Participants were able to quit the study at any stage prior to submitting. Participants'

personal information was not reported in any of the findings. The risks for participants in this study were minimal since their only task was to respond to the questionnaire.

Participants were also free to withdraw from the study at anytime.

### **2.5- Statistical Analysis:**

1. Statistical analysis was performed using SPSS Statistical Software 22, IBM Chicago. All statistical tests were two-tailed, and p-values less than 0.05 were considered statistically significant. Ninety five percent confidence intervals were calculated to estimate the population means for the data. Exploratory factor analysis procedure was used to investigate the structure of the scale as an indication of the construct validity for the three categories of interactions (related to trainees, patients or administration) to each of the 22 items of the scale. Multiple regression analysis was carried out to examine the contribution of the study variables and how much variance of the burnout scores was explained by these variables. These variables are age, gender, marital status, living situation (alone or with others), total years of work experience as a faculty, majority of practice community vs. academic, academic rank, Specialty, level of higher education achieved, number of night/shifts you are on-call per month, average number of patients that you are the most responsible physician (MRP) for per month, number of active research projects you are currently involved in, nature of work; full or part time.

## **Chapter 3: Results:**

### **3.1- Psychometric Properties of MBI:**

#### **3.1.1- Construct validity index**

Principal axis factoring with Varimax rotation was used to investigate the dimensionality of MBI according to the population of the study and to give an index of construct validity. The results are presented in **Tables A1, A2, and A3**. The factor retention criteria were 1) Eigenvalues greater than 1, 2) evidence from the screen plots and 3) factor loadings greater than 0.30. A separate factor analysis was conducted for all three categories of responses: due to trainees, due to patients and due to administration.

The three prerequisites for principal axis factoring that our study met were:

1. Determinant analysis was larger than zero for all responses, which are deemed significant.
2. Kaiser-Meyer-Olkin (KMO) of sampling adequacy: KMO for the category due to students is 0.92, due to patients is 0.92, and due to administration is 0.91. According to Kaiser (1974), KMO values greater than 0.60 are required for good factor analyses, and therefore the current results indicate adequate sampling across the three subscales of burnout (e.g., EE, DP, and PA).
3. Bartlett's test for sphericity (Tabachnick and Fidell, 2007) was significant for the three responses ( $p < 0.001$ ).

Based on the three aforementioned indices, the data was suitable for performing principal axis factoring for the three categories of responses.



Initial examinations of the eigenvalues and screen plot generated by factor analysis of MBI are consistent with the same three dimensions or subscales reported by Maslach et al. (1986): EE, DP and PA. The extracted sum squared loading indicated what percentage of the variance in an original variable is explained by a factor (**Table 4**).

The factor loadings range from 0.47 - 0.87 for students, 0.47 - 0.85 for patients and from 0.50 - 0.89 for administration. These ranges indicate that all of the items load onto a single factor, based on the aforementioned factor loading criteria for factor structure.

However, a few items were identified as exceptions:

- For responses related to students: question 16 loaded equally in both EE and DP factors.
- For responses related to patients: questions 16 and 20 should have loaded in EE, but they loaded in DP.
- For responses related to administration: questions 11 and 15 should have loaded in DP however they loaded in EE instead.

The aforementioned results indicate that the three subscales (EE, DP and PA) identified in the current study had the same dimensionalities identified in previous work (Maslach & Jackson 1986, 1991). These three dimensionalities were similar across the different burnout categories (e.g. trainees, patients and administration). These results give an indication of construct validity of the scale based on the study population and according to the new categories of responses that are introduced by this study.

**Table 4: Extracted Sum Squared Loading for the Modified MBI scale**

Burnout source Subscale	Administration	Patients	Students/Trainees
<b>EE</b>	53.48%	36.04%	36.56%
<b>DP</b>	12.12%	18.34%	14.81%
<b>PA</b>	3.56%	5.07%	5.41%

**3.1.2- Reliability (Internal Consistency):**

Nine internal consistencies (Cronbach’s alpha) indexes were calculated and are presented in **Table 5**. The results indicate that the reliability of the modified scale ranged between 0.86 - 0.97 across the three types of human interactions. All these reliabilities are more than the acceptable value mentioned by Nannilly (1993) and higher than what was reported by Maslach (1986) for the original MBI scale.

**Table 5: Internal Consistency (Cronbach's alpha Values)**

Burnout source Subscale	Administration	Patients	Students/Trainees
<b>EE</b>	0.97	0.93	0.93
<b>DP</b>	0.92	0.86	0.82
<b>PA</b>	0.90	0.89	0.88

**3.1.3- Burnout Prevalence**

To estimate the prevalence of burnout among the academic clinicians, burnout percentages for the three types of interaction categories (due to trainees, patients and administration) were calculated and presented in **Table 6**. Academic clinicians reported higher levels of burnout due to administration relative to that caused by patients and

trainees in both EE, DP, and PA (percentages are interpreted in reverse to the other two subscales)

The mean squares with standard deviation for the three types of interactions categories were calculated and presented in **Table 7**. As mentioned above, burnout due to administration was the highest in both EE and DP, and lowest for PA.

**Table 6: Burnout prevalence among the three major sources of human interactions.**

Percentages indicate the levels of burnout as defined by Maslach and Jackson (1986).

Burnout source Subscale	Administration	Patients	Students/Trainees
<b>EE</b>	51.8%	26.4%	11.7%
<b>DP</b>	44.8%	24.5%	9.8%
<b>PA*</b>	16.3%	33.4%	33.7%

\* Percentages are interpreted in reverse to the EE and DP scales.

**Table 6: Means and standard deviations of the burnout scores for the three types of interactions**

Burnout source Subscale	Administration	Patients	Students/Trainees
<b>EE</b>	27.31 (15.93)*	19.46 (11.31)	13.3 (10.44)
<b>DP</b>	12.52 (9.16)	7.59 (6.00)	5.34 (4.95)
<b>PA**</b>	18.96 (11.57)	35.25 (9.48)	34.42 (9.58)

\*Standard deviations appear in parentheses below means.

\*\* Percentages are interpreted in reverse to the EE and DP scales.

### **3.2- Variables Contributing to Burnout:**

Regression analysis was used to determine the contributing variables for burnout syndrome. Thirteen variables were included as predictors for burnout:

2. Age
3. Gender
4. Marital status
5. Living situation (alone or with others)
6. Total years of work experience as a faculty
7. Majority of practice community vs. academic
8. Academic rank
9. Specialty
10. Level of higher education achieved
11. Number of night/shifts you are on-call per month
12. Average number of patients that you are the most responsible physician (MRP) for per month
13. Number of active research projects you are currently involved in
14. Nature of work; full or part time

To meet the requirement of multiple regressions, categorical and ordinal data variables are converted to dummy variables of two values: 0 and 1. Sample size variable ratio was calculated to be 25, which is acceptable for regression analysis (Nunnally, 1978).

The following variables were converted to dummy variables:

1. Marital status: single and separated were coded as 0 and married as 1.
2. Specialty: surgical specialties (Surgery, OBGYN and Anaesthesia) were coded as 0; while non-surgical specialties (Medicine, Critical Care, Family Medicine, Paediatrics, Psychiatry, Emergency Medicine and Medical Oncology) were coded as 1.
3. Academic rank: professor and associate professor were coded as 0; while assistant professor, associate clinical professor, assistant clinical professor and clinical scholar were coded as 1.
4. Living situation: alone was 0; while living with others was 1.
5. Educational level: postgraduate education, Ph.D., MBA, Masters and diploma was coded as 0; while no postgraduate degree was coded as 1.

Multiple regressions with stepwise methods in entering predictor (independent) variable were used. The results are summarized in **Tables A4, A5 and A6 (see Appendix)**

### **3.2.1- Emotional Exhaustion Dimension of Burnout:**

Multiple regression was used to compare three sources of EE (burnout due to trainees, burnout due to patients and burnout due to administration) according to the contribution of the 13 predictors and explain the variance of the EE burnout.

The results of the multiple regression is as follows (**Table A4**):

1. Specialty and age contributed to the variance of the emotional exhaustion subscale of burnout due to interaction with trainees. These two variables explain 6% of the

EE burnout variance. Four variables (age, number of night/shifts per month, living condition alone or with others and specialty) accounted for 10% of the EE due to patients' variance. Five variables (specialty, number of night/shifts per month, setting of practice community versus hospital, marital status and academic rank) contributed significantly to the regression model and accounted for 20% of the variance of EE due to interactions with administration.

2. Specialty contributed to the variance of all the three types of interactions of the EE burnout subscale. The beta weights of this variable were lower in EE burnout due to patients' interaction (-0.123) than both EE burnout due to administration interactions (-0.223) and EE burnout due to trainees' interaction (-0.219). The negative direction of beta indicates that non-surgical specialties negatively contributed to EE subscale of burnout compared to surgical specialties.

### 3.2.2- Depersonalization Dimension of Burnout:

To analyze the DP burnout dimension, the same 13 variables were used as predictors. The same scales of measurements and coding of the dummy variables were used. Multiple regressions with stepwise methods in entering the predictors' variables were used to analyze DP burnout. The results for the DP burnout are summarized in **Table A5** (see Appendix).

1. Three out of the 13 variables contributed to the variance on the students' DP burnout. The three variables were: specialty, number of night shift per month and setting of practice (community versus academic). The contribution of these three variables is 0.14% of the DP burnout variance. Five variables (specialty, age, academic degree, marital status and night shifts) explained 0.15% of the variance of DP due to patients. Six variables (specialty, night shifts, setting of practice, academic position, marital status and gender) contributed significantly to DP and explain 0.25% of the variance of DP due to administration.
2. Only specialty and number of night shifts contributed to the variance of all three categories of the sources of DP burnout. The beta weights of these variables are higher in DP burnout due to administration in both categories (specialty: -0.25 and night shift: 0.22) than both DP burnout due to students (specialty: -0.23 and night shifts: 0.19) and due to patients (specialty: -0.20 and night shifts: 0.13). The results indicate a negative direction of beta for specialty and a positive direction for night shifts in all the three categories of DP. Also DP burnout for the non-

surgical specialty is less than the surgery specialty. This suggests that the more night shifts the higher the DP burnout for the three categories.

### **3.2.3- Personal Accomplishment Dimension of Burnout:**

To analyze the PA burnout dimension, the same 13 variables were used as predictors (see **Table A6** in Appendix). The results of PA burnout are as follows:

1. Two variables (specialty and number of in-patients per month) out of the 13 predictors contributed to the variance of the students' PA burnout. These variables explain 5% of the PA burnout variance. Specialty, setting of practice (community versus academic), number of in-patients per month and academic rank explained 14% of the PA due to patients. Specialty and setting of practice (community versus academic) contributed significantly to PA and explained 0.12% of the variance of PA due to administration.
2. Only specialty contributed to the variance of all the three categories of the interactions of PA burnout. The beta weights of this variable were higher in PA burnout due to administration (0.30) than both due to students (0.12) and due to patients (-0.19). The results indicate a significant positive direction of beta for specialty in all the three main burnout interactions of PA burnout. This suggests that PA for the non-surgical specialties is higher than the surgical specialties for the three categories of burnout.



## **CHAPTER 4: DISCUSSION:**

This study utilized a novel modification of Maslach’s Burnout Inventory to identify the major sources and prevalence of burnout for academic clinicians in the Faculty of Health Sciences at McMaster University. In addition, we investigated contributing factors to burnout as it relates to demographic and workload variables.

### **4.1- Psychometric Properties of the Modified MBI:**

Based on our observations and review of the literature we hypothesized three main sources of burnout that might contribute to burnout in academic physicians: interactions with trainees, interactions with patients, and interactions with administration. Due to this novel modification, psychometric properties of the scale were tested to ensure that our modified scale bears the same dimensionality as that of the original unmodified MBI scale. Following is the detailed discussion of the psychometric properties of the modified MBI.

#### **4.1.1- Construct Validity Index:**

Our results revealed the same three dimensionalities as the unmodified MBI (EE, DP and PA) for each of our three main burnout interactions. However, some items cross-loaded onto two factors, mostly between EE and DP. Such crossover suggests that EE and DP are related to one another, and this finding is supported by the authors involved in the original tool development (Maslach, 1986). The Emotional Exhaustion (EE) subscale “assesses feelings of being emotionally overextended and exhausted by one's work”. The Depersonalization (DP) subscale “measures an unfeeling and impersonal response toward

recipients of one's service, care, treatment, or instruction” (Maslach, 1986). Both of these two constructs were found by Maslach et al. (1986) to positively contribute to the burnout level. Maslach further describes that there is moderate correlation between some items of EE and DP subscales, stating that although those are hypothesized to be independent subscales of burnout, they are empirically and statistically related to each other. Similarly, Lee & Ashforth (1993) found high correlation between EE and DP. EE and DP subscales contributed more highly to measures of burnout than PA. Several other studies consistently found cross loading for EE items in DP subscales (Byrne, 1993; Leiter & Dump, 1994; Schaufeli & Van Dierendonck, 1993). To maintain consistency with the large body of research using the MBI-HSS, it is recommended to maintain the current 22-item MBI-HSS with its established scoring (Maslach & Jackson, 1986). Furthermore, there is no sum score or equation for the three subscales to calculate burnout prevalence. However, the individual scores for EE and DP were cited by authors as surrogate to burnout. The three subscales give a complete multifaceted representation of burnout in which emotional exhaustion reflects a person’s emotional reaction to stress, while depersonalization reflects an individual’s evaluations of others and lastly personal accomplishment reflects evaluation of one’s self (Leiter, 1989).

#### **4.1.2- Burnout Source and Prevalence in Academic Clinicians:**

This is the first study to investigate the three main interactions related to burnout in a single scale in one administration. Our study showed that the least source of burnout in academic clinicians is associated with trainee interactions, followed by patient

interactions, while the highest burnout levels were related to interactions with administration.

The impact of administrative interactions on burnout symptoms is a particularly interesting and novel finding. Respondents may have perceived interactions with administration in different ways. For example, some respondents may have interpreted “interactions with administration” as personal practice (e.g., office work, billing, secretary, charts, dictations, etc.), perceived administrative roles (e.g, academic or hospital roles), or s interactions with administrative offices (e.g., academic or hospital based administrators). Further studies are required in order to pinpoint the specific administrative interactions that are related to burnout in academic clinicians. That is the first step to coming up with recommendations to modify those administrative variables and prevent burnout.

The three hypothesized interactions related to burnout that are specific to academic clinicians were trainees, patients, and administration. These were also hypothesized by Maslach and Jackson (1982). However, they found that physicians spending most of their time in direct contact with patients scored high on EE versus those who spent some of their time working hours on teaching or administration. The most possible explanation is that in the early 1980s patient workloads were higher with more frequent night on-calls and less concern over work hours than it is nowadays.

It has been shown that the more human interactions experienced at the workplace, the higher the level of burnout on MBI (Maslach & Pines, 1977). Academic clinicians interact with more people in comparison with non-academic clinicians, specifically

interactions with trainees and administration. Therefore academic clinicians are at a higher risk for burnout. Furthermore, research has shown that when caseloads were over forty people served per day, scores on EE and DP were higher and lower on PA (Maslach & Jackson, 1984). A more recent study in British Columbia demonstrated that academic clinicians' total workload is distributed as follows: 60-70% with direct patient care, 10-15% indirect patient contact (charts, reports review, etc.), 20% administration, and less than 10% of non-clinical work (e.g, research or teaching) (Conlon, 2008). Although patient related responsibilities made up the bulk of the workload and administration was one of the least, burnout in the present study was higher due to interactions with administration. This reflects the negative experience of academic clinicians towards administrative interactions.

Shanafelt et al. (2009) conducted a study on 465 academic clinicians and showed that the majority (68%) reported patient care as the aspect of work they found most meaningful, followed by research (19%), education (9%), and the least was administration (3%). Those spending less than 20% of their time on the most meaningful activity had higher rates of burnout on multivariate analysis. This study concluded that spending more time on administrative responsibilities predisposes academic physicians to burnout. Although patient care has been shown to be most meaningful to academic physicians (Shefald, 2009), it is also a significant source of burnout depending on the nature of specialty and workload. Patient load, as will be discussed in the following section, has been associated with burnout.

Student and trainee interactions demonstrated the least source of burnout for academic clinicians in the present study. This might be because trainees (medical students, residents and fellows) share a great deal of the workload in an academic institute. In addition, trainees work under the supervision of the academic physician; therefore they are under their authority, which may render the interaction less stressful for clinicians. Furthermore, research has shown that educators find their job rewarding and therefore it increases their job satisfaction (Adams & Bailey, 1989; Doyle & Forsyth, 1973). These might explain why interaction with trainees is the least source of burnout compared to interactions with patients and administration.

#### **4.2- Variables Contributing to Burnout:**

One of the main objectives of this study was to investigate independent variables contributing to burnout to better implement interventional methods to target these variables in the workplace. Based on our review of the literature and observations, we chose thirteen variables to include in our regression analysis.

##### **4.2.1- Age as a Contributing Factor for Burnout:**

Our study demonstrated that younger physicians report higher levels of emotional exhaustion due to interactions with trainees and patients as well as more depersonalization in response to patient interactions. This is consistent with previous research showing that burnout is more prevalent in younger workers (Maslach, 2003) and younger physicians (Nassar et al., 2014). A possible explanation is that younger workers are less experienced; they may become more cognitively overwhelmed with the workload

of a “routine work day” for a senior physician. Also, for technical specialties such as surgery, young surgeons may still be on the steep portion of their technical learning curve, with associated performance anxiety and fear of complications. Another possible explanation is that younger clinicians may feel pressured to prove themselves to colleagues, staff and family unlike senior staff who are more established in their personal and professional lives. The inverse relationship between age and burnout may have negative impact on retention of future academic clinicians; those who are not able to cope well with burnout are more likely to leave their jobs (Maslach, 2003). Those that are able to cope with burnout early in their careers usually do well after (Maslach, 2003), probably by refining their coping strategies and becoming more resilient to work related stress. From this we learn that burnout is potentially reversible and contextual.

The transition from being a trainee to an academic clinician is a stressful process (Teunissen & Westerman, 2011). Individuals progress from working under the protection and guidance of an attending to working independently where they are required to directly communicate and meet regularly with administration, and be involved in committees. They are also expected to supervise trainees, publish research and assume leadership roles. This increase in professional obligations puts tremendous stress on the junior academic physicians, which may deplete their emotional resources and increase their risk of burnout.

Our study found age to be a contributing variable to EE for trainees and patients but not for administration. One possible explanation is that younger academic clinicians may feel overwhelmed with the new responsibility of caring for patients’ safety early in

their careers. In addition, supervision and teaching of trainees are roles that create stress for the new academic clinician. This may be because trainees are close to their age and experience. A junior academic clinician may find it stressful to delegate a clinical task to trainees while still honing their own clinical skills.

#### **4.2.2- Gender as a Contributing Factor for Burnout:**

Our findings revealed that females rate higher on the DP subscale due to interactions with administration than males. Maslach (2003) reported that men are more prone to have depersonalization at work, while females report more emotional exhaustion. Also males are more reluctant than females to report burnout symptoms (Tokuda et al., 2009). The Physicians Work Life study of a random stratified sample of 6000 physicians revealed that female physicians were 60% more likely to report burnout than male physicians (McMurray et al., 2000). In addition, female physicians are more likely to report sexual harassment at the work place than male physicians. Furthermore, female physicians generally have more domestic responsibilities than male physicians (Gautam, 2001).

Despite major changes in attitudes and behaviour towards women in Western societies such as UK, USA and Australia (O'Driscoll et al., 2007), there are still reports of workplace discrimination against women, specifically during pregnancy. Pregnant females might be discriminated against with delayed promotions in their careers and hostility from co-workers because they are expected to share some of their workload (O'Driscoll et al., 2007). Increasing rates of discrimination against pregnant women have

been reported in countries such as the UK, the USA, and Australia (O'Driscoll et al., 2007).

#### **4.2.3- Marital Status and Living Condition as a Contributing Variable for Burnout:**

Single clinicians in our study were associated with increased burnout for EE and DP due to patient and administrative interactions. This is consistent with previous research that being single is associated with increased risk of burnout (Ramirez et al., 1996). Overall, single individuals experienced the most burnout, followed by divorced workers. Finally married workers experienced the least level of burnout (Maslach, 2003). McMurray et al. (2000) reported that female physicians with young children experienced less burnout when having the social support of a spouse, colleague or partner. Maslach (2003) hypothesized that the reason married workers experienced lower levels of burnout is that they are usually older, psychologically mature and stable. Furthermore, they have higher interpersonal skills and are more skilful in problem solving and adaptability due to their involvement with their families.

#### **4.2.4- Specialty as a Contributing Factor for Burnout:**

We grouped specialties into non-surgical specialties (Medicine, Critical Care, Family Medicine, Paediatrics, Psychiatry, Emergency Medicine and Medical Oncology) and surgical specialties (Surgery, Obstetrics and Gynaecology and Anaesthesia). Of all the variables examined, specialty showed the strongest association with burnout. Specialty was the only variable that contributed to all subscales and all interactions: EE and DP due to trainees, patients, administration interactions. In addition, surgical specialties are negatively correlated with PA due to students, patients and administration.



Our results corroborates with the literature in the presence of a positive correlation between surgical specialties, work related stress and burnout. Surgical specialties have been reported to be stressful (Dyrbye et al., 2007; Green et al., 1990; Kent & Johnson, 1995; Shanafelt, 2008). Studies from various surgical subspecialty societies in North America estimated burnout rates among surgeons to range from 30%-48% (Campell et al., 2001; Hams et al., 2005; Kuerer et al., 2007; Bertges et al., 2005; Benson et al., 2007; Sharma et al., 2008; Johnson et al., 1993). Personality characteristics may be related to the higher levels of burnout associated with surgical specialties. For example, although some surgeons may believe that they are more resilient than their colleagues, the inherent personal traits that define a surgeon (e.g. self-sacrifice, commitment and singularity of focus) puts them at an increasing risk of distress and burnout (Balch et al., 2009). Furthermore, research has shown that the number of medical errors reported by surgeons is related to the level of burnout and to the quality of their mental life (Shanafelt et al., 2009). These studies suggest that surgeons in various surgical subspecialties are at a high risk of burnout with a strong signal of increased medical errors. Interventions should be placed to prevent this from escalating. Surgeons, unlike other specialties, are expected to work longer hours, endure higher levels of responsibility and deal with more stressors. The unique environment and tasks of the operating room present several possible areas of stressors that non-surgical specialties do not encounter. These stressors could include adherence to operating room procedures, unique team interactions (scrub nurses, anesthesia team and operating room administrators) as well as time and resource

constraints. In addition, they are required to deal with devastating complications due to technical errors and confront patients and their families.

Surgeons are individuals who share certain characteristics and an unwritten code of rules and expectations of staying late, meeting a certain volume of procedures, not complaining, resilience to stressors, performing under stress and keeping their emotions out of the operating room (Balch et al., 2009). In addition, surgeons are expected to balance these stressors with their personal and family lives. These qualities can deplete emotional resources and may promote self-destructive behaviours that have deleterious repercussions on themselves, their families and their patients (Campell et al., 2001; Hams et al., 2005; Kuerer et al., 2007; Bertges et al., 2005; Benson et al., 2007; Sharma et al., 2008; Johnson et al., 1993).

#### **4.2.5- Academic versus Community Based Practice as a Contributing Factor for Burnout:**

Academic practice had a positive correlation with burnout (EE and DP due to administration and DP due to students). These findings are consistent with commonly reported challenges of working in an academic center versus a community center. Physicians in academic centers have additional commitments compared to those working in community centers affiliated with an academic center (e.g. working with trainees, research commitments, teaching, additional patient load, and higher patient acuity). All of these factors are associated with burnout and stress (CITATIONS).

#### **4.2.6- Academic Rank as a Contributing Factor for Burnout:**

Our findings indicate that lower academic rank was positively correlated with burnout (EE due to administrative interactions, DP due to patient and administrative interactions) and inversely correlated with PA due to patient interactions. This may be due to the fact that junior faculty are more cognitively overloaded than senior faculty with new responsibilities and challenges, just as younger faculty experience higher burnout than more senior clinicians. Younger faculty are consistently reported in literature to be at a higher risk for burnout (Campbell et al., 2001). This confirms our findings for burnout correlation with age.

#### **4.2.7- Workload as a Contributing Factor for Burnout:**

The number of night shifts was significantly correlated with EE due to patient and administrative interactions, as well as DP due to trainee, patient and administrative interactions. Academic clinicians' workload has been shown to be an etiological factor associated with burnout (Campbell et al., 2001; Shanafelt et al., 2009; Kuerer et al., 2007; Firth-Cozens et al., 1997; Ramirez et al., 1995). In this study, the number of night shifts per month only contributed to EE in relation to patient and administrative interactions and not due to trainee interactions. A possible explanation is that trainees lower the workload for academic clinicians on call by sharing ward calls and in triaging emergency room referrals. Therefore they are probably perceived to decrease the degree of emotional exhaustion. On the other hand, when the academic clinicians are overworked due to working numerous night shifts, it may cause the academic clinician to develop DP with trainees, patients and administration.

The number of patients under the care of an academic clinician as the most responsible physician (MRP) per month, in our study, has a significant positive correlation with PA due to student and patient interactions. This corroborates other studies showing that the most meaningful aspect of an academic clinician's job is patient care (Shanafelt et al., 2009). Patient care gives clinicians a sense of personal accomplishment since it is the essence of being a doctor. With increased patient load comes increased trainee assistance in sharing the workload and teaching, which also promotes their personal accomplishments.

#### **4.3- Prevention and Treatment of Burnout Syndrome for Physicians:**

“An ounce of prevention is worth a pound of cure” (De Legibus, 1240). Prevention is the most reliable and cost-effective strategy for managing burnout. Preventative measures must focus on modifiable variables of burnout, whether they are individual, external or work-related variables. With individual constitutional variables, a thorough career fit screening during medical school, residency and academic recruitment would help align individual characteristics with the best suited specialty. As for external factors, the six key domains of the workplace environment (workload, control, reward, community, fairness, and values (Maslach & Leiter, 2008)) should be modified to ensure worker satisfaction and thereby prevention of burnout.

Our study highlighted several independent variables that were related to burnout. This information could assist in identifying the subpopulation at risk and targeting preventative measures accordingly. Burnout prevention and treatment is beyond the scope of this thesis. In terms of current interventions for those suffering from burnout syndrome,

a recent meta-analysis by Regehr et al. (2014) found that cognitive, behavioural and mindfulness-based approaches were effective interventions in reducing subjective stress and anxiety in medical students and practicing physicians as well as burnout syndrome in physicians. Regehr and colleagues suggested that preventative interventions should start at the medical students' level where work related stress begins to develop and progress through their future career.

A major obstacle in implementing such programs is that physicians tend to be poor at tending to their own wellness and have decreased help-seeking behaviour (Wallace et al., 2009). According to the Canadian Medical Association, from 25% of physicians who self-identified as depressed and considered seeking help, only 2% actually did (Sibbald & Myers, 2003). Due to the complexity and cost-effectiveness of these interventional measures, research is needed to implement specific preventative measures.

## **CHAPTER 5: CONCLUSION**

This study highlighted the prevalence of burnout and potential etiological variables of work related stressors of burnout in academic physicians. Our results demonstrated, as hypothesized, that academic clinicians have an increased risk of burnout syndrome. In addition to having psychological implications, burnout syndrome causes workers to become disengaged in their work and become less confident. More seriously, burnout has been linked to major clinical errors (CITATION still needed). This has strong repercussions on patient care as well as the quality of training for future physicians. Treating burnout is resource intensive and still experimental. The best remedy is prevention. Therefore it is essential to investigate the contributing variables to burnout for academic clinicians and develop effective preventative measures to render the work environment less stressful, more productive and ultimately transpire to better patient care.

Our study used creative modifications of Maslach's Burnout Inventory to identify potential etiological factors associated with burnout in clinician educators. Three different interactions were queried: students/trainees, patients and administration. Our results indicated that interactions with administration (51.8%) were the major source of burnout for faculty members followed by patients (26.4%) and lastly trainees (11.7%). Our results also indicated that burnout is more common in young physicians, surgical specialties and among individuals who are single or separated. Other factors found to be correlated with burnout include living alone, working in an academic centre, low academic rank and high patient workload.

This study raises awareness to administrators and stakeholders about the prevalence of this psychological phenomena among academic physicians. More studies in this area are required in order to solidify the contributing variables of burnout in our healthcare system.

### **5.1- Limitations:**

A limitation to this study is the survey response rate which has been a major concern in survey research. In our study we were unable to accurately calculate the response rate because the departments did not have an exact number of clinical faculty members. Non-clinicians (e.g, PhD trained researchers) were on their mailing list as well as non-active (e.g., retired) members. Other clinicians were listed more than one email on the mailing list (for themselves and/or their assistants). With those limitations, our survey response rate was within the average response rate reported in literature. A meta-analysis by Cook et al. (2000) showed that the mean response rate reported in 49 studies was 34.6%. The response rate for our study was 36.2%. Another limitation that it is an institution specific study.

In this study we were able to establish that interactions with administration is a bigger source of burnout than interactions with either patients or trainees. However, a limitation of this is that interactions with administration is very broad. It is unknown which specific type of interaction within administration that is the highest source of burnout. This is an area for future studies to explore.

Lastly, there are other forms of human interactions that academic clinicians face that were unaccounted for in this study. For example, interactions with colleagues and other staff members. This also should be the focus of future studies.

## **5.2- Significance:**

Improving patient care and safety is the ultimate end goal for all medical research and is the main reason why medical schools and academic centers exist. There is a paucity of studies showing a direct relationship between burnout and impaired job performance beyond self-reports (Maslach & Leiter, 1997). Several studies have shown that nurses with high levels of burnout are more likely to be judged by their patients as providing suboptimal care (Leiter et al., 1998; Vahey et al., 2004). Another study used self-reports to display that residents experiencing burnout were significantly more likely to self-report frequent suboptimal patient care (Shanafelt, 2002). Shanafelt et al. (2009) conducted a study on US surgeons, it demonstrated that 9% of surgeons that were suffering from burnout reported that they have made a critical medical error within the past 3 months. Surgeons' errors carry significant morbidity and mortality risks compared to errors by other specialists due to the interventional nature of surgical practice (Shanafelt et al., 2009). We hope that our study will significantly contribute to the burnout literature and help in leveraging the quality of workplace environment for academic clinicians, translating to better patient care.



### **5.3-Future Directions:**

Further studies are required in order to explore the nature of the administrative interactions that is the major source of burnout. In addition, more studies are required to solidify the contributing variables of burnout in academic clinicians. Future studies are required to further test the psychometric properties of our modified MBI tool and to add to its validity and reliability in different population settings. The findings of our research are consistent with the literature and should raise awareness to professional organizations and stakeholders concerned about patients' and physicians' safety due to healthcare burnout. More resources are needed to support burnout research in Canada.

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**CHAPTER 7: APPENDIX**

**Table A 1: Rotated factor Matrix for Burnout due to Student's Interaction**

Due to students/trainees	Factor		
	EE	PA	DP
I feel emotionally drained from my work (1)	<b>0.873</b>	-0.093	0.036
I feel used up at the end of the workday (2)	<b>0.877</b>	-0.066	0.158
I feel fatigued when I get up in the morning and have to face another day on the job (3)	<b>0.773</b>	-0.094	0.26
Working with people all day is really a strain for me (6)	<b>0.678</b>	-0.174	0.366
I feel burned out from my work (8)	<b>0.775</b>	-0.068	0.336
I feel frustrated by my job (13)	<b>0.757</b>	-0.103	0.208
I feel I'm working too hard on my job (14)	<b>0.66</b>	0.104	0.23
I feel like I'm at the end of my rope (20)	<b>0.569</b>	-0.18	0.49
I feel very energetic (12)	-0.371	<b>0.722</b>	-0.047
I can easily create a relaxed atmosphere with my students (17)	-0.184	<b>0.712</b>	-0.182
I feel exhilarated after working closely with my students (18)	-0.224	<b>0.714</b>	0.156
I have accomplished many worthwhile things in this job (19)	-0.064	<b>0.774</b>	-0.057
I don't really care what happens to some of my students (15)	0.148	-0.273	<b>0.71</b>
I feel students blame me for some of their problems (22)	0.299	-0.06	<b>0.473</b>
I've become more callous (emotionally hardened) toward people since I took this job (10)	<b>0.471</b>	-0.18	<b>0.555</b>
I worry that this job is hardening me emotionally (11)	<b>0.512</b>	-0.064	<b>0.591</b>
Working with people directly puts too much stress on me (16)	<b>0.481</b>	-0.18	<b>0.481</b>

Extraction Method: Principal Axis Factoring.

Rotation Method: Varimax with Kaiser Normalization. a.Rotation converged in 6 iterations.

**Table A 2: Rotated Factor Matrix for Burnout due to Patient's**

Due to patients	Factor		
	EE	PA	DP
I feel emotionally drained from my work (1)	<b>0.853</b>	0.006	0.163
I feel used up at the end of the workday (2)	<b>0.832</b>	0.053	0.194
I feel fatigued when I get up in the morning and have to face another day on the job (3)	<b>0.775</b>	-0.062	0.32
Working with people all day is really a strain for me (6)	<b>0.701</b>	-0.139	0.33
I feel burned out from my work (8)	<b>0.797</b>	-0.082	0.351
I feel frustrated by my job (13)	<b>0.722</b>	0.063	0.334
I feel I'm working too hard on my job (14)	<b>0.642</b>	0.173	0.147
I can easily understand how my patients feel about things (4)	0.149	<b>0.564</b>	-0.23
I deal very effectively with the problems of my patients (7)	0.13	<b>0.757</b>	-0.159
I feel I'm positively influencing other people's lives through my work (9)	0.023	<b>0.748</b>	-0.09
I feel very energetic (12)	-0.366	<b>0.688</b>	-0.003
I can easily create a relaxed atmosphere with my patients (17)	0.006	<b>0.761</b>	-0.34
I feel exhilarated after working closely with my patients (18)	-0.175	<b>0.644</b>	0.155
I have accomplished many worthwhile things in this job (19)	-0.042	<b>0.735</b>	-0.08
In my work, I deal with emotional problems very calmly (21)	0.084	<b>0.709</b>	-0.301
I feel I treat some patients as if they were impersonal objects (5)	0.282	-0.192	<b>0.653</b>
I've become more callous (emotionally hardened) toward people since I took this job (10)	0.447	-0.054	<b>0.621</b>
I worry that this job is hardening me emotionally (11)	0.458	-0.179	<b>0.672</b>
I don't really care what happens to some of my patients (15)	0.198	-0.277	<b>0.645</b>
I feel patients blame me for some of their problems (22)	0.258	-0.046	<b>0.55</b>
Working with people directly puts too much stress on me (16)	<b>0.465</b>	-0.177	<b>0.512</b>
I feel like I'm at the end of my rope (20)	<b>0.507</b>	-0.216	<b>0.604</b>

Extraction Method: Principal Axis Factoring.

Rotation Method: Varimax with Kaiser Normalization. a.Rotation converged in 6 iterations.

**Table A 3: Rotated Factor Matrix for Burnout due to Administration**

Due to administration	Factor		
	EE	PA	DP
I feel emotionally drained from my work (1)	<b>0.861</b>	-0.222	0.028
I feel used up at the end of the workday (2)	<b>0.883</b>	-0.184	0.112
I feel fatigued when I get up in the morning and have to face another day on the job (3)	<b>0.873</b>	-0.207	0.119
I feel I treat some administration as if they were impersonal objects (5)	<b>0.512</b>	-0.18	0.546
Working with people all day is really a strain for me (6)	<b>0.783</b>	-0.256	0.28
I feel burned out from my work (8)	<b>0.887</b>	-0.23	0.063
I've become more callous (emotionally hardened) toward people since I took this job (10)	<b>0.747</b>	-0.207	0.35
I worry that this job is hardening me emotionally (11)	<b>0.774</b>	-0.206	0.325
I feel frustrated by my job (13)	<b>0.847</b>	-0.239	0.053
I feel I'm working too hard on my job (14)	<b>0.831</b>	-0.04	0.104
Working with people directly puts too much stress on me (16)	<b>0.685</b>	-0.319	0.36
I feel like I'm at the end of my rope (20)	<b>0.794</b>	-0.286	0.315
I feel administration blame me for some of their problems (22)	<b>0.645</b>	-0.164	0.465
I can easily understand how my administration feel about things (4)	-0.106	<b>0.502</b>	-0.438
I deal very effectively with the problems of my administration (7)	-0.13	<b>0.64</b>	-0.422
I feel I'm positively influencing other people's lives through my work (9)	-0.187	<b>0.817</b>	-0.116
I feel very energetic (12)	-0.29	<b>0.727</b>	-0.049
I can easily create a relaxed atmosphere with my administration (17)	-0.277	<b>0.644</b>	-0.378
I feel exhilarated after working closely with my administration (18)	-0.148	<b>0.74</b>	-0.016
I have accomplished many worthwhile things in this job (19)	-0.237	<b>0.801</b>	-0.162
I don't really care what happens to some of my administration (15)	0.56	-0.308	<b>0.557</b>
In my work, I deal with emotional problems very calmly (21)	-0.11	<b>0.463</b>	<b>-0.478</b>

Extraction Method: Principal Axis Factoring.

Rotation Method: Varimax with Kaiser Normalization. a.Rotation converged in 6 iterations.