Do Organizational and Critical Incident Stress Vary Between Races in Law Enforcement?

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Abstract

Prior research has found that law enforcement officers are involved in various forms of stress, two of which are categorized as organizational and critical incident stressors. Since the 1940s, the theory of representative bureaucracy has suggested that minorities benefit organizations by using their diverse backgrounds to better handle situations. There is inadequate research assessing these two forms of stress between Caucasian and minority law enforcement officers. This study examines the research question if African American law enforcement officers perceive more or less stress than their non-minority counterparts. Using the data set *Police Stress and Domestic Violence in Police Families in Baltimore, Maryland (1997-1999)*, results show that Blacks do not have more stress overall. In addition, they also have less psychological symptoms of stress compared to White officers.

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Chapter 1

Introduction

Historical Relevance

It is August 9, 2014, at 11:51 a.m. and Officer Darren Wilson of the Ferguson Police Department (FPD) receives a call from dispatch (Brown, 2015; Buchanan et al., 2014; Clarke & Lett, 2014). A local Missouri convenience store has just been robbed and the suspects have fled on foot. At 12:01 p.m., Officer Wilson is on patrol and sees two individuals, Dorian Johnson and Michael Brown, walking down the middle of the roadway. He proceeds to direct the boys onto the sidewalk but notices both match the suspect's description in a recent robbery. Wilson confirms the description with dispatch and then proceeds to make contact. He attempts to open his cruiser's door but Brown slams the door back shut. A tussle begins over Wilson's firearm, and consequently a single shot is fired inside the cruiser. The shot, which went through Brown's hand, caused him and his accomplice to flee temporarily. They sprint roughly 35 feet before unarmed Brown decides to turn around and taunt the officer. Wilson attempts to use several verbal commands towards Brown to get him to halt, but Brown decides to charge at the officer. Fearing for his life, Wilson fires 12 rounds out of his .40 caliber weapon. By 12:04 p.m., the altercation is over and Brown has been struck 6 times, with 1 shot to the head being fatal.

This unfortunate event, which has been depicted through the eyes of the Ferguson Police, was eventually confirmed by 6 credible bystanders. Their testimony convinced the St. Lois County prosecutor not to seek formal charges and relieved the officer of any criminal wrong doing (Sexton, 2015). Although the shooting was deemed justified, it

sparked a toxic series of events that threatened to destroy the city of Ferguson. What ensued after the shooting was nearly a year of violent protests that involved widespread vandalism, looting, numerous arrests and even gun fire, all while the entire nation observed. Subsequently, with the nation in an uproar over the separation of communities and the police, the U.S. Department of Justice (USDOJ) announced it would investigate the Ferguson Police Department and other departments with similar issues.

At the time of the shooting, the city of Ferguson included approximately 21,000 residents. A majority, roughly 67%, were African American. Even though they were the majority population, they lacked representation within their department comparable to the size of their presence in the community. Out of 54 sworn officers, only four (7%) were African American (USDOJ, 2015). With this small percentage based on demographics, why did FPD decide not to hire more minority officers? The rioting and destruction that ensued after the shooting showed an elevated sense of distrust by the citizens of Ferguson over their department's underrepresentation. Did FDP's hiring practices transpire as a result of an inability to recruit qualified minority candidates, or was there underrepresentation done on purpose?

The events at Ferguson highlighted the underrepresentation of minorities in law enforcement across the United States. This was not an isolated event. In the 2013 Law Enforcement Management and Administrative Statistics (LEMAS) survey of 269 departments conducted by the Bureau of Justice Statistics, it was found that others throughout the country were also suffering from the same hiring problem (Reaves, 2015). A third party used a method that subtracted the department's minority percent from the community's percent to create a representation scoring system. For example, San

Bernardino, CA, had a minority population of 82% but only 39% of the police department was minority, meaning that its underrepresentation score was 43%. Other departments like the Jersey City Police Department in New Jersey was also underrepresented by 43% and the Grand Prairie Police Department in Texas was one of the worst at 52% (Maciag, 2015, p. 5). While none of these were as bad as FPD at 60%, it shows that the issue is nationwide.

The idea of diversifying organizations was conceptualized well over a half century ago. In 1944, J. Donald Kingsley conceived an idea that government bureaucracies should reflect the composition of the people that they serve. Called the theory of representative bureaucracy, it stated that each population subgroup faces unique situational factors throughout life, making diverse backgrounds beneficial to bureaucracies (Kingsley, 1944; Selden, Brudney, & Kellough, 1998; Selden, 1998; Meier, Wrinkle, & Polinard, 1999).

Seemingly before its time, the theory of representative bureaucracy was not implemented in the United States until over a decade later during the Civil Rights Movement and subsequent legislative and administrative reforms (van Gool, 2015). Public concern over rising crime rates and radically driven riots lead to reports by the U.S. Presidential Commission in 1967 and the Kerner Commission in 1968. The reports put in motion changes in the demographic composition of police departments through revised hiring practices (U.S. Kerner Commission, 1968; U.S. Presidential Commission, 1967).

The implementation of the theory of representative bureaucracy has its share of critics. In policing, the particular concern is the toll taken on African American officers.

According to this argument, the culture of law enforcement is largely white and male, which makes it difficult for minority officers to fit in (Alpert, Noble, & Rojek, 2015; Dowler, 2005). Race may compound an already difficult employment situation: Law enforcement is considered a highly stressful profession with high turnover (Orrick, 2005; Wareham, Smith, Lambert, 2015) and mortality (Aamodt & Stalnaker, 2006; Chaw & Boyle, 2013). Attempts to resolve understand the relationship of race and work stress through research have yielded contradictory findings. Some studies suggest that Black police officers are experiencing more stress on the job than their white counterparts (Morash, Haarr, & Kwak, 2006; Pascoe & Smart, 2009), while other studies show they do not (Dowler & Arai, 2008).

The debate needs resolution. The research question guiding this project is whether Black officers are experiencing more or less stress based on their minority status. If minorities experience more stress than their counterparts, then departmental wide coping tactics need to be restructured to lessen the negative outcomes associated with stress.

Chapter 2

Literature Review

Stress has been an ongoing concern in law enforcement due to officers' inability to manage it (Copes, 2005; Stevens, 2008). Since police are typically viewed as a hybrid between a crime fighter and a social worker, their roles expose them to various stressors (Anderson, Swenson, & Clay, 1995; National Advisory Commission on Criminal Justice Standards and Goals, 1973; Van Maanen, 1973). Their responsibilities include deterring and controlling harmful conduct and aiding those in danger as well as assisting those who cannot care for themselves. Important functions are not only bound by laws deriving from the U.S. Constitution, but are also subject to society's constant scrutiny (Dowler, 2003). Unfortunately, the external pressures are not the only factors involved. Internal organizational forces like administration and departmental policies as well as fellow employees on the workforce dictate when officers are needed on the job regardless of seniority, and that all discretionary decisions will be held accountable no matter the circumstance. All of these combined cause high levels of stress for officers that lead to cynicism (Caplan, 2003; Richardsen, Burke, & Martinussen, 2006), burnout (McCarty & Skogan, 2012; Vuorensyrjä & Mälkiä, 2011), turnover (Orrick, 2005; Wareham, Smith, & Lambert, 2015), destructive coping tactics (He, Zhao, & Archbold, 2002; Swatt, Gibson, & Piquero, 2007), and even suicide (Aamodt & Stalnaker, 2006; Chaw & Boyle, 2013).

Anatomy of Stress

Stress can be defined as a bodily reaction to certain environmental triggers (Dobson & Smith, 2000; Wheaton, Young, Montazar, & Stuart-Lahman, 2013). Simply

put, stressors are the cause, and stress is the effect. Both stressors and stress vary between individuals depending on their physiological symptoms and environment.

Not all types of stress are bad and some may not warrant a medical diagnosis. Two types of stress are commonly referred to as eustress and distress (Fevre, Matheny, & Kolt, 2003; Suedfeld, 1997). Eustress is generally referred to as the good type of stress that leads to positive responses and keeps people motivated. The emotions best associated with eustress include joy, happiness and love (Simmons & Nelson, 2007). The second variation of stress, labelled distress, is any stressor an individual perceives to be negative. Common emotions associated with it include frustration, fear, and anxiety (Simmons, Nelson, 2007). While distress may come and go based on daily routines for many, those that experience these emotions long term fall into another category based off of a medical diagnosis.

Physiological symptoms may begin with basic cardiovascular issues like high blood pressure but can easily turn into much larger problems. Heart disease could potentially decrease by 23% if stress is reduced (Stevens, 2008, p. 59). High stress has also been shown to lessen an individual's immune system effectiveness as well as overloading one's body in the production of catecholamine, which causes the digestive tract to slow down and increases the chances of getting cancer (Anderson, Litzenberger, & Plecas, 2002). To put into the perspective, over 150,000 lives could be saved annually just in the United States if the amount of job stress is reduced (Stevens, 2008, p. 60).

Symptoms of distress can be severe, however, not all symptoms receive a medical diagnosis, such as employee cynicism and burnout. Dating back to ancient Greece, cynicism is the feeling of distrust towards another based on the belief that they have some

form of underlying motive (Desmond, 2006). Psychological feelings of cynicism can eventually transpire into negative behaviors that may lead to pessimistic and sarcastic statements about the organization or fellow employees (Dean, Brandes, & Dharwadkar, 1998). Once new employees become subject to routine cynicism, they too absorb cynical attitudes (Stevens, 2008). Consequently, this distrust builds over time and not only leads to an employee's job dissatisfaction but also job exhaustion (Johnson & O'Leary-Kelly, 2003). This fatigue, typically referred to as employee burnout, can ultimately lead to more serious forms of stress. On the other hand, the types of stress so severe that lead to conditions of mental illness are identified by the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-V). Currently, it recognizes many stressor related disorders with the most prominent being Acute Stress Disorder (ASD) and Posttraumatic Stress Disorder (PTSD).

Acute Stress Disorder refers to a state of mental tension that is associated with an individual's traumatic experience (Bryant, 2006; Bryant & Harvey, 2000; DSM-V). First recognized in the prior DSM-IV manual, ASD was created to predict the early onset of PTSD and is characterized by symptoms of intrusion, negative mood, dissociation, avoidance and arousal that occur a few days to one month after the event takes place (Bryant, 2006). For an individual to be properly diagnosed, they must have a presence of nine distinctive symptoms within those five categories (American Psychiatric Association, 2013 p. 280).

The first diagnosis category, intrusion, involves the presence of recurrent and intrusive memories of the event they perceive as traumatic. These memories include dreams based on the event as well as flashbacks which cause the individual to relive

traumatic events. Second is a negative mood that can be seen in the inability to experience positive emotions like happiness and satisfaction. Third, dissociation from reality alters the individual's state of mind. Perceptions include a reduction in time, a feeling of separation of mind and body as if the person is viewing oneself from afar as well as an inability to recall vital details of the event. It is noted that amnesia of the traumatic events is often a symptom related to physical injuries suffered during the experience. Fourth are avoidance symptoms. These include any evasive behaviors towards specific triggers of the traumatic event. Last, arousal symptoms include instability in sleep, exaggerated responses when startled easily, aggression with little or no provocation, and an inability to concentrate (DSM-V).

Posttraumatic Stress Disorder is another type of mental disorder that develops after witnessing a traumatic event. Since ASD is a precursor to PTSD, the diagnoses are relatively the same, but with the individual potentially displaying the above symptoms amplified (Hamblen, 2009). A major differentiating factor between the two is symptom timeframe. Indicators for ASD occur from as little as three days after the traumatic experience, all the way up to one month. PTSD, on the other hand, is more long term, oftentimes showing symptoms within the first three months of the event. However, it is not uncommon for the individual to experience delayed expressions, causing the symptoms to appear much later in time. Unlike ASD where symptoms typically end after one month, symptom length for PTSD can last well over 50 years (American Psychiatric Association, 2013, pp. 277-278).

Stress in Law Enforcement

One profession potentially at the forefront when discussing the effects of occupational stress is law enforcement. Unfortunately, there is a drastic problem stemming from an officers' lack of coping with job stress. This deficiency will not only lead to aggressive policing tactics resulting in community distrust, but also will lead to more serious matters involving their very own mortality, including health and suicide concerns (Stevens, 2008). Officers initially join the profession for the opportunity to help people (Raganella & White, 2004). However, their constant actions in response to various situations leads to unavoidable stress (Anderson, Swenson, & Clay, 1995; Blum, 2000; Ransley & Mazerolle, 2009). Furthermore, the stress of institutional bureaucracy can have serious consequences for officers. For both civilian and sworn employees within a department, work conflict and the lack of social support are significant factors in burnout (McCarty & Skogan, 2012). When officers perceive being fatigued, this burnout causes a moral fight or flight response, which can lead to the high turnover rates of the profession. Those who fight the fatigue and continue their work are potentially taking years off of their life. The average mortality rate of a law enforcement officer is 66 years old, which is 9 years less than the general population's average of 75 years (Violanti, Vena, & Petralia, 1998). Included in this mortality rate are suicides, which can be described as a result of officers lack of coping with stressors. The general population's suicide rate is 11.4 per 100,000 persons, but law enforcement officers are estimated to be 52% above the general population's rate (Aamodt & Stalnaker, 2006).

Officers become susceptible to two types of stress, which can be labelled organizational stress and critical incident stress (Anderson, Litzenberger, & Plecas, 2002;

Copes, 2005; Daniello, 2011; Rogers, 2014; Stevens, 2008). Some research suggests that critical incidents involving an officer killing in the line of duty are the most stressful situations they will face (Violanti, 1995). Alternatively, others have concluded that organizational stressors including administration and the conflict of regulations they must face to be the most strenuous (Brooks & Piquero, 1998; Stevens, 1999). Whether caused from organizational stress or critical incident stress, these conditions can affect an officer's future responses to their job duties when placed into perilous situations. How officers become susceptible to stress and how they deal with it is of utmost importance not only to their health, but so they can serve their communities to their fullest abilities.

Organizational Stress

Organizational stress is the type of stress brought about from day-to-day operations in the workplace. It comprises responses to internal administration of the department, its policies and procedures and employees ongoing interactions with the community and its leaders (Daniello, 2011; Rogers, 2014).

Social isolation. The first factor contributing to organizational stress in law enforcement is a separation from other people (friends, family, and even spouses) in ways that do not occur in most other professions. Policies requiring officers to participate in shift cycles result in roughly 20% of burnout (Brusgard, 1975). Departmental policies typically dictate that schedules either run on three eight-hour shifts or two twelve-hour shifts. Those using the eight-hour schedule have officers begin at 7 a.m., 3 p.m., or 11 p.m. while those using the twelve-hour schedule begin at 7 a.m. and 7 p.m. While some personnel ranks like police chief may stay on one set schedule, most rotate weekly or daily to fulfill department demands (Anderson, Swenson, & Clay, 1995; Vila, 2006).

In addition to the previously mentioned stressors stemming from administration along with departmental policies and procedures, there is stress that comes from skepticism. The idea of cynicism, where individuals are self-motivated and only out for themselves, has many lower-level officers skeptical of higher officials and the transparency of their department (Johnson, 2012; Stevens, 2008). If they make an unpleasant discretionary decision in the line of duty, will their administration side with their own, or reprimand the officers involved because of social pressure? To combat this distrust from within, officers form their own subculture deemed “the blue wall of silence” (Alpert et al, 2015, pp. 112-113; Rogers, 2014). This unofficial brotherhood creates a tight nit bond and a code of silence that seemingly protects those included. However, this male-dominated subculture may exclude those who are racial and ethnic minorities or women (Rogers, 2014). Furthermore, it puts those involved in a compromising situation. If an officer steps over their official duties and is involved in a questionable situation, those involved in this subculture will become ostracized if they come forward and report those involved. Even though these types of subcultures are formed to protect one another, they seemingly create more stress for those not fortunate enough to join, and also those who do that get placed into controversial circumstances.

Bureaucratic structure. The term bureaucracy is most notably associated with the famous sociologist who studied it, Max Weber (Evans & Rauch, 1999; Weber, 2011). A bureaucracy is characterized by hierarchical arranged divisions in a command-and-control structure, explicit policies and procedures, and the use of written communications and records (Frug, 1984). While not always efficient, many private and public organizations utilize these formalized structures in their administration hierarchies. Law

enforcement is no different in its use of a structure that deliberately mimics the military. This paramilitary structure arranges certain individuals in a hierarchy with the department commander and chief at the apex. Ranks sport titles such as assistant chief, captain, lieutenant, sergeant, corporal and patrol officers. Like any bureaucracy, most officers start at the bottom of the hierarchy and must sacrifice much time and effort to gain the experience necessary to go up through the ranks (King, 2003).

Although bureaucracies are in their ideal form efficient meritocracies, the paramilitary structure of modern-day policing has major departures from the model that induce stress. In the field, officers must make immediate decisions without any assistance from a superior, yet face accountability at all times (Wareham, Smith, & Lambert, 2015). This style of management induces stress among officers as a result of concerns over using too much or too little discretion when handling an altercation. Furthermore, politics in the law enforcement profession are rampant, a direct result of budget constraints, agreed upon contracts, unionization and the political involvement of department administration (Stevens, 2008). Finally, promotions in policing are not often linked to seniority or merit, but are often viewed as an extension of departmental politics, a perception which adds to officer frustration and stress (Anderson, Litzenberger, & Plecas, 2002; Rogers, 2014). The simple fact is that regardless of seniority, an officer will undoubtedly still face a lack of promotion and numerous shift variations as a result of the department's policy demands.

Critical Incident Stress

The second type of stressors observed by officers all relate to critical incident stress (CIS), which can be defined as any event or series of events that cause an immense

amount of tension to that individual (Rogers, 2014; Stevens, 2008). These situations may cause the person an overload of stress while the event is taking place or well after the incident has resolved. Examples of critical incident stressors for law enforcement officers include but are not limited to media scrutiny, experiencing a needle stick, witnessing a traumatic event, attending a police funeral, and involvement in a hostage, shootout or violent arrest situation (Anderson, Swenson, & Clay, 1995; Gershon, 1999; Stevens, 2008).

Constant media scrutiny can be unrelenting to some officers and their departments (Dowler, 2003). Unfortunately, it only takes one bad discretionary mistake to have every media outlet, not only local but sometimes even national, criticizing an officer's actions. The issue stems from societies lack of situational timeframe awareness. In the moment, an officer may only have minutes, or in some cases seconds, to make a decision based on their training (or lack thereof) and experience. Society, on the other hand, is separated from the incident and the factors leading up to it, all while having an unlimited amount of time to scrutinize the officer's actions well after the event has ended. Exaggerating the nature of the altercation, the media oftentimes leaves out important details leading up to the event or only broadcasts certain details based on political agendas (Wallsten, 2007). Whatever the case may be, an officer's actions are burdened with discretion being loosely defined. This burden alone causes stress, let alone being the focal point of media's attention. When officers become the center of media attention, then the traumatic experience will undoubtedly leave them with CIS.

Another source of CIS is with frequent contact with substance abusers. Officers must resolve these situations tactfully because in many cases they are dealing with

individuals in altered states of minds. Not only will the situations be unpredictable, but also combative. In some cases, individuals under the influence of certain substances like PCP or bath salts may appear somewhat superhuman in strength. If an officer is not prepared, the abuser may try anything to elude capture. More simplistically, even a simple pat down of a suspect can unknowingly surprise an officer with a hidden syringe.

The potential fear of handling an altercation with an infected substance abuser can cause an immense amount of stress for officers. If by some chance an officer is punctured by a needle, the officer risks being infected with viruses like H.I.V., hepatitis or even intoxication from what the syringe holds. Between 2004 and 2007, the Centers for Disease Control and Prevention reported 19,687 new diagnoses of H.I.V. in substance abusers (Centers for Disease Control and Prevention, 2009). With the rate of infection continually rising due to needle sharing, the likelihood of an officer being pricked also goes up. If they are in fact punctured, waiting on results to test if a contingent has been transferred would be a tremendous CIS for them.

Witnessing horrendous crimes and their aftermath also proves to be a large contributor to CIS. A majority of officers rate the opportunity to help people as number one and excitement of work as number six on a list of reasons to join the profession (Raganella & White, 2004). Many may not fully understand the demands and situations the job puts them in. Frequent contact by responding to traumatized victims that are severely injured, the heinousness of crimes, and the identification of bodies all expose officers to unforgettable CIS (Anderson, Swenson, & Clay, 1995).

Attending a police funeral is also a traumatic experience for any fellow officer. Seventy-seven percent find attending an officer’s funeral to be a substantial cause for CIS

while 50% of officer's dwell on prior experiences (Gershon, Lin, & Li, 2002). Even though the Uniform Crime Report (UCR) recorded 27 officers killed in the line of duty in 2013, the amount of fear is much greater than the probability of actually being killed (Federal Bureau of Investigation, 2013).

Since many officer deaths are projected nationally through the media, officers watching do not need to know the officer killed directly to experience CIS. If the fallen officer is a former or current colleague, the possibility of CIS severity will go up (Anderson, Swenson, & Clay, 1995). Guilt may trouble a slain officer's partner, forcing them to relive the events questioning what they could have done differently. In addition, the location where the officer's life was taken can also trigger unforgettable memories. All of which potentially leading to negative coping tactics and PTSD (Stevens, 2008).

The involvement in hostage, shootout or violent arrests can cause officers CIS for various reasons. In all of these incidents, the potential for a casualty is present. If an officer is not able to talk down a suspect from a hostage situation, the aggressor may take the life of an innocent person. Alternatively, the officer may have to act quickly and take out the suspect before any harm is done to the hostage.

While hostage situations have the potential to become shootouts, other altercations leading to fire fights can pose a threat to any proximate bystanders. Some shootouts involve both the officer and suspect(s) firing at one another, some situations only result in an officer discharging their weapon. A somewhat recent trend called suicide by cop troubles officers with situations in which they must act accordingly to stop a charging threat. Although the suspect appears to be expressing deadly force towards authorities by aggressively charging or reaching for an item. In actuality, they are baiting

officers and looking for a suicidal way out (Mohandie, Meloy, & Collins, 2009; Pinizzotto, Davis, & Miller, 2005). Unfortunately, for those suspects that were not armed and were conveying deadly force towards the police and resulted in death. Not only do the victims' families suffer, but so do the officers involved. Officers become burdened with killing an innocent person and must deal with societies distrust after the altercation, leading to CIS.

Violent arrests unpredictably arise in numerous forms. Officers responding to armed suspects may have a level of expectation that the dispute will be hostile. Some ordinary scenarios like a traffic stop can quickly escalate into something more violent. Not many of these altercations result in the same outcome, making officers need to be aware of the situation at all times. If they act too quickly or not quickly enough, a victim, suspect, witness, themselves or other officers can be seriously injured or killed. This is not just a caused from the use of firearms but includes other methods. Too aggressive vehicle pursuits or methods to stop fleeing suspects can result in serious physical harm to potentially anyone (Kraska, 2007). Whatever the case may be, even if death has not occurred, the shear trauma observed during confrontations can result in CIS.

Minority Hiring

The concept of representative bureaucracy was formed by J. Donald Kingsley in a 1944 book named *Representative Bureaucracy: An Interpretation of the British Civil Service.* Revolutionary for its time, this model builds on the idea that a more diverse workforce is beneficial for an organization. This idea, while not empirically supported at the time of its inception, was used to support the claim that diversification of bureaucracies makes them well rounded (Selden, 1998).

Kingsley's theory of representative bureaucracy was not broadly adopted in the United States until the formation of the U.S. Commission on Civil Rights in 1957 (Krislov & Rosenbloom, 1981; U.S. Commission on Civil Rights, 1969). The commission pushed for administrative reform believing that desegregation and increasing representation would increase employee productivity (Romzek & Hendricks, 1982; van Gool, 2015). Subsequently, the Equal Employment Opportunity Act of 1972 diversified bureaucracies through the use of revised hiring practices to increase the numbers of females and minorities. Businesses would then be held accountable for the percentage of minorities within their workforce. Based on demographics, certain regions of the country contain higher populations of minorities, making them the majority race and altering these percentages (Hill, 1977). Despite the fact that private businesses began desegregation in the late 1950s, it took over a decade for the same ideology to enter the public sector. Schools showed benefits to the individual as well as the organization. When a school's principal was a minority, fellow employees received more promotions and when the teacher was a minority, students scored higher on standardized tests (Meier & Stewart, 1992).

Law enforcement agencies were even slower to diversify their workforces. At one time, officer duties were primarily focused on being the best crime fighters as possible. Whether through deterrence or rapid response rates, the basis of crime fighting did not revolve around pleasing the society they served (Morris & Heal, 1981; Stenson & Silverstone, 2014).

The 1967 Presidential Commission on Law Enforcement and the Administration of Justice recognized this disconnect and sought ways to provide more effective law

enforcement. Through the use of a National Opinion Research Center Poll, the commission identified minority distrust towards law enforcement officers. Sixty-three percent of white responders felt the police were "almost all honest," while only 30% of nonwhites had the same opinion. Furthermore, police corruption and the idea police were doing a poor job were both perceived to be 9% higher by nonwhites (U.S. Presidential Commission, 1967, pp. 99-106). This was interpreted to mean that policing's lack of diversity when responding to calls in high minority settings cause hostile situations and policies regarding the matter needed to be addressed.

Shortly after the release of the Commission report in February, a series of civil disturbances took place with the worst ones occurring in Detroit and Newark. Fueled by minority community member distrust toward the Caucasian population, roughly 10% of those killed and 38% injured were firefighters or law enforcement officers (U.S. Kerner Commission, 1968, p. 5). As a result, Lyndon B. Johnson established the Kerner Commission in July of 1967 to determine the causes of the riots, which were later determined to be a result of racial hostility (U.S. Kerner Commission, 1968).

How both the U.S. Presidential Commission and the Kerner Commission planned to resolve the issues in racial hostility included applying the theory of representative bureaucracy. It was reasoned that by hiring more minority members in law enforcement agencies, the disconnect between the community and the police would be resolved. This ideology not only makes both parties less hostile, but also provides a basis for more effective policing.

Subsequent research gives conflict results about whether diversifying police departments on behalf of representative bureaucracy is actually beneficial to individual

officers. Implementation of the theory has increased the numbers of minority officers working in some areas as much as 40% (Sklansky, 2006, p. 1237). The opportunity to help people and job security are the top two motivations for becoming an officer regardless of race, ethnicity or gender (Raganella & White, 2004). Some studies show that African Americans experience less stress (Dowler & Arai, 2008). In addition, minority officers express lower than average perceptions of organization conflict and unfairness along with rating their job satisfaction higher than their white counterparts (Johnson, 2012; McCarty & Skogan, 2012).

However, in contrasting studies, African Americans experience more stress because of their minority status (Morash, Haarr, & Kwak, 2006; Pascoe & Smart, 2009). For organizational stressors, Black officers face discrimination, harassment as well as not being able to advance through the ranks as timely as their White counterparts (Bobb, Epstein, Miller, & Abascal, 1996). As a result, minorities rate their satisfaction of good companionship with co-workers much lower in comparison to non-minority officers (Raganella & White, 2004). With stress being linked to serious physical and mental health issues in conjunctions with the limited one size fits all coping tactics. Given the debate above, I turn my attention in this thesis to a fundamental question: Do minority officers benefit police departments by having less stress?

Chapter 3

Methodology

Data used in this research comes from Robyn Gershon's (1999) study, *Police Stress and Domestic Violence in Police Families in Baltimore, Maryland (1997-1999)*. At the time of the study, the Baltimore Police Department had just over 3,000 sworn law enforcement officers for some 700,000 residents. This self-reported survey was completed by 1,104 law enforcement officers. The research reported is limited to 804 respondents who had routine contact with suspects. In addition, missing data reduced the number of usable observations to between 768 and 802 depending on the source and type of stress. Although more than 15 years old, the data gathered from this survey remains relevant and has been used in various recent studies about police stress (Dowler & Arai, 2008; Gachter, Savage, & Torgler, 2011; Kurtz, 2012; Kurtz, 2008; McCarty, Zhao, & Garland, 2007; Zavala, 2013; Zavala, Melander, & Kurtz, 2015). The version of the Gershon file that I used was prepared by my thesis advisor for his own research.

Sources and Types of Stress

Factor analysis (Kerlinger & Pedhazur, 1973, pp. 360-361; Suhr, 2006) was used to create measures for the sources and types of stress. Factor analysis identifies whether variables have common but undetected influences that correlate with one another (Cudeck, 2000). The contribution of each variable to a factor is communicated through a factor loading (Gorsuch, 2014). These coefficients are numerical measures of contribution based on a -1 to +1 scale. Zero provides a neutral zone meaning no agreement, where -1 relates to strong disagreement and +1 strong agreement. When identifying if a variable provides a substantial contribution to a factor, the coefficient of

the variable had to be at least .3 (Kline, 1994). In this study varimax rotation was used to determine the loadings. In addition, Cronbach's alpha was analyzed to test internal reliability (Tavakol, 2011)—all factors in this study had a Cronbach's alpha of at least .69.

Gershon's survey was formulated on questions from nationally normed scales and subscales, which made the use of factor analysis ideal (Gershon, 1999; 2000). The six factors used in this study (Table 1, Appendices I-VI) were built from major constructs devised by Gershon to use in the questionnaire for the Project SHIELDS report (Gershon, 1999, p. 32). Sources of stress are the two highlighted in the literature review as the principal causes of police stress—organizational stressors and exposure to critical incidents (Appendices I and II).

Burnout is the feeling of mental and sometimes physical exhaustion built up from constant frustration with an organization (Jackson & Schuler, 1983). Gershon's questionnaire includes Maslach's burnout inventory (MBI) scale consisting of three categories best associated with burnout. The first, emotional exhaustion, measures an individual's feeling of being emotionally overextended. Second, depersonalization measures the feeling of losing all sense of identity. Third, personal accomplishment measures achievement in an individual's work (Maslach & Jackson, 1986). From these categories, a series of 8 questions (Appendix III) were fabricated (Gershon, Barocas, Canton, Li, & Vlahov, 2009).

PTSD is a mental disorder that develops after witnessing a traumatic event. It is characterized by psychological symptoms like memory loss and flashbacks that appear within three months of the event that persist for an undefined timeframe (American

Psychiatric Association, 2013; Hamblen, 2009). PTSD and psychological stress are based on a modified Checklist-90 symptom survey (Gershon, Barocas, Canton, Li, & Vlahov, 2009). Validated modifications taken from Beehr focused on anxiety, depression and somatization (Beehr, Nieva, & Johnson, 1994). Three questions applied specifically towards PTSD (Appendix IV), and the factoring of PTSD variables was based on tetrachoric correlations due to the contributing variables being dichotomous (Bonett & Price, 2005). Another 19 psychological symptoms (Appendix V) examined officer stress (Gershon, Barocas, Canton, Li, & Vlahov, 2009).

Perceived stress is any feeling an individual interprets as tension in the wake of the occurrence of stressful events. Gershon modified an existing work stress scale developed for health care workers to include public service workers (Revicki, Whitley, & Gallery, 1993). Before the scale's use in Project SHIELDS, it was first validated by additional researchers (Gershon, Vlahov, Kelen, Conrad, & Murphy, 1995). Included were 11 questions (Appendix VI) based on a 4-point scale that asked how often a feeling occurred (Gershon, Barocas, Canton, Li, & Vlahov, 2009).

Analytic Strategy

Statistical analysis was conducted using SPSS version 20. Using ordinary least squares (OLS) regression, six models were developed—one for each source and type of stress. The dependent variables were the factor scores for the sources and types of stress with the sources of stress becoming control variables when the dependent variables were the types of stress. The independent variable was the race/ethnicity of the officers, which can be broken into the categories Black, White, and Other. Hispanics were included as Other due to their small sample size. The control variables in this study were approximate

age, gender, education level, and officer rank. Age is labeled as approximate because it is a calculation based on the respondent's year of birth—respondents were not asked to give their exact age. Years of service was highly correlated with age, so years of service was not included in the analysis to avoid collinearity. With officer rank, categories were collapsed due to small sample sizes: agents and detectives were classified as special purpose officers, and sergeants, lieutenants and above were combined as supervisors.

Results of OLS regression are reported in separate tables for each dependent variable. Due to a majority of the variables being categorical, unstandardized betas are reported. The results in unadjusted and adjusted models are for all respondents and regressions while respondents split by race/ethnicity. Unadjusted results are simple OLS regressions using only one independent or control variables or a block of related dummy variables (e.g., all race/ethnicity variables together). The adjusted results are from multivariate OLS regressions with all independent and control variables included in the model. The SPSS split file command was used to determine if independent and control variables behaved differently within each race/ethnic category, hence the results in these columns are labelled "Split Files." Split-file results for Others were not reported because of the small number of respondents in this category. In this discussion of results, attention is given only on those variables attaining statistical significance ($p<.05$).

Chapter 4

Analysis and Findings

Descriptive statistics can be found in Table 2. Roughly 88% of respondents were male. Minority officers made up 262 respondents, with 29% identifying as African American and 3% as other. The mean age was roughly 37 years old with 84% not in supervisory roles. A majority, 63%, were married, and 58% indicated having at least some college education.

A total of six models were examined to determine if the sources and type of stress varied between an officer's race and ethnicity. Table 3 shows no relationship between job dissatisfaction and race/ethnicity among all respondents. Significant results are associated with two control variables, age and supervisory role. The unadjusted bivariate coefficients for officer age ($b=.014$, $p<.01$) and supervisory role ($b=.275$) are positive. Age remains positive in the adjusted model for all respondents ($b=.013$, $p<.01$), but supervisory role becomes insignificant ($b=.224$, $p>.10$). In the analyses split by race/ethnicy, age is the only significant variable, being positively related to job dissatisfaction among Whites ($b=.071$, $p<.01$). There is no significant relationship among Blacks.

In Table 4, the level of critical incident stress is lower among Black officers. However, this relationship exists only in the unadjusted relationship ($b=-.173$, $p<.05$)—it disappears in the multivariate model. Among all respondents, there are positive relationships between supervisory status and exposure to critical incidents (Unadj.: $b=.612$, $p<.001$; Adj.: $b=.377$, $p<.001$); special purpose officers are positively related to critical incidents in the unadjusted model ($b=.280$, $p<.001$), but the relationship becomes

insignificant once other variables are added. Age is positively related to exposure to critical incidents in both the unadjusted ($b=.032$, $p<.001$) and adjusted ($b=.023$, $p<.001$) models for all respondents. College education ($b=.165$, $p<.05$) and widowhood ($b=1.10$, $p<.05$) are significant in the unadjusted models but these relationships do not carry over to the multivariate analysis. In the split-file analysis, the finding about increased levels of critical incident exposure among supervisors remain across both Whites ($b=.240$, $p<.05$) and Blacks ($b=.691$, $p<.01$), but the positive relationship between age and critical incident exposure remains significant only among Whites ($b=.032$, $p<.001$).

Table 5 shows no relationship between race/ethnicity and burnout among all respondents. Job dissatisfaction and critical incident exposure are positively related to burnout across all models. In unadjusted models, reduced levels of burnout are associated with special-purpose officers ($b=-.305$, $p<.001$), supervisors ($b=-.237$, $p<.05$) and college-educated officers ($b=-.227$, $p<.05$), all these relationships disappear in the adjusted model. The split-file regressions reveal interesting differences by race. Job dissatisfaction remains positively related to burnout among both Whites ($b=.449$, $p<.001$) and Blacks ($b=.378$, $p<.001$), but critical incidents remain significant only with Whites ($b=.212$, $p<.001$). In addition, the negative relationship between burnout and rank reappears only among Whites for both special-purpose officers ($b=-.252$, $p<.01$) and supervisors ($b=-.372$, $p<.01$).

Table 6 shows no relationship between race/ethnicity and PTSD. Among the controls, the sources of stress (job dissatisfaction and critical incidents) are positively related to PTSD across both unadjusted and adjusted models for all respondents. Other significant variables show no consistency. College education is positively related

($b=.075, p<.05$) to PTSD in the unadjusted model, but is insignificant in the adjusted. There is a positive relationship between widowhood and PTSD in the adjusted model for all respondents ($b=.475, p<.05$), but this result is disregarded due to the small number of widowers in the sample and the anomalous nature of the result. The split-file analysis shows that the sources of stress are positively related to PTSD across both racial groups; college education is positively related to PTSD only among Whites ($b=.107, p<.01$).

Table 7 shows levels of psychological stress are lowest among Blacks in both unadjusted ($b=-.248, p<.05$) and adjusted ($b=-.276, p<.05$) models. Among all respondents, job dissatisfaction and critical incident exposure exhibit consistent positive relationships with psychological stress, as does being divorced or separated. In the split-file regression, the positive relationship with the sources of stress remains; divorce and separation are significant only among Whites ($b=.579, p<.05$).

Table 8 shows no relationship between perceived stress and race/ethnicity. Males have lower levels of perceived stress in the adjusted model ($b=-.506, p<.05$), though no significant result in present in the unadjusted model. Job dissatisfaction positively related to perceived stress in both the unadjusted ($b=-.239, p<.001$) and adjusted ($b=.238, p<.001$) models. In the split-file analysis, few variables appear as significant. Males have reduced levels of stress among Blacks ($b=-.662, p<.05$), and among the sources of stress, only critical incident exposure among Whites ($b=.192, p<.05$) is significant.

Chapter 5

Discussion

With conflicting results in the literature regarding the benefits of minority hiring in organizations, a research question was formed examining whether or not African Americans experience more stress based on their minority status in law enforcement. The argument that Black police officers are experiencing more stress than their White colleges because of their race must be rejected. At two points, Black officers even had lower levels of stress: Black officers show fewer psychological symptoms of stress, and have lower levels of critical incident stress, though the latter holds true only in an unadjusted model. All other sources and types of stress show no difference between officers by race, though this lack of a result is important given the insistence of some researchers that stress levels should be higher among Blacks.

Some differences appear among Whites and Blacks when the regressions were split by race. The most consistent ones appear among the sources of stress—positive relationships were found between age and supervisory status among Whites but not among Blacks. These differences may reflect longer active careers among White officers: In the Baltimore survey, 62% of Blacks were under age 35 years compared to only 44% of Whites. Now that Blacks are "aging into" positions of leadership in the department, it would be interesting to replicate the study to see if the differences across groups has evened out.

Conclusive and consistent findings show that certain types of stress can be predicted by its sources. Job dissatisfaction and critical incident stress are both predictors of officer burnout, PTSD, and psychological symptoms of stress. While this does not

provide conclusive results to whether African American officers experience more organizational or critical stress, it does confirm that policing is a stressful profession that leads to negative psychological outcomes. Since law enforcement is a unique profession that exposes its employees routinely to job-related pressures, the duties of policing will never fully change. Officers will always be introduced to organizational stress and critical incidents. As a result, more needs to be done to assist officers with coping with these unavoidable stressors.

One of the more intriguing results showed that officers with college education were more likely to have signs of PTSD in some instances (Table 6). This finding goes against many modern-day recruiting policies which strive for candidates to have additional formal schooling above high school. However, this may be a product of the educational system and the lack of on the job experience an individual gets while in college. Internships are thought to give students viable experience to transfer into their profession, but it is possible that the length of internships are not long enough or that they are not exposing the students to real situational factors of the job.

Limitations of the Research

One of the primary limitations of this research includes the design of the original study. Cross-sectional analysis becomes a concern since we cannot tell the mechanics of how stress spreads throughout a police department over time. There is a possibility that the most seriously affected police officers already left the department before the study even began. Unfortunately, these groups of people could have produced more substantial results towards this work.

Another limitation deals with the research being focused only on the Baltimore Police Department. The underrepresentation of minorities in this department only raises more questions whether or not other departments throughout the country have similar dynamics. As a result, the findings of this work may not be generalized to the entire population of police officers and departments in the United States.

Future Research

Contradictory studies about minority individuals and stress, more research needs to be conducted in this field of study. Policing has proven to be a stressful profession with limited one-size-fits-all coping tactics that are not helping an officer's mental and physical well-being. If Gershon's study could be replicated and expanded across the country, the results would yield much more substantial findings that could be generalized to an entire population. Based on some of the major and most diverse police departments across the nation, larger departments like New York, Miami-Dade, Los Angeles, and Philadelphia should be analyzed. It would also be beneficial to replicate a similar study but with smaller, rural departments to see if the factors influence stress are different. If results gathered were substantial enough, it could warrant departmental changes throughout the country dealing with stress and potential coping mechanisms. This could potentially benefit officers well-being, and ultimately the communities that they serve.

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Table 1
Summary of Factors

	N	Mean	SD	Min	Max
Job dissatisfaction	768	.14	1.17	-3	4
Critical incident stress	791	.22	.942	-2	3
Burnout	786	-.16	1.14	-4	2
PTSD	797	.31	.422	0	1
Psychological symptoms	777	.09	1.25	-3	5
Perceived stress	771	.09	1.77	-5	7

Table 2
Descriptive Statistics

	N	%		N	Mean	SD
Race/ethnicity						
White	533	66.5	Approximate age	788	36.75	8.48
Black	235	29.3				
Other	27	3.4				
Total	795	100				
Gender						
Male	707	88.2				
Female	93	11.6				
Total	800	100				
Rank						
Officer	508	63.3				
Special purpose officers	163	20.3				
Supervisor	131	16.3				
Total	802	100				
Education						
High School	112	14				
Some College	464	57.9				
College	220	27.4				
Total	796	100				
Marital status						
Married	504	62.8				
Live-in partner	61	7.6				
Divorced/separated	96	12				
Single	135	16.8				
Widowed	4	.5				
Total	800	100				

Note: Percents may not total 100% due to rounding error

Table 3
Coefficients for Job Dissatisfaction

	All Respondents		Split Files	
	Unadj.	Adj.	White	Black
Race/ethnicity (ref=White)				
Black	.020	-.032		
Other	.404	.418		
Gender (ref=Female)				
Male	.059	.064	.109	-.001
Approximate age	.014**	.013*	.017**	.010
Rank (ref=Officer)				
Special purpose officers	-.111	-.102	-.136	-.025
Supervisor	.275*	.224	.118	.308
Education (ref=Some college)				
High School	- .124	.060	.014	-.125
College	-.096	-.135	-.092	-.150
Marital status (ref=Live-in partner)				
Married	.051	.038	.005	.312
Divorced/separated	.079	.069	.035	.267
Single	.043	.170	.074	.447
Widowed	.742	.553	.292	.952
R^2		.026	.028	.022

Note: t p<.10 *p<.05 **p<.01 ***p<.001

Table 4
Coefficients for Critical Incident Stress

	All Respondents		Split Files	
	Unadj.	Adj.	White	Black
Race/ethnicity (ref=White)				
Black	-.173*	-.047		
Other	-.202	-.137		
Gender (ref=Female)				
Male	.088	.032	.024	.061
Approximate age	.032***	.023***	.032***	5.98
Rank (ref=Officer)				
Special purpose officers	.280***	.176	.140	.291
Supervisor	.612***	.377***	.240*	.691**
Education (ref=Some college)				
High School	-.185	-.097	-.145	.028
College	.165*	.018	-.017	-.017
Marital status (ref=Live-in partner)				
Married	.166	.063	.022	.236
Divorced/separated	.233	.159	.098	.387
Single	-.029	.074	.147	.068
Widowed	1.01*	.646	.160	1.24
R^2		.110	.136	.092

Note: t p<.10 *p<.05 **p<.01 ***p<.001

Table 5
Coefficients for Burnout

	All Respondents		Split Files	
	Unadj.	Adj.	White	Black
Race/ethnicity (ref=White)				
Black	-.049	-.141		
Other	-.061	-.124		
Gender (ref=Female)				
Male	.145	-.014	.215	-.214
Approximate age	-.002	-.007	.100	-.006
Rank (ref=Officer)				
Special purpose officers	-.305***	-.236t	-.252*	-.071
Supervisor	-.237*	-.191	-.372**	-.421
Education (ref=Some college)				
High School	.126	.160	.235	.013
College	-.227*	-.071	-.086	-.137
Marital status (ref=Live-in partner)				
Married	.044	.061	.025	.427
Divorced/separated	.255	.330	.260	.681
Single	-.041	-.050	-.011	.123
Widowed	.130	.630	.369	1.18
Job dissatisfaction	.458***	.435***	.449***	.378***
Critical incidents	.230***	.180***	.212***	.107
R^2		.110	.287	.249

Note: t p<.10 *p<.05 **p<.01 ***p<.001

Table 6
Coefficients for Posttraumatic Stress Disorder

	All Respondents		Split Files	
	Unadj.	Adj.	White	Black
Race/ethnicity (ref=White)				
Black	.000	.022		
Other	.023	.016		
Gender (ref=Female)				
Male	.043	.021	-.018	.043
Approximate age	.003	-.002	-.002	-.002
Rank (ref=Officer)				
Special purpose officers	-.015	-.078	-.079	-.088
Supervisor	.066	-.070	-.060	-.089
Education (ref=Some college)				
High School	-.003	.020	.025	.005
College	.075*	.100t	.107**	.139
Marital status (ref=Live-in partner)				
Married	.035	-.012	-.022	-.060
Divorced/separated	.107	.055	.042	.013
Single	.011	-.031	-.030	-.096
Widowed	.385	.475*	.316	.765
Job dissatisfaction	.111***	.089***	.093***	.089***
Critical incidents	.153***	.136***	.149***	.104***
R^2		.195	.196	.200

Note: t p<.10 *p<.05 **p<.01 ***p<.001

Table 7
Coefficients for Psychological Symptoms of Stress

	All Respondents		Split Files	
	Unadj.	Adj.	White	Black
Race/ethnicity (ref=White)				
Black	-.248*	-.276**		
Other	.055	.017		
Gender (ref=Female)				
Male	-.136	-.218	-.411	.012
Approximate age	.002	-.008	-.012	.000
Rank (ref=Officer)				
Special purpose officers	.095	.166	.088	.382
Supervisor	.215	.150	.116	.379
Education (ref=Some college)				
High School	.009	.090	.036	.184
College	-.113	-.172	-.184	-.168
Marital status (ref=Live-in partner)				
Married	.034	-.023	.006	.052
Divorced/separated	.495*	.540**	.579*	.589
Single	.139	.158	.157	.301
Widowed	.706	.978	-.144	3.58
Job dissatisfaction	.330***	.308***	.350***	.230**
Critical incidents	.238***	.154**	.152**	.121**
R^2		.150	.162	.148

Note: t p<.10 *p<.05 **p<.01 ***p<.001

Table 8
Coefficients for Perceived Stress

	All Respondents		Split Files	
	Unadj.	Adj.	White	Black
Race/ethnicity (ref=White)				
Black	-.083	-.186		
Other	-.063	-.701		
Gender (ref=Female)				
Male	-.352	-.506*	-.477	-.662*
Approximate age	-.007	-.013	-.018	-.016
Rank (ref=Officer)				
Special purpose officers	-.135	-.061	-.104	-.015
Supervisor	-.046	-.034	-.150	.570
Education (ref=Some college)				
High School	-.135	-.153	.039	-.383
College	-.180	-.136	-.058	-.166
Marital status (ref=Live-in partner)				
Married	.230	.286	.140	.785
Divorced/separated	.153	.212	.062	.867
Single	.213	.189	.076	.687
Widowed	-.220	-.153	.357	-.808
Job dissatisfaction	.239***	.238***	.283	.116
Critical incidents	.147	.123	.192*	.014
R^2		.047	.048	.083

Note: t p<.10 *p<.05 **p<.01 ***p<.001

Appendix I

Factor Scores for Job Dissatisfaction

Questions	Factor Score
(19) There is good and effective cooperation between units.	.449
(20) I can trust my work partner.	.381
(23) It is likely I will look for another full-time job outside this department within the next year.	.362*
(24) Compared to my peers (same rank), I find that I am likely to be more criticized for my mistakes.	.427*
(25) I feel that I am less likely to get chosen for certain assignments because of "who I am" (e.g., race, gender, sexual orientation, physical characteristics).	.587*
(26) Within the department, gender related jokes are often made in my presence.	.331*
(27) When I am assertive or question the way things are done, I am considered militant.	.599*
(28) Promotions in this department are tied to ability and merit.	.413
(30) The administration supports officers who are in trouble.	.352
(32) The department tends to be more lenient in enforcing rules and regulations for female officers.	.336*

Notes: Questions were taken from Gershon (1999, 2000). *indicates variable reverse coded.

Appendix II

Factor Scores for Critical Incident Stress

Questions	Factor Score
(35) Making a violent arrest.	.652
(36) Shooting someone.	.360
(37) Being the subject of an Internal Investigations Division (IID) investigation.	.537
(38) Responding to a call related to a chemical spill.	.530
(39) Responding to a bloody crime scene.	.605
(40) Personally knowing the victim.	.570
(41) Being involved in a hostage situation.	.584
(42) Attending a police funeral.	.580
(43) Experiencing a needle stick injury or other exposure to blood and body fluids.	.472

Notes: Questions were taken from Gershon (1999, 2000).

Appendix III

Factor Scores for Burnout

Questions	Factor Score
(47) I can obtain helpful stress debriefing when I need it (i.e., not just going to a bar).	.320
(48) I feel that I can rely on support from my family, friends, etc.	.357
(49) I feel optimistic or hopeful about the future.	.433
(50) I feel like I am on automatic pilot most of the time.	.501
(51) I feel like I need to take control of the people in my life.	.490
(52) I feel burned out from my job.	.717
(53) I feel like I am at the end of my rope.	.715
(54) I feel I treat the public as if they were impersonal objects.	.509

Notes: Questions were taken from Gershon (1999, 2000).

Appendix IV
Factor Scores for Posttraumatic Stress Disorder

Questions	Factor Score
(44) Cause you to have intrusive or recurrent distressing thoughts, memories, or dreams about the event.	.856
(45) Make you avoid things related to the event (i.e. thoughts, places, conversations).	.885
(46) Make you feel detached from people and activities that are important to you.	.865

Notes: Questions were taken from Gershon (1999, 2000).

Appendix V

Factor Scores for Psychological Symptoms of Stress

Questions	Factor Score
(85) Pains or pounding in your heart and chest.	.203
(86) Faintness or dizziness.	.168
(87) Loss of sexual interest or pleasure.	.376
(88) Feelings of low energy or slowed down.	.507
(89) Thoughts of ending your life.	.334
(90) Feelings of being trapped or caught.	.603
(91) Headaches or pressures in your head.	.442
(92) Blaming yourself for things.	.672
(93) Feeling blue.	.697
(94) Nausea, upset stomach, stomach pains.	.386
(95) Suddenly scared for no reason.	.282
(96) Feeling no interest in things.	.619
(97) Trouble getting your breath.	.196
(98) A lump in your throat.	.246
(99) Feeling hopeless about the future.	.548
(100) Spells of terror or panic.	.240
(101) Feeling so restless you could not sit still.	.452
(102) Crying easily.	.334
(103) Feeling that something bad was going to happen to you at work.	.456

Notes: Questions were taken from Gershon (1999, 2000).

Appendix VI
Factor Scores for Perceived Stress

Questions	Factor Score
(104) I feel tired at work even with adequate sleep.	.465
(105) I am moody, irritable, or impatient over small problems.	.579
(106) I want to withdraw from the constant demands on my time and energy from work	.659
(107) I feel negative, futile, or depressed about work.	.641
(108) I think that I am not as efficient at work as I should be.	.409
(109) I feel physically, emotionally and spiritually depleted.	.615
(110) My resistance to illness is lowered because of my work.	.372
(111) My interest in doing fun activities is lowered because of my work	.423
(112) I feel uncaring about the problems and needs of the public when I am at work.	.341
(113) I have difficulty concentrating on my job.	.382
(114) When I ask myself why I get up and go to work, the only answer that occurs to me is "I have to."	.417

Notes: Questions were taken from Gershon (1999, 2000).