

Do Ethnicity and Occupational Status Interact to Influence Anxiety? An Investigation of Anxiety Among Hispanic Emergency Responders

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Do Ethnicity and Occupational Status Interact to Influence Anxiety? An Investigation of Anxiety Among Hispanic Emergency Responders

Although anxiety is a universal emotion, some of the most severe job related levels of anxiety are among emergency responder occupations, jeopardizing their well-being and positive job performance. The literature suggests that certain ethnic groups report higher levels of anxiety than other ethnic groups. Using Lazarus and Folkman's transactional model of stress, this study examines whether ethnicity predicts differing anxiety levels across occupations. We sampled emergency and non-emergency responders in the state of Texas in the United States. The strongest positive relationship between occupational status and anxiety was observed for Hispanics compared to non-Hispanics. However, the findings reveal no main effect between Hispanic ethnicity and anxiety. Our findings show that ethnicity may explain differences in experienced anxiety across occupations. Implications for theory and practice are discussed

Keywords: Emergency responders, Anxiety, Hispanic

Introduction

Growing evidence suggests that job related factors play an important role in the development of anxiety and related physical and psychological consequences. This costs organizations as much as \$300 billion annually in turnover, absenteeism, decreased productivity, medical costs, and job dissatisfaction (Maslach, Schaufeli and Leiter 2001; Wallace, Edwards, Arnold, Frazier, and Finch 2009; APA 2010; Hall, Dollard, Tuckey, Winefield and Thompson 2010). Anxiety is related to illnesses and disorders affecting millions of adults (18% of the U.S. population) and by extension, millions of workers (APA 2010). Anxiety occurs as a result of stress, and manifests in physiological, cognitive, and behavioral components (Lewis 1970; Lazarus and Folkman 1984). Moreover, work related anxiety is the most difficult to treat clinically (Muchalla and Linden 2005). As a result, an impressive number, 96%, of *Fortune 500* companies have assistance programs for employees who may be adversely affected by stressful events at work. Such interventions, in particular individual interventions, promote and maintain mental health and well-being to reduce turnover and job burnout, and to improve organizational effectiveness (Michie and Williams 2002; Bhagat and Stevenson 2008; Bhui, Dinos, Stansfeld and White 2012).

The purpose of this study is twofold. First, we investigate the relationship between occupation and anxiety. Second, we examine the role ethnicity plays in terms of affecting the cognitive mechanisms that are implicated in creating anxiety in individuals. This study answers the calls for studies of anxiety, a result of job stress associated with emergency responder occupations (Parker and DeCotiis 1983; Bacharach and Bamberger 2007). Indeed, while anxiety plays a significant role in occupational stress, researchers rarely focus on anxiety dimensions of job stress among emergency responders (Lourel, Abdellaoui, Chevaleyre, Paltrier and Gana

2008). Since the literature suggests that emergency responders experience some of the highest reported occupational anxiety, there is much to learn from this occupational group. We explore anxiety among emergency responders (i.e., police officers, firefighters, and paramedics) in order to expand the knowledge of occupational anxiety.

Within a job context, job demands affect everyone, but anxiety is particularly evident among emergency responders (Hall et al. 2010; ten Brummelhuis, ter Hoeven, Bakker and Peper 2011). As necessary as emergency responders are to society, this occupation's anxiety levels can lead to cardiovascular damage (Regehr, LeBlanc, Jelley, Barath and Daciuk 2007) and even death. For example, the National Fire Protection Association reports that as of 2011, 51% of on duty firefighter deaths had been classified as anxiety related heart attacks or sudden cardiac events (Lourel et al. 2008; Fahy, LeBlanc and Molis 2012). Recent studies also show that anxiety is considered one of the factors contributing to cardiovascular problems among paramedics (Hegg-Deloye et al. 2012). Moreover, emergency responders reportedly experience high anxiety levels and focused thinking when responding to an emergency (Lourel et al. 2008), jeopardizing their well-being and positive job performance (Parker and DeCotiis 1983; Bacharach and Bamberger 2007).

Numerous organizational psychological studies imply that differences in individual experiences of psychological strain can be further explained by one's traits (Kammeyer-Mueller, Judge and Scott 2009). The occupational stress literature further suggests that proneness to anxiety in certain occupations may differ within ethnic groups. Note that throughout this paper, we refer to *ethnicity* as a social category based on one's cultural background (Gilroy 1998). For example, post war studies report that Hispanics appear to be more prone to posttraumatic stress disorders than African-Americans and non-Hispanic Whites (Ruef, Brett and Schlenger 2000).

Specific Hispanic groups have been studied. For example, Puerto Rican veterans reported more severe anxiety-related symptoms and disorders than African-American or Caucasian veterans (Pole, Metzler, Thomas and Charles 2005). In a non-occupational context, after September 11, post-traumatic stress studies in New York showed that 14% of Hispanics compared to fewer than 10% and 7% of African-Americans and Caucasians (respectively) met severe stress disorder criteria (Pole et al. 2005). Other studies found that Hispanics and Native Americans were more likely to suffer from post-traumatic stress disorders after natural disasters (i.e., devastating hurricanes) than other ethnic groups (Perilla, Norris and Lavizzo 2002; Pole et al. 2005). If there is a difference among war veterans and civilians, then it is reasonable to hypothesize that these differences may be present within occupations.

The second focus of this study is to ascertain whether ethnicity is associated with higher levels of anxiety in general, or whether anxiety levels depend upon both ethnicity and occupational role. We examine the role of ethnicity as a characteristic that may modify the cognitive appraisal mechanisms associated with creating anxiety by examining the differences in reported anxiety levels among Hispanics in emergency responder and non-emergency responder occupations. We chose to study Hispanics since previous studies specifically cite differences in anxiety-related symptoms and disorders for this group in certain occupations. Moreover, Hispanics represent the fastest growing and largest minority group in the United States (U.S.) and are projected to be over 24% of the U.S. population by 2050 (Cisneros 2009; Blancero and Del Campo 2012). Increasing numbers of Hispanics select emergency responder occupations (NFPA 2013). Although research on Hispanics is growing slowly, research focused on Hispanic (emergency responders) and their well-being at work is severely limited (Perilla et al. 2002; Rodriguez-Calcagno and Brewer 2005; Blume, Resor, Villanueva and Braddy 2009).

This paper is organized as follows. We review Lazarus and Folkman's transactional model of stress (1984), which serves as our theoretical framework. We then review research and present hypotheses on the relationship between emergency responder status and anxiety and on the role of ethnic background as a moderator of this relationship. We present our method and the results of our field study, followed by a discussion of theoretical and practical implications.

Theory and Hypotheses

Lazarus and Folkman's Transactional Model

For a half a century, studies have noted the importance of understanding occupational stress and anxiety and their association with negative job-related outcomes and job dysfunctions (Kahn, Wolfe, Quinn, Snoek and Rosenthal 1964; ten Brummelhuis, ter Hoeven, Bakker and Peper 2011). Researchers have noted that as stress increases to moderate levels, efficiency and performance increase (Benson and Allen 2000). However, as stress produced anxiety increases in frequency, intensity and duration, it produces serious limitations in the individual and tends to become pathological (Endler and Kocovski 2001). To understand how anxiety can affect emergency responders, we rely on Lazarus and Folkman's (1984) transactional model of stress, which suggests three major constructs: stress (stressor), cognitive appraisal, and coping.

Stress is a physiological and psychological response (mental process) to situations (stressors) in the environment (Lazarus and Folkman 1984). Cognitive appraisal is divided into two stages, primary and secondary, and mediates the relationship between the environment (stressor) and the individual (Lazarus and Folkman 1984). The primary appraisal of stress occurs after encountering the stressor. It represents an evaluation of what is at stake and whether the stressor is irrelevant or stressful. Stressful situations are evaluated as potentially harmful-loss, threatening, or challenging. Threatening stressors are those stressors that most provoke emotions

of anxiety. Secondary appraisal is defined as an evaluation of “what can be done about it” (p. 33). Whether an event is stressful depends on the cognitive appraisal process shaping the individual’s reaction and appraised meanings specifically related to emotional responses (i.e., anxiety).

The role of emotions was not even considered at one point in stress theory guided studies (Lazarus 1993). Since the 1970s, however, North American psychological views became more receptive to a cognitive mediational approach in regards to stress and emotions. The theoretical consolidation of psychological stress and emotions such as anxiety are considered in the literature in the form of emotion theory. The knowledge of which encounters may make an individual perceive an event as stressful–harmful, threatening or challenging–is not enough to study without also understanding the emotions associated with the event. For example, the core relational theme for the emotion anxiety is facing uncertainty or existential threat. Beyond the core relation, however, are variables such as personalities, motives and beliefs that can influence the experience of emotions (anxiety). In the appraisal stage, the significance of the event is influenced by what is valuable to the person experiencing the stressor. Thus, the first stage of stress is present, exposure to an event or environment that may cause the appraisal of uncertainty, challenge, or direct threat. The inclusion of emotions such as anxiety in stress studies made sense. Essentially, the role of the cognitive mediational principle in psychological stress theory stipulates that the stressor in itself is not what causes a stress reaction, but rather, it is in combination with the individual’s appraised significance of the stressor. Furthermore, through the inclusion of studying emotions within the scope of stress, researchers have gained valuable sources of information regarding individual adaptation and coping (Lazarus 1993).

Lazarus and Folkman's transactional model incorporates factors influencing cognitive appraisals, which we find relevant in emergency responder occupations. The cognitive appraisal is a mirror of the individual's personal factors, unique interpretation of the event and reactions which largely depend on his/her personal characteristics, perceptions, commitments, beliefs (individual and cultural), thoughts, and situational factors. The negative connotations, for example, stem from the degree of commitment; the greater the commitment, the greater the potential of threat and psychological harm. Situational factors will only be stressful if they are associated with harm, danger, or lack of mastery and influence the event (Lazarus and Folkman 1984). The literature suggests that emergency responders are extremely committed, risking their lives and limbs facing dangerous environments (i.e., fire, theft, car accident).

Appraisals are strong predictors of which coping methods to utilize to deal with the stressor, which is the final stage in the transactional model. The individual assesses which coping resources to utilize: problem-focused, emotion-focused, or avoidance strategies (Lazarus and Folkman 1984). Problem-focused coping requires doing something about the stressor. Emotion-focused coping requires emotional regulation. Avoidance strategies are to simply ignore the stressors (Lazarus and Folkman 1984).

Anxiety

Anxiety is a universal emotional reaction to the perception of threatening or dangerous stimuli/stressors and psychological work stressors (Endler and Kocovski 2001; Regehr, LeBlanc, Jelley, Barath and Daciuk 2007; Bhui et al. 2012). Anxiety, an apprehension cued off by threats to what an individual values and holds essential to existence, is conceptualized as a stimulus, trait, or motive (Eysenck 1985; Endler and Kocovski 2001; Regehr et al. 2007). "It is an emotional state with the subjectively experienced quality of fear as a closely related emotion"

(Lewis 1970, p. 77). In addition to emotional responses, anxiety is associated with unpleasant cognitive and physiological aspects such as the arousal of the nervous system (e.g., nervousness or tightness of the chest), provoked by situations and internal stimuli in the form of thoughts and ideas perceived as dangerous to an individual (Alexandros-Stamatios, Matilyn and Cary 2003). These types of thoughts may be disproportional to the threat, as they are subjective (Lewis 1970). An array of symptoms and disorders are associated with anxiety, ranging from headaches and peptic ulcers, eating disorders, drug and alcohol consumption/abuse, disintegration of family and social relationships, a weakening of the immune system, severe depression, and post-traumatic stress disorders (Endler and Kocovski 2001).

The Relationship between Emergency Responder Roles and Anxiety

Emergency responders will mentally process whether the stressor is negative and how threatening or challenging the stressor appears (Lazarus and Folkman 1984). Stress studies show that emergency responders experience different degrees of anxiety levels correlated to the different stages of operation: pre-arrival (anticipatory), operational, and post-operational (Anderson, Litzenberger and Plecas 2002; Lourel et al. 2008). The more threatening the environments, the greater chance of provoked emotions (anxiety), and the event is more threatening given the commitment emergency responders exhibit (Endler and Kocovski 2001; Regehr et al. 2007). Thus, the literature implies that during the cognitive processes, commitment (personal factor) and imminent danger (situational factor) continuously influence anxiety levels in emergency responder occupations, as stipulated by Lazarus and Folkman's transactional model.

With respect to emergency responders, we acknowledge that reported differences of job anxiety levels may depend on occupational factors. For instance, even if emergency responders

are exposed to the same type of occupational stress, not everyone may be affected equally (Harris, Baloglu and Stacks 2002; Shakespeare-Finch, Smith and Obst 2002). The preparedness to fulfill occupational job requirements, such as skills, training, experience, uniforms, and so forth, create a form of buffer against the impact of the stressors (Moran 1998, 2001). During the cognitive appraisal, the environment will be stressful if associated with situational factors such as lack of mastery (Lazarus and Folkman 1984). However, the evidence suggests that emergency responders still experience increased anxiety on the job, not only in the U.S., but globally.

Studies related to emergency responder stress show that samples of international emergency responders have similar anxiety-related reactions. For instance, Anderson et al. (2002) studied Canadian police officers who reported higher than usual anticipatory anxiety stress. French firefighters experienced high levels of anticipatory anxiety and increased anxiety during the operational phase when responding to fires (Lourel et al. 2008). Police officers and firefighters in the Netherlands reported high levels of post-traumatic stress symptoms after their involvement in critical incidents (Slottje, Witteveen, Twisk, Smidt, Huizink, van Mechelen and Smid 2008). It is generally understood that emergency responders have high stress jobs and experience anxiety (Anderson et al. 2002; Harris et al. 2002; Bacharach and Bamberger 2007; Lourel et al. 2008). Lazarus and Folkman's transactional model would predict that the more stressors there are in one's job, the more anxiety will be experienced. Therefore, consistent with theory and prior research we expect to find the following:

Hypothesis 1: There will be a positive relationship between emergency responder status and job anxiety.

The Effects of Cultural Background on Anxiety

“Cultural forces, values and beliefs shared by a social system and passed from generation to generation” have been shown to significantly impact emotional behavior (Gordon 1981; Lazarus and Folkman 1984, p. 228). Clinical psychologists understand the influence of social and cultural factors on the formation and manifestation of anxiety (Tseng 2003). Although all individuals may react to stressors with emotional reactions, cultural factors will influence both the perception and interpretation of events and will contribute to the emotional reactions, including anxiety (Tseng 2003). This demand, Tseng notes, may be so excessive as to cause culture produced anxiety. Thus, it is posited that a possible explanation for Hispanics’ increased levels of reported anxiety and related disorders may be credited to the cognitive process. In addition to commitment and situational factors, cultural beliefs may be an additional factor to consider (Lazarus and Folkman 1984). Therefore, we incorporate cultural beliefs about bravery into our study of cultural influences.

Bravery is not specific to one ethnic group, and thereby, its cultural values and beliefs. For example, in Japan during both World War I and World War II, civilians and soldiers alike were expected to perform brave acts (i.e., kamikaze; Peterson and Seligman 2004). President Theodore Roosevelt (U.S.) emphasized that success is found in men “who do not shrink from danger,” that is, they show self-reliance, strength, resolute, honesty, and courage (Filene 1986, p. 71). With this type of rhetoric (especially in time of war), almost all young boys suffered from the anxiety of being considered sissies (Filene 1986). While bravery extends to different cultures, there are also cultural differences regarding bravery that are apparent between ethnic groups.

One interesting facet of Hispanic culture is an emphasis on male oriented bravery beliefs. Bravery is a form of duty and a norm that some cultures socialize (Peterson and Seligman 2004).

These norms become expected behaviors (Triandis 1972, 1989). Compared to individualist cultures which focus on individuals, collectivistic cultures (i.e., subcultures: Cuban-American, Mexican-American and Puerto Rican) focus more on the collective good and will be more influenced by subjective norms (Stone, Isenhour and Lukaszewski 2008). Thus, a commitment to the cultural values of bravery may vary between cultural groups.

An important factor affecting Hispanic males is the *machismo* influence, a need to demonstrate courage and bravery as well as other associated gender role cultural expectations (Glick and Fiske 1996; Falicov 2001; Olivas-Lujan et al. 2009; Estrada, Rigali, Arciniega and Tracey 2011). Over 35 years of scholarly work in anthropology, sociology, and psychology examines machismo as an ethnic-cultural experience. The term refers to Hispanic masculine gender roles related to characteristics such as being gallant, brave, prideful, chivalrous and courageous, having honor, concern for others, virtuous, protecting family and the defenseless, and having great physical strength among others (Mosher and Sirkin 1984; Fragoso and Kashubeck 2000; Torres, Solberg and Carlstrom 2000). Furthermore, it is a Hispanic phenomenon, spreading from areas such as Mexico, via roots traced to Spain. We note that there are negative connotations, yet, contemporary machismo is the term used to describe the modern Latino man (Fragoso and Kashubeck 2000). In Western cultures, the derogatory term *macho* and its associated characteristics are associated with the term and the true meaning of machismo, which centers on courageous and dangerous acts, is lost (Mosher and Sirkin 1984; Fragoso and Kashubeck 2000; Torres et al. 2002).

The translations throughout time have made it difficult to measure machismo as most are more familiar with the negative connotations (Mosher and Sirkin 1984; Fragoso and Kashubeck 2000; Torres et al. 2002). Moreover, although machismo characteristics stem from Spanish

culture, police subculture research shows characteristics of officer machismo include an attraction to adventure, high risk-taking behavior when investigating or chasing a suspect, and identification with a crime fighter image (White, Cooper, Saunders and Raganella 2010). The literature suggests that negative connotations associated with the term machismo may form response bias. In this study, we assume the positive characteristics of machismo (i.e. brave, protector of the defenseless, prideful) are part of the Hispanic cultures and will influence anxiety.

Further, the literature points to two things regarding Hispanic males specifically. First, previous war related studies, which also entail dangerous situations, show a difference between ethnic groups. Hispanics reported higher rates of anxiety-related symptoms and disorders than other groups (Ruef et al. 2000; Pole et al. 2005). Second, the cognitive appraisal depends on perceptions, commitments and individual-cultural beliefs. The deeper the commitment (which we associate with machismo) is, the greater the potential of anxiety. Situational factors will only be stressful (influence anxiety) if they are associated with harm and danger. Thus, both personal and situational factors are associated with characteristics of machismo in the cognitive process. For Hispanic males, machismo means they must face challenges and display bravery at all times, or their masculinity is threatened (Triandis 1984). This may be a personal factor that does not influence anxiety levels among non-Hispanics. Emergency responders, in general, are characterized as being brave and demonstrating abilities to perform their duties courageously, living up to characteristics associated with their role (Filene 1986; Beaton and Murphy 1995; Moran 2001; Harris et al. 2002). However, among non-Hispanics, there are no cultural expectations of machismo which could further produce anxiety.

All of the above suggest that cultural differences and beliefs regarding bravery machismo may further explain the relationship between anxiety and emergency and non-emergency

responder occupation status among Hispanics but not among non-Hispanics. Thus, it may be possible that an additional personal factor (individual and cultural beliefs) may play a role in the experienced anxiety, and may lead Hispanics in emergency responder roles to report higher levels of anxiety compared to Hispanics in non-emergency responder occupations. The same may not be true for non-Hispanic emergency responders if they are not as heavily influenced by machismo cultural expectations of bravery. We predict the following:

Hypothesis 2: The positive relationship between emergency responder status and job anxiety will be stronger for Hispanics than for non-Hispanics.

Method

Sample and data collection

Field data were collected through a paper survey and participant responses were anonymous. Students collected the data in exchange for extra credit. Students in two business courses with 60 students per course (120 student total) were asked to distribute five surveys each. A total of 600 paper surveys were distributed. Of these, 547 surveys were filled out by participants, for an initial response rate of 92%. Once the data were cleaned and missing data were accounted for, we had a total of 512 complete responses, for a final response rate of 85%.

The students were instructed to recruit from emergency service personnel throughout South Texas from fire stations, police stations, and emergency responder services (EMS). Instructions also stipulated that any non-emergency staff (administrative) were not to be recruited, only emergency responders. This satisfied the requirement to locate individuals in emergency responder occupations (Regehr et al. 2007). For the low stress participants, non-emergency responders from various industries and occupations in South Texas were recruited, primarily from a local courthouse. The area where the sample was drawn has large numbers of

city, county, state and federal agencies and large retail areas. The final sample consisted of 512 individuals in emergency responder (coded 1) and nonemergency responder roles (coded 0). Emergency responders comprised 49% of the sample. The sample was 91% Hispanic, which was expected, given the demographics of South Texas where the data were collected. U.S. Census data show that this is in line with county demographics, which show Hispanic or Latino (90.9%) and White non-Hispanic (7.5%). One third, 33%, of participants, were under the age of 26, 36% were between 26 and 35 years of age, 22% were between the ages of 36 and 45 years, 8% were between the ages of 46 and 55, and 1% were older than 55. Over half, 62%, of the participants had at least a high school diploma, 29% reported a Bachelor's or Master's degree; 9% reported "Other." Regarding the sex of our participants, 77% were male and 23% were female. However, 100% of the emergency responders were male. Given the large Hispanic population where the sample was collected, gender role expectations may explain the reason females had not entered emergency responder occupations (Triandis 1984).

Measures

Anxiety

Anxiety was measured using the five item anxiety factor from Parker and DeCotiis' (1983) Job Stress scale. Previous stress studies have used this anxiety scale to study anxiety in cross-cultural studies (Jamal and Preena 1998; Jamal 1999). A sample item is, "Sometimes this job drives me up the wall." Response options ranged from 1 (strongly disagree) to 7 (strongly agree). The Cronbach alpha reliability for the scale was $\alpha = .75$.

Ethnicity

To measure cultural background, participants were asked to list their ethnicity. Participants were asked whether they were Hispanic, Caucasian, Asian American, Native American, African

American, or other. Ethnicity was coded as Hispanic = 1 and 0 otherwise.

Control variables

Age was collected as an ordinal variable (1= ages 18-25, 2 = 26-35, 3 = 36-45, 4 = 46-55, 5 = 55+). Age was used as a control in the analyses because the literature suggests that as people age, their stress levels tend to decrease which may be credited to life experiences and may have formed hardiness against the impact of stressors (Dienstbier 1989; Baltes and Baltes 1990). We controlled for gender (coded 0 = female, 1 = male), because women typically hold less dangerous jobs than men and this may influence anxiety. We also asked participants whether they had good relationships with their coworkers. Studies have shown social support tends to influence the appraisal and impact of stressors, functioning as a coping mechanism for both general and emergency responder occupations (Beaton and Murphy 1995; Anderson et al. 2002). One question was created: “Do you have a good relationship with your coworkers?” Participants answered yes = 1 or no = 2. These responses were dummy coded as 1 for good relationships and 0 otherwise. Participants were asked how many times per month they went to church (recorded as a continuous variable) because spiritual beliefs are a means of coping with and reducing anxiety (Seybold and Hill 2001). Participants were also asked whether they had to meet a quota for their jobs (yes or no) because quotas may cause anxiety (Nayak 2014). Nayak’s (2014) research and those papers cited within the article support the statement that quotas have been known to increase stress. Nayak specifically credits quotas to “severe anxiety” among software and computer professionals, where quotas are not the norm. The quotas may include lines of code to write per day or software bugs to fix. For our analyses, the variable was coded as 1 = quota and 0 = no quota.

Results

In order to test our hypotheses, we used a hierarchical moderated regression analysis following the procedure described in Cohen, Cohen, West and Aiken (2003). The control variables were entered in the first step, followed by the independent variables in the second step. The two-way interaction term was added in the third step.

Table 1 presents descriptive statistics and correlations for all variables. The results show a statistically significant positive correlation between emergency responder status and anxiety ($r = .20, p < .01$). Results of the moderated regression analysis testing the hypotheses are shown in Table 2. Of the control variables entered in Model 1, good relationship with coworkers had a positive effect on anxiety ($\beta = .20, p < .01$). This is contrary to our expectations, and we discuss possible reasons for this in the discussion. As expected, if a quota is required on the job, this is positively associated with anxiety ($\beta = .11, p < .05$). Emergency responder status had a positive and statistically significant effect on anxiety ($\beta = .14, p < .05$) in Model 2, supporting Hypothesis 1. There was a statistically significant interaction effect between ethnic background and emergency responder status ($\beta = .13, p < .05$) in Model 3. The interaction term explained an additional 2% of the variance beyond the controls and main effects; this is common for interaction terms (McClelland and Judd 1993).

Insert Table 1 about here

Insert Table 2 about here

We plotted the interaction as described in Aiken and West (1991). See Figure 1 for the plot. A post-hoc test of the simple slopes shows that emergency responder status positively predicted anxiety for Hispanics ($\beta = .25, t = 3.17, p < .01$) but not for non-Hispanics ($\beta = .02, t = .24, p > .05$). This supports Hypothesis 2.

Insert Figure 1 about here

Discussion

Studies investigating organizational anxiety have few or no Hispanic samples. This is the first management study sampling Hispanics in emergency responder roles and their associated levels of anxiety. Our results show significantly higher levels of anxiety among emergency responders compared to non-emergency responders and that this difference was significantly greater for Hispanics compared to non-Hispanics. We argue this difference in anxiety levels across occupation and ethnicity can be traced to differences in how Hispanic men cognitively appraise certain environmental stressors. Anxiety in occupations may be related to cultural and normative beliefs associated with one's culture and not simply driven by the tasks of the job. Our findings support this idea through our interaction effect between emergency responder status and Hispanic ethnicity on anxiety levels. Higher levels of anxiety may be due to an ethnic factor called machismo, which emphasizes the underpinnings of chivalry (ex: bravery), considered in this study as a Hispanic cultural phenomenon.

The transactional model predicts that factors including preexisting beliefs and commitments may leave the individual most vulnerable when the commitment is high (Lazarus and Folkman 1984). Values and commitments established by the individual's social system that shape emotions and behavior are passed down from one generation to the next (Lazarus & Folkman, 1984). These cultural forces have major impacts on an individual's shaping of emotional reactions (e.g., anxiety) of stress and they hinge on the cultural significance given to them. Our findings provide some support for this idea, because the expectation of machismo and the need to be brave in the Hispanic culture (Glick and Fiske 1996; Falicov 2001; Estrada et al. 2011) may provide a cultural explanation for Hispanic emergency responders reporting higher

levels of anxiety than Hispanic non-emergency responders. This may be influenced by both the necessary anxiety to perform their emergency responder job duties and additional anxiety from their cultural expectations to be brave. In a personal communication with the first author, a Hispanic male firefighter stated,

“I was thinking, Oh my God, I’m going to drop the hose and I’m going to run straight out because I panicked...I got against the wall, leaned down a little bit, counted for about 16 seconds and I got my composure back. I got my breath back and I was thinking in my head, if I run out there, people are going to think I am a coward.”

Courageous action is the response to fear and courage, interacting simultaneously (Goud 2005). During the primary and secondary cognitive appraisal stages, threatening stressors provoke the highest levels of anxiety among Hispanic emergency responders (Lazarus and Folkman, 1984). The individual’s extreme emotional responses (i.e., anxiety) are what the literature cites as being dangerous to well-being. It is important to investigate the dark side of courage and the job characteristics that predispose people to higher levels of anxiety at work. Contrary to what has been reported elsewhere in the stress literature, we do not find a main effect of Hispanic ethnicity on anxiety. It is noteworthy that the studies reporting higher levels of anxiety among Hispanics were conducted after war (Rosenheck and Fontana 1996; Ruef et al. 2000), terrorist attacks (Pole et al. 2005), and natural disasters (Perilla et al. 2002; Pole et al. 2005). The higher levels of anxiety reported in those studies may have been related to other stressors experienced by Hispanics which may make it harder for them to recover from devastation (i.e., low socioeconomic status and discrimination; Flores et al. 2008). This may explain why in one study, which did not focus on ethnic differences in relation to stress within emergency responder occupations, found no cultural differences in the appraisal of stressors (Moran 1998). It is interesting to note that war-related reported anxiety levels lend some credence to the probability that the increased levels could be related to the machismo influence,

given the need to be brave during war; in particular, when comrades' lives are in danger as well. As stated previously, this particular phenomenon has yet to be tested among emergency responders; thus, there are no relevant studies to support the notion. However, as restricted as this notion may be, there are also no studies contradicting it.

It is interesting to note that good relationships with coworkers had a small positive correlation with anxiety in this study. This is contrary to studies showing that good relationships with coworkers in emergency responder occupations are associated with lower stress levels (Beaton and Murphy 1995; North, Tivis, McMillen, Pfefferbaum, Cox, Spitznagel and Schoor 2002). Work related to emergency responders credits social support as a means of coping with the traumatic scenes they are exposed to (Beaton and Murphy 1995; Anderson et al. 2002). However, we also note that coworker relationships among emergency responders are bonds of brotherhood and camaraderie. This is common in the occupation given the job characteristics (life/death) and the amount of time spent together during work shifts (Casey and Leger 1996; Varvel et al. 2007). The bond is so tight that, the most reported anxiety-producing stressors for emergency responders are associated with deaths of fellow emergency responders (Casey and Leger 1996). It is possible that the fear of losing a member of one's team in the line of duty is one of the most anxiety-producing factors in an emergency responder's job. It is also possible that this correlation is being driven by the non-emergency responders in the sample if those non-emergency responders who experience anxiety at work are more likely to have good relationships with their coworkers because they talk to them about work as a coping mechanism.

In order to tease apart the relationship between good relationships with coworkers and anxiety at work for both emergency responders and non-emergency responders, we conducted two additional post-hoc analyses. We first conducted a moderated regression analysis testing the

interaction effect of emergency responder status and relationships with coworkers as a predictor of anxiety. In this analysis, we controlled for age, sex, church attendance, and quotas. We found that emergency responder status was positively and significantly related to anxiety ($\beta = .14, p < .05$) and this main effect was negatively moderated by good relationships with coworkers ($\beta = -.24, p < .01$). A test of the simple slopes showed that emergency responder status positively predicted anxiety when relationships with coworkers were poor ($\beta = .58, t = 3.96, p < .01$) but not when relationships were good ($\beta = -.02, t = -.20, p > .05$). This is consistent with prior findings in emergency responder samples showing that good relationships with coworkers are negatively related to stress (Beaton and Murphy 1995; North, Tivis, McMillen, Pfefferbaum, Cox, Spitznagal and Schoor 2002). Emergency responders need to be able to trust their coworkers with their lives, if necessary, and having poor relationships with one's coworkers must be anxiety-inducing for emergency responders.

As the second post-hoc check, we examined the bivariate correlation between relationships with coworkers and anxiety for both the emergency responders and non-emergency responders. Findings show a positive relationship between good relationships with coworkers and anxiety among non-emergency responders ($r = .20, p < .01$) but a negative relationship ($r = -.13, p < .05$) for emergency responders. Therefore, the small positive correlation between good relationships with coworkers and anxiety seems to be driven by the non-emergency responders, as there were more of them in the sample. Consistent with the literature, good relationships with coworkers is associated with lower stress for emergency responders. For the non-emergency responders, good relationships with coworkers may be positively associated with anxiety if establishing good relationships is a coping mechanism to deal with work-related anxiety. Because our study is cross-sectional, we cannot establish causality between these variables.

Employee assistance programs for emergency responders should be aware of these findings, because emergency responder occupations are unique in that the fear of losing a life is quite real. Providing opportunities at work to maintain good relationships among emergency responders seems important for them to carry out their work and have less anxiety. Future research should delve further into when and why good relationships with others at work may increase worker anxiety among both emergency and non-emergency responders.

Theoretical Implications

The findings show that culturally-based normative values may influence how stressors are perceived. Future research should focus on the findings of this study showing that culturally-based normative values and beliefs may influence how stressors are perceived and what accompanying emotions are produced to enrich the theoretical frameworks discussed in this study. Our results suggest that the Lazarus and Folkman transactional model of stress should be expanded to account for both the effects of occupation and the effects of culturally-based values. Future research may be conducted on other under-studied ethnic groups to test how anxiety works for them.

Practical Implications

Anxiety is necessary for emergency responders. However, acute anxiety can lead to severe stress-related disorders and symptoms. One method that may be effective if considered prior to the anxiety levels reaching an acute status is a form of cognitive behavior therapy which reinforces adaptive coping styles (Adams, Davis, Brown & Thomson, 2013). The treatments are administered by trained therapists and mental health professionals. However, there are elements that can be introduced in a well-being program. For example, cognitive behavior therapy is intended to help the individual identify problematic beliefs and emotions through an exploration

of exposing what is negative about them and replacing that with either new beliefs or with a more logically based belief.

Limitations and Future Research

There are several limitations in this study. The low number of Caucasians is not representative of the U.S. population where Caucasians are the majority. Among non-emergency responders, the small subset of Caucasians ($n = 13$) reported higher anxiety ($M = 3.80$, $SD = 1.31$) than the Hispanics ($M = 3.06$, $SD = 1.16$) and this difference was statistically significant, $t(261) = 2.22$, $p < .05$. We suspect this is because these Caucasians (normally the majority group in the U.S.) are a small minority in the part of the country where the study took place. Although U.S. Census reports show that our sample is representative of the demographics for the region where the study took place, we acknowledge that the Hispanics may experience more anxiety in circumstances where they are the minority group. This limitation can be addressed by collecting other samples of emergency responders and different ethnic groups in other areas of the country.

All of the emergency responders were male. This is not representative of the population of emergency responders. For example, the number of Hispanic females in emergency responder occupations has been slowly increasing. Although less than 4% of the female firefighters in the U.S. were Hispanic in 1984, this number was expected to increase to 10% in 2010 (NFPA 2013). Future studies should try to collect more sex-diverse samples to test the generalizability of our findings. To account for differences in anxiety related to gender in non-emergency responder occupations, we did control for gender in the analyses.

The variables collected in this study were also self-reported and offer reported anxiety at a particular point in time. Employee self-reported anxiety seems appropriate because employees would know best about their own feelings of anxiety (Spector 1994). However, longitudinal

studies may expose other variables not addressed in this study or in the literature, which may be contributing to anxiety and are not directly related to the occupation itself. Future research may measure other variables that may influence anxiety levels.

The final limitation is that machismo is not measured. Until a valid and reliable instrument free of biases due to negative connotations is available, it will be difficult to measure machismo (Mosher and Sirkin 1984; Fragoso and Kashubeck 2000; Torres et al. 2000). Future research may find that non-Hispanics and other ethnic group members also experience high anxiety when they have high aggressive or machismo values and beliefs. Subsequently, the need to measure machismo may require substituting the behavior(s) through the use of other scales intended to measure bravery, moral courage or aggressiveness (Bem 1981; Rate, Clarke, Lindsay and Sternberg 2007). Furthermore, it could be stated that even then, occupation could moderate emotions such as aggression among individuals from the same population, as was the case in this study: emergency versus non-emergency responders.

Conclusion

In summary, studies investigating organizational anxiety have few Hispanic samples. This is one of the first studies to sample emergency responder roles and measure their anxiety compared to other occupations. As expected, emergency responder status was positively related to anxiety at work. The positive relationship between occupational status and anxiety was stronger for Hispanics in emergency responder roles than for Hispanics in non-emergency responder roles. We argue this difference in anxiety across occupations across ethnicity may be due to the cultural influences that affect how individuals perceive anxiety-producing stressors.

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Table 1. Means, standard deviations, and inter-correlations for all study variables.

Variables	Mean	SD	1	2	3	4	5	6	7
Controls									
1. Age	2.07	.97							
2. Gender (Male)	.77	.42	.18**						
3. Good relationship with coworkers	.72	.45	.16**	.40**					
4. Times attended church per month	1.36	.67	.22**	.25**	.48**				
5. Quota required	.42	.49	-.13**	-.24**	-.49**	-.33**			
Independent									
6. Emergency responder	.49	.50	.35**	.54**	.56**	.43**	-.35**		
7. Hispanic ethnicity	.91	.29	-.13**	-.07	-.08	-.08	.04	-.15**	
Dependent									
8. Anxiety	3.36	1.35	.09*	.13**	.18*	.09*	-.01	.20**	.00

Note: $N = 512$.

* $p < .05$, ** $p < .01$.

Age measured on an ordinal scale where 1 = 18-25, 2 = 26-35, 3 = 36-45, 4 = 46-55, 5 = 55+.

Gender measured as 0 = female and 1 = male.

Quota required measured as 0 = no and 1 = yes.

Table 2. Regression analysis to test the moderating effect of ethnic background on the relationship between emergency responder status and anxiety.

Variables	Step 1		Anxiety Step 2		Step 3	
	β	<i>t</i>	β	<i>t</i>	β	<i>t</i>
Controls						
Age	.06	1.43	.04	0.84	.04	0.79
Gender (Male)	.06	1.32	.02	0.33	.02	.37
Good relationship with coworkers	.20**	3.54	.16**	2.73	.16**	2.74
Times attended church per month	.01	.04	-.01	-.36	-.02	-.34
Quota required	.11*	2.28	.12*	2.44	.12*	2.44
Independent and Moderator						
Emergency Responder			.14*	2.30	.13*	2.18
Hispanic ethnicity			.03	0.79	-.02	-0.47
Two-way interaction						
Emergency Responder × Hispanic ethnicity					.13**	2.81
<i>R</i> ²	.05**		.06†		.08**	
ΔR^2			.01†		.02**	
<i>F</i>	5.31**		4.62**		5.08**	
<i>Df</i>	(5,506)		(2,504)		(1,503)	

Notes: *N* = 512. † *p* < .10, * *p* < .05, ** *p* < .01. Two-tailed tests.

Standardized betas are reported.

Age measured on an ordinal scale where 1 = 18-25, 2 = 26-35, 3 = 36-45, 4 = 46-55, 5 = 55+.

Gender measured as 0 = female and 1 = male.

Quota required measured as 0 = no and 1 = yes.

Figure 1. Interaction of emergency responder status and racial/ethnic status on anxiety.

