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Reactions to a Near Fatal Accident: An Investigation of Emotion and Coping Responses

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REACTIONS TO A NEAR FATAL ACCIDENT: AN INVESTIGATION OF EMOTION AND COPING RESPONSES

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REACTIONS TO A NEAR FATAL ACCIDENT: AN INVESTIGATION OF EMOTION AND COPING RESPONSES

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A 12-month longitudinal study assessed the emotional reactions of an intercollegiate athletic team to a near fatal bus incident. PANAS-X and the Brief COPE, administered on five occasions, indicated NA declined over time. Most coping strategies showed significant changes in trajectory. Acceptance and Positive Reframing were high across waves.

In October 2010, an intercollegiate athletic team and coaching staff were traveling by sleeper bus to an out-of-state match. The team members and coaches were in the back of the bus when they felt the bus swaying and heard the tires hit the rumble strips. The head coach went forward to find the bus driver unconscious and slumped over the steering wheel. Although the bus swerved into the oncoming lane of interstate traffic and back onto the other shoulder, the coach was able to steer the bus and stop it safely on the side of the road. The bus driver had suffered a fatal heart attack; fortunately, the coaches and players survived with only minor injuries. This study is a longitudinal follow up assessing the emotional reactions of the coaches and team to the bus incident across a twelve-month time frame. The Positive and Negative Affect Schedule - Expanded (PANAS-X; Watson & Clark, 1994) and the Brief COPE (Carver, 1997) were administered on five occasions. Negative affect declined over time, with a larger drop in waves more proximal to the incident. Positive affect demonstrated a curvilinear pattern

showing increases on the second and third wave but dropped off at the end of the spring semester 2011 and the beginning of the fall semester 2011. There were significant changes in the coping trajectories for 10 of the 14 coping strategies from the Brief COPE. These data are of particular interest as we could locate no other studies in the published literature of individual athlete or team reactions to traumatic travel incidents, although ESPN (Lavigne, 2010) noted that bus safety should be a concern for team travel.

Introduction

In 2009 in the United States, there were more than 200 bus accident fatalities and over 10,000 injuries related to bus and motorcoach crash accidents (NHTSA, 2009). Automobile accidents can leave victims unable to work or function properly. A near tragic and traumatic bus accident that occurred in October 2010 provided a unique opportunity to examine individual responses and reaction trajectories to a single traumatic event. An intercollegiate athletic team and coaching staff were traveling by sleeper bus to an out-of-state match. The team members and coaches were separated from the driver by a curtain when they felt the bus swaying and heard the tires hit the rumble strips. The head coach went to the front of the bus to find the bus driver unconscious and slumped over the steering wheel. Although the bus swerved into the oncoming lane of interstate traffic and back onto the other shoulder, the coach was able to gain control of the bus and safely steer it to a stop on the side of the road. The bus driver had suffered a fatal heart attack. Fortunately, the coaches and players survived with only minor physical injuries.

This study is a longitudinal follow-up assessing the emotional reactions across a twelve-month time frame of the coaches and team to the near fatal bus incident. As an under-studied area, there is little research literature on athletic team reactions to trauma. Therefore, emotion in the workplace is the focus of the literature review to lay the foundation for this study. As there are no published studies concerning an athletic team's reactions to a traumatic event, we hope to contribute to an under-researched area of psychology.

Literature Review

As there is no literature on athletic team reaction to trauma, this review will explore the relationship between emotion and workplace injury and trauma. It is important to note that athletic teams share characteristics with work teams in that they work together, with a collective identity, to achieve a common objective (Hodge, 1995). Recently, sports psychologists have incorporated organizational literature to better understand teams. Weinberg and McDermott (2002) compared sport and business perception of factors involved in success, analyzing leaders' perceptions of leadership cohesion and communication. They concluded that there was a good deal of similarity between success in sport and business.

An individual's emotions are influenced by the organization and environment in which they work, and workplace emotions subsequently may affect an individual's emotions away from work. Workplace emotion is greatly affected by on-the-job injuries and trauma. This review focuses on the influence that these significant events can have on job performance, job satisfaction, and overall life emotions.

Organizations and organizational researchers have recently demonstrated an increased interest in emotions in the workplace (Weiss, Suckow, & Cropanzo, 1999). Within the past ten years, there have been unprecedented national events, including terrorist attacks and a national recession, that have changed how individuals view and experience work. The literature review first focuses on the history of emotions in the workplace.

History of Emotion in the Workplace

Shaped by the ideas and developments in previous decades, the study of emotion at work clearly emerged in the 1930s. Early research in emotion at work was shaped by influential ideas and developments made in the scientific method over the previous decade. Scientific principles provided the fundamental methodologies and instruments necessary to conduct such research, and organizations began to value the need to understand the feelings of workers and improve organizational conditions (Brief & Weiss, 2002).

Early studies examining emotion in work focused on job satisfaction and the psychopathology of workers. Classic studies by Fisher and Hanna (1931), Hersey (1932), Kornhauser and Sharp (1932), Viteles (1932), and others were characterized by innovation and diversity. *The Dissatisfied Worker*, by Fisher and Hanna (1931), was developed from the examination of multiple case studies. Fisher and Hanna believed that job dissatisfaction was due to "nonadjustive emotional tendencies" in the worker, and their psychological unrest was incorrectly attributed to their jobs. As noted by Brief and Weiss (2002), Fisher and Hanna's work was influential to many of their contemporaries; they are referenced by Viteles, Hersey, Hoppock (1935), and other published works.

Further research related to workplace emotions continued into the 1930s, largely focusing on job satisfaction. Kornhauser and Sharp (1932) were interested in determining influences on individual feelings and attitudes. They conducted a survey of employees, supplemented by interviews, focusing on overall satisfaction and facet

satisfaction. Kornhauser and Sharp concluded that there was no relationship between the efficiency ratings of employees and their attitudes; however, satisfaction was slightly negatively correlated with absenteeism. Hersey (1932) focused his research on a small group of skilled railroad car and locomotive workers. Through his self-developed emotion measures and the use of a repeated measures design, Hersey observed a relationship between the workers' daily affect level and their daily performance levels. Hoppock (1935) showed a concern for job dissatisfaction and the social implications of satisfactions in the general population, not just a single organization. Hoppock conducted surveys and interviews of workers in a single community exploring the work environment, non-work issues, and emotional maladjustment. Hoppock's results showed that work environment, non-work issues, and emotional maladjustment all influenced job satisfaction.

The diversity of methods and ideas in early research on emotion at work sparked an interest in a new field of research; however, it did not last and the field was narrowed and diluted. Influential and innovative research and concepts were forgotten, but the rigorous methodological tools remained (Brief & Weiss, 2002). Job satisfaction and structured questionnaires became the focus of the narrowed field of emotion in the workplace.

Job Satisfaction

Job satisfaction is ubiquitous in organizational psychology as it is one of the most abundantly researched and published topics in the field. Jex and Britt (2008) provided support for a classic anecdote; Locke's chapter in the Handbook of Industrial and

Organizational Psychology (1976) reported job satisfaction related studies numbered in the thousands. Since Locke's initial search, more than 20 years earlier, the number of studies has greatly increased. Jex and Britt (2008) conducted a more recent search of PsycINFO with the keywords "Job Satisfaction," the results revealed 21,375 references on the topic. I conducted a current search of PsychINFO, using the same keywords as Jex and Britt. The search resulted in 27,654 references, over 6,000 more results in three years. It is not hard to see job satisfaction's importance to industrial and organizational psychology.

Job satisfaction can be defined as an affective reaction to one's job, resulting from the incumbent's comparison of actual outcomes with those that are desired (Weiss, 2002). Locke (1976) has defined job satisfaction as "a pleasurable or positive emotional state resulting from an appraisal of one's job or job experiences." This definition considers job satisfaction to be an emotional reaction to work. Job satisfaction focuses on employee attitudes toward their job. Although the job satisfaction construct mainly emphasizes the emotional component, it also gives consideration to cognitive and behavioral components (Jex & Britt, 2008). Job satisfaction is generally construed in affective terms; however, typically, only cognitive aspects are measured (Brief & Weiss, 2002). Job satisfaction was once thought to be the cause of high productivity, but subsequent research has shown a slight positive relationship between the two (Judge, Thoresen, Bono, & Patton, 2001); however, it is still important to study job satisfaction. Understanding employees' satisfaction is desirable as job satisfaction is related to behavior (e.g., commitment) that is beneficial to the organization.

Recently, it has been recognized that job satisfaction is influenced by affective dispositions or personality traits (Brief & Weiss, 2002). Emotions in the workplace have been shown to influence job satisfaction; however, they have not always been measured using methods and tools that actually tap into how workers feel. Therefore, it is important to understand how emotions are produced and measured.

Production of Emotions

Emotion is a difficult construct to define; it is a combination of physiological, subjective, and behavioral responses. Frijda (1993) provided a general summary. First, emotion has an experiential component. Second, a person, object, or event is always coupled with the subjective experiential element. Third, emotional states include recognizable physiological changes. Finally, discrete emotions contain particular action tendencies.

Emotion and mood are closely connected, but they have discerning characteristics. The affective state of emotions and moods are distinguished by the duration of the affective state (Frijda, 1993). When compared to emotions, moods are considered less intense and of longer duration. Moods have less definable beginnings and endings. These are general differences, however, and moods and emotions can vary greatly.

Orthogonal structure rotation of affect self-ratings has revealed two reliable dimensions of emotion, Negative Affect (NA) and Positive Affect (PA; Watson & Clark, 1997). NA represents the extent to which one specifically experiences a negative mood, such as feelings of nervousness, sadness, irritation, guilt, contempt, or disgust. As

opposed to NA, PA represents the extent to which one experiences a positive mood, such as feelings of joy, interest, energy, enthusiasm, or alertness. NA and PA are independent and distinct; research has shown that these two factors, PA and NA, consistently emerge as the two dominant factors of emotional experience across time, response format, and culture (Watson, 1988). Affect with the same valence are typically strongly, positively correlated and opposite valences are typically weakly, negatively correlated with one another (Watson & Clark, 1994).

Emotion experienced at work can be influenced by feelings produced outside of the workplace; however, this review strictly focuses on emotions generated from workplace events and experiences. There are many factors that influence feelings experienced in the workplace, including cycles in feelings and dispositional influences. Cycles in feelings are related to lifestyle, sociocultural factors, and biological factors. The dispositional basis of emotion at work influences the emotions experienced by individuals.

Individuals high in NA experienced higher occurrences of depressed mood, anxiety, and other NA indicators than those with PA (Heinisch & Jex, 1997). Similarly, research has shown that the personality traits of PA and NA are correlated with their corresponding affective tones (George, 1990).

Weiss and Cropanzano (1996) discussed the consequences of affective states and traits at work, particularly the distinction between affect-driven and judgment-driven behaviors. According to Weiss and Cropanzano, behaviors that are driven by affect are relatively immediate behavioral and cognitive outcomes of affective states. The effects

of affect-driven behavior generally are bounded in time and unmediated by overall evaluative job judgments or elements of the job experience. Behaviors driven by judgment are influenced by overall or particular evaluative judgments, such as job satisfaction or facet satisfaction. The authors reasoned that some relationships reported in the literature may have been the result of affective states influencing both satisfaction and the particular outcome.

Staw and Barsade (1993) have researched the affect processes that may influence performance. Some of these processes suggest conflicting effects of positive and negative affective states. For example, research has indicated that positive affective states facilitate creativity and efficacy judgments, and other research has suggested that negative affective states lead to more thorough exploration of problem solutions and more accurate judgments. The research of Staw and his colleague (1993) demonstrated that PA, rather than NA, facilitates performance. PA facilitates decision quality and interpersonal performance, as well as more general performance indicators. Similar research has shown that a positive mood state generally encourages helping behavior and cooperation and reduces aggression (Isen & Baron, 1991). George (1989) showed that positive, but not negative, moods predicted absenteeism and that positive and negative moods predicted turnover intentions.

Workplace Factors Affecting Workplace Emotion

Workplace factors producing emotions and moods have been grouped in several categories; examples include aversive stimuli, physical settings, and organizational characteristics. The aversive stimuli literature, including stress, is enormous; it includes

role juggling, time pressure, mood spillover, negative job experiences, occupational hassle, and organizational relationships. As noted by Brief and Weiss (2002), the literature on aversive stimuli pertaining to moods and emotions is advancing methodologically. The physical and social environment of work is beginning to gain more perspective and attention, but there is still is a need for a theoretical frame of reference.

There is little known about the relationship between the physical workplace and emotion. Music has been shown to improve the moods of individual workers, and the effect was stronger for simpler jobs (Oldham, Cumming, Mischel, Schmidtke, & Zhou, 1995). The busyness and emotional labor of a workplace environment has an influence on workplace affect. Locke (1996) observed, through a study of a pediatric department, the exchange between the emotions of patients and the emotions expressed by physicians. Locke found that physicians employed comedy in response to negative emotions, presumably to reduce anxiety and fear.

Less rigorous and unscientific practices, such as feng shui, suggest that the furniture orientation, office layout, and other practices can influence the moods and feelings of individuals in the environment. However, qualitative data have supported these beliefs. Research studies have demonstrated the physical cues and symbols in organizations can influence the emotions of participants. For example, Wasserman, Rafaeli, and Kluger (2000) observed that pleasant emotions were related to eclectically designed organizations rather than to single form designed organizations.

In addition to the physical workplace structure, the organizational structure or characteristics, such as work groups and organizational rewards, have the ability to produce emotions in employees. Organizational justice, the perception of fairness in the workplace, is composed of three types of justices—procedural, distributive and interactional. Procedural fairness, the extent to which procedures and processes are perceived to be fair, has the strongest influence. Distributive justice refers to the fairness of the outcomes that are distributed in an organization. Outcomes have been found to influence happiness. Interactional justice refers to the fairness of the treatment of individuals in an organization (Weiss, Suckow, & Cropanzano, 1999). There has been little progress toward understanding the effects of organizational reward outcomes on workers' moods, feelings, and emotions.

The literature discussed above should provide a basic understanding of the production of emotions in the workplace. The literature and research on the production of emotions in the workplace is interesting and varied; however, it has lacked rigorous methodology, theories, and progress. Organizational research concerning the production of moods and emotions has raised many questions, and multiple opportunities exist to advance the current field of research.

Emotion Related to Workplace Injuries

Workplace injuries are not common, especially bus and motorcoach accidents (NHTSA, 2009); however, when injuries occur they can be costly and catastrophic. The medical, legal, and social implications of workplace injuries have been the subject of considerable research, but the psychological consequences of workplace injuries have

been given much less consideration. Occupational injuries have been attributed to two causes— the characteristics of the work environment and work practices and the characteristics of the individuals (Iverson & Erwin, 1997). Evidence has shown that individuals high in PA report higher self-efficacy, a greater propensity to actively control their environment, and greater decision-making skills than individuals high in NA (Judge & Locke, 1993). Iverson and Erwin (1997) conducted a study with a sample of blue-collar workers that examined the effects of PA and NA on injuries, controlling for the effects of work life and personal factors. Consistent with their hypotheses, PA was negatively related to employee injury and NA was positively related to workplace injury. In addition, supervisory and coworker support was associated with decreased injury. The results support that PA and NA differentially predict the incidence of workplace injury, and the effects are independent of work life and personal factors, such as supervisory and coworker support.

Emotional Distress

Severe symptoms of emotional distress can occur after work related injuries, and evidence suggests that workplace injuries may result in the development of post-traumatic symptoms (Grunert et al., 1992). These resulting symptoms have been described as a dysfunctional stress response, sometimes meeting the diagnostic criteria for post-traumatic stress disorder and acute stress disorder (Asmundson, Norton, Allerdings, Norton, & Larson, 1998). The Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2000) defines posttraumatic stress disorder (PTSD) as an anxiety disorder precipitated by a traumatic event and characterized by symptoms of reexperiencing the trauma, avoidance and numbing, and hyperarousal.

According to Asmundson and his colleagues (1998), the emotional response of fear and other emotions, such as sadness and anger, are specifically related to post-traumatic symptoms and other forms of psychopathology such as grief and depression. Mild problems with physical, social, and affective functioning are common complaints of victims of workplace accidents.

Novara and colleagues (2009) conducted a study aimed at investigating emotional distress symptoms in individuals who experienced workplace accidents. They employed a multimodal assessment, including subjective and psychophysiological indexes of affective responding. Specifically, several psychopathological domains (related to NA), namely anxiety, depression, anger, irritability, and post-traumatic symptoms, were assessed by means of self-report measures. Novara and colleagues hypothesized that individuals who exhibited poorer psychological adjustment would experience more work accidents than healthy individuals as indicated by higher scores in questionnaires assessing anxiety, depression, and general psychopathology.

When compared with the control group, the injured workers did not significantly differ with regard to the severity of symptoms of anxiety, depression or hostility; however, the injured workers scored significantly higher than the controls in the avoidance and re-experiencing scales of the PTSD symptom scale. The findings indicate that although workers who have sustained accidental injuries do not show evidence of a general and significant impairment in their emotional adjustment, they still experience post-traumatic symptoms following the accident. These results support previous indications of the potential development of long-lasting psychological maladjustment as a consequence of work injuries. Novara and colleagues' findings suggest that a greater

severity of post-traumatic symptoms following workplace accidents is accompanied by a higher rate of general psychopathology and emotional distress (2009).

In a cohort study conducted by Franche and colleagues (2009), workers who filed a lost time compensation claim for a work-related injury were interviewed one month and six months post injury. The findings suggested that high levels of depressive symptoms were prevalent in workers with work-related injuries, particularly in the weeks immediately following injury, and in workers with return to work problems. Further, workers who initially expressed high levels of depressive symptoms were equally likely to experience persistence or resolution of symptoms within six months of the injury. For those whose symptoms persisted over six months, underdiagnosis and undertreatment were an important problem. In the short term, a significant percentage of those developing PTSD may not return to work despite traditional treatment interventions (MacDonald, Colotla, Flamer, & Karlinsky, 2003).

Epidemiological research has suggested that PTSD may be more prevalent among women than among men (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Foa and Tolin (2002) conducted a meta-analysis of sex specific PTSD studies. The results indicated that female participants were more likely than male participants to meet diagnostic criteria for PTSD, regardless of the type of study, population, type of assessment, or other methodological variables. This is consistent with epidemiological research showing a higher prevalence of fear and anxiety disorders among females (Foa & Tolin). There is a greater prevalence of motor vehicle accident related PTSD among female participants, however this does not appear to be attributable to severity of injury,

as male participants reported greater severity of physical injury in a large sample of motor vehicle accident survivors (Ehlers, Mayou, & Bryant, 1998).

The results of these studies make a case for directing attention to the mental health of injured workers. Injured workers with problematic return-to-work trajectories appear to be a group particularly vulnerable to depressive symptoms. After a workplace injury, workers face multiple losses, such as loss of income, functional ability, health, and quality of life. For some injured workers, depressive symptoms seem to be an expected initial reaction to injury as it would be to other traumatic life events. For others, symptoms are persistent and associated with significant impairment.

Understanding what distinguishes an expected reaction to a workplace injury from a problematic reaction is still needed. While early treatment may not be appropriate for transient depressive symptoms, physician awareness of persistence in symptoms will help to identify workers who may benefit from further assessment and specialty mental health intervention (Franche et al., 2009). Future research should investigate treatment, workplace-based factors, psychological factors, and social factors facilitating resolution of depressive symptoms**.** Individuals can face difficulties when returning to work. Organizations need to provide social and organizational programs to ease the demanding transition. Injuries can be reduced through an organization's safety practices, the removal of job hazards, through high job involvement, social support, and PA (Judge & Locke, 1993).

Emotion Related to Workplace Trauma

Trauma, the experience of being psychologically overwhelmed, can render a person helpless. At that moment, they are incapable of coping either intellectually or emotionally. Research has shown that trauma leaves a person changed psychologically and physiologically. Thinking patterns, emotional responses, and biochemistry are altered by trauma, which can result in depression, anxiety, difficulty responding to new situations, rigid thinking, defensiveness, paranoia, aggressiveness, over-reactivity to mild stress, and increased health problems (Van der Kolk, 1994).

Trauma can result from a single event or a series of less dramatic stressors which, through their cumulative effect, create debilitating psychological and physical changes. Cumulative trauma is created by the combined effects of workplace stressors (Van der Kolk, 1994). Although not as severe as a major traumatic episode in the workplace, these factors wear away a worker's sense of security, value and well-being.

Train drivers and subway train drivers have been examined for post-traumatic symptoms because of the high prevalence of on-the-track accidents. A study addressing the acute and long-term psychological reactions of 101 train drivers to on-the-track accidents found that stress and PTSD symptoms were frequently reported after accidents (Malt et al., 1993). It was found that the train drivers reported moderate-to-high intrusive distress and symptoms of acute physiological arousal, whereas avoidance symptoms were found to be the least prevalent. Subsequent examination of the drivers at one month and one year indicated that there was a significant decrease in PTSD symptoms over time, with few reporting long-term psychological distress (Malt et al., 1993).

Firefighters are at risk for PTSD due to their exposure to work related trauma. The study conducted by Corneil, Beaton, Murphy, Johnson, and Pike (1999) compared work-related trauma exposures and the post-traumatic stress in firefighters. The firefighters reported a large number of post-traumatic stress symptoms, and the self-reported PTSD prevalence rates did not differ significantly; however, analysis of departmental records for respondents' previous year on duty revealed significant differences in both frequencies and categories of traumatic incident exposure.

Research has shown that workers who report symptoms consistent with PTSD after trauma have significantly poorer work potential than those without PTSD symptoms (Matthews, Harris, & Cumming, 2009). The return-to-work rate of individuals sustaining major trauma in one study was slightly over half (Holtslag, Post, van der Werken, & Lindeman, 2007); typically return to work rates range from 50-90% one to two years after the traumatic event (MacKenzie, 1987). According to Holtstag and colleagues (2007), univariate analysis showed that determinants of post-injury work status were age, comorbidity, trauma severity score, activities of daily life and cognitive complaints.

Coping with Traumatic Life Events

A study conducted by Hofmann, Heering, Sawyer, and Asnaani (2009) showed that participants who recalled a stressful life event and used reappraisal and acceptance strategies had lower levels of anxiety than did participants who used suppression strategies. However, the reappraisal strategy was more effective for moderating subjective feelings of anxiety than attempts to suppress or accept the emotional experience. The results support research that found the suppression of emotions can lead

to an increase in maladaptive emotions and reappraisal is an effective method to reduce subjective and physiological arousal (Campbell-Sills, Barlow, Brown, & Hofmann, 1997). The results indicate that acceptance and reappraisal strategies were effective for regulating physiological arousal.

Wolgast, Lundh, and Viborg (2009) found, compared to the control condition who were not instructed to use any emotion regulation strategies, both reappraisal and acceptance led to significant reductions of subjective distress and physiological reactions associated with aversive emotions and behavioral avoidance. Rood and colleagues (2012) compared the effects of experimentally induced rumination, acceptance, distancing, and positive reappraisal on negative and positive affect states. The results showed that the use of positive reappraisal in response to thinking about a stressful experience significantly increased PA and decreased NA compared to rumination, acceptance, and distancing. Subsequently, the results suggested that PA increased and NA decreased most when participants thought about what they learned from a stressful experience, and, in turn, how they benefited from the event. These findings are consistent with earlier studies that demonstrated a positive relationship between positive reappraisal and well-being (Helgeson, Reyonlds, & Tomich, 2006). The results of the study suggest that positive reappraisal influences NA and PA.

Moore, Bombardier, Brown, and Patterson (1994) found that problem-focused coping was more highly correlated with positive adjustment than emotion-focused coping. In a study of individuals with diabetes, (Tuncay, Musabak, Gok, & Kutlu, 2008) found that Acceptance, Positive Reframing, Instrumental Support, Emotional Support, self-distraction, and venting were the most frequently used coping strategies. The coping

strategy Self-Blame was significantly correlated with the problem-focused and emotion-focused coping strategies. Research has shown that emotion-oriented coping strategies may be less adaptive than problem-oriented strategies (Karlsen & Bru, 2002). However, the impact of these coping strategies depends on the specific constraints of the stressful situation. Hanson, Buckelew, Hewett, and O'Neal (1993) conducted a longitudinal study and found a positive relationship between the use of Positive Reappraisal as a coping strategy and acceptance of disability. In addition, a negative relationship existed between the levels of acceptance of disability and the use of wishful fantasy. Kennedy, Marsh, Lowe, Grey, Short, and Rogers (2000) also used a longitudinal design to assess participants from initial post injury to 2 years post-discharge from rehabilitation. The results showed a high level of stability over time both in the levels of psychological adjustment and the type of coping strategies used. Two of the most frequently used coping strategies were Acceptance and Positive Reappraisal. Other frequently used coping strategies were Active Coping, Planning and both Emotional and Instrumental Support. The least frequently employed strategies were Behavioral Disengagement, Denial and Substance Use (Kennedy et al., 2000).

Stability in the use of coping strategies over time also was found by Craig, Hancock, and Dickinson (1994). Kennedy et al. (2000) suggested that the consistency of coping strategies was indicative of dispositional aspects of the coping measure used. Nevertheless, they also found that the levels of anxiety and depression were highly correlated with the use of maladaptive coping strategies of Behavioral Disengagement, Substance Use, and Denial; this pattern was similar across all time points. A longitudinal study conducted by Pollard and Kennedy (2007) found that Acceptance was the most

commonly used coping strategy. Active Coping and Positive Reframing were the other most commonly used coping strategies. The least used coping strategies were Behavioral Disengagement, Denial, and Substance Use. When illnesses are not controllable, the use of more emotion-focused strategies may emerge. In uncontrollable situations Coping theory and research has indicated the benefits of problem focused coping, such as Acceptance and Positive reframing (Carver 1997; Coyne, Aldwin, and Lazarus, 1981). In addition, a study consisting of a sample of the spouses of individuals experiencing a terminal disease found the Acceptance was one of the most frequently used COPE subscale. Active Coping, Planning, Denial, and Mental Disengagement were the other frequently used coping strategies (Helder, Kaptein, Van Kempen, Weinman, Van Houwelingen, & Roos, 2002).

Conclusion

Work is a defining feature of human beings; injuries and trauma can severely damage work ability. In the wake of negative life events, restructuring of life goals and commitments, new activity interests, and greater attention to the present have been observed (Tedeschi, Park, & Calhoun, 1998). Specific differences exist between personal, health care professionals, and organizational perceptions of what psychosocial variables are most important for recovery from work related injury and trauma. During recovery, health care professionals endorsed different variables and goals than patients. These differing attitudes can foster divergent goals and expectations, leading to inappropriate treatment and non-compliance. Awareness of the possible separation between these perceptions may improve communication, leading to clear and shared rehabilitation goals and better outcomes (Antoniazzi, Celinski & Alcock, 2002).

There is a lack of research in many areas on the effects of emotion in the workplace, especially concerning injuries and trauma. The lack of research in these areas should not detract from the existing significant body of related research. It should be considered an opportunity to research unexplored areas and develop new methodologies.

The Current Study

This study is a longitudinal follow-up assessing the emotional reactions and the reaction trajectories of the coaching staff and players to a near fatal bus incident across a twelve-month time frame. The accident occurred in the fall of 2010; reactions were measured at 2 weeks, 1, 4, 10 and 12 months following the incident. Specifically, the PANAS-X (Positive and Negative Affect Schedule, Expanded; Watson & Clark, 1994) and the Brief COPE (Carver, 1997) were used to measure the emotion and coping strategies of the coaching staff and players.

Hypotheses

There are three specific hypotheses investigated in this study:

H_1: The Positive Affect of the participants will increase overtime.

H_2: The Negative Affect of the participants will decrease overtime.

H_3: The coping strategies used by the participants will decrease overtime.

Method

Participants

Participants were members of an intercollegiate sports team, including both the athletes and coaching staff; 15 women and 1 man participated in the study. The participants consisted of 14 players, 2 coaches, and 1 graduate assistant. Ages of the players ranged from 18-23 years. The sample was 93.75% Caucasian (*N*=15) and 6.25% (*N*=1) African American. The education level of athlete participants at the time of the incident included 5 freshman, 4 sophomore, 3 junior, and 2 senior undergraduate students.

Materials

A paper and pencil instrument was used to assess the participants' reactions to the bus accident. The instrument consisted of validated and reliable measures of emotion and coping strategies. The PANAS-X (Watson & Clark, 1994) and the Brief COPE (Carver, 1997) were used to assess the participants' emotion and coping strategies, respectively. In addition, participants completed two scales developed to measure behavior and attitudes, wrote a narrative of the incident, and, in the final instrument section, listed any positive or negative outcomes that resulted from the incident.

Positive Affect and Negative Affect Schedule- Extended. Emotions are frequently assessed using the PANAS (Positive Affect and Negative Affect Schedule; Watson, Clark, & Tellegen, 1988). The PANAS-X was developed by Watson and Clark (1994) from the PANAS. The PANAS measures two factors, Positive Affect (PA) and Negative Affect (NA), the two dominant dimensions of emotional experience (Watson & Clark,

1994). PA is characterized by optimism, self-efficacy, and likability; NA is characterized by depression, anxiety, and low decision making skills (George, 1989; Heinisch & Jex, 1997; Judge & Locke, 1993). Although these two dimensions, PA and NA, account for roughly half of the variance in mood items (Watson, 1988), specific emotional states can also be identified. Watson and Clark expanded the PANAS to 60 items to assess specific emotional states. In addition to the higher order scales, the PANAS-X measures 11 specific affects. The PANAS-X is favored because of the scales simplicity and ease of administration.

Normative data suggest that data collected from college student samples can be generalized with confidence. The general and specific affect scales demonstrate convergent (self- and peer-ratings) and discriminate validity (Watson & Clark, 1994). The two dominant dimensions, NA and PA, have been found reliable (α_{NA} = .64-.96; α_{PA} = .80-.93). In addition, evidence suggests that PANAS-X can be used to measure state and trait affect. Trait scores on the PANAS-X are stable over time and show significant convergent and discriminant validity when correlated with peer-judgments. In addition, trait scores are highly correlated with corresponding measures of aggregated state affect and are strongly and systematically related to measures of personality and emotionality (Watson & Clark, 1994). The data suggest that the PANAS-X can be used to assess long-term individual differences in affect.

The PANAS-X consists of 60 items that are words and phrases that describe different feelings and emotions. In addition to PA and NA, the PANAS-X measures eleven specific affects: Fear, Sadness, Guilt, Hostility, Shyness, Fatigue, Surprise, Joviality, Self-Assurance, Attentiveness, and Serenity. Our participants rated the extent to

which they had been experiencing a number of emotions when they thought about the bus incident over the course of the two weeks immediately preceding each wave of data collection. The PANAS-X uses a 5-point graphic rating scale, ranging from "very slightly or not at all" to "extremely." Higher scores indicate a greater presence of the specific emotion.

Brief COPE Inventory. Coping strategies are often used after accidents to reduce trauma. It is possible to measure coping strategies through the use of the well-developed Brief COPE (Carver, 1997). The Brief COPE was developed from a previously published measure, the COPE (Carver, Scheier, & Weintraub, 1989), a proven measure of coping that assesses relevant effective and ineffective coping responses. In past work, the Brief COPE has shown more than adequate reliability (α = .57-.90). The Brief COPE was developed to minimize the effort and time needed from participants. In the Brief COPE, two scales from the full COPE were omitted, other scales were reduced to two items, and an additional scale was added. Scales were omitted because they added no value to or were redundant, were modified because they were problematic, or were lengthened due to evidence of their importance (Carver, 1997). Data from hurricane survivors indicated internal reliability, and a factor analysis resulted in a structure that was generally consistent with the full COPE (Carver, 1997).

The Brief COPE Inventory was given to our participants to identify the coping strategies used and the frequency with which they used each coping strategy. The full COPE Inventory has 60 items compromising 15 scales; the Brief COPE consists of 28 items, which measure 14 generally adaptive or problematic coping strategies. The Brief COPE was used because of its simplicity and the reduced time required to administer the

scale. Participants endorsed how regularly they engaged in coping behaviors from fourteen possible categories (i.e., Denial, Religion, Venting, Self-Blame, Humor, Distraction, Acceptance, Reframing, Emotional Support, Instrumental Support, Planning, Substance Use, Behavior Disengagement, and Active Coping). The Brief COPE scale response options are on a five-point scale that ranges from "I haven't been doing this at all" to "I have been doing this a lot."

Self-Developed Scale 1. Scale 1 was developed to measure the extent to which participants thought about the bus incident, felt a need to discuss the bus incident, and actually discussed the incident with teammates, friends, coach, and family. The scale consists of 11 items with five response options "Never," "Seldom," "Sometimes," "Often," and "All of the time."

Self-Developed Scale 2. Scale 2 was developed to measure the ease with which the participants could discuss the incident with teammates, friends, coach, and family. In addition, the scale measured the effect the incident had on the closeness of the relationship of the participants with teammates, friends, coach, and family. The scale consists of 18 items with four response options that range from "Strongly Disagree" to "Strongly Agree."

Procedure

The study was conducted over a twelve-month period; within this time period, there were 5 waves of measurement of the participants' reactions. The first wave was administered 1 month after the incident, and participants were asked to respond retrospectively how they felt immediately following the incident. The second wave of

data was collected at the same meeting. Following this first wave, reactions were measured at 4, 10, and 12 months.

Participants voluntarily participated in the study. Participants read an informed consent form, and continued participation in the study implied continued consent. The survey was administered by the researchers in a group setting. In later administrations, graduated seniors completed the study via e-mail. Participants received written instructions that were read aloud at each administration of the study. Participants were instructed not to proceed to the next section until all participants had finished. The completion time for the questionnaire was approximately 20 minutes. Participants completed the PANAS-X, wrote a brief narrative of the incident, completed the Brief COPE, completed the two self-developed measures, and, finally, listed the positive or negative effects of the incident.

Results

In order to address the first two hypotheses, that is, participant PA will increase overtime and participant NA will decrease overtime, PA and NA composites were computed as described by Watson and Clark in the PANAS-X manual (1994). The NA composite consists of ten PANAS-X items (afraid, scared, nervous, jittery, irritable, hostile, guilty, ashamed, upset, and distressed). Similarly, the PA composite consists of ten PANAS-X items (active, alert, attentive, determined, enthusiastic, excited, inspired, interested, proud, and strong).

In the present study, PA and NA were measured at five time periods for a single group of participants. We were interested in the changes in PA and NA across the waves of the current study. The non-experimental, longitudinal time series design of the study suggested specific analysis techniques. The first and second hypotheses were tested by repeated measures analysis of variance (ANOVA) using data from the five administrations of the questionnaire.

PA demonstrated a significant nonlinear pattern, with nonsignificant increases in the second and third wave and nonsignificant decreases in the fourth and fifth waves, $F(4, 56)= 2.61$ ($p < .05$, $\eta_p^2 = .16$). Pairwise comparison post hoc tests, with the Bonferonni correction ($\alpha = .0025$), were computed for PA. When compared to the initial administration ($M = 1.87$, $SD = .59$), the increase in PA in the second wave ($M = 2.37$, $SD = .48$) and third ($M = 2.51$, $SD = .53$) were not significant ($p = .141$ and $p = 1.00$, respectively). The slight decrease in PA at the one year anniversary of the incident was not significantly different from any of the four waves ($M = 2.51$, $SD = .59$; $p = 1.00$). On

the other hand, NA significantly declined over time, with a larger drop in waves more proximal to the incident, $F(4, 56)= 59.98$ ($p < .001$, $\eta_p^2 = .81$). From the initial wave ($M = 3.26$, $SD = .52$), the decreases in the second ($M = 2.15$, $SD = .66$; $p < .001$) and third wave ($M = 1.60$, $SD = .97$; $p < .006$) were significant; however, the decreases seen in the fourth ($M = 1.45$, $SD = .93$) and fifth wave ($M = 1.34$, $SD = .94$) were not significantly different ($p = 1.00$) when compared to each other. The first two hypotheses were supported by the results of the study (See Figure 1 and Table 1).

Figure 1: PA and NA Ratings Across Time

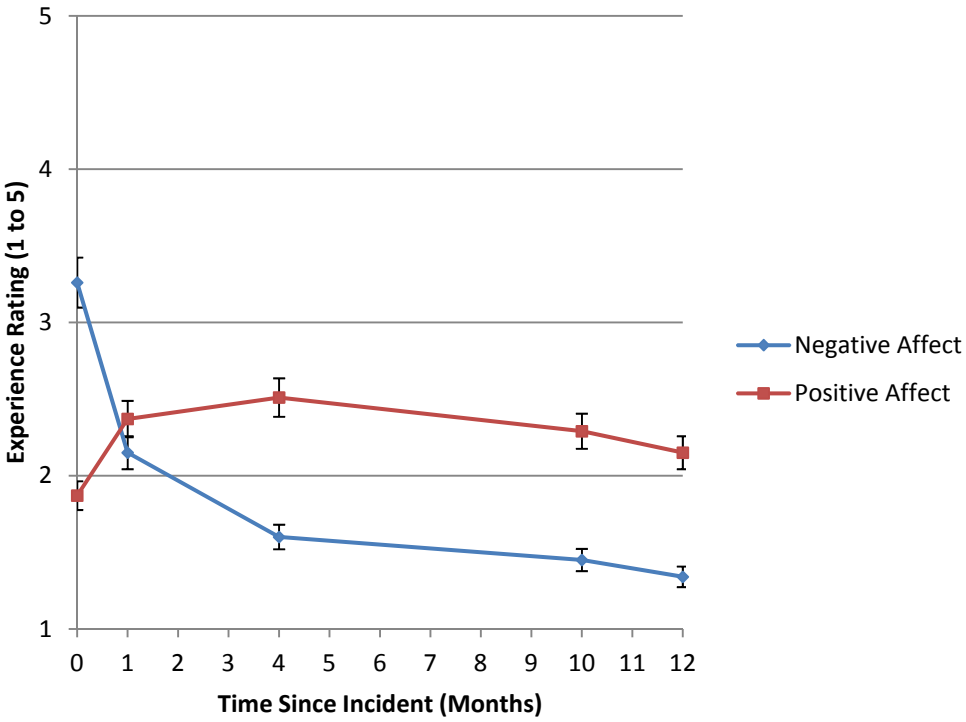


Table 1: Panas-X and Brief COPE Means and Standard Deviations

Group (N = 15)	Mean (SD) Time 1 (Retrospect)	Time 2 (1 Mo.)	Time 3 (4 Mo.)	Time 4 (10 Mo.)	Time 5 (12 Mo.)	*P*
Positive Affect	1.87[0] (.59)	2.37[0] (.48)	2.51[0] (.53)	2.29[0] (.56)	2.15[0] (.59)	< .05*
Negative Affect	3.26[2345] (.52)	2.15[1345] (.66)	1.60[12] (.97)	1.45[12] (.93)	1.34[12] (.94)	< .001*
Self-Distraction	4.47[2345] (.74)	3.00[1345] (.85)	1.73[12] (.88)	1.30[12] (.65)	1.47[12] (.93)	< .001*
Active Coping	2.73[45] (1.22)	2.60[4] (1.06)	2.17[0] (1.08)	1.50[12] (.71)	1.73[1] (.88)	< .001*
Denial	3.33[2345] (1.05)	2.10[14] (1.15)	1.33[1] (.62)	1.13[12] (.35)	1.27[1] (.65)	< .001*
Substance Use	2.63[345] (.55)	2.13[45] (.66)	1.77[14] (.37)	1.40[123] (.39)	1.57[12] (.56)	< .001*
Emotional Support	3.80[2345] (1.21)	2.53[1345] (.97)	1.83[124] (.77)	1.23[123] (.53)	1.37[12] (.61)	< .001*
Instrumental Support	3.50[2345] (1.30)	2.33[145] (1.03)	1.57[1] (.65)	1.23[12] (.65)	1.27[12] (.50)	< .001*
Behavioral Disengagement	2.23[5] (1.20)	2.03[5] (1.04)	1.20[0] (.53)	1.47[0] (1.29)	1.10[12] (.28)	< .05*
Venting	2.43[45] (1.07)	1.93[4] (.73)	1.57[0] (.68)	1.23[12] (.53)	1.30[1] (.56)	< .001*
Positive Reframing	3.20[0] (1.26)	3.33[4] (1.10)	3.03[4] (1.13)	2.13[23] (.99)	2.47[0] (.93)	< .05*
Planning	2.20[5] (1.22)	1.83[0] (.99)	1.67[0] (.79)	1.47[0] (1.36)	1.30[1] (.56)	= .06
Humor	1.07[0] (.26)	1.33[0] (.62)	1.20[0] (.53)	1.23[0] (.46)	1.27[0] (.46)	= .56
Acceptance	3.60[0] (1.00)	4.00[0] (.89)	4.03[0] (.81)	3.47[0] (1.17)	3.90[0] (.81)	= .29
Religion	2.60[345] (.57)	2.37[45] (.67)	2.00[1] (.63)	1.63[12] (.58)	1.47[12] (.55)	< .001*
Self-blame	1.87[0] (1.41)	1.47[0] (.74)	1.37[0] (.61)	1.23[0] (.53)	1.33[0] (.75)	= .053

*$p < .05$, for repeated measure ANOVA.
Superscript numbers denote means that are significantly different.
Time denotes the wave of data collection and the time interval since the incident.

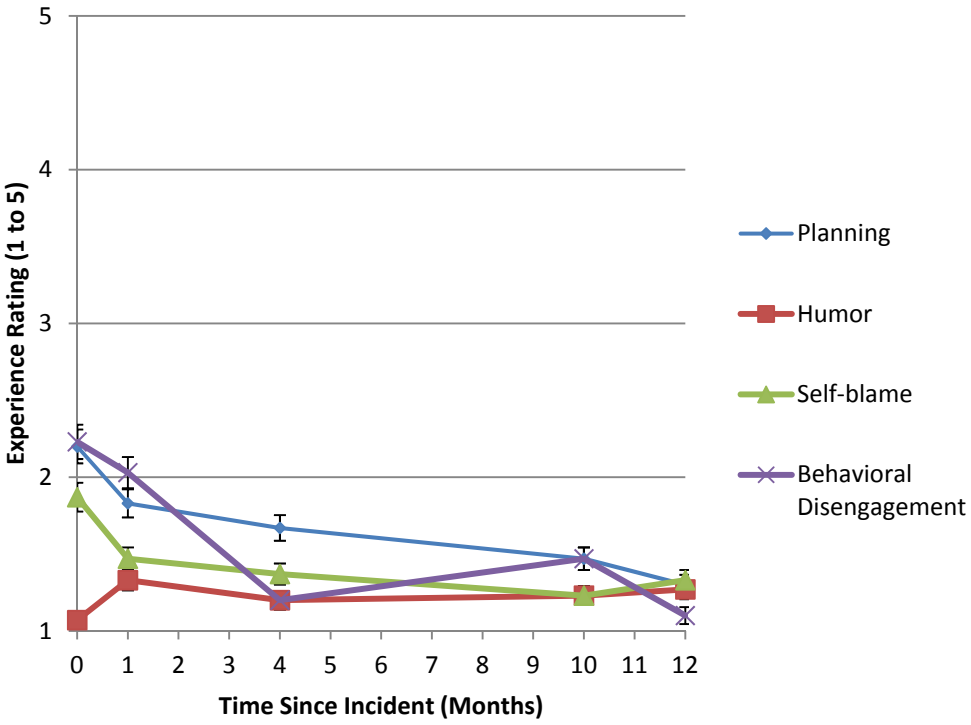
In order to test the third hypothesis, that is, coping strategies used by the participants will decrease over time, Brief COPE scale scores were computed using the method outlined by Carver (1997). Unlike the PA and NA composites, Carver does not provide instructions or recommend the formation of an overall score on the Brief COPE.

As with the first two hypotheses, repeated measure ANOVAs were used to analyze the 14 Brief COPE scale responses (i.e., Self-distraction, Active Coping, Denial, Substance Use, Use of Emotional Support, Use of Instrumental Support, Behavioral Disengagement, Venting, Positive Reframing, Planning, Humor, Acceptance, Religion, and Self-blame) across time.

There were significant changes in the coping trajectories for 10 of the 14 coping strategies from the Brief COPE (See Table 1). The coping strategies that did not significantly change in trajectory over the administrations were Planning, $F(4, 56)= 2.36$ ($p = .064$, $\eta_p^2 = .14$), Humor, $F(4, 56)= .76$ ($p = .556$, $\eta_p^2 = .05$), Acceptance, $F(4, 56)= 1.28$ ($p = .289$, $\eta_p^2 = .08$), and Self-Blame, $F(4, 56)= 2.50$ ($p = .053$, $\eta_p^2 = .15$).

Although Behavior Disengagement, $F(4, 56)= 4.89$ ($p < .05$, $\eta_p^2 = .26$), showed a significant decrease across administrations, it was endorsed at a very low level as a response to the incident. In addition, Humor, Planning, and Self-blame were not typically used as coping strategies by the participants (See Table 1 and Figure 2).

Figure 2: Brief COPE Ratings Across Time for Planning, Humor, Self-Blame, and Behavioral Disengagement

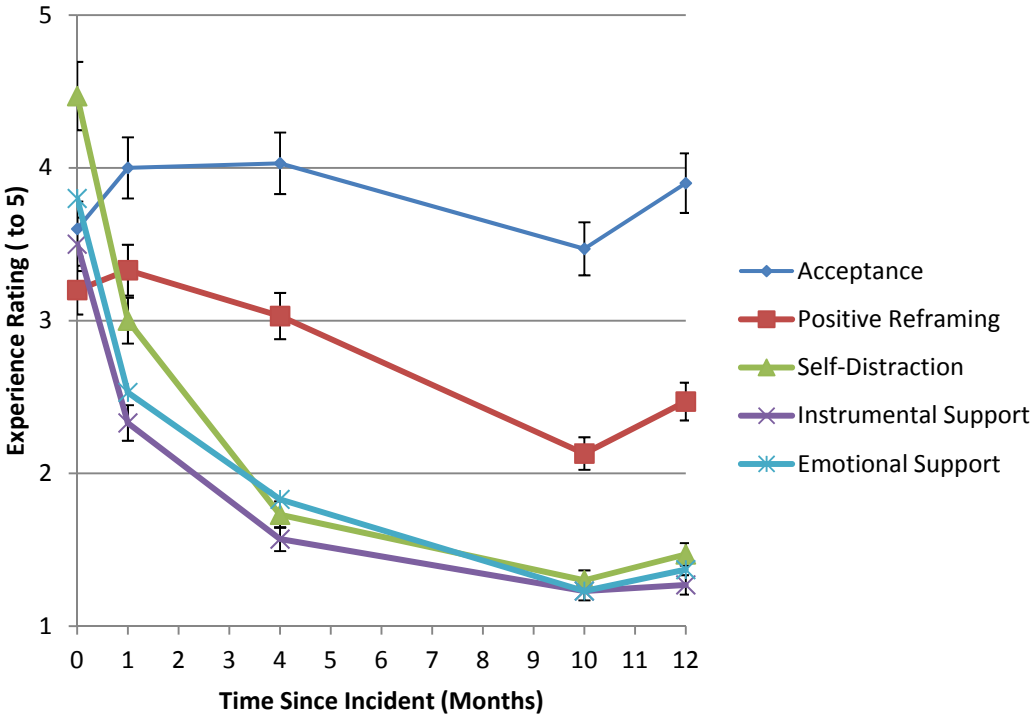


Interestingly, the change in the trajectory of Acceptance was not significant; however, Acceptance was the most frequently used coping strategy and was high across all waves. Like Acceptance, Positive Reframing, $F(4, 56)= 4.31$ ($p < .05$, $\eta_p^2 = .24$), was consistently used across all waves (See Figure 3). Acceptance and Positive Reframing were the only coping strategies that showed this trend.

In contrast to Acceptance and Positive Reframing, Self-distraction, $F(4, 56)= 75.32$ ($p < .001$, $\eta_p^2 = .84$), Emotional Support, $F(4, 56)= 32.66$ ($p < .001$, $\eta_p^2 = .70$), and Instrumental Support, $F(4, 56)= 23.36$ ($p < .001$, $\eta_p^2 = .63$), had a high rate of use immediately after the incident but then dropped off significantly thereafter. These coping

strategies showed a nonsignificant peak at the one year anniversary of the incident (See Table 1 and Figure 3).

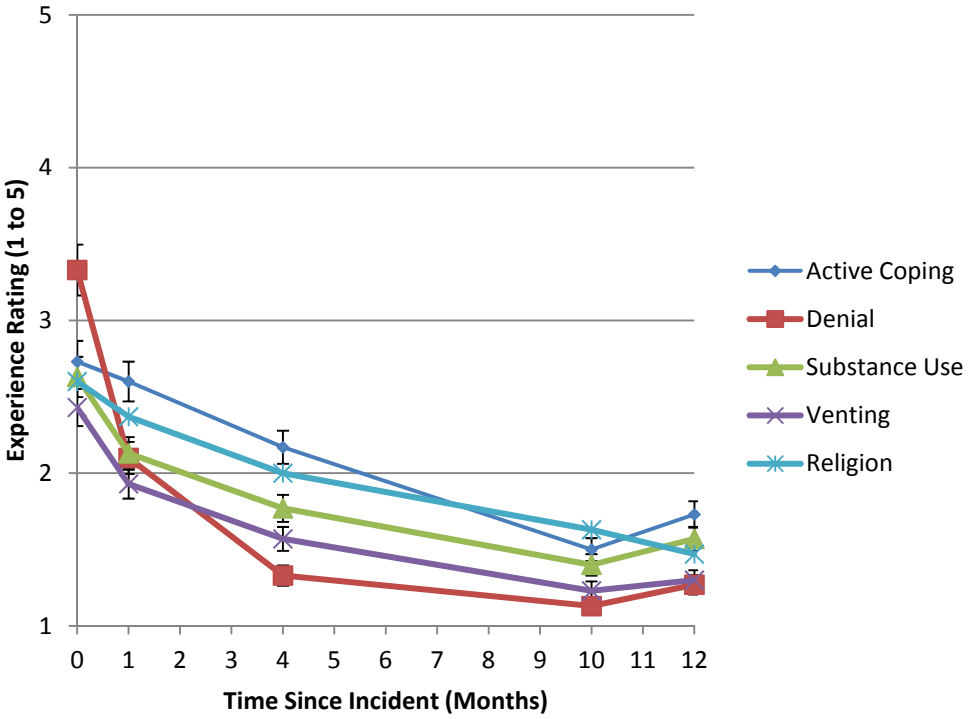
Figure 3: Brief COPE Ratings Across Time for Acceptance, Positive Reframing, Self-Distraction, Instrumental Support, and Emotional Support



Active Coping, $F(4, 56)= 8.39$ ($p < .001$, $\eta_p^2 = .38$), Denial, $F(4, 56)= 30.01$ ($p < .001$, $\eta_p^2 = .68$), Substance Use, $F(4, 56)= 19.93$ ($p < .001$, $\eta_p^2 = .59$), Venting, $F(4, 56)= 8.76$ ($p < .001$, $\eta_p^2 = .39$), and Religion, $F(4, 56)= 16.22$ ($p < .001$, $\eta_p^2 = .54$), resulted in significant patterns similar to Self-distraction, Emotional Support, and Instrumental Support. These coping strategies were used at a high rate soon after the incident but dropped significantly over time. Additionally, these strategies showed a slight increase after the fourth wave at the one year anniversary of the incident. In general, a majority of the coping strategies declined over the waves; however, the third hypothesis was not fully supported (See Figure 4).

Pairwise comparison post hoc tests, with the Bonferonni correction ($\alpha = .0025$), were computed for the 14 Brief COPE Scales. Although all coping strategies declined after the first administration, excluding Acceptance and Positive Reframing, only Self-Distraction ($p < .001$), Denial ($p < .001$), Emotional Support ($p = .002$), and Instrumental Support ($p = .041$) were endorsed at significantly different rates across time. A majority of the coping strategies (Humor, Self-Blame, Acceptance, Positive Reframing, Self-Distraction, Instrumental Support, Emotional Support, Active Coping, Denial, Substance Use, and Venting) showed a slight non-significant increase at the one year anniversary of the incident ($p = 1.00$; See Table 1 and Figures 2 - 4).

Figure 4: Brief COPE Ratings Across Time for Active Coping, Denial, Substance Use, Venting, and Religion



For both Scale 1 and Scale 2, composite scores were created by combing the items that measured each of the five constructs, that is, thinking about the incident (Thinking), discussing the incident (Discussion), ease of discussing the incident (Discussion Ease), effect on the incident on closeness to others (Closeness), and positive and negative outcomes from the incident (Impact).

Cronbach's alpha was calculated to assess the internal consistency reliability of the five subscales of Scale 1 and Scale 2 across the five waves of the current study. The Thinking subscale consisted of 3 items (mean $\alpha = .56$), the Discussion subscale consisted of 8 items (mean $\alpha = .90$), the Discussion Ease subscale consisted of 7 items (mean $\alpha = .86$), Closeness subscale consisted of 8 items (mean $\alpha = .84$), and the Impact subscale consisted of 2 items (mean $\alpha = .51$; See Table 2). The Discussion, Discussion Ease, and Closeness subscales were found to be highly reliable. The Thinking and Impact subscales were not found to be highly reliable, likely due to the small number of items in subscales.

The results for two of the self-developed measures showed patterns similar to the PANAS-X and the Brief COPE results. The scale composites Discussion Ease, $F(4, 56)= 1.70$ ($p = .162$, $\eta_p^2 = .11$) and Closeness, $F(4, 56)= 1.55$ ($p = .201$, $\eta_p^2 = .10$), did not significantly differ across waves but were high across all five administrations. Similarly, Impact remained relatively stable and high across all waves; however, unlike Discussion Ease and Closeness, changes in Impact were significant across time, $F(4, 56)= 4.20$ ($p < .05$, $\eta_p^2 = .23$; See Table 3 and Figure 5).

Thinking $F(4, 56)= 131.27$ ($p < .001$, $\eta_p^2 = .90$) and Discussion $F(4, 56)= 53.60$ ($p < .001$, $\eta_p^2 = .79$) showed patterns similar to the Brief COPE coping strategies Self-distraction, Emotional Support, and Instrumental Support. That is, Thinking ($M = 4.71$, $SD = .47$) and Discussion ($M = 3.51$, $SD = .85$) were highest immediately after the incident. Following a sharp decline after the first two administrations, Thinking and Discussion remained stable over the final three waves. Pairwise comparison post hoc tests, with the Bonferonni correction ($\alpha = .002$), were computed for the 5 scales. The first two waves of Thinking ($M = 4.71$, $SD = .47$) and Discussion ($M = 3.51$, $SD = .85$) were significantly different from the means of all other waves. There were no significant differences between the means of Discussion Ease, Closeness, and Impact across time.

Table 2: Cronbach's Alpha of Scale 1 and Scale 2

	Coefficient Alpha					
Group (N = 15)	Time 1 (Retrospect)	Time 2 (1 Mo.)	Time 3 (4 Mo.)	Time 4 (10 Mo.)	Time 5 (12 Mo.)	Mean (SD)
Thinking	.38	.58	.73	.27	.86	.56 (.24)
Discussion	.88	.84	.92	.88	.96	.90 (.05)
Discussion Ease	.86	.89	.59	1.00	.98	.86 (.16)
Closeness	.76	.84	.80	.82	.82	.84 (.03)
Impact	.97	.69	.62	.13	.13	.51 (.37)

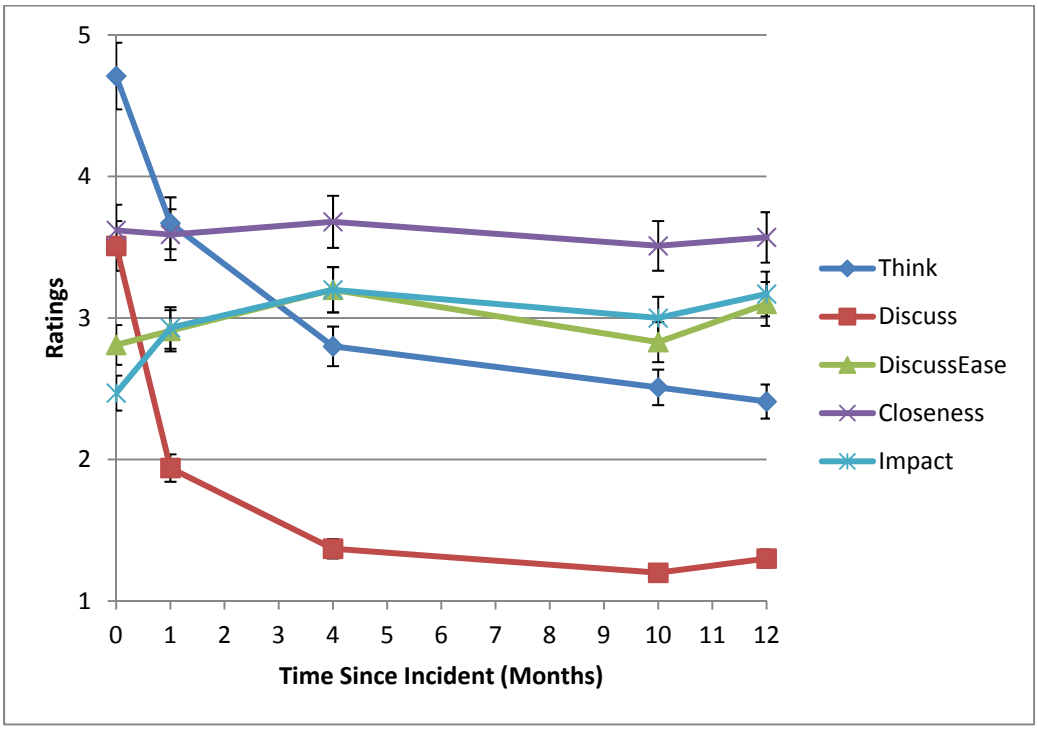
Time denotes the wave of data collection and the time interval since the incident.
Thinking and Discussion ratings were made on a 5-point scale; Discussion Ease, Closeness, and Impact ratings were made on a 4-point scale.

Table 3: Self-Developed Scale 1 and Scale 2 Means and Standard Deviations

	Mean (SD)					
Group (N = 15)	Time 1 (Retrospect)	Time 2 (1 Mo.)	Time 3 (4 Mo.)	Time 4 (10 Mo.)	Time 5 (12 Mo.)	*P*
Thinking	4.71^{2345} (.47)	3.67^{1345} (.72)	2.80^{12} (.91)	2.51^{12} (.67)	2.41^{12} (.98)	< .001*
Discussion	3.51^{2345} (.85)	1.94^{1345} (.76)	1.37^{12} (.46)	1.20^{12} (.36)	1.30^{12} (.53)	< .001*
Discussion Ease	2.81^{0} (.67)	2.91^{0} (.53)	3.20^{0} (.53)	2.83^{0} (.89)	3.10^{0} (.67)	= .162
Closeness	3.62^{0} (.36)	3.59^{0} (.41)	3.68^{0} (.30)	3.51^{0} (.37)	3.57^{0} (.42)	= .201
Impact	2.47^{0} (1.03)	2.93^{0} (.46)	3.20^{0} (.70)	3.00^{0} (.65)	3.17^{0} (.62)	< .05*

*$p < .05$, for repeated measure ANOVA.
Superscript numbers denote means that are significantly different.
Time denotes the wave of data collection and the time interval since the incident.

Figure 5: Self-Developed Scale 1 and 2 Ratings Across Time for Thinking, Discussion, Discussion Ease, Closeness, and Impact



The first wave was administered 4 weeks after the incident and participants were asked to respond retrospectively how they felt immediately following the incident. Because participants were asked to respond retrospectively in the first wave and not in the other waves, it was assumed, for the first wave, that the participants could accurately remember the event. Therefore, all analyses were rerun with only the last four waves of data. The results were equivalent to the original analyses, with all five waves of data. That is, the pattern of significance for the final four waves of data, from the analysis with five waves, remained the same when only the final four waves of data were analyzed.

Discussion

The current study focused on reactions of an intercollegiate sports team to a near fatal bus accident. The first two hypotheses addressed how affect, specifically PA and NA, changed over time. The participants were expected to show a decrease in NA and an increase PA as time since the incident increased. The results of the study supported these hypotheses.

NA of the participants significantly declined over the five waves. Initially, there was a large drop in NA following the first administration. This was followed by smaller decreases over the remaining three waves. Although the increase in PA was significant, it was not as large as the decrease of NA in the participants. Immediately after traumatic events, emotions are at their peak. Trauma can change a person psychologically and physiologically. Thinking patterns, emotional responses, and biochemistry are altered by trauma. In turn, this can lead to physical and psychological problems (Van Der Kolk, 1994). As seen in the results of our study, as time since the traumatic incident increased, individuals returned to more stable affect levels.

The decrease in NA and the increase in PA are important. Research has shown individuals high in NA experience higher occurrences of depressed mood and anxiety than those with PA (Heinisch & Jex, 1997). PA facilitates decision quality, performance, cooperation, and self-efficacy—skills that are important in achieving success when working as a team toward a common goal (George, 1989; Isen & Baron, 1991; Judge & Locke, 1993; Staw & Barsade, 1993). In addition, NA is positively related to workplace

injury (Iverson & Erwin, 1997). Therefore, a reduction in NA could prevent future injuries and incidents.

It is important to note, although individuals who experienced a traumatic event do not significantly differ with regard to anxiety, depression, or hostility (related to NA) when compared to those who have not experienced a traumatic event, Novara and colleagues (2009) found individuals who experienced a traumatic event (i.e., work-related accidents) scored significantly higher than the control group on the PTSD symptom scale. These findings indicate that although individuals may not show a significant impact of trauma in their affect, they can still experience post-traumatic symptoms, general psychopathology, or emotional distress following a traumatic incident.

The third hypothesis focused on the coping strategies employed by the participants in response to the incident. It was expected that the strategies used by the participants would decrease over time. Overall, the hypothesis was supported by the results as 10 of the 14 strategies showed a significant change in trajectory across the five waves of data collection. The coping strategies Humor, Planning, Self-Blame, and Behavior Disengagement were endorsed at very low rates as coping strategies by the sample.

In general, the coping strategies were initially used at a high rate shortly after the incident but dropped off over the remaining waves. Self-Distraction, Instrumental Support, Emotional Support, Active Coping, Denial, Substance Use, Venting, and Religion displayed this pattern. These coping strategies were used immediately after the

accident to stabilize mood and were used less frequently as time since the incident increased. As seen in the final waves, when affect had reduced to more stable levels, coping strategies were used less frequently.

Acceptance and Positive Reframing are perhaps the coping strategies that displayed the most interesting patterns. Although the trajectory of Acceptance did not change across waves, it was the most frequently used coping strategy. Positive Reframing was high across all waves as well. Acceptance and Positive Reframing were the only consistently used coping strategies across all waves of the study. These results are consistent with research that has suggested Positive Reframing and Acceptance are the most effective and commonly used emotion regulation strategies (Campbell-Sills et al., 2006; Gross, 1998; Gross & Levenson, 1997; Hofmann et al., 2009; Kennedy et al., 2000; Pollard & Kennedy, 2007).

At the one year anniversary of the bus accident, the coping strategies used by the participants increased after they had declined over the previous waves. The increase in coping strategies, specifically Acceptance and Positive Reframing, suggests that the participants were trying to remain upbeat despite the potential for salient reminders of the incident.

The results of the Scale 1 and Scale 2 subscales Discussion Ease and Closeness were similar to the results for the Brief COPE scales Acceptance and Positive Reframing. The two subscales remained high and did not change significantly across all waves of the study. These results support the quality of the relationship that the team has developed. The players and coaching staff evidently feel that they are easily able to discuss the

incident. Players and coaches indicated a consistently high level of closeness towards teammates, coaches, family, and friends.

Although there was a significant effect across time for the Impact subscale, none of the pairwise comparisons were significant. There is a gradual trend across the five waves demonstrating slight positive increases in the impact of the incident.

The Thinking and Discussion subscales results showed a significant change in trajectory similar to the Brief COPE scales Self-distraction, Emotional Support, and Instrumental Support. Throughout the first two waves, participants thought about and discussed the incident; however, over the remaining three waves they thought about and discussed the incident significantly less. The results suggest that after the first two waves the participants were recovering from the incident, and they returned to a more normal state where thoughts and discussion of the incident were occurring at a significantly lower rate.

Implications

The expression of emotion as a coping strategy has generally been thought to be detrimental to recovery from stressful stimuli. Past research has indicated a positive relationship between emotion-based coping strategies and psychological distress. Alternatively, psychotherapeutic and functionalist theories postulate that emotions effectively reduce the effects of stressors. Recently, research has shown emotional expression following a stressful incident can promote recovery and benefit well-being (Stanton and Low, 2012).

Coping strategies may be categorized into two domains, problem-focused coping and emotion-focused coping. Problem-focused coping attempts to directly modify the situation. Emotion-focused coping attempts to develop strategies to regulate emotion (Lazarus & Folkman, 1984). As seen in the Brief COPE (Carver, 1997), coping strategies can take multiple forms. In addition to emotion-focused and problem focused coping strategies, coping strategies may be classified as adaptive or maladaptive.

The 14 Brief COPE scales are not classified based on the dimensions of emotion versus problem focused or adaptive versus maladaptive. Nonetheless, the coping strategies will be discussed using these common dimensions. In our sample, emotion-focused coping strategies (e.g., Emotional Support, Self-Distraction, Behavioral Disengagement, Venting, Self-Blame, Denial, and Substance Use; Carver 1997) were not frequently employed immediately after the incident, with the exception of Denial; as time from the incident increased, they were used less frequently. Three of the emotion-focused strategies were not endorsed by the sample (Behavioral Disengagement, Self-Blame, and Humor). The maladaptive strategies (e.g., Behavioral Disengagement, Venting, Self-Blame, Denial, Self-Distraction, and Substance Use) are emotion-focused strategies (Carver, 1997).

Problem-focused strategies (e.g., Planning, Positive Reframing, Religion, Instrumental Support, and Active Coping; Carver, 1997) were relatively stable across all waves, with the exception Religion and Instrumental Support. Religion and Instrumental Support displayed patterns similar to emotion-focused strategies. Acceptance and Positive Reframing were the only strategies that remained high throughout all five administrations of the study. Although Planning remained stable, it consistently was not

endorsed as a coping strategy. A majority of the adaptive coping strategies (e.g., Planning, Positive Reframing, Instrumental Support, Active Coping, Emotional Support, and Humor) are problem-focused strategies. Emotional Support and Humor are the only adaptive emotion-focused strategies; however, Humor was not used as a coping strategy by the sample. The maladaptive strategies were used less frequently than the adaptive strategies.

Emotionally expressive coping typically uses multiple methods and is used in combination with other strategies. Emotion-based coping strategies are of particular interest to the current study because of their potential significant positive influence when used after uncontrollable events. Young women who experienced uncontrollable stressors significantly benefited from emotion-focused coping (Stanton, Danoff-Burg, Cameron, & Ellis, 1994). For young women, emotional expression coping strategies can increase life satisfaction and reduce depressive symptoms. However, for men, the conflict of emotional coping and gender roles is associated with the use of less emotion-focused coping strategies, which in turn was associated with increased maladaptive symptoms. In comparison, older individuals, regardless of gender, benefited from emotion-focused coping (Stanton, Kirk, Cameron, & Danoff-Burg, 2000). Emotion-focused coping should not be seen as a negative coping style; experiencing emotion can be beneficial to psychological and physical health.

Frattaroli conducted a meta-analysis including studies in which participants who had experienced trauma wrote about stressor-related emotions for three to five sessions. The results indicated that the writing led to increased psychological health, physical health, and overall functioning (2006). The utility of expressive writing is increased if it

is employed immediately after the traumatic incident. Although not explained in this thesis, the narratives that the participants wrote in the current study may have supported an in increase in positive outcomes and psychological health.

The ability to put emotions into meaningful words can reduce the intensity of a feeling and provide meaning to a stressful situation, while reducing distress and enhancing health. Expressive coping provides individuals with the opportunity to direct goals, identify barriers preventing goal achievement, and to create tools needed to reach goals. However, expressive coping alone does not guarantee the completion of goals. Expressing emotions with others who have experienced a traumatic event serves as a catalyst to develop relationships, which is an important aspect of teams (Stanton & Low, 2012). It is important to note, the effect of emotionally expressive coping depends on multiple variables, including the characteristics of the stressor, the environment, the individual, and the coping strategy used.

Limitations

The current study contributes additional research to an area neglected in the published literature. Although the results are significant and meaningful, limitations exist for this study. An administration of measures before the traumatic incident took place would have provided the most significant improvement to our study. The addition of baseline data would provide a meaningful comparison throughout the waves and create the ability to asses when the participants had returned to their normal affect levels. However, due to the circumstances of the current study, this was not feasible.

A second limitation to this study is the lack of a sensitive individual performance measure to determine if the reactions of the participants to the incident affected performance. The performance of the team on the court (i.e., win/loss record) and academically (i.e., overall GPA) remained consistent before and after the incident. The team's record for the 20 games immediately prior to and following incident was identical. Prior to and following the incident the team had won 15 matches and lost 5 matches. Additionally, the overall GPA of the team remained above 3.0. This is supported by the endorsement of Self-Distraction as a coping strategy only immediately after the traumatic incident. This result indicates that the players were able to remove distractions and regain focus on academic and athletic goals. Individual performance may have varied; however, individual performance measures were not obtained. In business and sport, performance is often the bottom line; therefore, performance comparisons should be considered. It is clear academic and athletic performance for the team did not decline following the incident. Due to the, high level of academic and athletic performance of the team, athletic and academic performance had little room for improvement.

Another limitation resulted from the unanticipated nature of the incident. We were not prepared to collect data immediately following the incident. The first wave of data were collected four weeks after the incident and participants were asked to respond retrospectively how they felt immediately following the incident. Because participants were asked to respond retrospectively in the first wave and not in the other waves, it was assumed that the participants could accurately remember the event. Therefore, the analyses were rerun with only the last four administrations. The results were identical to

the original analyses, indicating that the participants were able to accurately remember the incident. It is not possible to determine the accuracy of these retrospective responses.

Finally, as with all longitudinal designs, history and maturation can threaten internal validity. History, the occurrence of events outside the study, and maturation, changes that occur in the participants during the course of the study that are not part of the study, can affect the results. These threats could have been reduced through the use of a control group; however, a suitable control group was not available (Bordens & Abbott, 2010).

Summary

The results demonstrate the change in trajectory of emotion and coping strategies over a twelve month time period. PA increased, NA decreased, and the use of coping strategies decreased across the five waves of the longitudinal study. The measurement of reactions to traumatic incidents can improve the recovery of the individuals involved in the research. Self-report scales assessing emotion focused-coping have been shown to reflect stress (Stanton et al., 2000). Additionally, findings from studies conducted by Stanton and Low (2012) have shown that the intentional expression of emotions, in response to stressors, can be helpful. Multiple coping strategies (Self-Distraction, Instrumental Support, Emotional Support, and Denial) were used immediately after the accident to stabilize emotions. However, over time, only two strategies remained prevalent, Acceptance and Positive Reframing. The data of this study are of particular interest as no other studies in the published literature of individual athlete or team reactions to traumatic travel incident could be located, even though ESPN (Lavigne,

2010) noted that bus safety should be a concern for team travel. The results of this study contribute to an under researched body of literature.

APPENDIX A

Instrument

Name: _____Date:_____

Follow-Up Study on the "Bus Incident"

This packet contains several different types of questions about your experience with the bus incident. Please carefully read the directions and respond to the items. There are several different types of items on the questionnaire. If you have any questions as you respond to items, please ask Dr. Shoenfelt.

Thank you for participating in this study!

This part of the questionnaire consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. **Consider the bus incident. Indicate to what extent you feel this way when you think about the bus incident.**

1 – very slightly or not at all
2 – a little
3 - moderately
4 – quite a bit
5 - extremely

_____cheerful
_____disgusted
_____attentive
_____bashful
_____sluggish
_____daring
_____surprised
_____strong
_____scornful
_____relaxed
_____irritable
_____delighted
_____inspired
_____fearless
_____disgusted with self
_____sad
_____calm
_____afraid
_____tired
_____amazed
_____shaky
_____happy
_____timid
_____alone
_____alert
_____upset
_____angry
_____bold
_____blue
_____shy
_____active
_____guilty
_____joyful
_____nervous
_____lonely
_____sleepy
_____excited
_____hostile
_____proud
_____jittery
_____lively
_____ashamed
_____at ease
_____scared
_____drowsy
_____angry at self
_____enthusiastic
_____downhearted
_____sheepish
_____distressed
_____blameworthy
_____determined
_____frightened
_____astonished
_____interested
_____loathing
_____confident
_____energetic
_____concentrating
_____dissatisfied with self

Please write a brief description in your own words of the bus incident. Describe your experience of the event.

Instructions: Please indicate the extent to which you have engaged in each of the following behaviors when trying to deal with the bus incident by placing a check in one of the boxes found on the right of each behavior.

I have been doing this…	**Never**	**Seldom**	**Sometimes**	**Often**	**All of the Time**
1. turning to work or other activities to take my mind off of things					
2. concentrating my efforts on doing something about the situation that I'm in.					
3. saying to myself: "This isn't real."					
4. using alcohol or other drugs to make myself feel better.					
5. getting emotional support from others.					
6. giving up trying to deal with it.					
7. taking action to make the situation better.					
8. refusing to believe that it has happened.					
9. saying things to let my unpleasant feelings escape.					
10. getting advice and help from other people.					
11. praying or meditating.					
12. trying to see it in a different light, to make it seem more positive.					
13. criticizing myself					
14.trying to come up with a strategy about what I should do.					
15. getting comfort and understanding from another person.					
I have been doing this…	**Never**	**Seldom**	**Sometimes**	**Often**	**All of the Time**
16. giving up on any attempt to cope.					
17. looking for something good in what has happened.					
18. making jokes about it.					
19. doing something to think about it less, such as					

going to the movies, watching TV, reading, daydreaming, sleeping, or shopping.					
20. accepting the reality of the fact that it has happened.					
21. expressing my negative feelings.					
22. trying to find comfort in my religion or spiritual beliefs.					
23. trying to get advice or help from other people about what to do.					
24. learning to live with it.					
25. thinking hard about what steps to take.					
26. blaming myself for things that happened.					
27. using alcohol or other drugs to help me get through it.					
28. making fun of the situation.					

Please indicate the extent to which you have engaged in each of the following behaviors by placing a check in one of the boxes found on the right of each behavior.	**Never**	**Seldom**	**Sometimes**	**Often**	**All of the Time**
1. I think about the bus incident.					
2. I discuss the bus incident with teammates					
3. I discuss the bus incident with friends.					
4. I discuss the bus incident with a coach.					
5. I discuss the bus incident with family.					
6. I think about the bus incident when I am riding on the team bus.					
7. I need to discuss the bus incident with teammates.					
8. I need to discuss the bus incident with friends.					
9. I need to discuss the bus incident with a coach.					
10. I need to discuss the bus incident with family.					
11. I think about the bus incident when I am riding in a car.					

Please indicate the extent to which you agree or disagree with each statement.	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
1. It is **easy** to talk about the bus incident with **teammates**.				
2. It is **difficult** to talk about the bus incident with **teammates**.				
3. It is **easy** to talk about the bus incident with **friends**.				
4. It is **difficult** to talk about the bus incident with **friends**.				
5. It is **easy** to talk about the bus incident with a **coach**.				
6. It is **difficult** to talk about the bus incident with a **coach**.				
7. It is **easy** to talk about the bus incident with **family**.				
8. It is **difficult** to talk about the bus incident with **family**.				
9. The bus incident made me **closer** to my **teammates.**				
10. The bus incident made me **closer** to my **coach**.				
11. The bus incident made me **closer** to my **friends**.				
12. The bus incident made me **closer** to my **family.**				
13. The bus incident made me **withdraw** from my **teammates.**				
14. The bus incident made me **withdraw** from my **coach.**				
15. The bus incident made me **withdraw** from my **friends**.				
16. The bus incident made me **withdraw** from my **family**.				
17. The bus incident has had a **positive impact** on my everyday life.				
18. The bus incident has had a **negative impact** on my everyday life.				

If you agreed with item #17, please provide an example of how the bus incident has had a **positive impact** on your everyday life.

If you agreed with item 18#, please provide an example of how the bus incident has had a **negative impact** on your everyday life.

APPENDIX B

Results of Repeated Measures ANOVA for PANAS-X and Brief COPE

Effect	*MS*	*df*	*F*	*p*
Negative Affect	.88	4	2.61	< .05*
Positive Affect	9.45	4	59.98	< .001*
Self-Distraction	26.84	4	75.32	< .001*
Active Coping	4.27	4	8.39	< .001*
Denial	12.68	4	30.01	< .001*
Substance Use	19.93	4	19.93	< .001*
Emotional Support	16.58	4	32.66	< .001*
Instrumental Support	13.78	4	23.36	< .001*
Behavioral Disengagement	3.81	4	4.89	< .05*
Venting	3.70	4	8.76	< .001*
Positive Reframing	3.93	4	4.31	< .05*
Planning	1.81	4	2.36	= .06
Humor	.15	4	.76	= .56
Acceptance	.96	4	1.28	= .29
Religion	3.42	4	16.22	< .001*
Self-blame	.91	4	2.50	= .053
Error		56		

*$p < .05$, for repeated measure ANOVA.

Tests of Within-Subjects Contrasts

Measure: Negative Affect

Source	Time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Linear	30.917	1	30.917	138.306	.000	.908
	Quadratic	6.484	1	6.484	32.506	.000	.699
	Cubic	.406	1	.406	3.336	.089	.192
	Order 4	.039	1	.039	.452	.513	.031
Error(Time)	Linear	3.130	14	.224			
	Quadratic	2.793	14	.199			
	Cubic	1.702	14	.122			
	Order 4	1.210	14	.086			

Tests of Within-Subjects Contrasts

Measure: Positive Affect

Source	Time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Linear	.317	1	.317	.459	.500	.032
	Quadratic	2.858	1	2.858	8.039	.013	.365
	Cubic	.299	1	.299	2.241	.157	.138
	Order 4	.038	1	.038	.229	.640	.016
Error(Time)	Linear	9.674	14	.691			
	Quadratic	4.978	14	.356			
	Cubic	1.870	14	.134			
	Order 4	2.314	14	.165			

Tests of Within-Subjects Contrasts

Measure: Self-Distraction

Source	Time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Linear	88.935	1	88.935	186.112	.000	.930
	Quadratic	18.011	1	18.011	97.787	.000	.875
	Cubic	.240	1	.240	.894	.361	.060
	Order 4	.161	1	.161	.325	.577	.023
Error(Time)	Linear	6.690	14	.478			
	Quadratic	2.579	14	.184			
	Cubic	3.760	14	.269			
	Order 4	6.925	14	.495			

Tests of Within-Subjects Contrasts

Measure: Active Coping

Source	Time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Linear	14.415	1	14.415	24.285	.000	.634
	Quadratic	.268	1	.268	.371	.552	.026
	Cubic	2.160	1	2.160	7.132	.018	.337
	Order 4	.244	1	.244	.583	.458	.040
Error(Time)	Linear	8.310	14	.594			
	Quadratic	10.107	14	.722			
	Cubic	4.240	14	.303			
	Order 4	5.856	14	.418			

Tests of Within-Subjects Contrasts

Measure: Denial

Source	Time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Linear	39.015	1	39.015	41.192	.000	.746
	Quadratic	11.668	1	11.668	42.826	.000	.754
	Cubic	.027	1	.027	.104	.751	.007
	Order 4	.024	1	.024	.110	.745	.008
Error(Time)	Linear	13.260	14	.947			
	Quadratic	3.814	14	.272			
	Cubic	3.573	14	.255			
	Order 4	3.019	14	.216			

Tests of Within-Subjects Contrasts

Measure: Substance Use

Source	Time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Linear	12.327	1	12.327	75.912	.000	.844
	Quadratic	1.905	1	1.905	8.058	.013	.365
	Cubic	.240	1	.240	.859	.370	.058
	Order 4	.095	1	.095	1.801	.201	.114
Error(Time)	Linear	2.273	14	.162			
	Quadratic	3.310	14	.236			
	Cubic	3.910	14	.279			
	Order 4	.740	14	.053			

Tests of Within-Subjects Contrasts

Measure: Emotional Support

Source	Time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Linear	57.042	1	57.042	48.595	.000	.776
	Quadratic	9.011	1	9.011	16.724	.001	.544
	Cubic	.042	1	.042	.337	.571	.023
	Order 4	.259	1	.259	1.326	.269	.087
Error(Time)	Linear	16.433	14	1.174			
	Quadratic	7.543	14	.539			
	Cubic	1.733	14	.124			
	Order 4	2.737	14	.196			

Tests of Within-Subjects Contrasts

Measure: Instrumental Support

Source	Time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Linear	46.482	1	46.482	48.049	.000	.774
	Quadratic	8.601	1	8.601	13.505	.002	.491
	Cubic	.002	1	.002	.004	.950	.000
	Order 4	.002	1	.002	.006	.938	.000
Error(Time)	Linear	13.543	14	.967			
	Quadratic	8.917	14	.637			
	Cubic	5.723	14	.409			
	Order 4	4.830	14	.345			

Tests of Within-Subjects Contrasts

Measure: Behavior Disengagement

Source	Time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Linear	12.042	1	12.042	9.726	.008	.410
	Quadratic	.630	1	.630	1.436	.251	.093
	Cubic	.000	1	.000	.000	1.000	.000
	Order 4	2.575	1	2.575	6.637	.022	.322
Error(Time)	Linear	17.333	14	1.238			
	Quadratic	6.138	14	.438			
	Cubic	14.750	14	1.054			
	Order 4	5.432	14	.388			

Tests of Within-Subjects Contrasts

Measure: Venting

Source	Time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Linear	13.202	1	13.202	25.946	.000	.650
	Quadratic	1.458	1	1.458	2.327	.149	.143
	Cubic	.107	1	.107	.379	.548	.026
	Order 4	.047	1	.047	.170	.686	.012
Error(Time)	Linear	7.123	14	.509			
	Quadratic	8.774	14	.627			
	Cubic	3.943	14	.282			
	Order 4	3.846	14	.275			

Tests of Within-Subjects Contrasts

Measure: Positive Reframing

Source	Time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Linear	10.667	1	10.667	7.290	.017	.342
	Quadratic	.043	1	.043	.033	.858	.002
	Cubic	4.167	1	4.167	11.254	.005	.446
	Order 4	.857	1	.857	1.614	.225	.103
Error(Time)	Linear	20.483	14	1.463			
	Quadratic	18.064	14	1.290			
	Cubic	5.183	14	.370			
	Order 4	7.436	14	.531			

Tests of Within-Subjects Contrasts

Measure: Planning

Source	Time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Linear	7.042	1	7.042	8.438	.012	.376
	Quadratic	.144	1	.144	.154	.701	.011
	Cubic	.042	1	.042	.067	.800	.005
	Order 4	.019	1	.019	.029	.868	.002
Error(Time)	Linear	11.683	14	.835			
	Quadratic	13.088	14	.935			
	Cubic	8.733	14	.624			
	Order 4	9.449	14	.675			

Tests of Within-Subjects Contrasts

Measure: Humor

Source	Time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Linear	.135	1	.135	1.027	.328	.068
	Quadratic	.096	1	.096	.390	.542	.027
	Cubic	.240	1	.240	2.897	.111	.171
	Order 4	.115	1	.115	.370	.553	.026
Error(Time)	Linear	1.840	14	.131			
	Quadratic	3.457	14	.247			
	Cubic	1.160	14	.083			
	Order 4	4.356	14	.311			

Tests of Within-Subjects Contrasts

Measure: Acceptance

Source	Time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Linear	.007	1	.007	.007	.936	.000
	Quadratic	.305	1	.305	.432	.522	.030
	Cubic	2.802	1	2.802	3.745	.073	.211
	Order 4	.720	1	.720	1.297	.274	.085
Error(Time)	Linear	13.843	14	.989			
	Quadratic	9.874	14	.705			
	Cubic	10.473	14	.748			
	Order 4	7.776	14	.555			

Tests of Within-Subjects Contrasts

Measure: Religion

Source	Time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Linear	13.500	1	13.500	55.588	.000	.799
	Quadratic	.019	1	.019	.104	.751	.007
	Cubic	.167	1	.167	1.069	.319	.071
	Order 4	.001	1	.001	.004	.953	.000
Error(Time)	Linear	3.400	14	.243			
	Quadratic	2.552	14	.182			
	Cubic	2.183	14	.156			
	Order 4	3.678	14	.263			

Tests of Within-Subjects Contrasts

Measure: Self-Blame

Source	Time	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Linear	2.535	1	2.535	3.500	.082	.200
	Quadratic	1.001	1	1.001	2.814	.116	.167
	Cubic	.007	1	.007	.048	.830	.003
	Order 4	.077	1	.077	.336	.571	.023
Error(Time)	Linear	10.140	14	.724			
	Quadratic	4.981	14	.356			
	Cubic	1.943	14	.139			
	Order 4	3.216	14	.230			

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