Emotional Reactions and Coping Strategies of an Intercollegiate Athletic Team to a Near-Crash Team Travel Accident: 15-Month Longitudinal Case Study

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Abstract

Objective: Travel by bus is common for athletic teams, and accidents are becoming increasingly more frequent. Most survivors of bus accidents do not require clinical treatment; however, virtually all studies of accident survivors focus only on those under clinical treatment. The current study sought to characterize the affective changes that took place immediately after a travel accident as well as the trajectory of coping tendencies of the team members.

Methods: In a 15-month longitudinal study, we assessed on seven occasions the emotional reactions of members of an intercollegiate volleyball team to a near-crash bus accident as well as the team members' self-reported coping strategies.

Results: Negative affect declined over time, with a larger drop at times more proximal to the incident; positive affect remained consistent throughout the 15 month period. A variety of coping strategies were used. Acceptance was endorsed throughout the 15 months. Other strategies were highly endorsed the first few months but dropped off as negative affect declined.

Conclusions: Athletic team travel accidents are occurring with increased frequency. The team examined in the current study displayed a decline in negative emotion and changes in their coping preferences over time. Teams involved in travel accidents may find these results informative as to expected time frames for emotional reactions and the nature of effective coping.

Keywords

Bus accident; Athletes; Emotion regulation; Resilience; Social support; Coping; Longitudinal affect

Introduction

Bus safety has received increased public attention and concern in response to reports of serious and fatal crashes. The Motorcoach Enhanced Safety Act of 2012 directs the U. S. Secretary of Transportation to prescribe regulations to increase a number of facets of bus safety. Many athletic teams travel by bus each season.

A recent ESPN news article cited bus safety as a concern for athletic teams and indicated that the number of accidents is on the rise [1]. Accident estimates in the United States include some 14,000 non-fatal injuries and 325 fatal injuries as a result of the approximately 63,000 bus accidents occurring each year [2]. In Europe, rates are estimated at roughly 20,000 bus accidents leading to 30,000 injuries, and 150 fatalities annually [3]. There have been a number of clinical studies examining the impact of traffic accidents on survivors, typically identifying participants through hospital treatment records [4]. However, many survivors of bus accidents (or other traffic accidents) are not clinically treated unless hospitalized or directed to do so through litigation. As suggested by Kaplan et al. [5], there are few studies on bus accidents and many questions remain. One of these unanswered questions is how non-clinical survivors respond emotionally to an accident and how they cope with the trauma of being in an accident. Although motor vehicle accidents have been identified as a stressful critical incident athletes will potentially face [6], we searched both the scholarly literature and a more general internet search for published studies on athlete reactions to travel accidents and found none, although there are a number of reports of such incidents in the news.

In October 2010, an intercollegiate volleyball 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 on the side of the road. Several of the athletes were knocked from their seats. The head coach went forward to find the bus driver unconscious and slumped over the steering wheel. The bus driver had suffered a fatal heart attack. The bus swerved into the oncoming lane of interstate traffic. Fortunately, the coach was able to gain control of the bus and stop it safely on the side of the road. The coaches and players survived with only minor physical injuries, but were emotionally impacted. This potentially tragic bus incident provided a unique opportunity to systematically examine the longitudinal trajectory of the team’s emotional reactions to a single traumatic event, a team travel accident, across a 15-month time frame. Additionally, coping tendencies immediately after the incident and throughout the subsequent 15 months were tracked. Given that this incident fell outside of the control of the team, we expected that the team members would rely more on emotion-focused coping strategies more early on after the incident than later in time [7,8], as event-related negative emotion declined [9,10]. Support for these predictions is briefly introduced in a review of the underlying dynamics of how individuals cope with stressful events and the role that emotions play in coping.

Motor vehicle accidents are often stressful situations that fall outside of the control of those who are involved. Among adolescents, motor vehicle accidents can lead to posttraumatic stress symptoms and have other serious health consequences if maladaptive forms of coping are employed [11]. For adults, the incidence of post-traumatic stress disorder among motor vehicle accident survivors varies from 6% to 45%, with higher prevalence rates emerging among samples that lack social support or that experience prolonged physical health problems as a result of the injuries sustained during the accident [12]. After a motor vehicle accident, individuals experience an increase in arousal and stress, and rumination about the event is a strong

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predictor of developing PTSD psychopathology [12]. One way to assess individual reactions to stressful events such as motor vehicle accidents is to track changes in psychosocial factors linked to one’s well-being, primarily changes in perceptions of well-being and affect or the use of coping strategies post-incident.

To simplify the process of gathering data on coping with stress, coping responses can be examined relative to several categories of problem-focused or emotion-focused thoughts and behaviors [13]. Problem-focused coping strategies are actions or thoughts that are implemented in order to directly combat a source of stress. For instance, a motorist with a flat tire will engage in a series of steps to safely navigate the vehicle off of the road to replace the tire with a spare or to phone a mobile automobile service to replace the tire. These activities directly resolve the motorist’s problem; however, if a tire goes flat while a motorist is driving on a busy road or in inclement weather, it is quite natural for fear and anxiety to build up as the individual has to steer the vehicle off of the road. Although stressful events create obstacles for one’s momentary goals, they also evoke emotions which must be managed on top of finding solutions to resolve the problem [14]. Emotion-focused coping strategies (e.g., avoidance or denial, positive reappraisal, venting, etc.) are thoughts and actions that are geared toward minimizing one’s negative emotional reactions to stress [13,15]. One’s emotional state is intimately tied to his/her level of physiological arousal, and high states of arousal can make it more challenging to implement problem-focused coping strategies [16,17]. Avoidant styles of coping are more typical when events result in severe emotional impact and thoughts of one’s own mortality [18,19]. Overall, those who are most effective at resolving stress use a mix of both problem-focused and emotion-focused coping strategies that are appropriate for the stressor they are facing [20].

Student athletes, the focus of the current study, face a number of everyday challenges associated with balancing academics, physical training, rigorous practice schedules, team travel, and team competitions. Among the most impactful critical incidents cited by athletes are accidents and severe or near-fatal personal injuries [6]. Athletes who experience distress fare better if they can seek social support from one another and their community, if they avoid ruminating about the event and stay focused on caring for themselves, and if they carefully consider returning to team play (i.e., a normal routine). When faced with a stressful event such as a traumatic accident, active problem-focused coping (e.g., maintain team performance related goals) and the down-regulation of negativity via adaptive emotion-focused techniques (e.g., positive re-framing, acceptance, and seeking social support - both emotional and instrumental) can lead to substantial reductions in negative affect and future distress [21,22].

When faced with an uncontrollable stressor, long-term physical and mental health outcomes are improved by displaying emotions and engaging in emotion-focused coping when around close others [23]. The emotional communication that takes place during the social support process predicts the internal states of those involved and can be used to track the trajectory of stress relief after a critical incident [24]. High levels of social support immediately following a traumatic event can buffer the emotional impact of the event and reduce potential long-term mental and physical health problems [12,25-27]. Reappraisal [28] and social support are vital to efforts to regulate emotion [29] and have been found to lead to a reduced incidence of post-traumatic stress symptoms months to years after a traumatic incident [25,26]. Bonanno et al. [10] suggested that coping strategies traditionally thought of as adaptive or maladaptive may be flexible in being health promoting or health detracting depending on the interaction between the person and the situation.

The current study is a 15-month longitudinal examination of the emotional reactions of the coaching staff and players of an intercollegiate volleyball team to a near-crash bus incident. The current study also tracks the self-reported coping tendencies of the team members. The study is descriptive and not a clinical assessment. A university counseling psychologist met with the team on two occasions immediately following the accident. Any direct impact of this counseling would have occurred prior to the first wave of data collection. This study and its authors were independent of the counseling provided to the team.

Based on our review of the literature, two hypotheses were tested.

Hypothesis 1: Team members were expected to report less emotional negativity as the incident became more distant in time.

Hypothesis 2: Team members were expected to rely more on emotion-focused coping strategies (e.g., positive reappraisal and the use of social and instrumental support) immediately after the incident but to lessen the use of emotion-focused strategies over time as the negativity associated with the incident subsided.

Methods

Participants and procedure

Participants were the 13 female members of an intercollegiate volleyball team, all of whom have now graduated and are no longer on the team, and two coaching staff members (one male and one female). All participants provided informed consent to participate in the study. The age of the student athletes ranged from 18 to 23 years; the sample included nine underclassmen and five upperclassmen. The sample was mostly Caucasian (n=14) with one African-American. Each participant provided responses to the same set of materials across seven time points, or waves of data collection. The study used a non-experimental, longitudinal time-series design. The accident occurred in October 2010; data were collected 2 weeks, 2 months, 4 months, 6 months, 10 months, 12 months, and 15 months following the incident. This time frame was selected because it should encompass the full cycle of response to a traumatic event, which often takes a full year [6]. The final wave was beyond the renewed saliency that typically occurs on the anniversary of an event. Materials in the first wave asked the participants to consider their reactions to the incident immediately after it took place and, thus, are retrospective reports. The materials in the remaining six waves asked the participants to consider their current state relative to the bus travel incident. Participants who graduated during the course of the study completed the study materials for the later waves via e-mail and returned them to the corresponding author.

Measures

Positive affect and negative affect schedule - extended (PANAS-X):

The PANAS-X [30] was used to assess self-reported Positive Affect (PA) and Negative Affect (NA), the two dominant dimensions of emotional experience, at each of the seven time points or waves. PA and NA scores were calculated by averaging the items that reflect each respective dimension of affect (PA: active, alert, attentive, determined, enthusiastic, excited, inspired, interested, proud, and
strong: NA: afraid, scared, nervous, jittery, irritable, hostile, guilty, ashamed, upset, and distressed). Higher average scores indicate a greater presence of the specific affect dimension. PA and NA each had acceptable reliability within each wave of data collection (PA: Cronbach’s α range=0.62-0.92, average α=0.84; NA: Cronbach’s α range=0.66-0.96, average α=0.84).

Brief COPE inventory: The Brief COPE [21] was used to assess the coping strategies that the participants used to manage the stress associated with the bus incident at each time point. The Brief COPE consists of 28 items that measure 14 generally adaptive or non-adaptive coping strategies (two items per strategy). The participants endorsed how regularly they engaged in the coping behaviors of the fourteen strategies (i.e., denial, religion, venting, self-blame, humor, self-distraction, acceptance, positive reframing, using emotional support, using instrumental support, planning, substance use, behavioral disengagement, and active coping). Higher average scores indicate greater self-reported use of a given coping strategy type. Each coping strategy type from the Brief COPE demonstrated adequate internal consistency (α=0.63-0.93) within the waves of measurement (average α across waves: active coping=0.63, planning=0.87, positive reframing=0.63, acceptance=0.66, humor=0.81, religion=0.65, using emotional support=0.79, using instrumental support=0.80, self-distraction=0.78, denial=0.65, venting=0.64, substance use=0.93, behavioral disengagement=0.74, and self-blame=0.87) that were consistent with or better than the internal consistency values reported by Carver [21].

Other factors: To further explore specific behavioral, cognitive, and emotional reactions, items specific to this study were developed. Items measured how often the participants (a) thought about the bus incident (three items), (b) felt a need to discuss the bus incident with teammates, friends, coach, and family (four items), Participants responded to each item using a 5-point scale (“Never,” “Seldom,” “Sometimes,” “Often,” and “All of the time”). Individual item responses were averaged at each wave of data collection for each participant to create a Thinking about Frequency score [(a)] and a Discussion Frequency score [(b) and (c)]. Average internal consistency across waves for the Thinking about Frequency scale was α=0.63. Average internal consistency across waves for the Discussion Frequency scale was α=0.90.

A second set of items was developed to further explore the longitudinal effects of the accident on social support. Items measured (d) the ease with which the participants could discuss the incident with teammates, friends, coaches, and family (eight items), (e) the impact the incident had on the closeness of the relationship of the participants with teammates, friends, coaches, and family (eight items), (f) the overall negative impact that the incident had on the participant (one item), and (g) the overall positive impact that the incident had on the participant (one item). For this set of items, participants responded using a 4-point scale by indicating the extent to which they agreed with each statement (from “Strongly Disagree” to “Strongly Agree”). Individual items within each measure were averaged at each wave of data collection for each participant to create a Discussion Ease score [(d)] and a Closeness score [(e)]. Average internal consistency across waves for the Discussion Ease scale was α=0.72. Average internal consistency across waves for the Closeness scale was α=0.97. The alpha for Closeness was low, which likely is a result of it assessing closeness to teammates, coaches, friends, and family, relationships which would not necessarily vary in a similar manner. Overall Negative Impact [(f)] and Positive Impact [(g)] scores each consisted of one item for each wave.

There are two additional indicators of effective coping that were examined that may be more objective than our self-report data, academic performance, and team match performance. Although it was beyond the scope of this study to examine individual academic performance, team academic data was compared pre- and post-incident. We also examined match performance data before and after the incident.

Results

The current study used a within-subjects design in which time of measurement served as the primary independent variable for each of the dependent variables. Separate within-subjects ANOVAs were conducted to examine the impact of time on the participant PA and NA ratings, Brief COPE ratings, and responses to the other items (i.e., Thinking About Frequency, Discussion Frequency, Closeness, and Impact). The results of these analyses are reported in separate sections below. The means and standard deviations for each dependent variable are listed in Table 1 for each time point and are organized by measure type.

It should be noted that the athlete data and the coach data are reported aggregated together. The team data were analyzed alone without the coach data and demonstrated the same pattern of results reported in Table 1. The sample size of the coach data alone was too small to analyze and too small to report independently while maintaining confidentiality.

Positive affect (PA) and negative affect (NA) ratings

A within-subjects repeated-measures ANOVA examining the impact of time on the participants’ PA ratings revealed a significant main effect, F(6, 84)=3.04 (p=0.01, η²=0.18). Post-hoc pairwise comparisons were computed for PA with a Bonferroni correction (α=0.002). PA demonstrated a significant nonlinear pattern; however, the PA ratings at any given wave were not significantly different from those at any other wave. That is, the increase in PA in the second (2 months) and third (4 months) waves were not significantly different from PA at any other wave. Likewise, the slight decrease in PA beyond the one year anniversary of the incident was not significantly different from PA ratings at any of the other waves.

A within-subjects ANOVA examining the impact of time on the participants’ NA ratings revealed a significant main effect, F(6, 84)=57.60 (p<0.001, η²=0.80). Post-hoc pairwise comparisons were computed for NA with a Bonferroni correction (α=0.002). Overall, NA significantly declined over time, with a larger drop in waves more proximal to the incident. Decline in NA observed from the initial wave to the second wave and then to the third wave were significant. Declines in NA observed in the remaining waves were not significant. In sum, the participants demonstrated significant decline in NA across the first four months following the accident before leveling off to a very low level. These results support Hypothesis 1 that team members would report less emotional negativity as the incident became more distant in time.

Brief COPE strategy endorsement ratings

Initial coping strategies: In the first wave of data collection, participants reported using a variety of coping strategies while coping with the aftermath of the bus accident. A within-subjects ANOVA
examining possible differences in strategy endorsement across the 14 strategy types at the first time point revealed a significant main effect, \( F(13, 182)=16.44 \) (\( p<0.001, \eta^2=0.54 \)). Post-hoc pairwise comparisons (Bonferroni corrected, \( \alpha=0.0005 \)) revealed that the extent of use of the different coping strategies varied immediately following the accident, with Self-Distraction being used most often and Humor being used least often. Seven of the fourteen coping strategies, Self-Distraction, Religion, Using Emotional Support, Acceptance, Using Instrumental Support, Denial, and Positive Reframing, were more commonly endorsed than were the remaining seven types of coping strategies. The seven strategies frequently used were endorsed substantially above the mid-point (all had mean endorsement rates greater than 3.0) of the 5-point scale, suggesting that the participants implemented these coping strategies as their first line of defense. It is worth noting that these preferred strategies include both adaptive (most, i.e., 5 of 7) and maladaptive (e.g., Denial and Self-Distraction) forms of coping.

**Final coping strategies:** A second within-subjects ANOVA examining possible differences in strategy endorsement across the 14 coping strategy types at 15 months post-incident revealed a significant main effect, \( F(13,182)=11.24 \) (\( p<0.001, \eta^2=0.45 \)). Post-hoc pairwise comparisons (Bonferroni corrected, \( \alpha=0.0005 \)) revealed that participants were more likely to engage in Acceptance than in the other strategies during the final wave of measurement 15 months after the bus incident. Participants continued to endorse Acceptance at a level near the mid-point of the scale. All other strategies were endorsed at a level between very slightly or not at all and a little.

**Differences in strategies across waves:** Separate within-subjects ANOVAs were conducted for each coping strategy type to determine the impact that time of measurement had on strategy endorsement. There were significant changes in the coping trajectories for 12 of the 14 coping strategies from the Brief COPE (See Table 1). The two coping strategies that did not significantly change in trajectory over the administrations were Humor, \( F(6,84)=1.02 \) (\( p=0.416, \eta^2=0.07 \)), and Substance Use, \( F(6,84)=0.87 \) (\( p=0.524, \eta^2=0.06 \)); typically, neither strategy was endorsed by participants. Although the ANOVA for Self-Blame revealed a significant trend, \( F(6,84)=2.63 \) (\( p=0.022, \eta^2=0.16 \)), no differences were observed via post-hoc pairwise comparisons (Bonferroni corrected, \( \alpha=0.002 \)) and endorsement rates were relatively low. Likewise, Acceptance displayed a significant trend, \( F(6,84)=2.39 \) (\( p=0.035, \eta^2=0.15 \)); however, Acceptance was endorsed above or near the mid-point of the scale in every wave.

Both Religion, \( F(6,84)=19.05 \) (\( p<0.001, \eta^2=0.58 \)), and Positive Reframing, \( F(6,84)=5.57 \) (\( p<0.001, \eta^2=0.29 \)), were endorsed at levels at or near the mid-point for early waves before falling below and remaining at this level of endorsement at waves 3 (4 months) and 4 (6 months), respectively. Self-Distraction, \( F(6,84)=65.65 \) (\( p<0.001, \eta^2=0.82 \)), Denial, \( F(6,84)=27.26 \) (\( p<0.001, \eta^2=0.66 \)), Using Emotional Support, \( F(6,84)=30.80 \) (\( p<0.001, \eta^2=0.69 \)), and Using Instrumental Support, \( F(6,84)=21.43 \) (\( p<0.001, \eta^2=0.61 \)), had high rates of use immediately after the incident but declined significantly thereafter. Likewise, Active Coping, \( F(6,84)=7.08 \) (\( p=0.001, \eta^2=0.34 \)), Venting, \( F(6,84)=9.20 \) (\( p<0.001, \eta^2=0.40 \)), Behavioral Disengagement, \( F(6,84)=9.46 \) (\( p<0.001, \eta^2=0.40 \)), and Planning, \( F(6,84)=5.97 \) (\( p=0.001, \eta^2=0.30 \)), displayed significant declines over time after first being moderately endorsed immediately after the incident.

In sum, the participants tended to engage in a variety of strategies when coping with the near-crash team bus accident. The most commonly used strategies were emotion-focused strategies. Acceptance (highly) was endorsed throughout the entire 15 months of the study, and Positive Reframing (moderately) was endorsed for the first 4 months. However, strategies associated with social support (Using Instrumental Support and Using Emotional Support) and with avoidance (Self-Distraction and Denial) declined once the participants’ average level of NA dropped to the floor of the PANAS-X scale by four months after the accident. These results support Hypothesis 2 that team members would rely more on emotion-focused coping strategies (e.g., positive reappraisal and the use of social and instrumental support) immediately after the incident but would lessen the use of emotion-focused strategies over time as the negativity associated with the incident subsided.

**Other factors**

**Use of other factors across waves:** Composite scores were created for each of the six other factors scales at each measurement period. The means and standard deviations for each of these factors at each wave may be found in Table 1. Separate within-subjects ANOVAs were conducted to examine the impact of time of measurement on each of these factors. Discussion Ease, \( F(6,84)=1.08 \) (\( p=0.38, \eta^2=0.07 \)), and Positive Impact, \( F(6,84)=1.83 \) (\( p=0.10, \eta^2=0.12 \)), did not significantly differ across waves; scores were consistently moderately high in magnitude. Closeness ratings, \( F(6,84)=2.67 \) (\( p=0.02, \eta^2=0.16 \)), varied across time and were moderately high in magnitude. Post-hoc pairwise comparisons (Bonferroni corrected, \( \alpha=0.002 \)) indicated Closeness at the fourth wave of data collection was significantly lower than at the second wave; there were no other differences in Closeness across waves.

Thinking About Frequency, \( F(6,84)=33.81 \) (\( p<0.001, \eta^2=0.71 \)), and Discussion Frequency, \( F(6,84)=46.15 \) (\( p<0.001, \eta^2=0.77 \)) declined over time. Post-hoc pairwise comparisons (Bonferroni corrected, \( \alpha=0.002 \)) demonstrated that these two factors were at their peaks immediately after the incident but then displayed a sharp decline after the first two waves. Negative Impact ratings, \( F(6,84)=4.02 \) (\( p<0.001, \eta^2=0.22 \)), displayed a trend toward a gradual and significant decline from the initial wave to the final wave; however, the post-hoc comparisons (Bonferroni corrected, \( \alpha=0.002 \)) revealed that the mean ratings were not different from one another.

**Performance indicators of coping:** Two additional indicators of effective coping were examined, academic performance and team match performance. Inspection of the team academic data indicated no decrement following the bus incident. The team was an all-conference academic team (i.e., team Grade Point Average of 3.4 or better on a 4.0 scale) the season preceding the accident, the season of the accident, and the season following the accident.

In examining match performance data before and after the accident, we again found no decrease in performance. Including only conference matches during the regular season, in 2010, the season of the accident, the team was 4:1 (wins/losses) prior to the accident and 10:1 post accident. The season prior to the accident, 2009, five matches into the conference season the team was 3:2 and 11:2 the rest of the regular conference season. The season following the accident, 2011, the team was 4:1 at five matches into the conference season and 11:0 the remainder of the regular conference season. Thus, the team records before and after five matches into the conference season (i.e.,
The current study longitudinally tracked the emotional responses and coping strategies of an intercollegiate volleyball team over the 15-month period following a near-crash bus accident. Given that this stressful event fell outside of the control of the athletes and coaches as they rode the team bus and that none of the team members were seriously injured during the accident, the residual impact that this event had on the team was chiefly emotional in nature. As predicted, the team’s negative affect was at its peak immediately after the accident and then declined throughout the remainder of the study.

Overall, the team’s experience of positive affect remained relatively stable over the fifteen months. Immediately after the incident, the members of the team, on average, endorsed more emotion-focused coping strategies than problem-focused strategies (e.g., planning or active coping). Immediately after the incident, the most commonly endorsed coping strategies included self-distraction, using emotional support, acceptance of the situation, using instrumental support, denial, and positive reframing of the situation.

Based on the emotion-focused coping strategies that were predominantly used, three general behavioral tendencies emerged: (a) expressing thoughts and feelings (repalling thinking about the accident), (b) seeking support, acceptance of the situation, using instrumental support, and (c) engaging in maladaptive coping strategies such as substance use and disengagement.

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### Discussion

The current study longitudinally tracked the emotional responses and coping strategies of an intercollegiate volleyball team over the 15-month period following a near-crash bus accident. Given that this stressful event fell outside of the control of the athletes and coaches as they rode the team bus and that none of the team members were seriously injured during the accident, the residual impact that this event had on the team was chiefly emotional in nature. As predicted, the team’s negative affect was at its peak immediately after the accident and then declined throughout the remainder of the study.

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Based on the emotion-focused coping strategies that were predominantly used, three general behavioral tendencies emerged in response to the accident. First, the coaches and players sought to support one another after the event and also sought emotional and...
instrumental support from their peers, family, and friends. Although we have no objective measure of team cohesion, the relatively high level of cohesion frequently found in high performing teams is characteristic of this team. Team cohesion may have aided in the coping response, particularly in the form of social support.

During the first month after the incident, the team reported that they frequently discussed the accident with others and that they found the events surrounding the accident to be easy to discuss. Although this event had a tremendous impact on the lives of the players and coaches on the team, an open line of communication may have helped to mitigate some of the negative emotionality tied to the event [31-33]. Closeness scores at the fourth wave six months after the accident were significantly lower than they were at the second wave, but did not differ other than this across the 15-month period under study. The decrease in closeness at the fourth wave may be explained by the fact that at the time of the fourth wave, the team had concluded their spring season and there was little team interaction.

Over time, the team reported relying less on social support as a means of coping with the aftermath of the event, suggesting that, as their negative emotional reaction to the event subsided, there was less of a need to draw from the support of others. When one suffers a traumatic life event, higher levels of social support immediately after the event takes place can serve to buffer the emotional impact of the trauma and reduce the likelihood of experiencing long-term mental and physical health problems [25-27,34].

Aside from the use of social and instrumental support to cope with the near-crash bus incident, another trend that emerged in the data is the use by the coaches and players of two avoidant coping strategies (i.e., self-distraction and denial) immediately following the accident. Avoidant styles of coping such as denial, distraction, or suppression, are typically used when the emotional impact of an experience is severe [35,36] and when one is dealing with a stressor that evokes the salience of mortality [18,19]. The accident took place because the bus driver died at the wheel while the team was in route to a competition. In addition to considering the death of the bus driver, the team also faced the hypothetical consequences of what could have happened if the bus was not re-directed out of the oncoming interstate traffic onto the side of the highway. The team reported that they considered the event very frequently within the first month after the accident occurred; thus, individual team member thoughts may have revolved around the possibility of their own demise in the bus incident. The use of self-distraction and denial had decreased to a relatively low level by two months after the accident.

The team’s coping strategies included resilience-oriented strategies such as acceptance and positive reframing [10,37,38]. Although the team initially displayed a negative emotional response to the bus incident, this negative reaction declined by four months post-accident; the team’s level of positive emotion was maintained across the fifteen months of the study. In response to stress, rumination can act to intensify the negative emotions that re-occur over time after the event [39,40]. One means of combatting the ill-effects of rumination is to reframe the outcome of the event in a more positive light, focusing on one’s personal survival and the resilience of the human experience (i.e., positive reframing) [41]. When faced with a negative event over which one has no control, accepting the negativity associated with the outcome and moving on by focusing on one’s future goals can lead to reduced distress when thoughts about the stressor re-emerge over time (i.e., acceptance) [42]. Although

the team frequently discussed the incident and reported relatively high levels of two avoidant coping strategies early on after the event, the team also endorsed the use of positive personal reflection, thus engaging simultaneously in adaptive and maladaptive coping strategies. However, at the one year anniversary of the bus incident, the team was chiefly relying on acceptance to cope with the thoughts and feelings evoked by the event.

Limitations

As with most field studies, there are limitations to our research. Our study is a longitudinal case study of a single team of female athletes. Although there is nothing to suggest the team is atypical, our results may or may not generalize to other teams, to male athletes, or to other accident situations.

Self-reported data are common in the social sciences; however, self-report data are subjective and vulnerable to bias. Our first wave of data is retrospective, which may make it more vulnerable to bias. It was important for the welfare of the team members that they felt comfortable participating in the study. Given the nature of the accident and the immediate aftermath of the accident, and the requirements for Institutional Review Board approval, the first wave of data was collected as quickly as was feasible. It is likely the athletes and coaches were forthright in reporting their perceptions and behavior at each wave of data collection. The corresponding author has had a long-term relationship with the team which enabled access to the athletes and coaches and provided psychological safety for their self-reports.

Because of the nature of accidents, we did not know ahead of time that the bus accident would occur. We have no baseline data to compare to our post-incident data. However, 15 months of post-incident data include clear patterns that suggest that the players and coaches returned to what is likely to have been their pre-incident level of coping with the normal stress of participating in intercollegiate athletics within the 15-month time frame we studied.

Conclusions

We could find no published study that systematically and longitudinally assessed the reactions of an athletic team to a traumatic travel accident. Our data provide a reference for other teams who experience an unfortunate accident. Future researchers may track similar coping and emotional reactions to determine if our results are generalizable to other athletes and to other situations. Research questions that remain unanswered include whether there are differences between male and female athletes in coping strategies, differences in how athletes from different sports cope with accidents, or if non-athletes cope in a similar manner to the intercollegiate athletes in this study. Likewise, it may be of interest to track physiological indicators of stress such as cortisol levels.

Team members reported a consistent level of PA across the 15-month period following the accident. Although we can speculate that this PA is representative of the team’s psychological hardness, further research is needed to further explore and explain this finding. NA declined across the year with the largest declines most proximal to the accident. Team members reported using a variety of coping strategies immediately after the accident, most of which changed in their trajectories over time. The adaptive coping strategies of using emotional support, acceptance, using instrumental support, and positive reframing, and the two avoidant strategies of self-distraction

and denial were more commonly endorsed than the remaining eight types of coping strategies. Acceptance (highly) and positive reframing (moderately) continued to be endorsed throughout the year such that at the one year anniversary of the bus incident, the team was chiefly relying on acceptance and positive reframing to cope with the thoughts and feelings evoked by the event.

Bus travel is a frequent activity for many teams. To our knowledge, our study provides the first systematic assessment of an athletic team’s emotional and behavioral reactions to a near-crash accident, as well as the strategies they employed to cope with the aftermath of the accident. The data reported in our study indicate this intercollegiate volleyball team coped well with a near-crash accident and, as such, our study provides insight into effective team coping. There was no decrement in either academic performance or team match performance related to the accident. The players and coaches reported they relied on each other, family, and friends to provide emotional support during the first few months following the accident and that they remained close to each support group throughout the 15-month period under study. By the 12-month anniversary of the accident, players and coaches reported using only the adaptive coping strategies of acceptance and positive reframing when referencing the accident. Our results should prove useful to teams involved in travel accidents. Our data provide what may be expected in terms of emotional responses and coping strategies across the first year following an accident. Teams involved in travel accidents and others may find these results informative when considering expected timeframes for emotional reactions to accidents and the nature of coping strategies to effectively deal with the aftermath of the accident.

References


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