

A COMPARISON BETWEEN INJURED AND UNINJURED FOOTBALL PLAYERS ON SELECTED PSYCHOSOCIAL VARIABLES

**Britton W. Brewer
Springfield College**

**Trent A. Petrie
University of North Texas**

Conclusions drawn from or recommendations based on the data provided by the National Collegiate Athletic Association are those of the authors based on analyses/evaluations of the authors and do not represent the views of the officers, staff or membership of the NCAA.

ABSTRACT

The psychological impact of athletic injury on 916 NCAA Division I football players was examined. Injured student-athletes reported significantly higher levels of depression and life stress than uninjured student-athletes. The findings, which are consistent with previous research, suggest that injury can be a significant stressor for student-athletes.

INTRODUCTION

Participation in intercollegiate athletics involves extensive commitments of time and energy. It has been argued that the demands placed on college student-athletes exceed those placed on their nonathletic peers (Pinkerton, Hinz, & Barrow, 1989). In addition to the typical academic and social challenges faced by college students in general, student-athletes encounter a unique set of concerns as a result of their participation in intercollegiate athletics, such as discrimination, social isolation, and extensive

travel to competitions (Engstrom & Sedlacek, 1991; Pinkerton, Hinz, & Barrow, 1989; Petitpas & Champagne, 1988).

One of the major transitions experienced by many student-athletes is dealing with physical injury (Pearson & Petitpas, 1990). Despite the high prevalence of injury in sport activities (Kraus & Conroy, 1984; Lanese, Strauss, Leizman, & Rotondi, 1990; Meeuwisse & Fowler, 1988; Zemper, 1989), there has been little research on the psychological impact of athletic injury. Several studies have found that injured athletes experience greater mood disturbance than their uninjured counterparts (Chan & Grossman, 1988; Pearson & Jones, 1992; Smith, Stuart, Wiese-Bjornstal, Milliner, O'Fallon, & Crowson, 1993) and that this postinjury mood disturbance tends to diminish as rehabilitation progresses (McDonald & Hardy, 1990; Smith, Scott, O'Fallon, & Young, 1990). Kleiber, Greendorfer, Blinde, and Samdahl (1987) found that college student-athletes who sustained a career-ending athletic injury experienced lower postcollegiate life satisfaction than those who did not. A subsequent reanalysis of these data (Kleiber & Brock, 1992) revealed that low levels of postcollegiate life satisfaction were evident only for those student-athletes who were committed to playing professional sport and who sustained a career-ending athletic injury.

Investigations on the psychological effects of athletic injury, however, have been limited in several important ways. First, sample sizes have typically been small. None of the studies has had samples in excess of 100 injured participants. Second, college student-athletes have been the primary participants in only two studies (Kleiber, Greendorfer, Blinde, & Samdahl, 1987; McDonald & Hardy, 1990). And third, perhaps as a consequence of the first two limitations, relatively few psychological variables have been included in typical investigations of psychological responses to athletic injury. Thus, the purpose of this study was to examine differences between injured and uninjured college football players on selected psychological variables employing a large, diverse sample that was randomly selected during the National Collegiate Athletic Association's 1987-1988 national study.

METHOD

Participants

Participants were 916 NCAA Division I football players who participated in the 1987-88 National Study of NCAA Student-Athletes (Center for the Study of Athletics, 1988). The football players were drawn randomly from 42 universities that had been selected to represent the variation in size, location, and public/private status of all 291 Division I universities. The mean age of the participants was 19.78 ($SD = 1.40$) years; 553 (60%) identified themselves as white and 344 (38%) as black. In terms of class standing, 296 (32%), 257 (28%), 220 (24%), and 138 (15%) reported being freshmen, sophomores, juniors, and seniors, respectively.

Measures

Several well-validated and psychometrically sound measures were administered as part of the National Study. The Center for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977), the Rosenberg Self-Esteem Scale (Rosenberg, 1965), and the Spielberger Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970) were used to assess depression, self-esteem, and trait anxiety, respectively. The Levenson (1974) Locus of Control Scales were used to measure perceptions of three dimensions of control (internal control, powerful others, and chance). Acceptably reliable indices of life stress ($\alpha = .88$) and social support ($KR-20 = .58$) were developed from survey items.

Two items pertaining to recent injury history were used to determine membership in the injured and uninjured groups. Participants who reported having sustained an injury in intercollegiate practice or competition during the preceding academic year comprised the injured group ($n = 488$). The remaining participants comprised the uninjured group ($n = 428$). Unfortunately, none of the items on the National Study questionnaires addressed injury severity.

RESULTS

Table 1 presents means and standard deviations for the psychosocial variables assessed in this investigation. To examine differences between the injured and the uninjured group, a one-way MANOVA was performed on participants' scores on the depression, self-esteem, trait anxiety, locus of control, life stress, and social support inventories. A significant multivariate effect for group membership (Wilks' $\lambda = .97$, $F[8,907] = 3.34$, $p < .005$) was obtained.

Follow-up univariate ANOVAs revealed that the injured group had significantly higher depression scores ($F[1,914] = 7.50$, $p < .01$) and life stress scores ($F[1,914] = 16.96$, $p < .0001$) than the uninjured group. No other significant effects were obtained, although the difference between the injured group ($M = 4.46$, $SD = 2.14$) and the uninjured group ($M = 4.71$, $SD = 2.19$) on social support approached significance ($p < .08$).

Although the CES-D generally is not used to make clinical diagnoses of depression, researchers (Husaini, Neff, Harrington, Hughes, & Stone, 1980; Radloff, 1977) have identified cut-off scores that may be employed to classify individuals and determine prevalence rates. Using the original cut-off of 16, 115 (27%) and 161 (33%) of the uninjured and injured football players, respectively, could be classified as depressed. When the more conservative cut-off of 23 is applied, however, prevalence rates drop to 9% ($n = 35$) and 13% ($n = 61$) for the two groups.

DISCUSSION

The results of this study indicate that injured college student-athletes reported significantly higher levels of depression and life stress than their

Table 1

Means and Standard Deviations of Psychosocial Variables for Injured and Uninjured Participants

Variable	Group	
	Injured (n=488)	Uninjured (n=428)
Depression		
M	14.15	12.66*
(SD)	(8.80)	(7.56)
Self-esteem		
M	25.21	25.27
(SD)	(4.86)	(4.33)
Trait anxiety		
M	38.38	37.55
(SD)	(9.43)	(8.26)
Locus of control		
Internal control		
M	38.18	38.24
(SD)	(5.89)	(5.80)
Powerful others		
M	21.55	21.92
(SD)	(11.18)	(10.41)
Chance		
M	18.47	19.09
(SD)	(8.81)	(8.93)
Social support		
M	4.46	4.71
(SD)	(2.14)	(2.19)
Life stress		
M	118.28	114.08*
(SD)	(14.28)	(15.99)

*Significantly different from injured group at $p < .01$.

uninjured counterparts. These findings are consistent with previous research documenting greater mood disturbance for injured versus uninjured athletes (Chan & Grossman, 1988; Pearson & Jones, 1992; Smith et al., 1993) and with the theoretical position that injury is a stressor (Weiss & Troxel, 1986; Wiese & Weiss, 1987). The nonsignificant differences between the injured and uninjured groups on the remaining psychological scales make sense when it is considered that, with the exception of the social support scale, the measures are designed to

assess dispositional characteristics that are unlikely to change as a result of athletic injury.

The current findings provide impetus for the provision of counseling and support services to injured student-athletes (e.g., Chartrand & Lent, 1987; Denson, 1992; Jordan & Denson, 1990). The elevations in depression and life stress experienced by injured student-athletes should be of particular concern for counselors and other student service professionals for several reasons. First, although injured athletes typically receive care from sports medicine personnel (e.g., athletic trainers, team physicians), these professionals generally have no formal training in helping student-athletes cope with concomitant psychological disturbances like depression (Etzel & Ferrante, 1993). Injured student-athletes who experience high levels of depressive symptoms then must seek assistance from other professionals within the university community who possess the necessary knowledge and skills (e.g., counselors). In fact, the involvement of counselors in the treatment of injured student-athletes can be critical because psychological distress can interfere with adherence to injury rehabilitation regimens (Daly, Brewer, Van Raalte, Petitpas, & Sklar, in press) and physical recovery (Wise, Jackson, & Rocchio, 1979). Thus, counselors serve injured student-athletes by helping them cope with injury, reduce levels of depression (an aversive state in and of itself), and adhere to injury rehabilitation programs that are critical for reattaining the role and identity of athlete, a source of self-worth to many student-athletes (Petitpas & Champagne, 1988).

Second, life stress can have adverse effects in the academic arena. For example, Petrie (1993a) found an inverse relationship between student-athletes' life stress and grade point average. White college football players who reported higher stress levels at the beginning of the academic term earned lower grades during that term. Thus, in addition to experiencing athletic difficulties, injured student-athletes' academic performance may suffer as well. If identified early, however, the specific needs of these "high stress" student-athletes could be assessed and interventions targeted to help. For example, some high-stress, injured student-athletes may feel overwhelmed and unable to cope with the demands of school. Such student-athletes might benefit from individual/group therapy, where they could discuss their feelings and receive support, or from life skills workshops (e.g., on time and/or stress management), where they could learn essential skills for negotiating their current environment. Whatever the student-athletes' specific needs, counselors and other student service professionals again appear to be in the best positions to offer assistance.

It is important to acknowledge that, because of the retrospective and cross-sectional methods employed in this study, causal inferences cannot be made regarding the impact of athletic injury on the psychological state of college student-athletes. A possible alternative explanation for the findings of this study is that elevated levels of depression and life stress precipitated injury in the football players (e.g., Andersen & Williams, 1988; Petrie, 1992, 1993b, 1993c). Nevertheless, this investigation represents an improvement over previous studies with respect to the number of variables incorporated in the analyses and the size, diversity, and representativeness of the sample. In future

research, attempts should be made to rule out alternative explanations and to improve upon the current study by employing prospective and longitudinal designs (e.g., Smith et al., 1993) while retaining the positive elements of this investigation.

Physical injury is a risk inherent in competitive sport participation. As an enhanced understanding of the impact of athletic injury on student-athletes is developed through research, athletic counselors and student services professionals will be better prepared to attend to the needs of injured student-athletes and assist them in their transitions through college.

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Britton W. Brewer is an assistant professor in the Department of Psychology at Springfield College, where he teaches undergraduate and graduate courses. His research interests include athletic identity and the psychology of athletic injury rehabilitation. He also serves as the coach of the men's cross country team.

Trent A. Petrie is an assistant professor in the Department of Psychology at the University of North Texas, where he teaches undergraduate and graduate courses. His research interests are professional issues in sport psychology, psychosocial antecedents of athletic injury, and eating disorders. Teaching interests include group psychotherapy and multicultural counseling.