# Interventions for the Mind, Body, and Spirit of NCAA Student-Athletes: An Evidence to Practice Review

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## ABSTRACT

Life as an athlete in the National Collegiate Athletic Association (NCAA) can enrich and play an integral part in a young student-athlete's development. Consequently, this lifestyle comes with its own stressors that affect one's physical, spiritual, and psychosocial well-being. These issues can affect various aspects of a student-athlete's life, including their performance in sports, school, and social settings. Recent studies have begun connecting these domains directly to the health and well-being of NCAA student-athletes, leading to new evidence focused on the best intervention protocols for the biopsychosocial-spiritual (BPSS) model of health. A systematic review was conducted using five electronic databases. Twenty studies were included in this review, each assessing how effective existing interventions were at helping the health outcomes of BPSS factors in NCAA student-athletes specifically. The most used interventions in the reviewed literature included cognitive behavioral therapy, cognitive dissonance, and mindfulness. Results suggested that the interventions had positive BPSS effects on student-athlete stressors. This data can be especially beneficial for healthcare providers, such as athletic trainers, who work directly with them daily. The overall health of NCAA student-athletes should be considered when creating treatment protocols and BPSS-based programs should be incorporated due to their demonstrated positive effects.
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## ORIGINAL REFERENCE

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## SUMMARY

## CLINICAL PROBLEM AND QUESTION

The National Collegiate Athletic Association (NCAA) has about 500,000 participants yearly.[1] Sports can be an experience that helps athletes grow in confidence, maturity, social skills, work ethic, problem-solving, acceptance, and much more.[1] But for others, the addition of sports to college lives can prove to be too much when balancing social, spiritual, psychological, and biological stressors.[2] In recent years, researchers have begun studying these stressors of NCAA student-athletes and their connection to risky behaviors, mental health problems, and spirituality.[3] Data gathered from the National College Health Assessment identified that half of male NCAA athletes and almost three out of four female NCAA athletes described experiencing overwhelming anxiety in the last year.[4] Furthermore, over 5% of student-athletes have experienced suicidal ideation, and 30% of sudden deaths have come from suicide and drug-related activities.[4-6] It has been hypothesized that these behaviors are based on an inability to cope with the pressure from sports and school.[7] With this type of data surfacing, the NCAA acknowledged mental health as being the top health



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concern for student-athletes.[8] Athletic trainers in the collegiate setting work directly with this population daily; knowing what afflicts them physically is equally important as knowing what afflicts them mentally. The athletic trainer must aid in preventing, educating, and referring issues involving the patient's mental, social, and spiritual health and well-being. Therefore, this evidence-to-practice review aims to explore successful interventions managing the biopsychosocial-spiritual (BPSS) health of NCAA student-athletes.

## SUMMARY OF LITERATURE

To identify studies that highlighted interventional effects on the BPSS model, the authors of the guiding systematic review searched CINAHL, PsycINFO, PubMed, ERIC, and SPORTDiscus for articles. The search terms included many words related to "intercollegiate athletes," "depression," "stress," "body image," "treatment," and "spirituality." Those search terms revealed 420 unique articles, which, after a review of titles and abstracts, yielded 75 studies for a full review. For the full text to be reviewed, the study had an intervention to affect the BPSS model, be peer-reviewed, be published in English, and study NCAA student-athletes. If the reported outcome was biological, the study also had to report a psychological, social, or spiritual outcome. A double review system provided inter-rater consistency to the full-text review inclusions and exclusions. Once studies were deemed relevant, researchers used the Cochrane collaboration tools and the Quality Assessment Tool for Quantitative Studies (QATSQ) to assess bias, study design, methods, and other factors that affect the quality of the study. The scores from these quality assessments were used to rate the studies as either weak, moderate, or strong; the strong research was kept, and the weak and moderate articles were not included. Of these reviews, eighteen articles remained and were included, and two additional articles were selected after hand-searching the reference lists of the chosen articles.

## SUMMARY OF INTERVENTIONS

These studies used various psychological, mindfulness, educational, and social interventions. Most interventions were single administration education or intervention, 7 to 14 sessions of therapy or group intervention, or season-long interventions. Four studies used forms of cognitive behavioral therapy (CBT) administered by a therapist or a sports psychologist, while another study used normative therapy techniques via interactive computer programs. Six studies focused on mindfulness training related to performance measures, anxiety, stress, and heart rate. These techniques were either self-guided or conducted by a trained meditation instructor. The three studies aimed to investigate if cognitive dissonance and healthy weight education programs implemented by psychologists impacted body image and disordered eating habits. Six studies had at least one group given an educational intervention focused on stress, substance abuse, or health. Only one study looked at social support from the athletic training staff and its impact on the BPSS model of health. Several studies used more than one of the interventions mentioned earlier and a control group to compare 3 or 4 levels of an independent variable.

## SUMMARY OF OUTCOMES

Because the BPSS model encompasses many aspects of a person, the outcomes needed to study it should be equally encompassing. These studies researched objective and subjective biological, psychological, social, and spiritual wellness measures. Each study chose its unique biological measures, including body fat percentage, resting heart rate, illness/injury days, and several visits to a health center. Psychological outcomes examined body dissatisfaction, thinness idealization, self-esteem, sports anxiety, bulimic pathology, and anxiety symptoms. To assess the social impacts of the interventions, they measured alcohol use, alcohol-related consequences, levels of social cohesion, and team leadership skills. Mindfulness scores and overall

life satisfaction appraised improvements in spirituality. A few studies in the systematic review also viewed qualitative outcomes in addition to the quantitative measures collected. These included patients' preferences of intervention types and their subjective beliefs of the effectiveness of the treatments. They collected coaches' performance, leadership skills, and coping skills ratings of players who received the interventions compared to the control groups. In addition, studies qualitatively assessed how team group activities, like campouts and meetings, compared to more formal interventions in affecting the BPSS outcomes.

## FINDINGS AND CLINICAL IMPLICATIONS

Results from the guiding systematic review identified improvements in BPSS health outcomes when interventions based on mindfulness and cognitive-behavioral approaches were implemented (**Table 1**). Mindfulness involves specific meditative actions (yoga, deep breathing exercises, etc.) that help to decrease a patient's reactivity to stressful internal problems and help them develop skills to better self-reflect.[9] Cognitive-behavioral approaches involve treatments that help patients focus on maladaptive thoughts and behaviors to better understand and work through their emotions during high-stress situations.[10] Research from one study found that these intervention types showed significant decreases in the number of injured days, sick days, and visits to the health center,[11] and another study showed improvements in sports performance, concentration, and anxiety.[12] Additional research revealed in-person programs focusing on cognitive-behavioral and motivational interviewing techniques positively affected student-athlete substance use and abuse.[13] The participants had decreases in the frequency and amount of alcohol use and alcohol-related penalties, as well as increased protective behaviors. Athletic trainers could incorporate mindfulness and/or cognitive-behavioral type activities by starting with guided awareness of their body in space, their breath, and their thoughts while in a relaxed state and leading into self-guided meditative control over these same factors when in stressful situations.[14]

**Table 1**. Definition of Cognitive Therapies

| Intervention Type | **Definition** |
|---|---|
| Cognitive Behavioral Therapy | A treatment method that focuses on maladaptive behaviors and thoughts of individuals. It enhances the individual's attentiveness and understanding of their emotions, heightens their cognitive flexibility, and increases their ability to work through anxious, negative, and avoidant behaviors and thoughts.[10] |
| Mindfulness | A treatment method that uses exercises such as yoga, seated meditation, and deep breathing to help an individual decrease their reactivity to negative internal issues and increase their ability to self-reflect by focusing on the orientation of their bodies in that present moment.[9] |
| Cognitive Dissonance | A theory that states an individual's preferences are modulated by the act of choosing between two alternatives. This can cause psychological tension and stress and can be reduced by reevaluating the alternatives post-decision-making.[21] |

Several studies showed positive outcomes related to body positivity and disordered eating. One study found that dissonance prevention and healthy weight education decreased restrictive eating habits, bulimic pathologies, weight concerns, and thinness ideals.[15] Another study showed that those interventions also decreased dietary restraint in those with dietary restraint issues.[16] Health education intervention focusing on positive health behaviors was also linked to decreased body dissatisfaction and thinness idealization.[17] Data

from multiple studies determined that biopsychosocial-spiritual interventions also helped with depressive symptoms. One of these studies used a 10-week individual/group psychological training program focused on relaxation, positive self-talk, and the use of imagery, which demonstrated positive adjustments to self-confidence.[18] Another study found that implementation of a 7-week stress management program decreased anxiety and increased psychological abilities, sports performance, and educational performance.[13]

Implementing mindfulness and meditation programs showed increased awareness, mindfulness, and focus on the present and individual goals.[19,20] In one study, it led to greater goal-directed energy.[16] The results discussed can heavily influence clinical practice in the collegiate setting. For athletic trainers working with NCAA athletes, many of the patients they work with will experience some of the issues described above (substance abuse, loss of concentration, anxiety, low self-confidence, depression, etc.). Athletic trainers must know how to recognize these concerns and which interventions to seek out for their patients. Athletic trainers possessing the ability to help with matters outside of just sport-related issues can be critical in increasing their patients' overall quality of life.

This review showed great support for CBT techniques. Athletic trainers may not have the necessary training to employ this on their own; therefore, enlisting the help of a psychologist, social worker, or counselor trained in CBT may be beneficial. Referring athletes to the appropriate mental health specialist when they are experiencing difficulties in rehab, school, and social situations may help their overall wellness and improve their sports performance. The research presented in this article has shown how interconnected the mind, body, and spirit are; if one aspect fails, it can adversely affect the others. Conversely, addressing one of those aspects can result in healing the whole person. This can lead to safer behaviors, better health-related outcomes, and increased sports performance. Having the capability to help a patient or seek help on behalf of a patient in all four of these areas should be the standard of care for every athletic trainer, especially in the collegiate setting.

## CLINICAL BOTTOM LINE

Being an NCAA student-athlete can have adverse effects on the BPSS aspects of one's daily life. Those working directly with this population, especially athletic trainers, need to address and help manage these patients' specific social, spiritual, biological, and psychological issues. Athletic trainers play a significant role in the physical health of a student-athlete, and by extension, they have considerable influence over mental health. Recognition is one of the first skills athletic trainers need when dealing with BPSS issues. To do this, proper training and education need to be available and tailored to athletic training on issues like anxiety, depression, and substance use/abuse. Once recognized, the athletic trainer can implement the appropriate plan of care. Regarding NCAA student-athletes, there is no set intervention that guarantees positive results for all facets of the patient's BPSS character. So, it is particularly important that athletic trainers continue to learn about various interventions that have proved successful in similar populations.

These studies outline major ways athletic trainers can affect the BPSS well-being of their athletes. The most prominent way is through educational interventions. Athletic trainers can implement whole team or individual educational programs, which, as discussed previously, can be especially effective for disordered eating and substance abuse. Pre-emptive educational programs could help those at risk for serious issues and improve the overall well-being of the team unit. The comprehensive health of NCAA student-athletes is constantly challenged by life and sports stressors, and this should be a priority for everyone involved in their healthcare team.

Another method to address the patient's well-being is by athletic trainers incorporating mindfulness techniques into the daily plan of care and rehabilitation programs. Adding breathing techniques, stress management, visualization, and/or yoga into a patient's rehabilitation plan could improve both their mental and physical health. Successful interventions mentioned in this review include but are not limited to mindfulness meditations, motivational interviewing, life skills training, breathing techniques, individual and group sessions, substance use prevention programs, managing cognitive-behavioral stress techniques, and more. Different sports have various obstacles that can negatively impact a student-athlete's BPSS model. Athletic trainers benefit from researching what has worked well for common BPSS issues in the sports in which they work. This article represents a great starting point to see what the data indicates are the most effective interventions for collegiate student-athletes in one sport compared to another. Further research should be conducted on the BPSS model and related intervention strategies.

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