Mindfulness in Track and Field Performance Enhancement

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Abstract

This study examined the impact of mindfulness on the enhancement of track and field performance, anxiety, and self-confidence. A group of track and field athletes completed a week-long mindfulness intervention using the SmilingMind phone application or website. Before and after engaging in this intervention athletes were assessed for sports anxiety and self-confidence levels and their performances in their corresponding event area was recorded. The hypotheses that athletes who completed the mindfulness intervention would experience improvement in their track and field performance and self-confidence, and a decrease in sport anxiety compared to athletes who completed a control intervention, or no intervention was not supported. Potential explanations for these findings, including the methodological limitations encountered and suggestions for future research are discussed.
Mindfulness and Track and Field Performance

When it comes to sports performance, success involves developing competence and mastery of physical and mental abilities. Coaches and athletes across many different sports acknowledge that developing physical skills provides a necessary foundation. However, awareness of the essential nature of gaining control of the mental aspects of competition and performance has recently entered the sports world. For example, Weinberg and Gould (2015) found from self-reports that most coaches stated that mental skills account for at least 50% of the level of performance in elite athletes. Regarding track and field, elite runners in the United States have also contended that their sport is 80% to 90% mental (Lynch & Scott, 1999). However, when athletes or coaches were asked how much time they spend practicing and developing mental skills, most admit to committing only 5-10% of time to such efforts (Dale, 2010). It has also been reported that a majority of coaches and athletes prefer to focus all of their training time on developing technical and physical skills necessary for their sport (Truelove, 2014).

Research has identified several specific areas of mental performance that are consistent with high level physical performance, suggesting that it is the combination of mastery in mental and physical abilities that leads to optimal success. A series of correlational studies have led practitioners of sports psychology to endorse the notion that more successful performers are less anxious, more confident, and experience fewer negative thoughts (Gould, Eklund, & Jackson, 1992; Gould, Weiss, & Weinberg, 1981; Orlick & Partington, 1988).

Anxiety and Sport Performance

Yerkes-Dodson Law. According to the Yerkes-Dodson Law (Yerkes & Dodson, 1908) a curvilinear relationship exists between arousal and performance. This relationship suggests that as arousal increases performance improves, but only up to a certain point. This law was first
established by Robert Yerkes and John Dodson (1908) when they discovered that mild electrical shocks could be used to motivate rats to complete a maze. As they conducted the study, researchers realized that as the electrical shocks became too strong, the rats would scurry around in random directions to try to escape, which resulted in deterioration of the quality of their performance. This study demonstrated that an increase in stress and arousal can help one focus motivation and attention on the task at hand, but that the positive influence from stress and arousal is limited. When stress and arousal become too high, a negative effect on motivation and attention, and subsequently also on performance, can be predicted.

Athletic performance provides a prototypical illustration of the Yerkes-Dodson Law. When an athlete is poised to make an important move in their performance, like hitting a homerun in a baseball game, an ideal level of stress and arousal can sharpen ones’ motivation and attention and enable them to do so. However, when the player becomes overly stressed, they may instead “choke” and strike out. In the sport of track and field, a middle-distance runner might “go out too fast” as a result of over-arousal, leading them to “tie up” and struggle to maintain their pace and form through the finish. Field events that rely on the replication of precisely timed physical movements (e.g.; high jump, pole vault, discus, hammer throw) may be particularly prone to disruptions from excessive arousal.

Anxiety. Anxiety and its effects on sport performance has been one of the most frequently researched topics in sport psychology (Hanin, 2000; Woodman & Hardy, 2001). Within a sport context, anxiety is understood to be “an aversive emotional experience that can develop during potentially threatening, evaluative situations” (Englert & Bertrams, 2012, p. 580). Sport competitions fulfill the criteria of being a threatening evaluative situation due to athletes looking to perform well while under pressure from teammates, coaches, and fans. The fact that
awards are provided to the “winners” of athletic events codifies the evaluative factor of competition. It is not surprising that this evaluative component may cause heightened levels of anxiety in some athletes which then inhibits them from performing at an optimal level.

Researchers have identified several ways in which anxiety impacts involvement in sport. Anxiety has been associated with athletes quitting sports activities (Gould, Feltz, Horn, & Weiss, 1982; Scanlan, Babkes, & Scanlan, 2005), impaired performance (e.g., Hannin, 2000; Woodman & Hardy, 2001) and inhibition of an athlete’s “flow” state (Csikszentmihalyi, 1978; Jackson, 2000). This “flow” state is best described as a feeling of enhanced physical and psychological functioning, and a sense of freedom that stems from an absence of negative thoughts and self-conscious evaluation (Jackson, 2000). As self-conscious evaluation may prompt anxiety, achieving a “flow state” is the antithesis of being anxious. Researchers suggest that it may be difficult to achieve a flow state when anxious because anxiety can foster and maintain a negative self-conscious focus that disrupts concentrated attention (Scott-Hamilton & Schutte, 2016). In order to achieve a successful flow state, one must have the ability to be absorbed in the present moment (Csikszentmihalyi, 1978, Scott-Hamilton & Schutte, 2016). The current study will examine how athletes’ propensity toward being in an anxious state mediates the efficacy of a specific type of sport psychology intervention.

**Psychological Skills Training (PST)**

In the early days of sport psychology, approaches to enhance athletic performance were based primarily in social cognitive theory (Bandura, 1977) and skills training models grounded in cognitive-behavioral interventions (Meichenbaum, 1977). These approaches teach athletes to develop psychological skills such as imagery, goal setting, arousal control, self-talk, and precompetitive routines. These skills promote the development of self-control of internal
processes such as thoughts, emotions, and bodily sensations that, if left unchecked, can promote anxiety and self-doubt that undermine athletic performance. Therefore, utilization of interventions based in social cognitive and cognitive-behavioral theory are designed to create the ideal internal psycho-emotional state for maximizing performance (Hardy, Jones, & Gould, 1996). From the perspective of decreasing anxiety and negative thoughts while improving confidence, an effective approach for enhancing athletic performance would be to implement interventions that target negative thoughts and replace them with positive ones, while simultaneously reducing or controlling negative affective states (Hardy et al., 1996).

Developing cognitive strategies (imagery, goal setting, arousal control, self-talk, and precompetitive routines) as a programmatic intervention to help improve sport performance has been labeled Psychological Skills Training (PST). PST is defined as “the systematic and consistent practice of mental or psychological skills to enhance performance, increasing enjoyment, or achieving greater sport and physical activity self-satisfaction” (Weinberg & Gould, 2007, p. 250). Principles stemming from PST have been established and applied successfully in sports during the last five decades (Beauchamp, Harvey, & Beauchamp, 2012; Hays, 2009; Orlick & Partington, 1988; Papnikolaou et al., 2012; Sheard & Golby, 2006; Thelwell et al., 2010). Specific to track athletes, Patrick and Hrycaiko (1998) found performance improvement in athletes competing in the 1600-meter run, while benefitting from a PST intervention package that focused on relaxation, imagery rehearsal, self-talk, and goal-setting. Interventions consistent with Researchers have studied the effects of PST-based interventions on performance in a wide variety of skills-based sports including golf (Beauchamp, Halliwell, Fournier, & Koestner, 1996), soccer (Thelwell, Greenlees, & Weston, 2006), and equestrian (Blakeslee & Goff, 2007) as well as high intensity aerobic sports such as rowing, swimming,
track cycling and flat-water canoeing (Patrick & Hrycaiko, 1998; Sheard & Golby, 2006; Thelwell & Greenlees, 2003). The positive effects of PST-based interventions have been expanded to include the performance of athletes competing in disability sports (Larsen, 2014).
PST has also been adapted from sports and utilized to enhance performance in other areas such as music (Hatfield, 2016; Hatfield & Lemyre, 2016). Overall, previous research provides strong support for the use of PST to positively impact performance.

**Critique of PST.** However, some research investigating the impact of PST techniques such as imagery, goal setting, arousal control, self-talk, and precompetitive routines on competitive performance has not been supportive of improvement. Studies have suggested that focusing on emotional and cognitive states is insufficient in that reductions in “negative” affective stress such as anxiety, and/or increases in self-confidence via positive self-talk, do not consistently result in significant improvements in athletic performance (Daw & Burton, 1994; Murphy & Woolfolk, 1987; Weingburg, Seaborne, & Jackson, 1981). In addition, the methodological rigor of the studies forming the basis of the empirical support for PST programs’ ability to enhance athletic performance has been questioned. Gardner and Moore (2006) reviewed 104 empirical studies utilizing PST strategies and found that none of the studies met criteria for evidence-based empirical support. Among the set of studies reviewed, only four met the criteria for adequate design and methodology and used competitive athletes as participants, and only one study showed statistically significant improvements in performance. The authors concluded that traditional methods of performance enhancement had not demonstrated sufficient efficacy, which suggests consideration of alternative strategies.
Integrated Model of Human Performance

In response to findings that dispute the utility of PST interventions to improve sport performance, and also consistent with contemporary trends of increased interest in using mindfulness-based approaches to treat a wide variety of psychological disorders (Breslin, Zack & McMain, 2002; Brown, & Ryan, 2003; Roemer & Orsillo, 2002; Wolfsdorf & Zlotnick, 2001), an alternative strategy was recently developed to help improve athletic performance. The Mindfulness-Acceptance-Commitment (MAC) Approach promoted by Gardner and Moore (2007) has three components that are utilized to help improve performance: mindfulness, acceptance, and commitment. For this study the main focus will be on the mindfulness component.

**Mindfulness.** Mindfulness focuses on teaching the self to direct one’s attention to the present moment in a non-judgmental and accepting manner (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Salmon, Sephton, Weissbecker, Hoover, Ulmer, & Studts, 2004). From a cognitive perspective, mindfulness involves learning to observe internal and external events such as images, thoughts and emotions as no more than that (Kaufman, Glass, & Pineau, 2018). In other words, thoughts, emotions, and other internal and external events simply *are*—they do not inherently possess any meaning or evaluative implications. A goal of mindfulness is to learn to accept such events without perceiving them as absolute reality that needs to be acted upon (Kaufman, Glass, & Pineau, 2018). This mindful focus becomes an alternative to focusing on worry about past and future events that can undermine sport performance (Salmon et al., 2004). Learning how to reliably achieve a state of mindfulness can allow a performer who is experiencing a dysfunctional performance state to shift into a more functional performance state.

The Integrative Model of Human Performance, in which the Mindfulness-Acceptance-
Commitment approach is derived from, further explains other components that may play a factor in performance that could be positively impacted through implementation of a mindfulness-based intervention.

**The Integrative Model of Human Performance (IMHP).** As the IMHP model is described by Hardy et al. (1996), human activity contains multiple factors, including internal and external influences that are intricately intertwined to understand, predict, and enhance human performance. According to IMHP, four specific factors have been identified that contribute to functional and dysfunctional human performance: 1) instrumental competencies, 2) environmental stimuli and performance demands, 3) dispositional factors, and 4) behavioral self-regulation. Hardy et al. (1996) have offered the following descriptions of these four components. Instrumental competencies include an individual’s specific physical and/or cognitive skills and abilities. Environmental stimuli and performance demands include things such as work, competition, interpersonal, situational, and organizational circumstances and issues, and different challenges the performer must face in the moment of performance like weather conditions and crowd noise. Dispositional factors include intrapersonal characteristics connected to coping styles and cognitive-affective schemas. Cognitive-affective schemas are psychological templates by which the performer perceives, interprets, and responds to explicit and implicit performance stimuli and demands. Lastly, behavioral self-regulation includes interconnected cognitive, affective, physiological, and behavioral processes that are the foundation of goal-directed behavior within any performance domain.

The IMHP suggests that ideal performance will occur when these four elements are appropriately aligned (Hardy, et al., 1996). This perfect performance state has been described in many different ways such as “flow” (Csikszentmihalyi, 1975), “recipe of emotions” (Gould &
Udry, 1994), and “zone of optimal functioning” (Hanin, 1980). All of these terms suggest that at the core of elite levels of human performance is an optimum biopsychosocial and emotional state that promotes and sustains automated, task-focused, and goal-directed behavior. In essence, the right combination of cognitive, affective, and physiological conditions allows well-learned skills to occur in a seemingly effortless, automatic, and optimal manner. Previous research (Gardner & Moore, 2004; 2006) suggests that the types of interventions included in Gardner and Moore’s (2007) description of Acceptance and Commitment Therapy, which reflect a mindfulness-based approach, could be used to help athletes achieve this optimal state for performance.

The IMHP also suggests the presence of three sequential phases: pre-performance performance, and post-performance response. The pre-performance phase involves the processes that promote readiness for competitive or performance-related behavior and includes both internal and external factors that are present before performance. Included here is the importance or personal meaning an athlete places on their performance. The performance phase involves the interaction of cognitive, affective, physiological, and behavioral processes during performance including skill execution. The post-performance phase involves responses to performance outcomes and is present following a competitive performance. The focus of the present study will be on the pre-performance and performance phases as the participants will be asked to practice mindfulness prior to and during performance of an athletic event.

In the pre-performance stage, an individual is mainly affected by environmental stimuli, performance demands placed on them by others, and their own perceptions of their physical skills and personal abilities, and internal dispositional characteristics (e.g., coping styles, cognitive affective schemas). From among these, the current study will focus on internal dispositional characteristics that may be most amenable to psychological intervention. Research
suggests that individuals develop cognitive affective schemas, or cognitive representations of the self and its relation to the world, based on their life experiences (Safran & Segal, 1990). For example, there is an athlete named Jane who may believe that they always have to win a competition, or they will be viewed as a terrible athlete because they have disappointed their parents, coaches or teammates. This schema may have developed because the athlete has a history of consistently winning competitions. Upon the rare occasion when they lose, their parents, coaches, and teammates may show disappointment by being angry, disparaging them, or refusing to talk to them.

These learned representations are the cognitive structures that influence an individual’s allocation of attention to stimuli in the environment that are deemed as either psychologically or physically dangerous. As previously stated, affective schemas are also developed and become habitual as the result of repeated confirmatory life experiences. A person with a dysfunctional or inconsistent learning history may be more prone to developing attentional biases related to these schemas that result in stimuli in the environment being misclassified. This, in turn, can lead an individual to act in a way that is inconsistent with the actual current environmental demands and against their goals and values.

For example, one may choose to act in a way that will most readily reduce their anxiety or internal emotional turmoil, rather than engaging in behaviors that would promote the individual’s optimal performance. Continuing with the example of Jane, assuming she has developed a schema that if she does not win she is a terrible athlete who disappoints those around her, when she gets to the location of a competition, instead of focusing on what she needs to do to prepare herself for the competition, such as warming up and stretching, she is looking around at the other athletes and focused on whether they are better than her. From this she may
experience some anxiety or worry that she may lose this competition; and if she does she will continue to be looked at as a terrible athlete and as one who continues to disappoint her coaches, parents, and teammates. Now Jane decides to go to the bathroom to let herself calm down so that she can get back to warming-up. However, the time that it took her to calm down causes for her warm-up time to be shorter, which in turn may affect her performance.

Dispositional characteristics can also prime the athlete for how they will interpret and respond to external demands and environmental stimuli in competitive situations. Environmental stimuli can include relationships, occupational demands, financial pressures, physical injury, and the presence of audiences (Masaki, Maruo, Meyer, & Hajcak, 2017). These all have stimulus properties to which the individual will respond based on what they have learned from their prior similar life experiences. For one to compete at an optimal level, they must successfully confront and effectively manage these stimuli.

The final element in the pre-performance stage is the performance demands one must face. Performance demands are “specific cues and general requirements necessary to perform under conditions in which the individual is challenged to achieve at or above an established standard” (Moore & Gardner, 2007, p. 7). In track and field, where performance is objectively measured in definitive distances and finish times, the pressure to exceed the previous best performance is quite evident. Failure to exceed a previous “personal record,” regardless of how one performs relative to other competitors, can become a source of self-condemnation that erodes sport-specific confidence.

The interaction of performance-specific skills, dispositional characteristics, environmental stimuli, and performance demands are the antecedents for actual performance. This interaction is the setting for ideal behavioral self-regulation during performance, which is
the second stage of the IMHP model. During the performance stage an individual will experience a degree of physiological arousal and cognitive activity related to their performance situation. Typically, individuals will automatically attend to relevant aspects of their own behavior and thoroughly use reference points, such as personal and environmental cues, to evaluate and adjust their behavior to meet pre-determined performance standards. This is better known as discrepancy adjustment (Carver & Scheier, 1989; Wells, 2000). This concept can be related to the cruise control system in a car, where the car monitors changes in the condition of the road and adjusts its speed accordingly to maintain the predetermined speed. A similar phenomenon occurs in human performance where an athlete has to be able to monitor current changes within their environment or themselves and adjust accordingly to maintain a predetermined performance standard. For example, in long jump and triple jump an athlete cannot cross a predetermined spot (also known as the scratch board) when attempting a jump. If they do so, then their attempt does not count and is considered a “scratch.” In essence, when this athlete is running down the runway they have to be able to adjust to their environment, or their location on the runway compared to where the board is located, and decide if they need to slow down or take smaller steps so that they don’t “scratch” or go beyond this predetermined point when making their attempt. Therefore, failure to read the demands of the performance situation or the environment and effectively evaluate one’s current level of performance could result in failure of making the necessary adjustments to have a successful performance.

The most important feature during the performance phase is the degree to which a performer shifts from task-focused attention to self-focused attention. Task-focused attention is being able to focus on the environment and task at hand; whereas self-focused attention is the process of controlling one’s thoughts and emotions (Gardner & Moore, 2007). However, an
athlete who experiences a maladaptive performance typically over-focuses on controlling their thoughts and emotions, perceived deficits, and self-doubts. In contrast, the performer who intends to experience a successful and functional performance must strive to be more task-oriented, and experience a nonjudgmental, self-aware mindful absorption of the task at hand. This state has been referred to as having achieved mindfulness (Gardner & Moore, 2007).

**Mindfulness in Sport Performance**

Over the past decade, research on the benefits of mindfulness on psychological well-being has grown extensively (Charoensukmongkol, 2014). One of the earliest scientific studies documenting the utility of mindfulness was published in 1982 (Kabat-Zinn). Since then, the scholarly literature has repeatedly identified mindfulness meditation as an effective alternative to mental skills training drawn from cognitive-behavioral approaches (Brown & Ryan, 2003; Charoensukmongkol, 2013; Jha, Krompinger & Baime, 2007; Kabat-Zinn, 1990). Meditation is defined as "practices that self-regulate the body and mind, thereby affecting mental events by engaging a specific attentional set" (Cahn & Polich, 2006, p. 180). Research has found that mindfulness-based meditation produces several beneficial outcomes such as reducing stress (Baer, 2003; Grossman, Niemann, Schmidt & Walach, 2004), improving well-being (Brown & Ryan, 2003; Carlsson & Brown, 2005), improving physical health (Grossman, et. al., 2004), and reducing pain, anxiety and depression (Kabat-Zinn, et. al., 1992; Teasdale et al, 2002). Further research has found that mindfulness interventions are effective with non-clinical populations as well (Baer, 2003; Grossman, et al., 2004), and have been implemented to improve performance in university (Berg & Seeber, 2016) and government settings (e.g., Mindfulness All-Party Parliamentary Group, 2015).
Particularly germane to the current study, mindfulness training has been utilized by professional sporting teams (Singh, 2014), and individual athletes (Mipham, 2012). Mindfulness is being used more extensively with athletes because they often experience performance anxiety and worries that hinder performance as they are trying to develop into elite athletes (Hardy, Mullen, & Martin, 2001). In recognition of the fact that an athlete’s psychological state regarding self-confidence, motivation, anxiety, and attention can affect his or her performance (Kudlackova, Eccles, Dieffenbach, 2012), developing and employing mindfulness practices is viewed as a means for gaining a competitive edge over opponents who possess comparable physical skills. Burns (2016) claimed that for most athletes, mindfulness meditation produces many positive outcomes such as: 1) heightened self-knowledge, 2) clearer and calmer state of mind, 3) ability to "stay in the moment," 4) reduction in destructive aspects of competitiveness, which could be expressed in feeling less stressed and worried about winning and losing, and less worried about the opinions of others, 5) reduction in feelings of fear and anger, and 6) enhanced appreciation of others and the natural environment.

**Mindfulness Apps.** While the utility of the full Mindfulness-Acceptance-Commitment approach to achieve a state of mindfulness is well documented, it is also quite involved and time-intensive. Recent investigations (Pierce, Twohig, & Levin, 2016; Proudfoot, 2012) have examined the potential effectiveness of less time-intensive, and therefore more efficient, approaches for acquiring mindfulness skills. Consistent with the trend towards efficiency is the development of easily accessible, affordable mobile applications (“apps”) designed using a module format. Mindfulness-based mobile applications have become a popular new alternative to delivering mindfulness training. However, the scientific verification of the utility and
effectiveness of such apps has not kept pace with the developing, production, and marketing of new apps (Pierce, Twohig, & Levin, 2016).

However, a study conducted by Mani, Kavanagh, Hides & Stoyanov (2015) identified and reviewed the effectiveness of 23 different mindfulness apps that claim to provide instruction in mindfulness meditation. The researchers applied the Mobile App Rating Scale (MARS) (Stoyanov, Hides, Kavanagh, Zelenko, Tjondronegoro, & Mani, 2015) to rate each app based on classification, quality, and satisfaction. Of the apps evaluated, the top-rated apps included Headspace, Smiling Mind, iMindfulness, and Mindfulness Daily. Based on the criteria described below, the Smiling Mind mobile app was selected for use in the present study.

The app, Smiling Mind, includes features such as a timer, reminders, mood assessments, tracking, program-based practice, and connections to social media. It also requires no in-app purchases and is free of any costs. Smiling Mind is a not-for-profit organization that works to make mindfulness meditation accessible to everyone. According to claims made by its inventors, use of the Smiling Mind app produces the benefits commonly associated with mindfulness meditation to children and adults. The application has eight plans that are categorized for different subgroups based on age as well as plans designed for use in different settings, such as in the workplace and in schools. For the purposes of the current study, the six modules included within the plan titled “Sport” were used. The inventors make no specific claims, nor do they cite specific scientific evidence, regarding how effective this app is in improving objectively measured athletic performance.

The current study is designed to examine whether completing a six-module mobile phone app that provides training in mindfulness meditation can produce measurable improvements in performance among a group of collegiate-level track and field athletes. The influence the app has
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on sport performance-related anxiety, as well as on sport-related self-confidence, will also be examined.

Hypothesis 1: Reductions in sport performance anxiety will be significantly greater for participants who completed the mindfulness intervention compared to those assigned to the control group.

Hypothesis 2: Increases in sport confidence will be significantly greater for participants who completed the mindfulness intervention compared to those assigned to the control group.

Hypothesis 3: No change in sport confidence and sport performance anxiety will occur for participants who did not complete an intervention.

Hypothesis 4: If adequate and reliable performance data are available, significantly greater improvement in event distances or times from pre- to post-intervention will be recorded for participants who completed the mindfulness intervention compared to those assigned to the control group.

Methods

Participants

A total of 53 track and field athletes from a small Midwestern University were recruited to participate in this study. Of the 53 participants, 22 completed pre- and post-test measures. Out of these 22 participants, four completed the full control intervention and four completed the full experimental intervention. To be included in this study participants were required to complete all pre- (Demographics, SAS-2, and TSCI) and post-test measures (SAS-2, TSCI, SVQ) along with all six manipulation check surveys for the control group and all twelve manipulation check surveys for the experimental group. The manipulation checks provide documentation assuring the researcher that participants completed the intervention exercise (video; mindfulness activity).
Due to the limited number of participants who met inclusion criteria for intervention completion, the researcher included participants who only completed the pre- and post-test measures and no intervention (n= 14) to allow for additional analyses.

The final set of full participants in the current study consisted of nine men (41%) and 13 women (59%), distributed across self-reported racial/ethnic designations of 18 (82%) Caucasian/White, three (14%) African American/Black, and one (4%) as mixed African American/Caucasian. The ages of participants ranged from 18 to 23 years, with an average age of 19 years (SD= 1.21). Two (9%) of the participants indicated their track and field event as horizontal jumps, six (27%) as vertical jumps, three (14%) as throws, five (23%) as sprints, one (4%) as hurdles, three (14%) as middle distance runners, and two (9%) as long distance runners.

Materials

Demographics. Participants completed a demographics questionnaire (Appendix B). Questions included age, gender, ethnicity, how many hours a week they currently engage in relaxation or mindfulness exercises and track and field event area (e.g., Jumps, Throws, Middle Distance, Long Distance, & Sprints).

Sports Anxiety Scale-2 (SAS-2)

The Sports Anxiety Scale-2 (SAS-2; Smith, Smoll, Cumming, & Grossbard, 2006) is a 15-item self-report questionnaire that measures cognitive and somatic trait anxiety in sport performance settings (Appendix C). The SAS-2 is comprised of three, 5-item trait anxiety subscales measuring Somatic Anxiety (“My body feels tense”), Worry (“I worry that I will not play well”), and Concentration Disruption (“It is hard to concentrate on the game”). Each item uses a 4-point Likert scale (1= Not at all through 4= Very Much) to determine the level of somatic anxiety, worry, and concentration disruption one experiences in sport performance. The
SAS-2 sub-scale scores are computed by summing responses across the five items assigned to each subscale, to produce subscale scores that range from 5 to 20. The full set of 15 items can also be summed to produce a total scale score that ranges between 15 and 60. Higher scores indicate greater anxiety in sport performance situations, while lower scores indicate lower levels of sport performance anxiety.

The subscales of the SAS-2 were identified from a supplementary exploratory factor analysis of the original Sports Anxiety Scale (SAS; Smith, Smoll, & Schutz, 1990) that utilized responses obtained from a sample of 188 athletes. The selection of items was consistent with established procedures in regard to strength of factor loadings, subjectively judged content validity, and the contribution of each item to the scale’s internal consistency reliability. A second validation sample of 1,294 college students enrolled in an introductory psychology class who were currently involved in organized athletic activities was used to verify the psychometric properties of the SAS-2. This SAS-2 is a revision of the original SAS, which contained a total of 21 items. The three factor analytically derived subscales of Somatic Anxiety, Worry, and Concentration Disruption that comprised the original SAS were retained in the SAS-2. The internal consistency for the SAS-2 total scores has been reported as Cronbach’s alpha= .91, with subscale internal consistency reported as a= .84 for Concentration Disruption, .89 for Worry, and .84 for Somatic Anxiety. The test-retest reliability for the total score across a period of one week has been reported as $r = .87$, with subscales reported as .76 for somatic, .90 for worry, and .85 for concentration disruption. (Smith, Smoll, Cumming, & Grossbard, 2006). To establish divergent validity, the SAS-2 was compared to a measure of self-esteem, the Washington Self-Description Questionnaire (WSDQ; Smoll, Smith, Barnett, & Everett, 1993). When the WSDQ was administered to 563 child athletes, researchers found that the SAS-2 subscales and total score
showed a negative correlation with WSDQ scores. Predictive validity of the SAS-2 was determined by administering the SAS-2 to five youth basketball teams at the beginning of a season, followed by administration of a state anxiety questionnaire created from the SAS-2. The trait-to-state correlations for the cognitive scales of Worry and Concentration Disruption were .74 and .46. Total scales on the trait and state measures were correlated at $r = .64$.

**Trait Sport-Confidence Inventory (TSCI).**

The Trait Sport-Confidence Inventory (TSCI; Vealey, 1986) is a 13-item self-report questionnaire that measures trait sport confidence (Appendix D). Trait sport confidence is defined as the degree of confidence individuals typically possess about their ability to be successful in a sport (Vealey, 1986). Each item is ranked using a 4-point Likert scale (1=Low confidence through 4=High confidence) based on how confident one generally feels when they compete in a sport compared to the most self-confident athlete they know (“Compare your confidence in your ability to execute the skills necessary to be successful to the most confident athlete you know”). The TSCI score is computed by summing responses across all 13 items to produce a total score that ranges between 13 and 117. Higher scores indicate the person reports experiencing greater trait sport-confidence in sport performance situations, while lower scores indicate lower levels of trait sport-confidence. The internal consistency for the TSCI total scores has been reported as Cronbach’s alpha= .93. The test-retest reliability for the total score was reported across a period of 1 day ($r = .86$), 1 week ($r = .89$), and 1 month ($r = .83$). The content and concurrent validity for the TSCI total scores has been reported as being adequate (TSCI; Vealey, 1986).

**Social Validation Questionnaire**
The Social Validation Questionnaire (SVQ; Thelwell & Greenlees, 2001) was used to assess participants’ overall satisfaction with the intervention they completed (Appendix E). Participants responded to a series of 9 questions using a 5-point Likert scale (1= Not at all useful through 5= extremely useful) pertaining to the importance and significance of the changes they experienced, the development of mindfulness skills, their satisfaction with the mindfulness intervention, and the overall effectiveness of the study. The phrasing and number of questions was changed to better fit this study. The original SVQ had a total of 13 questions, for this study the questions regarding enjoyment of a mental toughness intervention was reworded to say mindfulness intervention. The questions regarding enjoyment of relaxation, mental imagery, positive self-talk and goal setting techniques were removed resulting in a total of 9 questions on this survey, for the current study. The Social Validation Questionnaire allowed the researcher to gain a better insight on the overall effectiveness of the intervention based on participants perception.

**Measurement of Sport Performance**

Pre-test or baseline performance data of each participant was recorded from an indoor track and field competition the team competed in at least three days prior to the beginning of the study. Post-test performance data for each participant was recorded from a track and field meet the team competed in at least three days following the end of the study.

Prior to conducting statistical analyses, a decathlon point system was used to standardize distance, heights, and times to make them comparable across the different event groups. Comparison of pre- and post-intervention performance data will produce a pre-to-posttest change or difference score that will serve as the primary dependent variable. Decathlon competitions are scored by utilizing a standardized point system developed by the governing bodies of the sport of
track and field. In this system, 1,000 points are awarded when an athlete’s time or distance approaches a recent world-best performance in that event. In essence, the farther you jump/throw, or the higher you jump, or the faster you run, the more points you are awarded. For this study, an online decathlon calculator was used to apply points to participants’ performances (USA Track & Field, n.d.). See appendix F to view a point system table and screenshot of an online calculator.

**Smiling Mind App**

The app Smiling Mind (Smiling Mind, N.D.) program was developed with Cricket Australia to complement their regular sports training program. The sports program consists of six modules, each including two sessions (an off-the-field mental training session and an on-the-field skills application session) for a total of twelve sessions. During the week they are assigned to the experimental/intervention group, the participants will be asked to complete both components of one module each day for six consecutive days. For example, the first module was completed on Monday, the second module on Tuesday, and so on. The days when the modules are accessed and practiced will correspond to days when the athletes are not engaged in formal competition or time-trial type performance tests. However, participants will be encouraged to utilize and apply the mindfulness-based skills they have learned that week during an end-of-week competitive performance situation.
A brief description of the informational content and applied activities related to each of the six SmilingMind modules is offered below:

**Module 1: Tuning Into Your Surroundings**
- Explores sense of touch, hearing and vision to ground oneself to the present moment
- Duration: 12 min.

**Module 2: Working with Emotions**
- Use mindfulness to recognize negative emotions w/o reacting to them.
- Duration: 10 min.

**Module 3: Mindful Movement**
- Tune into the body and become aware of new things
- Duration: 16 min.

**Module 4: Sharpening Concentration**
- Use one's breath to sharpen focus and attention
- Duration: 5 min.

**Module 5: Mindful Walking**
- Use walking to practice mindful attention and increase body awareness
- Duration: 8 min.

**Module 6: Getting Rid of Tension**
- Use breathing the practice letting go of tension in the body.
- Duration: 14 min.

*Mindfulness Module Quiz*

To serve as a manipulation check to verify whether athletes assigned to the experimental condition accessed the SmilingMind app and completed each daily mindfulness activity, quizzes were created by the researcher for each module of the mindfulness activity (Appendix G). Each mindfulness module quiz contains 3 to 5 multiple choice questions. Common questions include: 1) “What is the name of this module?”, 2) “How long does it take to complete this activity?”, and 3) “What is the purpose of this activity?”. Other questions are unique to the individual modules, for example “What is the first stretch/movement you are asked to engage in?” and “What is the key to observing emotions?”

*Track and Field Videos*

As a means to equate the experience of all participants, athletes assigned to the control condition were asked to view videos of track and field event performances from national
championship level meets. Information about how to access these videos were provided in an informational email (Appendix K). Six track and field videos were selected by googling USA Track and Field videos. The videos were selected to demonstrate elite-level performances in events that paralleled participants’ areas of specialization. Each video is approximately 5-minutes long and depicts one track and field performance. Events that were recorded include the men’s 10,000 km run, men’s 100m dash, women’s 4x100m relay, men’s 800m run, men’s high jump, and men’s 110m high hurdles. Each participant was assigned to view all videos.

**Video Quizzes**

To serve as manipulation check and to measure adherence, a set of questions was created by the researcher to test the athlete’s knowledge of the event video they were assigned to watch. Each video has its own quiz containing five multiple choice questions (e.g.; “What was this video about?”; “What was the winning time?”; “Who won the event?”). See Appendix H to view full list of quiz questions and answers.

**Procedure**

The proposed study was submitted to the University’s Internal Review Board (IRB) for review. The IRB application included a letter signed by the head track and field coach (Appendix J) agreeing to allow the researchers to recruit track and field student-athletes for research participation. One copy of the signed document was given to the head coach to retain for their own records, and one is being kept by the researcher.

After IRB approval to proceed, the researcher recruited participants by making in-person announcements about an orientation meeting that would be held to explain the study further. Follow-up announcements were provided by the corresponding event coaches reminding student-athletes of the opportunity to attend this orientation meeting.
During the orientation meeting, the researcher provided participants with an informed consent (See Appendix A) that included their code number. After signing the informed consent, participants completed baseline measures that included, (1) a demographic questionnaire, (2) the SAS-2 and (3) the TSCI. After sorting the consent forms into piles corresponding to the various track and field event categories (e.g.; vertical jumps, throws, sprinters, middle distance, etc.), the researcher employed an “every other” selection process working through the piles of consent forms to distribute the participants across the experimental and control conditions. Given the small number of participants, and to intentionally avoid creating a confound of event by condition, primary emphasis was placed on ensuring that approximately equal numbers of athletes from each event category were included in each of the two conditions.

The participants in the control group were sent an email explaining the details of what they would be doing over the course of this study (Appendix K). Over the next six days the participants received an email, each day, that included a link to watch a track and field video and an e-survey link that included the daily questionnaire of quiz questions they were to complete.

The participants in the experimental group were also sent an email explaining the details of what they would be doing over the course of this study (Appendix L), and instructions on how to download the Smiling Mind app/Access the web-based program (Appendix M). Once they downloaded the app/accessed the website and created their login information, instructions were provided on how to access the sport package and the six modules they would be using throughout the course of the study. Over the next six days they received a daily email reminder to from the researcher with a link to a questionnaire of quiz questions they were to complete each day after completing the assigned daily mindfulness module.
For both the experimental and control group, within three days of completing the sixth module or video, participants received an email that included an e-survey link that instructed them to complete post-measures that included, (1) the SAS-2, (2) the TSCI, and (3) the Social Validation Questionnaire. At the end of the survey the participants were provided a debriefing form and referrals (Appendix I).

Throughout the study an unplanned third group of participants became evident without intention from the researcher. This group included participants who agreed to participate in the study, and initiated participation by completing the set of pre-test measures, but provided no documentation of having accessed or completed the mindfulness activity or control activity associated with the group they had been assigned to. To increase the number of participants providing post-test data to allow for additional statistical analyses, an additional message was sent by the researcher on a messaging app (GroupMe) that the track and field team uses regularly. This message included a specific request asking this subgroup of participants to agree to access and complete the final survey packet. An email was then sent with their code number and link to the final survey. After completing the post-test survey packet, this set of participants were also provided a debriefing form and referrals (Appendix I).

Finally, the researcher collected pre-performance data from track and field meets. The meets included those that occurred three days prior to participants completing baseline measures, and a track and field meet that occurred three days after participants completed either the mindfulness or control activity (See Table 1 for full study timeline).
### Table 1. Study Timeline

<table>
<thead>
<tr>
<th>Stage</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Participant Recruitment</strong></td>
<td>Attended each event practice and provide information about my study and encourage all athletes to participate</td>
</tr>
<tr>
<td><strong>Orientation Meeting (Jan. 21)</strong></td>
<td>Participants Completed: (1) Informed Consent &amp; (2) Baseline Measures (Demographic Questionnaire; SAS-2; TSCI)</td>
</tr>
<tr>
<td><strong>Track and Field Performance Data Collected (Jan. 26)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Participants Divided into Experimental and Control Groups &amp; Complete Day 1 of Activity (Jan. 28)</strong></td>
<td>E-mail (Experimental-Appendix L; Control-Appendix K) was sent to each group with instructions on how to proceed with the study. Experimental Group Completed Module 1.1 in AM and Module 1.2 in PM. Control Group completed watching video #1.</td>
</tr>
<tr>
<td><strong>Experimental Group</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Activity Day 2 (Jan. 29)</strong></td>
<td>AM: Module 2.1  PM: Module 2.2</td>
</tr>
<tr>
<td><strong>Activity Day 3 (Jan. 30)</strong></td>
<td>AM: Module 3.1  PM: Module 3.2</td>
</tr>
<tr>
<td><strong>Activity Day 4 (Jan. 31)</strong></td>
<td>AM: Module 4.1  PM: Module 4.2</td>
</tr>
<tr>
<td><strong>Activity Day 5 (Feb. 1)</strong></td>
<td>AM: Module 5.1  PM: Module 5.2</td>
</tr>
<tr>
<td><strong>Activity Day 6 &amp; Performance Data Collected (Feb. 2)</strong></td>
<td>AM: Module 6.1  PM: Module 6.2</td>
</tr>
<tr>
<td><strong>Control Group</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Activity Day 2 (Jan. 29)</strong></td>
<td>Video #2</td>
</tr>
<tr>
<td><strong>Activity Day 3 (Jan. 30)</strong></td>
<td>Video #3</td>
</tr>
<tr>
<td><strong>Activity Day 4 (Jan. 31)</strong></td>
<td>Video #4</td>
</tr>
<tr>
<td><strong>Activity Day 5 (Feb. 1)</strong></td>
<td>Video #5</td>
</tr>
<tr>
<td><strong>Activity Day 6 &amp; Performance Data Collected (Feb. 2)</strong></td>
<td>Video #6</td>
</tr>
<tr>
<td><strong>Post-Test Measures Collected (SAS-2; TSCI; SVQ)/Debriefing Form Provided (Feb. 3 - Feb. 5)</strong></td>
<td></td>
</tr>
</tbody>
</table>
Results

The present study examined the impact of mindfulness on the enhancement of track and field performance, anxiety, and self-confidence. Unfortunately, due to the poor adherence with the interventions amongst participants, and the resulting unavailability of pre- and post-test performance data for a sufficient number of participants who also completed the interventions, none of the four hypotheses originally proposed could be tested.

Post-hoc analyses were conducted to examine the effect of the interventions on the two self-report questionnaires that were administered both pre- and post- intervention. In this analysis three intervention groups were created based on participants completing manipulation check quizzes. A 2 (Pre-Test Sports Anxiety Scores; Post-Test Sports Anxiety Scores) x 3 (Control Group; Experimental Group; No Intervention Group) Repeated Measures ANOVA showed no significant interaction ($F(1, 18)= 0.12, p= 0.89$) of sport anxiety scores between the control group ($M= 27.63, SE= 4.85$), experimental group ($M= 35.17, SE= 5.6$), and no intervention group ($M= 32.68, SE= 2.60$). A 2 (Pre-Test Self-Confidence Scores; Post-Test Self-Confidence Scores) x 3 (Control Group; Experimental Group; No Intervention Group) Repeated Measures ANOVA also showed no significant interaction ($F(1, 18)= 0.12, p= 0.89$) of self-confidence scores between control group ($M= 84.38, SE= 8.43$), experimental group ($M= 81.67, SE= 9.73$), and no intervention group ($M= 73.96, SE= 4.51$).

Additional post-hoc analyses were conducted to examine the effect of the intervention on the two self-report questionnaires that were administered both pre- and post- intervention. This analysis differed from those described above in that participants were retained from the two control and experimental groups even if they had not completed the manipulation check quizzes, thereby eliminating the third “no intervention” group included in the previous analyses. A 2
(Pre-Test Sports Anxiety Scores; Post-Test Sports Anxiety Scores) x 2 (Control Group; Experimental Group) x 2 (Male; Female) Repeated Measures ANOVA showed no significant interaction ($F(1, 11) = 3.082, p = 0.107$) of sport anxiety scores between the control group ($M = 33.65, SE = 2.43$) and experimental group ($M = 30.50, SE = 3.50$). A 2 (Pre-Test Self-Confidence Scores; Post-Test Self-Confidence Scores) x 2 (Control Group; Experimental Group) x 2 (Male; Female) Repeated Measures ANOVA also showed no significant interaction ($F(1, 11) = .052, p = 0.824$) of self-confidence scores between control group ($M = 72.75, SE = 5.43$) and experimental group ($M = 79.63, SE = 7.83$).

Additional observation was made of the demographic information within the above analysis. This observation revealed that females in the experimental group ($M = 29.00, SE = 4.43$) reported less anxiety overall compared to females in the control group ($M = 41.6, SE = 3.43$). Also, males in the experimental group ($M = 32, SE = 5.43$) reported more anxiety overall compared to males in the control group ($M = 25.7, SE = 3.43$).

The researcher did additional observation of the Social Validation Questionnaire to examine the average answer of the individually answered statements and average score of each cluster. The Social Validation Questionnaire included nine questions, that the participants answered based on a 5-point Likert scale (1= Not at all; 3= Neutral; 5= Very). These questions are split into three different clusters. The first cluster includes questions one through three and is labeled the Importance cluster. The second cluster includes questions four through six and is identified as the perceived improvement cluster. The third cluster includes question seven through nine and is identified as the satisfaction cluster. Table 2 displays the observations made.
Table 2. Summary of the Results of the Social Validation Questionnaire.

Discussion

The present study investigated the impact of utilizing app-based mindfulness training on sport performance, sport anxiety and self-confidence in competitive athletes. The fourth stated hypotheses of this study as it was originally designed, focused on performance data. Unfortunately, this hypothesis was not available for analysis due to unforeseen changes in competition schedules. These changes included: 1) athletes incurred injuries that prevented them...
from participating in the competitions that were intended to provide the pre- and/or post-test performance data; 2) coaches assigned athletes to different events in pre- and post-test competitions that did not allow for direct comparisons; and 3) athletes “no heighted” or otherwise failed to post performances that allowed for pre- to post-test comparisons. Among the small proportion of participants who did produce valid pre- and post-test performance data, poor compliance by participants in accessing and completing the app-based interventions and control group video viewing reduced the sample size below the threshold needed for the planned statistical analyses.

The focus of the statistical analyses utilized data obtained from study participants shifted to examining information obtained via completion of self-report measures of sport performance anxiety and self-confidence, and of overall satisfaction of the interventions. However, the analyses comparing self-reported ratings of anxiety and confidence pre- and post- intervention also failed to yield significant results. While a third level of analyses which utilized demographic information to create comparison groups also failed to produce significant results, a gender-based trend was identified suggesting that among track and field athletes, females tended to report higher levels of anxiety than males. This trend was even more pronounced when comparing males and females who had been assigned to the control group. Interestingly, this may suggest that what was intended to be a benign or “placebo” intervention (watching videos of track and field events performed by elite-level athletes as a substitute for completing the mindfulness app) had a differential effect on females compared to males. While watching the videos produced virtually no change in male athlete’s sport performance anxiety, females who watched the videos reported somewhat higher levels of anxiety at post-testing compared to their pre-test baseline. This suggestion is consistent with other findings in research on athletes that has
found females reporting higher anxiety levels than males (Abrahamsen, Roberts, & Pensgaard, 2008).

Given the relatively high level of self-responsibility required for adhering to the interventions utilized in this study (despite receiving daily reminders from the investigator to access and complete the interventions, participants retained the right to choose to not comply), a broad and summary interpretation of the results of this study illuminate a large discrepancy between athlete’s attitudes toward the importance of engaging in proactive and intentional effort to improve the “mental” aspect of sport performance and their actual willingness to commit time and energy to implementing specific interventions. This is consistent with previous research concluding that even though track and field athletes at the elite level acknowledge their sport is 80-90% mental (Lynch & Scott, 1999), coaches and athletes only commit approximately 5-10% of their time to develop positive psychological well-being (Dale, 2010). It has been reported that coaches and athletes prefer to commit their time to focus on development of physical aspects of training rather than mental training (Truelove, 2014).

The results of this study need to be interpreted with caution as several limitations are apparent. First, the sample size was small. A small sample size increases the chance for committing Type I and Type II errors. This results in not being able to identify actual differences or associations due to lack of statistical power. To increase sample size, several suggestions can be made. Recruiting participants from different teams across the university, or even across several different universities is an obvious option. Also, prolonging the length of the study and/or utilizing recruitment strategies that allow athletes to enter the study at any time, or on a “rolling” basis, rather than within the relatively time-limited window utilized in the present study.
A second major limitation of this study was the low levels of adherence to accessing and completing the experimental group mindfulness app and the control group videos. Therefore, implementing other strategies to improve adherence or participation would also be beneficial. These strategies may include reminding athletes to check their email that the survey links and instructions are being sent to, scheduling a meeting time specifically intended to encourage athletes to complete the daily intervention with a coach or research assistant present. Gaining permission to utilize five or ten minutes of scheduled “practice time” for completion of the interventions removes the tendency to perceive this as an “extra” commitment. Receiving specific and positive endorsements of the benefits of mental skills training from coaches or respected peer leaders, or the value of contributing to empirical research could also improve adherence. Some limitations may be impossible to avoid such as performance of all participants being recorded. In the world of sports injuries, cancelation of competitions, or participants not being entered into competition can occur outside of one’s control. In conclusion, although the findings from this study do not support the expectation that college athletes would benefit from completion of an app-based mindfulness training of one week’s duration, the limitations described preclude offering a definitive opinion about the potential utility of such interventions.
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Appendix A
Informed Consent

The Department of Psychology supports the practice of protection for human subjects participating in research. The following information is provided so that you can decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time without penalty.

**Purpose:** The present research aims to better understand how to improve performance in sports. The goal of this study is to look at the relationship between mindfulness meditation and sport performance.

**Eligibility Criteria:** You have been asked to take part in this study if you are at least 18 years of age and are a track and field athlete at Washburn University. Since this is a study testing a mobile phone/online application, ownership or access to a smartphone or laptop computer is required.

**Procedure:** If you agree to participate, you can expect the following:
1. You will be asked to complete a questionnaire with your name, age, gender, ethnicity, track and field event you participate in, and contact information.
2. You will complete a series of self-report surveys two times over the next three weeks.
3. Over the course of one week you will be asked to use your phone to access materials from the internet each day. You will also be required to record the frequency and duration of time you spent accessing these online materials. Text-message/email reminders will be sent to you twice per day and will include a link to submit the amount of time you spent in mindfulness practice. You will be asked to include the ID number that will be assigned to you so that all of the information you provide will be connected but de-identified.

**Benefits and Risks:** Mindfulness has been shown to improve mind-body awareness and reduce performance anxiety in sports. Your participation in this study will also inform knowledge of college student athlete-wellbeing. The study creates a minimal risk to loss of privacy. The Call Fire technology used to send text-message updates employs security measures to ensure your information is safe, secure, and only available to this researcher. A potential risk to participating in this study is that answering some survey questions may cause discomfort.

**Compensation:** You will become aware of and given access to a cost-free phone app that describes mental exercises that may be used to enhance athletic performance. Participants will not be paid to participate in this research project.

**Confidentiality and Privacy of Information:** Access to your information will be limited to researchers. Your privacy will be protected by keeping all of your information on a password-protected computer. In addition, your information will be associated with a number assigned to you rather than your name. Information obtained during the study will be kept confidential. Any publications or reports will use summary information rather than individually identifiable information. Thus, your name will not be associated with your information. A research assistant will be working in conjunction with the researcher so that the primary investigator will not be able to connect your ID number with your name.

**Agreement:** Your participation is solicited, but strictly voluntary. This agreement states that you have received a copy of this informed consent. Your signature below indicates that you agree to participate in this study. For any questions concerning the research project, you can call Miranda Wilson at 785-217-8300.

**Participants Name (Print):** _______________________________ **Code #:** __________

**Participant Signature:** _______________________________ **Date:** ________________
Appendix B
Demographic Measure

Age: ____

Gender:
____ Male
____ Female
____ Other (please specify) __________________________

Race:
____ Caucasian/White
____ African American/Black
____ Asian/Pacific Islander
____ Native American
____ Other

Track and Field Event:
____ Horizontal Jumps (Triple Jump, Long Jump)
____ Vertical Jumps (High Jump, Pole Vault)
____ Throws
____ Sprints (100m, 200m, 400m)
____ Hurdles (60m, 100m, 400m)
____ Middle Distance (800m, 1000m, 1500m, Mile)
____ Long Distance (3k, 5k, 10k)

How many hours do you currently engage in mindfulness or relaxation exercises? _________

Contact Information:

Email address: _________________________________
Many athletes get tense and nervous before or during games, meets or matches. This happens even to pro athletes. Please read each question. Then, circle the number that says how you USUALLY feel before or while you compete in sports. There are no right or wrong answers. Please be as truthful as you can.

### Sports Anxiety Scale-2

<table>
<thead>
<tr>
<th>Question</th>
<th>Not at All</th>
<th>A Little Bit</th>
<th>Pretty Much</th>
<th>Very Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before or while I compete in sports:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. It is hard to concentrate on the competition.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. My body feels tense.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. I worry that I will not perform well.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. It is hard for me to focus on what I am supposed to do.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. I worry that I will let others down.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Before or while I compete in sports:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I feel tense in my stomach.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. I lose focus on the competition.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. I worry that I will not perform my best.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. I worry that I will perform badly.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. My muscles feel shaky.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Before or while I compete in sports:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. I worry that I will mess up during my performance.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. My stomach feels upset.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. I cannot think clearly during the game.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. My muscles feels tight because I am nervous.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. I have a hard time focusing on what my coach tells me to do.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Think about how self-confident you are when you compete in sport. Answer the questions below based on how confident you generally feel when you compete in your sport. Compare your self-confidence to the most self-confident athlete you know. Please answer as you really feel, not how you would like to feel. Your answers will be kept completely confidential.

When you compete, how confident do you generally feel? (circle number)

<table>
<thead>
<tr>
<th>Question</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Compare your confidence in your ability to execute the skills necessary to be successful to the most confident athlete.</td>
<td>1</td>
<td>2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>2. Compare your confidence in your ability to make critical decisions during competition to the most confident athlete you know.</td>
<td>1</td>
<td>2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>3. Compare your confidence in your ability to perform under pressure to the most confident athlete you know.</td>
<td>1</td>
<td>2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>4. Compare your confidence in your ability to execute successful strategy to the most confident athlete you know</td>
<td>1</td>
<td>2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>5. Compare your confidence in your ability to concentrate well enough to be successful to the most confident athlete you know</td>
<td>1</td>
<td>2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>6. Compare your confidence in your ability to adapt to different game situations and still be successful to the most confident athlete you know.</td>
<td>1</td>
<td>2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>7. Compare your confidence in your ability to achieve your competitive goals to the most confident athlete you know.</td>
<td>1</td>
<td>2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>8. Compare your confidence in your ability to be successful to the most confident athlete you know.</td>
<td>1</td>
<td>2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
</tbody>
</table>
9. Compare your confidence in your ability to consistently be successful to the most confident athlete you know.

10. Compare your confidence in your ability to think and respond successfully during competition to the most confident athlete you know.

11. Compare your confidence in your ability to meet the challenge of competition to the most confident athlete you know.

12. Compare your confidence in your ability to be successful even when the odds are against you to the most confident athlete you know.

13. Compare your confidence in your ability to bounce back from performing poorly and be successful to the most confident athlete you know.
Appendix E
Social Validation Questionnaire

ID #: _________________________ Date: _________________________

Please rate the following questions on a scale from 1-5, with 1= not important/useful/enjoyable, 3= Neutral, and 5= very important/useful/enjoyable.

<table>
<thead>
<tr>
<th>Question</th>
<th>Not at All</th>
<th>A Little Bit</th>
<th>Neutral</th>
<th>Moderately</th>
<th>Very</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How important is it for you to improve your performance?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. How important is it for you to decrease competition anxiety?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. How important is it for you to improve self-confidence?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Did you see improvement in performance over the course of this study?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Did you see improvement in competition anxiety over the course of the study?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. Did you see improvement in self-confidence over the course of the study?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. Did you enjoy the mindfulness training intervention?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. Are you satisfied with the results of this intervention?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. Do you consider this intervention to be useful?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix F
Decathlon Point System Cheat Sheet

<table>
<thead>
<tr>
<th>EVENT</th>
<th>1,000 PTS</th>
<th>900 PTS</th>
<th>800 PTS</th>
<th>700 PTS</th>
<th>UNIT</th>
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<tr>
<td>100 M</td>
<td>10.395</td>
<td>10.827</td>
<td>11.278</td>
<td>11.756</td>
<td>Seconds</td>
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<tr>
<td>LONG JUMP</td>
<td>7.76</td>
<td>7.36</td>
<td>6.94</td>
<td>6.51</td>
<td>Meters</td>
</tr>
<tr>
<td>SHOT PUT</td>
<td>18.4</td>
<td>16.79</td>
<td>15.16</td>
<td>13.53</td>
<td>Meters</td>
</tr>
<tr>
<td>HIGH JUMP</td>
<td>2.20</td>
<td>2.10</td>
<td>1.99</td>
<td>1.88</td>
<td>Meters</td>
</tr>
<tr>
<td>400 M</td>
<td>46.17</td>
<td>48.19</td>
<td>50.32</td>
<td>52.58</td>
<td>Seconds</td>
</tr>
<tr>
<td>110 M HURDLES</td>
<td>13.8</td>
<td>14.59</td>
<td>15.419</td>
<td>16.29</td>
<td>Seconds</td>
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<tr>
<td>DISCUS THROW</td>
<td>56.17</td>
<td>51.4</td>
<td>46.59</td>
<td>41.72</td>
<td>Meters</td>
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<tr>
<td>POLE VAULT</td>
<td>5.28</td>
<td>4.96</td>
<td>4.63</td>
<td>4.29</td>
<td>Meters</td>
</tr>
<tr>
<td>JAVELIN THROW</td>
<td>77.19</td>
<td>70.67</td>
<td>64.09</td>
<td>57.45</td>
<td>Meters</td>
</tr>
<tr>
<td>1500 M</td>
<td>3:53.79</td>
<td>4:07.42</td>
<td>4:21.77</td>
<td>4:36.96</td>
<td>Minutes: Seconds</td>
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</table>

**Men's Outdoor Decathlon**

<table>
<thead>
<tr>
<th>Event</th>
<th>Mark</th>
<th>Score</th>
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</thead>
<tbody>
<tr>
<td>100m</td>
<td>10.9</td>
<td>883</td>
</tr>
<tr>
<td>Long Jump</td>
<td>6.09</td>
<td>606</td>
</tr>
<tr>
<td>Shot Put</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Jump</td>
<td></td>
<td></td>
</tr>
<tr>
<td>400m</td>
<td>53.6</td>
<td>656</td>
</tr>
<tr>
<td>110m Hurdles</td>
<td>14.5</td>
<td>911</td>
</tr>
<tr>
<td>Discus Throw</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pole Vault</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Javelin Throw</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1500m</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Score: 3056

**Women's Outdoor Decathlon**

<table>
<thead>
<tr>
<th>Event</th>
<th>Mark</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>100m</td>
<td>12.3</td>
<td>896</td>
</tr>
<tr>
<td>Discus Throw</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pole Vault</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Javelin Throw</td>
<td></td>
<td></td>
</tr>
<tr>
<td>400m</td>
<td>57.4</td>
<td>807</td>
</tr>
<tr>
<td>100m Hurdles</td>
<td>15.3</td>
<td>802</td>
</tr>
<tr>
<td>Long Jump</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shot Put</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Jump</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1500m</td>
<td>5:00</td>
<td>826</td>
</tr>
</tbody>
</table>

Total Score: 3331
Appendix G
Mindfulness Activity Quiz Questions

Module 1.1:
On a scale from 1-5, 1 being not at all to 5 being completely engaged, how engaged were you during this module?

1. What accent does the announcer possess?
   a. English
   b. Australian
   c. Russian
   d. None of the Above

2. What sense is the focus of this module?
   a. Touch
   b. Hearing
   c. Vision
   d. All of the Above

3. What is the name of this training session?
   a. Tuning into your surroundings on the field exercise
   b. Tuning in to your surroundings
   c. Working Mindfully
   d. Mindful Movement

4. How long does it take to complete this training session?
   a. 10:00
   b. 5:32
   c. 6:15
   d. 8:42

5. What are you supposed to do when your mind wanders?
   a. Let it wander
   b. Bring it back to the present moment
   c. Find an object to focus on
   d. Nothing

Module 1.2
On a scale from 1-5, 1 being not at all to 5 being completely engaged, how engaged were you during this module?

1. What is the purpose of this activity?
   a. Teach you to use mindfulness
   b. To let negative emotions be present without getting overwhelmed
   c. Both a and b
   d. Neither

2. Did this session guide you through a mindfulness activity or was it informational?
   a. Mindfulness guided activity
   b. Informational

Module 2.1:
On a scale from 1-5, 1 being not at all to 5 being completely engaged, how engaged were you during this module?

1. What is the purpose of this activity?
   a. Teach you to use mindfulness
   b. To let negative emotions be present without getting overwhelmed
   c. Both a and b
   d. Neither

2. Did this session guide you through a mindfulness activity or was it informational?
   a. Mindfulness guided activity
   b. Informational
3. What is the name of this training session?
   a. Working Mindfully with Emotions
   b. Working Mindful Movement
   c. On the field exercise
   d. Sharpening Concentration

4. How long does it take to complete this training session?
   a. 9:25
   b. 2:35
   c. 6:17
   d. 3:30

5. What is the key to observing emotions?
   a. Imagination
   b. Curiosity
   c. Letting them go
   d. Ignoring them

Module 2.2:
On a scale from 1-5, 1 being not at all to 5 being completely engaged, how engaged were you during this module?

1. What is the purpose of this activity?
   a. Awareness of breathing
   b. Notice and acknowledge emotions
   c. Both a and b
   d. Neither

2. Did this session guide you through a mindfulness activity or was it informational?
   a. Informational
   b. Mindfulness activity

3. What is the name of this training session?
   a. Sharpening concentration
   b. Working with emotions on the field exercise
   c. Mindful walking
   d. Tune into surroundings

4. How long does it take to complete this training session?
   a. 5:20
   b. 2:45
   c. 6:50
   d. 1:06

Module 3.1:
On a scale from 1-5, 1 being not at all to 5 being completely engaged, how engaged were you during this module?

1. What is the purpose of this activity?
   a. Walking mindfully
   b. Paying attention to your surroundings
   c. Doing stretches and movement slowly to begin to notice more about what the experience of doing them is like.
   d. Labeling emotions

2. What is the first stretch/movement you are asked to do?
   a. Pull knee toward chest
   b. Pull arm across chest
   c. Touch toes.
   d. Bend/lean forward from the ankles.

3. What is the last stretch/movement you are asked to do, other than standing straight?
   a. Squats
   b. Calf raises
   c. Lunges
   d. Toe touches

4. What is the name of this training session?
   a. Mindful Movement
   b. Tuning into surroundings
   c. Working mindfully
   d. On the field exercise

5. How long does it take to complete this training session?
   a. 3:50
   b. 5:20
   c. 14:43
   d. 20:00

Module 3.2:
On a scale from 1-5, 1 being not at all to 5 being completely engaged, how engaged were you during this module?

1. Did this session guide you through a mindfulness activity or was it informational?
   a. Mindfulness activity
   b. Informational
2. What is the name of this training session?
   a. Working mindfully
   b. Working with emotions
   c. Mindful Movement on the field exercise
   d. Paying Attention

3. How long does it take to complete this training session?
   a. 3:00
   b. 4:15
   c. 7:30
   d. 1:58

Module 4.1:
On a scale from 1-5, 1 being not at all to 5 being completely engaged, how engaged were you during this module?

1. What is the purpose of this activity?
   a. Paying attention to thoughts so that you can ignore them during competition.
   b. Learning to dismiss thoughts.
   c. Relaxing.
   d. Uses breath to help sharpening attentional focus so that you can start using it on the field in competition.

2. What is the name of this module?
   a. Working mindfully
   b. Working with emotions
   c. Mindful Movement
   d. Sharpening your Concentration

3. How long does it take to complete this module?
   a. 4:50
   b. 2:30
   c. 3:41
   d. 6:54

4. During this training session where were you asked to maintain your focus?
   a. On your breath
   b. On your thoughts
   c. On your muscles
   d. On an object in front of you

5. How long were you asked to count for?
   a. 14 seconds
   b. 5 seconds
   c. 9 seconds
   d. 10 seconds

Module 4.2:
On a scale from 1-5, 1 being not at all to 5 being completely engaged, how engaged were you during this module?

1. Did this session guide you through a mindfulness activity or was it informational?
   a. Mindfulness activity
   b. Informational

2. What is the name of this training session?
   a. Sharpening the concentration on the field
   b. Mindful emotion
   c. Working mindfully
   d. Maintaining thoughts

3. How long does it take to complete this training session?
   a. 1:31
   b. 3:40
   c. 2:00
   d. 1:49

Module 5.1:
On a scale from 1-5, 1 being not at all to 5 being completely engaged, how engaged were you during this module?

1. In this exercise what activity were you asked to bring your mindful awareness to?
   a. Sitting
   b. Listening to music
   c. Walking
   d. Cleaning

2. What is the name of this training session?
   a. Mindful awareness
   b. Mindful Walking
   c. Working with thoughts
   d. Working with emotions
3. How long did it take to complete this training exercise?
   a. 4:50
   b. 16:45
   c. 5:34
   d. 8:20

4. Did this session guide you through a mindfulness activity or was it informational?
   a. Informational
   b. Guided Mindfulness activity

5. How where you asked to walk?
   a. In a circle
   b. In a straight line
   c. Both a and b
   d. Neither

Module 5.2:
On a scale from 1-5, 1 being not at all to 5 being completely engaged, how engaged were you during this module?
1. Did this session guide you through a mindfulness activity or was it informational?
   a. Mindfulness activity
   b. Informational

2. What is the name of this training session?
   a. Paying attention to thoughts
   b. Working with emotions
   c. Working with thoughts
   d. Mindful Walking on the field

3. How long does it take to complete this training session?
   a. 3:50
   b. 7:05
   c. 2:54
   d. 9:29

Module 6.1:
On a scale from 1-5, 1 being not at all to 5 being completely engaged, how engaged were you during this module?
1. What is the name of this training session?
   a. Mindful thoughts
   b. Paying attention
   c. Getting rid of Tension
   d. Mindful movement

2. How long does it take to complete this training session?
   a. 11:44
   b. 2:30
   c. 1:09
   d. 7:49

3. What is the purpose of this training session?
   a. Paying attention to your thoughts
   b. Listening to music
   c. Using breath to let go of tension in the body
   d. Mindfully walking outside

4. What is this skill used for?
   a. Maximizing various recovery processes
   b. Paying attention
   c. Both a and b
   d. Neither

5. What is the best body position to be in when completing this session?
   a. Standing
   b. Sitting
   c. Laying down
   d. Walking

Module 6.2:
On a scale from 1-5, 1 being not at all to 5 being completely engaged, how engaged were you during this module?
1. When can you use this exercise?
   a. When you practice or compete.
   b. Before you go to sleep
   c. Working on homework
   d. Never

2. Did this session guide you through a mindfulness activity or was it informational?
   a. Mindfulness activity
   b. Informational

3. What is the name of this training session?
   a. Mindful awareness
   b. Paying attention to surroundings
   c. Getting rid of Tension on the field
   d. Sharpening concentration
4. How long does it take to complete this training session?
   a. 4:29
   b. 1:46
   c. 8:20
   d. 15:30

5. What does this module caution you against doing because it is inconsistent with remaining in a mindful state?
   a. Listening to music
   b. Watching tv
   c. Holding your breath
   d. Nothing

Appendix H
Video Quiz

Men's 10K Video: http://www.nbcSports.com/video/usatf-outdoor-championships-mens-10000m-final
1. What was the first-place finishing time?
   a. 30:14.20
   b. 27:34.50
   c. 29:01.44
   d. 28:00.15

2. What event was this video about?
   a. 5,000m
   b. 110m High Hurdles
   c. 1500m
   d. 10,000m

3. Who won the event?
   a. Hasaan Mead
   b. Alex Monroe
   c. Andrew Colley
   d. Brian Eimstad

Men's 100m Video: http://www.nbcSports.com/video/usatf-outdoor-championships-mens-100m-final
1. What was the first-place finishing time?
   a. 9.95
   b. 8.90
   c. 7.65
   d. 10.10

2. What event was this video about?
   a. 200m
   b. 60m
   c. 100m
   d. 100m High Hurdles

3. Who won the event?
   a. C. Coleman
   b. I. Young
   c. J. Gatlin
   d. C. Burrell

Women's 4x100m Relay Video: https://www.youtube.com/watch?v=zoMsyolRo72o
1. What was the first-place finishing time in the video?
   a. 42.19
   b. 43.07
   c. 45.31
   d. 41.09

2. What event was this video about?
   a. 4x200m relay
   b. 4x100m relay
   c. 400m Dash
   d. 400m Hurdles

3. Who won the event in the video?
   a. United States
   b. Kenya
   c. Mexico
   d. Japan

1. What was the first-place finishing time?
   a. 1:47.19
   b. 1:50.29
   c. 1:30.14
   d. 1:40.20

2. What event was this video about?
   a. 1500m
   b. Steeplechase
   c. 600m
   d. 800m

3. Who won the event?
   a. Erik Sowiniski
   b. Boris Berian
   c. Drew Windle
   d. Patrick Peterson

1. What event was this video about?
   a. Triple Jump
   b. Hammer Throw
   c. Pole vault
   d. High Jump

2. How many people cleared the bar in the video?
   a. 3
   b. 6
   c. 10
   d. 1

3. Who was the last high jumper to attempt a jump?
   a. Avion Jones
   b. Hoova Taylor
   c. Deante Kemper
   d. Erik Kynard


1. What event was this video about?
   a. 100m Hurdles
   b. 100m Dash
   c. 110m High hurdles
   d. 200m Dash

2. What was the first-place finishing time?
   a. 12.39
   b. 11.14
   c. 13.16
   d. 14.50

3. Who won the event?
   a. Ronnie Ash
   b. Devon Allen
   c. Jeff Porter
   d. Aleec Harris
Appendix I
Debriefing Form

Mindfulness in Track and Field Performance

Thank you for agreeing to participate in this study! The general purpose of this research is to provide a better understanding of how to improve performance in sports. The goal of this study was to look at the relationship between mindfulness and track and field performance.

We invited people who were currently competing in track and field at the college level who were at least 18 years old. In this study, you were asked to either use a mindfulness app or watch a track and field video chosen by the experimenter, for 6 days. Before and after the use of the app or video competition results were taken from recent track and field meets in your corresponding event. This information will provide insight on if using the mindfulness app improves performance and/or reduces anxiety in sport performance. The results from this study will be presented at a psychological conference to inform others if using a mindfulness-based phone application improves sport performance and/or decreases performance anxiety.

If you feel especially concerned about any anxiety symptoms you may be experiencing, please feel free to phone Washburn’s Psychological Clinic at (785) 670-1750 about options for counseling. Alternatively, you could also phone the Washburn University Counseling Services (785) 670-3100.

Thank you for your participation in this study. If you have further questions, please contact Miranda Wilson at miranda.wilson1@washburn.edu or (785) 217-8300. In addition, if you have any concerns about any aspect of the study, you may contact Dave Provorse, Ph.D., dave.provorse@washburn.edu or (785) 670-1562.

Additional Reading:


Appendix J

Letter of Access

I ____________________________ am providing Miranda Wilson access to the track and field student athletes that I coach for her to recruit participants for her research study. I understand that each athlete will attend a 1-hour orientation meeting where their participation in the study will be explained to them; and that each athlete who agrees to participate will need to commit 15 minutes each day for six consecutive days to complete their participation. I understand that Miranda Wilson will announce in person at different track practices when and where the orientation meeting will be held, as well as providing a brief overview of what participation in this study will entail. I understand that the athletes will be participating in the research for no more than two weeks, and that the research project involves collecting performance data from as many as three separate track meets, time-trials or other performances that simulate a competition environment.
Subject: Mandy’s Thesis Study: Activity Day 1
From: Miranda Wilson

IMPORTANT INFORMATION BELOW! PLEASE READ THE FULL EMAIL!

Hello All,
You all have been randomly assigned to participate in the following activity for the next 6 days.

WHAT YOU WILL BE DOING: You will be asked to watch a Track & Field video and complete an online survey that corresponds with the video.

I will send you two daily reminders in a form of an email with the video and survey link that you will need to complete, each day. If you do not complete the online survey and video by the end of the day, your data will be removed from the study. Each survey will take approximately one minute to complete.

Today is the first day of this study. So, this is your first email reminder! Below is a link to the video you will need to watch and the link to the online survey you will need to complete for today. I will send you a second a reminder later this afternoon!

Video Link: http://www.nbcsports.com/video/usatf-outdoor-championships-mens-10000m-final
Video Assessment Link: https://www.esurveycreator.com/s/e7fe0bf

REMINDER: You will need your code number that is indicated on your informed consent page to complete the Survey! If you do not remember your code # let me know and I will have my research assistant send it to you.

Thank you for your continued participation in my study!

Best,
Miranda Wilson
Subject; Mandy’s Thesis Study: Mindfulness Activity Day 1  
From: Miranda Wilson

Good Afternoon!

You have been randomly assigned to my Mindfulness group of my thesis study. There are a few steps you will need to follow in order to get started, this will take about 5-10 minutes! You will need an iPhone, Android phone, or a laptop to complete these steps!

These steps will be asking you to download an app named Smiling Mind to your phone or to access the website on a laptop. It is completely FREE to download and to use this program!!

The steps you need to complete are attached. Please complete them before reading the remainder of this email.

*Do NOT continue unless you have completed downloading the SmilingMind App or have accessed It on your laptop!!*

Starting today you will begin using the Smiling Mind: Sport program. You will start with the Daily 1: Tuning In To Your Surroundings Module and complete both sessions 1.1 and 1.2. I will send you a second daily reminder today in the form of an email to complete the sessions and surveys. In the email it will include 2 survey links like the one’s listed below. Here are the survey links for today’s module:

Module 1.1 survey link- https://www.esurveycreator.com/s/5e41aa7  
Module 1.2 survey link- https://www.esurveycreator.com/s/4d5be8a

You must complete both sessions and both surveys by the end of the day for your data to be used for this research. This will take you approximately 10-15 minutes to complete all four tasks.

I will continue to send you daily reminders and survey links for the next 6 days for each of the daily modules! Each email will include the name of the module and sessions you will need to complete in the Sport package.

I want to thank you for your continued participation in my study! If you have any questions, do not hesitate to send me an email! Also, if you do not remember your ID#/Letter, let me know and I can have my research assistant email that to you!

Best,  
Mandy Wilson

P.S- You can withdrawal from this study at any time without any penalty.
Appendix M
Smiling Mind App Download/Web Access Instructions

**iPhone/Android**

**Step 1**: Go to your app store and search for the mindfulness app name SmilingMind and download this to your phone.

![Smiling Mind App](image)

**Step 2**: Go to the Smiling Mind app and create a new account! You may create an account by using an email or by logging in with Facebook, Google, or Twitter. Whichever works best for you.

Once you have created this new account it is going to ask you to answer a few questions so that they can recommend different mindfulness packages to try. It does not matter how you answer these questions as there is a specific package, I will ask you to use for the duration of this study.

Once you have gotten through the question it will ask you to add the recommended packages to your program list or you can click on “No thanks, I want to browse all programs”. Again, you can click either one to move on.

**Step 3**: Next you will come to a screen that looks like the first picture below. Here you will click on Browse all Programs. Scroll to the bottom until you find the package named Sport (see second picture)! This is the program that you will be using for the duration of this study!

**Step 4**: Return to the email and read the remainder of information/instructions.
Laptop/Online Access

Step 1: Go to smilingmind.com.au

Step 2: Click on Login/Sign Up in the top right corner of the screen.

Step 3: Click on Create Account on the bottom of the screen.

Step 4: Create an account with: Facebook, Twitter, or Google or Register with an email address. Make sure to click on “I agree to the terms & conditions” to continue.

Step 5: Scroll through the different programs until you find the one labeled Sport. This is the package you will be using for the remainder of the study!

Step 6: Return to the email and read the final information/instructions.