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USING MINDFULNESS MEDITATION AS A TEAM BUILDING TOOL TO ENHANCE
PERCEPTIONS OF COHESION, MINDFULNESS, AND EMOTIONAL COMPETENCE: A
PILOT STUDY

By

Piotr A. Piasecki

A Thesis
Submitted to the Faculty of Graduate Studies
through the Department of Kinesiology
in Partial Fulfillment of the Requirements for
the Degree of Master of Human Kinetics
at the University of Windsor

Windsor, Ontario, Canada

2018

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July 19, 2018

DECLARATION OF ORIGINALITY

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ABSTRACT

The purpose of the pilot study was two-fold; firstly, to explore the effects of a team-based mindfulness meditation training program on perceptions of cohesion, and, secondly, to increase mindfulness and emotional competence. The participants were 32 female intercollegiate soccer players from two teams. One team was assigned to the mindfulness intervention condition, while the other served as the control condition. Participants completed measures of cohesion, mindfulness, and emotional competence pre- and post-intervention. The eight-week mindfulness meditation training program significantly increased perceptions of social cohesion. However, there were no significant changes for task cohesion, mindfulness, or emotional competence. Taken together, athletes in the mindfulness training program held higher perceptions of social cohesion than athletes in the control condition; indicating that mindfulness training allowed this team to increase its social cohesion.

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RESEARCH ARTICLE

Introduction

Historically, cohesion has been viewed as one of the most important small group variables (Lott & Lott, 1965). Why cohesion has been viewed in high regard is that it is a key attribute of successful groups, whether it be in the areas of work, exercise, military, or sport (Mudrack, 1989). In sport, numerous teams that have been considered dynasties; New York Yankees in baseball, the Montreal Canadiens in hockey, Manchester United in soccer, and Chicago Bulls in basketball; have anecdotally attributed their success to having strong team unity or cohesion. From an empirical perspective, the importance of cohesion comes from not only with its association to performance and team success (Carron, Bray, & Eys, 2002; Loughhead & Hardy, 2006), but also in its significant positive relationship with variables such as satisfaction, passion, and intention to return (Dobbins & Zaccaro, 1986; Paradis, Martin, & Carron, 2012; Prapavessis & Carron, 1996; Spink, Wilson, & Odnokon, 2010). With cohesion being an essential part of sport teams, Carron, Brawley, and Widmeyer (1998) forwarded a definition of cohesion to help guide researchers and referred to it as “a dynamic process reflected in the tendency for a group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of member affective needs” (p. 213).

Given the importance of cohesion to sport teams, it becomes beneficial for coaches and sport psychology consultants to enhance cohesion within their respective teams. Cohesion is developed through a process known as team-building. While there are several definitions of team-building in sport that range from having a common goal (Yukelson, 1997) to groups of individuals solving physical and mental challenges (Midura & Glover, 2005), the present study operationalized team-building as the process of promoting a sense of cohesion that enables the

team to work more smoothly and effectively (Brawley & Paskevich, 1997; Newman, 1984; Widmeyer & Ducharme, 1997). In order to help guide team-building interventions, Carron and Spink (1993) forwarded an applied team-building model comprised of the factors believed to enhance perceptions of cohesion (see Figure 1). This is a linear model consisting of inputs, throughputs, and outputs. The inputs consist of team environment (e.g., team togetherness, team distinctiveness) and team structure (e.g., team norms, leadership, roles). These two factors are believed to influence the throughput of team processes (e.g., team interaction and communication, team sacrifices), which then impacts the output of cohesion. In the current study to help increase perceptions of cohesion, the focus was on the team process of team interaction and communication.

To help foster team interaction and communication, the perspective adopted was to utilize a personal disclosure mutual-sharing (PDMS) approach. This type of team-building allows athletes to cultivate greater appreciation for their teammates, understanding their values, beliefs, attitudes, and personal motives (Hirsch, 1992). That is, collaborative personal disclosure matched with mutual sharing gives group members an opportunity for empathic responses and can foster enhanced understanding and appreciation of one another's experiences (Dryden, 2006). Research in sport has shown that PDMS, as a team-building intervention, has not only increased perceptions of cohesion but also increased trust in teammates, greater self and teammate awareness and understanding, and increased collective efficacy (Barker, Evans, Coffee, Slater, & McCarthy, 2014; Dunn & Holt, 2004; Holt & Dunn, 2006; Pain & Harwood, 2009; Windsor, Barker & McCarthy, 2011). For instance, Pain and Harwood (2009) found that the PDMS intervention led to improvements in perceptions of cohesion, communication, trust, and confidence in teammates. Similarly, with an intercollegiate hockey team, Dunn and Holt

(2004) found increased cohesion, improved confidence in teammates, and enhanced understanding of self and others following one PDMS session.

The vehicle for the PDMS in the current study is a team-based mindfulness meditation program, and this was done for two reasons. First, not only has mindfulness been suggested to increase perceptions of cohesion (Baltzell, & Akhtar, 2014; Burke, 2009; Cleirigh, & Greaney, 2015), but a mindfulness meditation program has been efficacious in impacting relationship functioning (Carson, Carson, Gil, & Baucom, 2004). Thus, a primary objective of the current study was to explore the effects of a team-based mindfulness meditation program on perceptions of cohesion. Second, given that a qualitative outcome of several PDMS studies has been self and team awareness and understanding (Dunn & Holt, 2004; Holt & Dunn, 2006), no studies to our knowledge has quantitatively examined this outcome. Consequently, a team-based mindfulness meditation program rooted in a PDMS approach is the type of intervention that would seemingly impact an individual's perception of both self and teammates to enhance awareness and understanding. Therefore, the current study operationalized this awareness and understanding as mindfulness and emotional competence. Kabat-Zinn (2003) defined mindfulness as "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment" (p. 145). Put simply, mindfulness is the state of being attentive to and aware of what is taking place in the present moment (Brown & Ryan, 2003), attending to one's internal experiences as they unfold in an individual's life and the ability to manage these experiences within oneself and others. Various studies on mindfulness in sport showed that athletes who participated in mindfulness training developed a better acceptance of external events and able to focus better on internal information (Gooding & Gardner, 2009; John, Verma, & Khanna, 2011). For instance, athletes were able to

reduce distraction around them and were more focused on relevant moment-to-moment information to optimize performance (Bernier, Thienot, Cordon, & Fournier, 2009). Mindfulness has also been related to decreasing stress, depression, anxiety, and rumination (Li Yuan, & Zhang, 2016; Remmers, Topolinski, & Koole, 2016), along with increased observing and nonjudging (Labelle, Campbell, Faris, & Carlson, 2015). Additionally, college students who participated in a mindfulness meditation program reported enhanced self-control and vitality, along with better regulation of emotions and suppression of thoughts (Canby, Cameron, Calhoun, & Buchanan, 2015; MacDonald & Baxter, 2016).

While mindfulness has positively been associated with several outcomes, Goleman and Lippincott (2017) suggest that the mechanism that enables mindfulness to be beneficial is emotional competence. Mikolajczak, Brasseur, and Fantini-Hauwel (2014) defined emotional competence as “individual differences in the identification, understanding, expression, regulation, and use of one’s own emotions and those of others, has been found to be an important predictor of individuals adaptation to their environment” (p. 42). In fact, research has shown that being emotional competent helps individuals deal effectively with unpleasant emotions and promotes pleasant emotions in order to cultivate both personal growth and well being (Brackett, Rivers, & Salovey, 2011). Moreover, individuals who scored higher on emotional competence have a tendency to be more socially competent, have better quality relationships, and are viewed as more interpersonally sensitive than individuals who scored lower on emotional competence (Brackett, Warner, & Bosco, 2005). Furthermore, emotional competence promotes positive social functioning by helping others identify emotional states, encourage others’ perspectives, enhance communication, and regulate behaviours (Brackett et al., 2011).

While there are several mindfulness-based interventions that have been used for athletes (e.g., Mindful Sport Performance Enhancement [MSPE; Kaufman, Glass, & Pineau, 2018], Mindfulness-Acceptance-Commitment approach [MAC; Gardner & Moore, 2004, 2006, 2007], Mindfulness Meditation Training for Sport [MMTS; Baltzell & Akhtar, 2014], and Berlin Mindfulness-based Training for Athletes [BATL; Jekauc, Kittler, & Scлагheck, 2017]), the current study used a mindfulness program designed for university-aged students called Koru (Rogers & Maytan, 2012). The word Koru is derived from the New Zealand Maori culture which symbolizes balanced growth. Koru is a training program that specifically targets young adults, teaching them mindfulness meditation that includes several mind-body skills, such as abdominal breathing and guided imagery. Compared to previously mentioned mindfulness-based interventions, Koru interventions are delivered in a group setting to capitalize on interactions amongst participants. This is an important component of the current study, which is to provide an environment for cultivating cohesion, along with mindfulness and emotional competence.

The primary purpose of the current study was to explore the effects of a team-based mindfulness meditation training program on athletes' perceptions of cohesion. The secondary purpose was that the intervention would increase mindfulness and emotional competence due to the nature of the program. The participants include two university level women's soccer teams, one being the intervention group and the other being the control group. Using a quasi-experimental design, it was hypothesized that the team receiving the mindfulness training program would have stronger perceptions of mindfulness, emotional competence, and cohesion compared to the control group.

Method

Participants

Thirty-two intercollegiate female soccer players from two teams participated in the current study. One team and their athletes from USport was assigned to the intervention condition ($n = 17$) with a mean age of 18.94 years ($SD = 1.39$). The second team and their athletes served as the control condition. The athletes from the control condition were from a Division II NCAA university ($n = 15$) with a mean age of 18.80 years ($SD = 1.37$). The overall age of the participants was 18.9 years ($SD = 1.36$), had been on their current team for 1.88 years ($SD = 1.05$), and had been playing soccer for 13.1 years ($SD = 3.29$). Moreover, the playing level between conditions were similar in that USport and NCAA Division II are comparable in terms of caliber of play. The overall regular season winning record for both teams were as follows: the intervention team had a win-loss-tie record of 4-5-8 for a winning percentage of 47.1%. The control team was 2-0-16 for a winning percentage of 11.1%.

Experimental Conditions

Intervention condition. Rogers and Maytan's (2012) Koru approach for teaching mindfulness to university students was used in the current research. The word *Koru* originated from New Zealand's Maori people, symbolizing new life, growth, balance, and harmony. In the current study, there were eight weekly Koru team sessions lasting between 45 to 55 minutes in duration. During each team session, athletes learned and practiced mindfulness meditation and one or two mind-body skills (see Table 1 for a brief overview of the Koru program). Each team session began with a "Check-in," which gave participants an opportunity to share any struggles they were facing when completing the mindfulness meditation or any obstacles they currently were dealing with in athletics or life. Additionally, the Check-in served as an opportunity for

participants to share any successes. The Check-in exercise was formatted using a personal disclosure mutual-sharing (PDMS) approach fosters an appreciation of team members' values, beliefs, attitudes, and personal motives (Hirsch, 1992).

In addition to the weekly team sessions, the Koru program required each participant to individually practice meditation for a minimum of 10 minutes daily. This was monitored by having each participant complete a daily meditation log (see Appendix A), which included documenting two things for which the athlete felt grateful. Furthermore, athletes in the intervention condition were asked to complete questionnaires related to mindfulness, emotional competence, and cohesion before the intervention (Time 1) and after the intervention (Time 2).

Control condition. The athletes in the control condition were asked to complete questionnaires related to mindfulness, emotional competence, and cohesion two times during the season; once at the beginning of the season, and once near the end of the season. Throughout the season, the athletes will receive no additional support from any sport psychology consultant.

Measures

Demographics. Participants were asked their age, the number of years they have played on their current collegiate team, and how many years they have been involved in soccer (see Appendix B).

Mindfulness. Mindfulness was assessed by the 15-item Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003, see Appendix C). The MAAS is a unidimensional measure of dispositional mindfulness. Sample items include "I rush through activities without being really attentive to them" and "I find myself doing things without paying attention". Respondents are asked to rate each item on a 6-point Likert scale anchored by *almost always* (1) and *almost never* (6). Carlson and Brown (2005) and Brown and Ryan (2003) demonstrated test-retest reliability,

and internal consistency levels (Cronbach's alphas) ranging from .80 to .90. Furthermore, the researchers (Brown & Ryan, 2003; Carlson & Brown, 2005) provided evidence to support construct validity and factorial invariance of the MAAS.

Emotional competence. Emotional competence was measured by the 20-item Short Profile of Emotional Competence (S-PEC; Mikolajczak, Brasseur, & Fantini-Hauwel, 2014, see Appendix D). The S-PEC assesses two broad dimensions of emotional competence, namely intrapersonal and interpersonal. Each of two broad dimensions contain five identical dimensions that examine emotional competence from the participants own (intrapersonal) and others (interpersonal) perspectives: identification of own emotions (When I feel good, I can easily tell whether it is due to being proud of myself, happy or relaxed); identification of others' emotions (I am good at sensing what others are feeling); understanding own emotions (When I am feeling low, I easily make a link between my feelings and a situation that affected me); understanding of others' emotions (Most of the time, I understand why the people feel the way they do); expression of own emotions (I am good at describing my feelings); listening to others' emotions (I find it difficult to listen to people who are complaining, reversed scored); regulation of own emotions (When I am angry, I find it easy to calm myself down); regulation of others' emotions (When I see someone who is stressed or anxious, I can easily calm them down); and, use of own emotions (My emotions inform me about changes I should make in my life), use of others' emotions (I can easily get what I want from others). It should be noted that 8 of the 20 items need to be reverse scored with higher scores representing higher emotional competence. Items on the questionnaire are scored on a 5-point Likert scale anchored by 1 (*strongly disagree*) to 5 (*strongly agree*).

Cohesion. Cohesion was assessed by the 18-item Group Environment Questionnaire (GEQ; Carron, Widmeyer, & Brawley, 1985, see Appendix E). The GEQ assesses perceptions of cohesion across four dimensions: Individual Attractions to the Group-Task (ATG-T; 4 items), Individual Attractions to Group-Social (ATG-S; 5 items); Group Integration Task (GI-T; 4 items) and Group Integration-Social (GI-S; 5 items). Sample items from each dimension are: ATGT-T, “I do not like the style of play on this team;” ATGT-S, “For me, this team is one of the most important social groups to which I belong;” GI-T, “Our team is united in trying to reach its goals for performance;” GI-S, “Our team would like to spend time together in the off season.” Respondents are asked to rate each item on a 9-point Likert scale anchored by 1 (*strongly disagree*) and 9 (*strongly agree*). It should be noted that 12 of the 18 items from the GEQ are negatively worded and need to be reverse scored. Thus, higher scores represent stronger perceptions of cohesion. Evidence for concurrent, predictive, and construct validity of the GEQ has been demonstrated (Brawley, Carron, & Widmeyer, 1987).

Procedure

The head coach approached the primary investigator two months prior to the start of the competitive season to determine the feasibility of developing a sport psychology program to be centered around team-building. It was determined by the researcher and coach that a mindfulness training program would best serve the needs of the team. A meeting was then scheduled with the athletes of the intervention group to gain consent (see Appendix F) and outline the mindfulness-based team-building intervention. The athletes in the intervention condition were informed that they would be involved in a season long mindfulness-based team-building program and would complete a series of questionnaires (MAAS, S-PEC, and GEQ) two times during the season; once at the beginning of the season, and once near the end of the season. The researcher

implemented and monitored the athletes in the mindfulness-based team-building program. There were 8 weekly mindfulness sessions ranging between 45 to 55 minutes. Athletes in the intervention were also instructed to practice the mindfulness exercises for a minimum of 10 minutes per day. Athletes in the control condition completed the MAAS, S-PEC, and GEQ at the same two time points as the athletes in the intervention condition. Ethical approval was obtained from the university's research ethics board. Informed consent was obtained from the intervention group and control group (see Appendix G). A quasi-experimental research design was employed, and all data were collected using Qualtrics software. Participants had the opportunity to be entered into a draw to win one of two \$50 Amazon gift cards.

Results

Descriptive Statistics

Internal consistency estimates were computed for each of the four cohesion dimensions from the GEQ (Carron et al., 1985), two dimensions of emotional competence from the S-PEC (Mikolajczak et al., 2014), and from the one dimension of mindfulness from the MAAS (Brown & Ryan, 2003) at both Time 1 (pre-intervention) and Time 2 (post-intervention). The Cronbach's alpha values for all variables were as follows: cohesion (ATG-T, Time 1, $\alpha = .80$, Time 2, $\alpha = .82$; ATG-S, Time 1, $\alpha = .85$, Time 2, $\alpha = .84$; GI-T, Time 1, $\alpha = .82$, Time 2, $\alpha = .81$; GI-S, Time 1, $\alpha = .81$, Time 2, $\alpha = .81$); mindfulness (Time 1, $\alpha = .82$, Time 2, $\alpha = .83$); and emotional competence (Intrapersonal, Time 1, $\alpha = .83$, Time 2, $\alpha = .83$; Emotional Competence Interpersonal, Time 1, $\alpha = .82$, Time 2, $\alpha = .82$).

A summary of the descriptive statistics can be found in Table 2. Of note, participants in the intervention condition had higher perceptions of cohesion for the ATG-S dimension, emotional competence-interpersonal, and emotional competence-intrapersonal after completing

the team-based mindfulness training program (i.e., Time 1 vs. 2). Conversely, the intervention condition decreased in three of the dimensions of cohesion (ATG-T, GI-T, and GI-S) and in mindfulness. In contrast, the control group had a decrease in all four dimensions of cohesion and mindfulness from Time 1 to Time 2. However, there was an increase in emotional competence-interpersonal, from Time 1 to Time 2.

Main Analysis

Data were analyzed using SPSS 24 software (IBM SPSS Predictive Analytics, Chicago, IL). The primary outcome of interest for this study was change in cohesion from pre- (Time 1) to post-intervention (Time 2). A secondary outcome was to examine change in mindfulness and emotional competence from pre- (Time 1) to post-intervention (Time 2). Given that there were significant positive correlations at Time 1 (pre-intervention) amongst some of the variables (see Table 3 for a summary of the bivariate correlations), a MANCOVA was conducted to address the study's purposes. The dependent variables were the post-intervention (Time 2) dimensions of cohesion, mindfulness, and emotional competence. The fixed factor was condition (intervention vs. control) and the covariates were the pre-intervention (Time 1) dimensions cohesion, mindfulness, and emotional competence. The results showed a significant multivariate effect, Pillai's trace $F(222) = 4.16$ ($p = .011$), and univariate analyses demonstrated that the groups differed significantly in perceptions of cohesion on two dimensions: ATG-S, $F(31) = 5.72$, $p < .02$, and GI-S, $F(31) = 23.2$, $p < .00$. The results showed no significant difference in cohesion in the task dimensions (ATG-T, $F(32) = .056$, $p = .82$; GI-T, $F(32) = 1.22$, $p = .28$). Furthermore, the results indicated no significant difference between pre- and post-intervention for mindfulness and emotional competence (mindfulness, $F(32) = 1.36$, $p = .26$; emotional competence interpersonal, $F(32) = 2.45$, $p = .13$; emotional competence intrapersonal, $F(31) = 3.41$, $p = .08$).

Moreover, Table 4 presents the pairwise comparison between the post-intervention scores. The Standard Error (SE) between the intervention group and control group shows that the team-based mindfulness meditation training program contributed to a smaller gap for the intervention group versus the control group. Given the small sample, a post hoc power analysis using the MANCOVA results demonstrated good power of .99 using G*Power software (Faul, Erdfelder, Lang, & Buchner, 2007).

Discussion

The purpose of the current study was twofold. The primary purpose was to examine the effects of a team-based mindfulness meditation training program on perceptions of cohesion. A secondary purpose was to examine whether a team-based mindfulness meditation training program would increase mindfulness and emotional competence. It was hypothesized that participants in the team-based mindfulness meditation training program would report stronger perceptions of cohesion, mindfulness, and emotional competence following an 8-week program compared to participants in the control condition. The current study is the first of its kind in the realm of sports. To date, other mindfulness meditation programs within sports have investigated whether these types of programs influence outcomes such as performance (e.g., Baltzell & Akhtar, 2014; Kaufman et al., 2018), stress (Goodman et al., 2014), injury risk (Ivarsson, Johnson, Anderson, Fallby, & Altemyr, 2015), psychological well-being, life satisfaction, and affect (Baltzell & Akhtar, 2014).

The primary purpose and related hypotheses of the current study was partially fulfilled. In particular, it was believed that participants in the team-based mindfulness meditation training program would have stronger perceptions of cohesion than participants in the control condition. The results showed that the team-based mindfulness meditation training program significantly

impacted the two social dimensions of cohesion (i.e., ATG-S, GI-S) for the intervention group compared to the control condition. However, the intervention did not impact the two task dimensions of cohesion (i.e., ATG-T, GI-T). These findings are somewhat similar to previous research. For instance, Dunn and Holt (2004) implemented a PDSM intervention with intercollegiate male hockey players prior to a tournament. Following the PDSM, these male hockey players were interviewed and reported that the PDSM program enhanced the team's social cohesion. However, Windsor et al. (2011) measured cohesion using the GEQ (Carron et al., 1985) pre- and post-PDSM and found no significant changes to either task or social cohesion. Nonetheless, the results of the present study support Tziner, Nicola, and Rizac's (2003) contention that a positive perception of social cohesion may evolve when collaborative interactions between team members are enhanced through the use of task strategies (i.e., mindfulness meditation). A unique contribution of the current study to the literature is the suggestion that a team-based mindfulness meditation training can influence perceptions of team cohesion within sport (Baltzell, Chipman, Hayden, & Bowman, 2015; Burke, 2009; Cleirigh, & Greaney, 2015). That is, the current study partially fills a gap in the literature by providing initial empirical evidence that a team-based mindfulness training program can be used as a team-building technique to impact perceptions of social cohesion.

Insofar as to an explanation to why task cohesion was not influenced by the intervention program may be related to the performance of the intervention team in the current study. The intervention team had a losing season with them not meeting the expectations they set for themselves at the beginning of the season. For the intervention team, the previous season's success (i.e., qualifying to the regional tournament and losing in the semi-finals) set the stage for high expectations for the upcoming season. During preseason the head coach of the

intervention group spoke to the team about surpassing last year's success and the goal this season was to qualify for the national championship tournament. Unfortunately, this goal was not met as the team did not even qualify for playoffs. The team was extremely discouraged and there was a sense of loss throughout the team towards the end of the intervention regarding the team's performance on the field. Carron, Bray, and Eys (2002) found a positive relationship between a team's performance and task cohesion.

The secondary purpose of the current study was to examine the effect of the team-based mindfulness meditation program on perceptions of mindfulness and emotional competence. Unfortunately, for both constructs the hypotheses were not met in that the team-based mindfulness meditation training program did not result in any significant difference between the intervention and control conditions. This type of finding brings into question the measures used to assess mindfulness (MAAS; Brown & Ryan, 2003) and emotional competence (S-PEC; Mikolajczak et al., 2014) within a sport context. Regarding the MAAS, Brown and Ryan (2003) developed a measure of mindfulness that assesses the frequency of mindful states in day-to-day life, using both general and situation specific statements. Consequently, the items of the MAAS are not sport specific and may not have captured how the athletes used mindfulness in their sport environment. Further, the various exercises taught in the team-based mindfulness meditation training program perhaps were not captured by the items of the questionnaire. Brown and Ryan stated that the items from the MAAS focus on the presence or absence of attention to and awareness of what is occurring in the present rather than other aspects associated with mindfulness such as acceptance, trust, empathy, or gratitude (Shapiro & Schwartz, 1998). For instance, two items that may have made it difficult for a participant to relate to within an athletic setting include, *"I get so focused on the goal I want to achieve that I lose touch with what I'm*

doing right now to get there,” and *“I find myself preoccupied with the future or past.”* These two items seem not to work in an outcome-oriented setting such as sport because the items may remind the participant about a past performance, which could bring negative emotions to the surface. As a result, future studies examining the validity and the reliability of the MAAS is warranted within sport.

Another possible reason why mindfulness was not significantly different between the intervention and control conditions could be related to the type of team-based mindfulness meditation training program used in the current study. Rogers and Maytan’s (2012) Koru protocol is a manualized training program in mindfulness, meditation, and other mind-body skills that specifically target young adults. However, the original program is delivered in the span of 4-weeks with each session lasting 90 minutes in duration. Past research using Koru has found significant increases in mindfulness (Greeson, Juberg, Maytan, James, & Rogers, 2014). Given the availability of the participants in the intervention condition, the current study modified the length of each session to 45-55 minutes over the span of eight weeks, teaching one skill at every session instead of two like in the original protocol. As a result, the duration of each session may have influenced the mindfulness measure in the current study because the participants did not have enough time to explore and practice each mindfulness exercise. Another aspect to take into consideration was the experience of the researcher who delivered the team-based mindfulness meditation program. The researcher had two years of experience as a certified mindfulness instructor. Ahlin and Kjellgren (2016) have provided basic mindfulness teacher qualifications that include (1) becoming teacher – what is needed to achieve the qualities of a good teacher, Ahlin and Kjellgren (2016) elaborate on this idea using a student’s perspective. Becoming a teacher is when the insight and compassion in the student reaches a mature level where they are

capable of becoming a teacher, where the sole importance lies in the practice itself and the help from more experienced practitioners; (2) being teacher – the teacher’s ability to embody the teaching, meaning that a teacher should practice and live as they teach. Incorporating the teachings in every single aspect of ones being, where not only words are used to transmit knowledge but all other behaviours become an avenue to teach; (3) pedagogic skills – qualities needed to transmit the teachings in a good way, where the teacher is aware of the changing conditions in the present moment and open to share experiences from their own life. Pedagogic skills also include being honest and admitting that every individual has their shortcomings, which opens the class to vulnerability and a sense of togetherness; and (4) social skills – preferable attitudes in a teacher recommended by the respondents of the study. Social skills are a cornerstone because the teacher is expected to have a way of being and talking that shows caring and selflessness towards the wellbeing of the students.

As for emotional competence, the results showed that the team-based mindfulness training program did not enhance this construct for the intervention condition, which is difficult to explain. One reason may be related to the operationalization of the emotional competence questionnaire. Pekaar, Bakker, van der Linden, and Born (2018) suggest that the Profile of Emotional Competence (PEC; Brasseur, Gregoire, Bourdu, & Mikolajczak, 2013), which is the longer version of the S-PEC does not have meaningful differentiation between intra- and interpersonal emotional competence. Pekaar et. al. (2018) note that the facets of the PEC are narrow, which remains difficult to unravel which facet is responsible for a specific effect. Therefore, the current study encourages future researchers to continue refining measures related to emotional competence.

While the results of the current study are interesting, there is a need for continued research. As a result, there are many research possibilities. First, it is recommended that future research implement a team-based mindfulness meditation training program using other sports to increase generalizability. Second, given that there was no significant increase in task cohesion, mindfulness, and emotional competence, it would be useful for researchers to conduct a qualitative study (e.g., interviews) to determine the thoughts of the participants concerning team performance, emotional competence, and mindfulness. Third, the current study examined the group dynamics variable of cohesion. It would be worthwhile to consider other group dynamic constructs, such as collective efficacy, when using a team-based mindfulness meditation training program.

The current study includes applied implications for sport psychology consultants. The current study significantly showed that mindfulness meditation training can be used as a team-building intervention affecting the social dimensions of cohesion. This gives sport psychology consultants another tool to use in their practice to increase the social relationships between teammates. The current study supports past research using team-building interventions that support social cohesion (i.e., Dunn & Holt, 2004; Holt & Dunn, 2006; Senécal, Loughhead, & Bloom, 2008). Enhancing social cohesion is essential given that this type of cohesion is associated with an increase in team performance (Carron, Colman, Wheeler, & Stevens, 2002).

In conclusion, as this study was the first of its kind to explore the variables of team cohesion, mindfulness, and emotional competence in the context of sport using a team-based mindfulness meditation training program, it is important to stress that the results presented should be considered exploratory. Nonetheless, the current study confirmed that a team-based mindfulness meditation training program effects social cohesion. The current study's

methodology allowed insight into effectiveness of an 8-week team-based mindfulness meditation training program on perceptions of cohesion, mindfulness, and emotional competence, which had not been examined in previous research. While this study explored cohesion, mindfulness, and emotional competence in sport, multiple questions still remain. Further research pertaining to cohesion and the delivery of a team-based mindfulness meditation training program is warranted to confirm the findings from the present study and to further advance the research in sport psychology.

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Table 1

Brief Overview of the Team Mindfulness Meditation Training

Week	Mindfulness Meditation Skills
One	<ul style="list-style-type: none"> • What is Mindfulness? • Brief guided meditation (3 min) • Continue with importance of mindfulness in sport and evidence behind it • Conclude with guided meditation (10 min)
Two	<ul style="list-style-type: none"> • 5-minute meditation • Check-in • Belly Breathing – Discuss how it is both involuntary and under our control, how it can reflect our mood and also be used to change our mood. (Each exercise will include: Introduce, practice, feedback) • Guided meditation – Body scan
Three	<ul style="list-style-type: none"> • 5-minute meditation • Check-in • Dynamic Breathing (Chaotic Breathing) – Has its origins in yoga and is a powerful exercise for immediate tension release and increased energy. • Guided meditation – Gathas (strengthen the students focus on their breath)
Four	<ul style="list-style-type: none"> • 5-minute meditation • Check-in • Walking Meditation – Is used when people are too restless or anxious to sit still.

Five

- Guided meditation – labeling thoughts gives students more help in working with their thoughts, as this is often the greatest obstacle for them.

- 5-minute meditation
- Check-in
- Guided Imagery – To calm yourself, to change your mood, to take a vacation in your mind, or prepare for a game.
- Guided meditation – Labeling feelings

Six

- 5-minute meditation
- Check-in
- Mindful Eating – A skill that students can use to enhance their pleasure in eating, as well as their ability to return their minds to the present moment.
- Guided meditation – Body scan

Seven

- 5-minute meditation
- Check-in
- Labeling thoughts and feelings
- Guided meditation – Gathas

Eight

- 5-minute meditation
 - Check-in
 - Next Steps and developing your own meditation practice.
-

Table 2

Descriptive Statistics for Team Cohesion, Mindfulness, and Emotional Competence.

Variable	Time 1		Time 2	
	Intervention	Control	Intervention	Control
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
ATG-T^a	7.94 (1.11)	7.62 (1.70)	5.76 (1.98)	5.64 (1.73)
ATG-S^a	6.76 (1.48)	7.21 (1.70)	7.51 (0.99)	6.20 (2.13)
GI-T^a	6.34 (1.01)	5.84 (1.24)	4.91 (1.20)	4.25 (1.00)
GI-S^a	6.55 (1.37)	6.36 (1.06)	6.35 (1.13)	5.02 (0.96)
Mindfulness^b	4.20 (0.58)	4.03 (1.01)	3.46 (0.70)	3.80 (1.15)
EC-Interpersonal^c	3.34 (0.39)	3.12 (0.72)	3.52 (0.46)	3.21 (0.57)
EC-Intrapersonal^c	3.24 (0.44)	3.08 (0.63)	3.34 (0.42)	3.02 (0.76)

Note. ATG-T = Individual Attractions to the Group – Task; ATG-S = Individuals Attractions to the Group – Social; GI-T = Group Integration – Task; GI-S = Group Integration – Social; EC = Emotional Competence.

^a Assessed on a 9-point scale ranging from 1 to 9.

^b Assessed on a 5-point scale ranging from 1 to 5.

^c Assessed on a 7-point scale ranging from 1 to 7.

Table 3

Bivariate Correlations Between Team Cohesion, Mindfulness, and Emotional Competence.

Variable	1	2	3	4	5	6	7
Time 1							
1. ATG-T	-	.46**	.65**	.62**	.29	.48**	.44*
2. ATG-S		-	.13	.31	-0.5	.01	.13
3. GI-T			-	.76**	.20	.28	.36*
4. GI-S				-	0.7	.35*	.37*
5. Mindfulness					-	.18	.37*
6. EC-Interpersonal						-	.44*
7. EC-Intrapersonal							-
Time 2							
1. ATG-T	-	.14	.49**	.56**	.28	.40*	.11
2. ATG-S		-	.19	.29	-0.03	.25	.39*
3. GI-T			-	.67**	.10	.23	.30
4. GI-S				-	.22	.65**	.46*
5. Mindfulness					-	.36*	.37*
6. EC-Interpersonal						-	.54**
7. EC-Intrapersonal							-

Note. ATG-T = Individual Attractions to the Group – Task; ATG-S = Individuals Attractions to the Group – Social; GI-T = Group Integration – Task; GI-S = Group Integration – Social; EC = Emotional Competence.

** . Correlation is significant at the 0.01 level.

* . Correlation is significant at the 0.05 level.

Table 4

Pairwise Comparisons Post-Intervention Scores

Variable	Raw <i>M</i> (<i>SD</i>)		Corrected <i>M</i> (<i>SE</i>)		<i>F</i>	<i>P</i>
	Intervention	Control	Intervention	Control		
ATG-T	5.88 (1.99)	5.79 (1.70)	5.77 (0.40)	5.92 (0.45)	0.05	0.81
ATG-S	7.49 (1.02)	6.32 (2.16)	7.53 (0.34)	6.27 (0.38)	5.72	0.02
GI-T	4.94 (1.24)	4.25 (1.04)	4.80 (0.23)	4.42 (0.25)	1.22	0.28
GI-S	6.41 (1.14)	5.02 (1.00)	6.31 (0.16)	5.14 (0.18)	23.2	0.00
Mindfulness	3.51 (0.69)	3.78 (1.20)	3.48 (0.20)	3.83 (0.22)	1.35	0.25
EC-Interpersonal	3.57 (0.42)	3.24 (0.58)	3.51 (0.08)	3.31 (0.09)	2.44	0.13
EC-Intrapersonal	3.37 (0.42)	3.02 (0.79)	3.32 (0.09)	3.07 (0.10)	3.41	0.07

Note. ATG-T = Individual Attractions to the Group – Task; ATG-S = Individuals Attractions to the Group – Social; GI-T = Group Integration – Task; GI-S = Group Integration – Social; EC = Emotional Competence.

Pillai's Trace: $F = 4.16$; $p = .011$

LITERATURE REVIEW

Introduction

The purpose of the present thesis is to examine whether a team-based mindfulness meditation training program can increase perceptions of team cohesion, mindfulness, and emotional competence in intercollegiate sport teams. The review of literature will be divided into four parts: (a) cohesion; (b) team-building; (c) mindfulness, and (d) emotional competence.

Cohesion

This section of the thesis reviews literature pertaining to cohesion. First, the construct of cohesion is defined, along with its characteristics. Second, the conceptual model for cohesion is presented. Third, measurement tool used to assess this construct is described.

Definition and Characteristics of Cohesion

The cohesiveness of groups, including sport teams, has been an important area of research in sociology, social psychology, education, military psychology, sport psychology, and organizational psychology (Mudrack, 1989). Given that cohesion has been examined in numerous areas, it has been suggested that cohesion is one of the most important small group variables (Lott & Lott, 1965). With its perceived importance, many attempts have been made to define this construct. One of the earliest definitions was advanced by Moreno and Jennings (1938), stating that cohesion is the force holding together individuals within a group in which they are a part of. This idea of cohesion as a force was also referred to by Festinger, Back, Schachter, Kelly, and Thibaut (1950), defining cohesion as the total forces that stem from the sources of attraction within a group, in other words, cohesion is viewed as the degree of attractiveness of a group to its members. Given that this definition was one of the earliest, it

became one of the most significant in terms of influencing the research being conducted during this era (Carron, 1982).

As cohesion research evolved, Festinger, Schachter, and Back (1963) expanded on their earlier conceptualization of cohesion (i.e., being a field of forces) and proposed that there are two types of forces that are bi-dimensional in nature: (i) attractiveness to the group, and (ii) means for achieving goals or objectives. This bi-dimensionality of cohesion was operationalized as developing social relationships and achieving group objectives (Fiedler, 1967; Hersey, & Blanchard, 1977). This led Mikalachki (1969) to argue that cohesion should be divided into two components consisting of social and task cohesion. Within the realm of sport, Carron (1982) expanded on these early definitions of cohesion describing it as a dynamic process that is related to the willingness of a group to remain together and united to reach its goals and objectives. Carron, Brawley, and Widmeyer (1998) further revised the Carron definition by adding an effective component. This revised definition is considered the most widely used definition and views cohesion as “a dynamic process that is reflected in the tendency for a group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of member affective needs” (Carron et al., 1998, p. 213). The multidimensional nature of the conceptual model possessed two underlying reasons that drove the development, which were the need to distinguish between the individual and the group, and the need to differentiate between task and social concerns of the group and its members (Brawley, Carron & Widmeyer, 1987). As the model was developed, Carron (1982) stated that it is essential to develop an instrument that assesses group cohesion, which stems from the importance of groups themselves.

Conceptual Model for the Study of Cohesion

Carron (1982) advanced a conceptual model for the study of cohesion in sport. Carron's (1982) model is linear comprised of inputs, throughputs, and outputs. The inputs are the antecedents of cohesion, the throughputs are the different dimensions of cohesion, and the outputs are the consequences. Specifically, the antecedents are the contributing factors to cohesion in a sport team, which can be environmental, personal, leadership, and team factors. An environmental factor refers to the obligations of the individual towards the team and the vision and objectives of the team of which the individual is a part. An example of environmental factor that is related to cohesion is the number of individuals that comprise a team. The size of a team becomes significant in relation to cohesion, according to Carron and Eys (2012) as team size increases cohesion decreases. Along with everyone on a team come personal factors, which refers to individual differences between team members, such as demographic attributes, cognitions, affect, and behavior. Martens and Peterson (1971) stated that individual satisfaction is a personal affect factor which is related to cohesion. A following antecedent to cohesion is leadership factors, which are leadership behaviours and styles employed by the coach or athlete leaders. Research has shown that coaches could promote higher levels of task cohesion by using more training and instruction behaviour, democratic behaviour, social support, positive feedback styles, and decreasing the use of autocratic coaching strategies (Gardner, Shields, Bredmeier, & Bostrom, 1996; Westre & Weiss, 1991). As for athlete leadership, Vincer and Loughhead (2010) demonstrated that stronger perceptions of cohesion were present on a team when athletes perceived their peer leaders to display social support, training and instruction, as well as democratic behaviour. The last out of the four antecedents is team factors, these include roles, norms collective efficacy, and performance. Team cohesion and performance have been a significant area of study. Carron, Colman, Wheeler, and Stevens (2002) carried out a meta-

analysis of 46 studies that examined the relationship between cohesion and performance in sport, concluding that there is a moderate relationship between both task and social cohesion, and the performance of sport teams.

As for throughputs, Carron (1982) operationalized them as the different dimensions of cohesion. First, Carron, Widmeyer, and Brawley (1985) argued that group members could have perceptions about the team as a whole and their own individual perceptions of the group. The latter is referred to as *Individual Attractions to the Group* (ATG), and is defined as an individual member's personal feelings about their role and involvement with other group members (Carron et al., 1985). The former is *Group Integration* (GI), refers to the closeness and bonding that occurs within the group as a whole (Carron et al., 1985). Second, Carron et al. argued that ATG and GI are further divided into task and social components. The social aspect is defined as an overall orientation toward creating and maintaining social relationships within the group. In contrast, the task aspect is defined as the overall orientation of achieving the group's goals and objectives (Carron et al., 1985). Taken together, cohesion is comprised of four dimensions that bind members to their group that include task and social aspects as well as individual attractions and group orientations. These dimensions are labeled: (i) Individual Attractions to the Group - Task (ATG-T); (ii) Individual Attractions to the Group - Social (ATG-S); (iii) Group Integration – Task (GI-T), and (iv) Group Integration – Social (GI-S). This conceptual model was the basis for the development of the Group Environment Questionnaire (GEQ; Carron et al., 1985), an inventory that assesses these four dimensions of cohesion.

Lastly, Carron's (1982) conceptual model concludes with outcomes that are operationalized into group and individual consequences. These group outcomes include but are not limited to team stability, absolute performance effectiveness and relative performance

effectiveness. Individual outcomes include but are not limited to variables such as behavioural consequences, absolute and relative performance effectiveness, and individual athlete satisfaction.

Measurement of Cohesion

In order to measure the four dimensions of cohesion, Carron et al. (1985) developed the 18-item Group Environment Questionnaire (GEQ). All items of the GEQ are measured on a 9-point Likert scale ranging from 1 (strongly disagree) to 9 (strongly agree). It should be noted that 12 items are negatively worded, meaning that these items must be reverse scored.

The GEQ is one of the most widely used measures of cohesion (Eys, Loughead, Bray, & Carron, 2009). One reason why it is used widely as a measure of cohesion concerns its strong psychometric properties. In terms of validity, research has shown that the GEQ demonstrates content, concurrent, predictive, and factorial validity. During the developmental stages of the GEQ, it was analyzed for content validity, to assure that the items in the GEQ measure the construct of cohesion and not a different group construct (Carron et al., 1998). Carron et al. (1985) ensured content validity by completing the following: a broad literature search of relevant cohesion literature, external participants used as active agents in the conceptual definition process, a conceptual model was used to provide structure for item and scale development, five independent experts assessed the items, and the examination of intercorrelations of each item. Along with content validity, the GEQ was tested for concurrent validity, which refers to the correlation of an instrument with other instruments measuring the same variable. Brawley et al., (1987) examined the relationship between the GEQ, the Sport Cohesiveness Questionnaire (SCQ; Martens, Landers, & Loy, 1972), and the Team Climate Questionnaire (TCQ; Grand & Carron, 1982). Brawley et al. (1987) found that all subscales of the GEQ were correlated in an

acceptable range with the SCQ. While task cohesion from the GEQ (ATG-T and GI-T) were correlated with the TCQ. These results provided evidence of concurrent validity for the GEQ.

Predictive and factorial validity was determined for the GEQ. Predictive validity refers to the ability of the GEQ to predict an outcome that is linked to the phenomenon of cohesion. Terry et al. (2000) examined whether cohesion was related to mood in athletes from rugby, rowing, and netball. The results indicated that high levels of task cohesion (ATG-T and GI-T) predicted low levels of the mood dimensions of tension, anger, and depression, while high levels of social cohesion (ATG-S) predicted low levels of tension and depression. As for factorial validity, Carron et al. (1985) used principles component factoring with oblique rotation. Done using the four factor model of cohesion, the results indicated indeed a four factor structure. Specifically, the GEQ was shown to be consistent with the conceptual model due to acceptable factor loading criterion as well as acceptable factor eigenvalues. In terms of reliability, research has shown that the internal consistency of the questionnaire is adequate with subscales having the following Cronbach's alpha values: ATG-T, =.80; ATG-S, =.76; GI-T, =.72; and GI-S, =.71 (Senécal, Loughead, & Bloom, 2008).

Team-Building

In this section, the construct of team-building will be defined, the characteristics will be examined, and a conceptual model will be outlined. Moreover, a review of the literature regarding team-building will be presented.

Definition and Characteristics of Team-Building

The process of developing or enhancing cohesion is accomplished through a process known as team-building (Senécal et al., 2008). Dyer (1977) described team-building as “an intervention conducted in a work unit as an action to deal with a condition or conditions seen as

needing improvement” (p. 4). The psychology literature that is concerned with team-building characterised it as a method of assisting the group to increase effectiveness, satisfy the needs of its members, or improve work conditions (Beer, 1980; De Meuse & Liebowitz, 1981; Hanson & Lubin, 1988). Newman (1984) defined team-building as a method to support a group and promote an increased sense of unity and cohesiveness, enabling the team to function more smoothly and effectively.

In sport, Hardy and Crace (1997) described team-building as an intervention that enhances team performance by positively effecting team processes or team synergy. Similarly, Widmeyer and Ducharme (1997) stated that the two main objectives of team-building interventions are to enhance a group’s maintenance (i.e., performance) and locomotion (i.e., cohesion). Consequently, Brawley and Paskevich (1997) stated that team-building is characterised as enhancing or improving a team for task and social purposes. In particular, Brawley and Paskevich noted that team-building interventions have the objective of: a) enhance teamwork that is necessary to accomplish the team’s task, b) influence interactive processes within the team such as inter-member and intrateam coordination and communication, c) change the perceptions, expectations, and attitudes of the team with respect to matters important to the team, and d) reduce group properties that detract from or hinder the group’s development toward effective teamwork.

All of the above definitions presented have a common element in the context of sport, where team-building effects teamwork through the development of task (group’s goals) and social (relationships) cohesion (Loughead & Hardy, 2006). The definition that will be used and related to throughout this paper is stated from Brawley and Paskevich (1997), who define team-building as a method of helping the group to: (i) increase effectiveness; (ii) satisfy the needs of

its members, and/or (iii) improve work conditions. A team-building intervention is designed to increase group effectiveness by enhancing cohesion (Carron, Spink, & Prapavessis, 1997).

Conceptual Model of Team-Building

In order to move into practice and deliver team-building interventions a conceptual model for team-building was advanced by Carron and Spink (1993). The conceptual model (see Figure 1) is linear in fashion comprised of inputs, throughputs, and outputs. The inputs consist of team structure and team environment. The inputs are assumed to influence the throughput, team processes, which have an impact on the output, operationalized as team cohesion (Carron & Spink, 1993).

The group structure category of Carron and Spink's (1993) team-building model contains variables such as role clarity, conformity to norms, role acceptance, and leadership. Carron and Spink stated that in order for a team to have a strong sense of "we," the team structure must become stable with acceptance of norms, roles, greater mutual interdependence and conformity. The second input category, team environment, consists of distinctiveness, togetherness, and proximity. Carron and Spink (1993) noted that, "when aspects related to the group's immediate environment and/or the appearance of group members themselves are distinctive, perceptually different, or unique, members develop a stronger sense of 'we,' more readily distinguish themselves from nongroup members, and ultimately develop stronger perceptions of cohesiveness" (p.12).

The throughput, which is the team processes, emphasizes two factors: individual sacrifices and communication. Carron and Spink (1993) stated that the reason why individual sacrifices are a key element for a team to be cohesive is because both team structure and team environment all under this factor in one way or another. When individuals sacrifice for the

benefit of the team, this in turn increases their commitment which ultimately enhances cohesiveness. This concept holds true with the principle of communication and cooperation within a team. A rise in communication within a team increases task and social interactions, growing the team's perceptions of cohesiveness (Carron & Spink, 1993).

Martin, Carron, and Burke (2009) stated that there are two types of protocols that have been used to deliver team-building interventions in sport including: (i) a direct approach, where the sport psychology consultant introduces and implements the intervention, and (ii) an indirect approach, where the consultant works with the coach who then implements the team-building program. This conceptual model of team-building and these approaches have been implemented using the following interventions: (i) a single task oriented protocol such as goal setting (Stevens & Bloom, 2003); (ii) an omnibus task oriented protocol that incorporates a wide variety of psychological constructs (Prapavessis et al., 1996); (iii) a socially oriented protocol that is directed towards interpersonal relations (McClure & Froster, 1991); (iv) and an adventure/outdoor experience (Rainey & Schweickert, 1988; Stewart, Carreau, & Bruner, 2016).

Team-Building Research

This last section will present research examining the effects of team-building within sport environments. It will be organized in terms of research using qualitative and quantitative methodologies.

Quantitative. The majority of team-building research has used quantitative methods. Pain and Harwood (2009) delivered a series of workshops as a team-building intervention, using a personal disclosure mutual sharing (PDMS) approach to encourage discussion of team functioning. Measures concerning team cohesion, social cohesion, communication, and trust/confidence in teammates were taken prior, during, and post intervention. The team-building

intervention lasted four weeks with each weekly session lasting approximately 45 minutes in duration. During these team-building sessions, players and coaches had the opportunity to discuss factors related to team functioning. These sessions were facilitated by the sport psychology consultant. In general, the results showed that team cohesion, communication, social cohesion, and trust/confidence in teammates increased pre to post intervention.

Barker, Evans, Coffee, Slater, and McCarthy (2014) delivered a team-building intervention using a PDSM approach to 15 academy cricketers. The intervention consisted of two PDMS. The first PDSM session required athletes to disclose relationship-oriented information and the second session (PDSM-2) allowed athletes to disclose mastery-oriented information. The authors measured the outcomes of social identity, collective efficacy, and social validation, which were collected at four separate time points (baseline, post PDSM-1, midpoint, and post PDSM-2). Each variable showed a significant increase from both PDSM session with the 15 cricketers.

Rovio, Arvinen-Barrow, Weigand, Eskola, and Lintunen (2012) delivered a season-long (12 months) multifaceted team-building intervention with an ice hockey team. The participants consisted of 22 players, aged 15-16 years, and three coaches. The team-building intervention focused on group and individual goal setting, as well as role clarity. The quantitative data collected in this study included the outcome measures focusing on goal achievement and cohesion through the completion of the Group Environment Questionnaire (GEQ; Carron et al., 1985). The results indicated a significant difference between the pre- and post-season scores for goal achievement. As for cohesion, the results indicated that task cohesion remained constant throughout the season. However, social cohesion increased gradually as the season progressed.

Qualitative. Qualitative methods have also been used to examine the outcomes related to team-building interventions. These methods include observation, visual analysis, and the most common method, interviews. An investigation using PDMS team-building activities by Dunn and Holt (2004) examined 27 male intercollegiate hockey players and their individual responses to the PDMS approach. The interviews with the participants were divided into two sections consisting of reflections concerning the regular season and playoff reflections. Interviews indicated the PDSM meetings were shown to benefit both the individual and team, bringing the team closer together, helping the athletes feel more committed to one another, and allowing the team to develop a greater sense of trust in one another.

A study done by Bloom, Stevens, and Wickwire (2003) assessed expert coaches' perceptions of team-building, participants included 29 head coaches (6 females and 23 males) from five higher education institutions. Each coach participated in one focus group session of 90 to 120 minutes in duration and was held at each of the five universities. The results indicated that six themes emerged: (a) fundamental elements, (b) team environment, (c) coaches role and characteristics, (d) team-building activities, (e) lessons learned, and (f) relationship between team-building/cohesion/performance. In brief, the results showed that all coaches believed in the implementation of team-building activities throughout the course of the season. It was stated that for majority of the coaches, implementing a team-building intervention throughout the season is a season long process designed to enhance the cohesion of the team.

An investigation by Klein, DiazGranados, Salas, Le, Burke, Lyons, and Goodwin (2009) set out to answer the question, does team-building work? The study was an extension of Salas, Rozell, Mullen, and Driskell's (1999) team-building meta-analysis. Klein et al. (2009) set out to investigate the impact of four team-building components (goal setting, interpersonal relations,

problem solving, and role clarification) on cognitive, affective, process, and performance outcomes. The results indicated that team-building does improve team outcomes. Furthermore, process and affective outcomes are most improved by team-building interventions, along with interpersonal relations, and problem solving having a moderate effect on outcomes. The components that had the largest effect were role clarification and goal setting. It was concluded that even though teams of all sizes benefit from team-building, it appeared that large teams benefited the most.

Mindfulness

This section of the thesis reviews literature pertaining to mindfulness. First, the construct is defined, along with the characteristics and types of mindfulness practices. Second, the mindfulness-based intervention along with the measurement tool used to assess this construct is discussed. Lastly, a review of the literature regarding mindfulness-based interventions in sport will be forwarded, and how an intervention may relate to perceptions of cohesion.

Definition of Mindfulness

In the last two decades, mindfulness has gained popularity in both the clinical and research settings (Bishop et al., 2004). Mindfulness is often identified as a relaxation technique (Benson & Proctor, 1984). The construct is viewed as multifaceted and is defined as the state of being attentive to and aware of what is taking place in the present moment (Brown & Ryan, 2003).

Shapiro, Carlson, Astin, and Freedman (2006) stated that today's concept of mindfulness has been westernized but has its roots in Eastern contemplative traditions associated with the formal practice of mindfulness meditation. In fact, Kabat-Zinn (2003) refers to mindfulness as the heart of Buddhist meditation. As mindfulness originated from Buddhist psychology, it shares

ideas with a variety of philosophical and psychological traditions, including ancient Greek philosophy, phenomenology, existentialism, and naturalism; and transcendentalism and humanism in America (Brown, Ryan, & Creswell, 2007). It is important to highlight these connections between traditional Buddhist models of the mind and contemporary science in order to foster a more precise understanding concerning the roles of attention, consciousness, and memory in mindfulness meditation (Davis & Thompson, 2014).

Moving away from its Buddhist origins, Shapiro et al. (2006) stated that mindfulness is more than meditation with Brown and Ryan (2003) affirming that mindfulness is inherently a state of consciousness involving an individual to attend to one's moment-to-moment experience. Thera (1972) similarly viewed mindfulness as "keeping one's consciousness alive to the present reality" (p. 11).

Kabat-Zinn (1982) was the first to secularize the practice of mindfulness meditation, popularizing it in Western health care using the technique to treat such psychological disorders as depression and anxiety. Kabat-Zinn (1994) defined mindfulness as "paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally" (p. 4). Mindfulness has been defined as nonelaborative, nonjudgmental, present-centered awareness in which each thought, feeling, or sensation that arises in the attentional field is acknowledged and accepted (Bishop et al., 2004). In the simplest of terms, mindfulness involves bringing one's complete attention to the present experience on a moment-to-moment basis and accepting the given situation (Marlatt & Kristeller, 1999).

Mindfulness Interventions in Sport

In the mindfulness literature related to sport, there is a paradigm shift that is emerging in sport psychology referred to as mindfulness-based interventions (Pineau, Glass, & Kaufman,

2014). It is suggested that it may be more beneficial for athletes to develop skills in present-moment awareness and acceptance (Gardner & Moore, 2006), known as mindfulness.

Furthermore, even though most interventions done within sport focus on sport performance, it is important to point out what type of research has been published with associating mindfulness and sport. In fact, mindfulness meditation has not been studied with the association of cohesion, delivered as a team-building intervention. This research will be the first of its kind completed in sport psychology. Furthermore, this section of the thesis will begin reviewing the existing mindfulness-based interventions for athletes.

There currently are four mindfulness-based interventions specifically for athletes. The four approaches are: Mindful Sport Performance Enhancement (MSPE), Gardner and Moore's (2004, 2007) Mindfulness-Acceptance-Commitment (MAC) approach, Mindfulness Meditation Training for Sport (MMTS) created by Baltzell and Akhtar (2014), and Jekauc, Kittler, and Scлагheck's Berlin Mindfulness-based Training for Athletes (BATL; 2017). These four interventions are further discussed along with a non-sport specific intervention called Koru, which is a mindfulness program that was created by Rogers and Maytan (2012) specifically for young adults who attend post secondary education.

MSPE. Kaufman, Glass, and Pineau (2018) developed the MSPE. The foundation of this intervention was based on Kabat-Zinn's (1990) Mindfulness-Based Stress Reduction (MBSR) program, and Segal, Williams, and Teasdale's (2002) Mindfulness-Based Cognitive Therapy (MBCT) program. The MSPE was developed to be adaptable to any sport. According to the authors, the goal of this program is to train athletes in the fundamentals of cultivating mindfulness, and gradually assist them to apply the mindfulness skills both to their sport performance and to their daily lives.

The MSPE is designed as a 6-session intervention with each session lasting 90-minutes. The MSPE is designed to be delivered on a weekly basis to groups of athletes and/or coaches, including daily home practice for each individual varying anywhere from 3 to 40 minutes. Participants can track their daily home practice using a mindfulness log that the facilitator distributes in the first session. The protocol created by Kaufman, Glass, and Pineau (2018) provides scripts for all team mindfulness sessions and digital recordings to facilitate at home practice.

MAC. The MAC (Gardner & Moore, 2004) approach to performance enhancement is another mindfulness-based intervention developed for athletes. The MAC program was conceptualized as an intervention model centred around mindfulness practice, in which cognitive and affective underpinnings of optimal athletic performance were the focus of therapeutic attention for the purpose of both the enhancement of performance and general well-being. Not only has the MAC approach been used in the sport setting, but also in the military and with high school students with behavioural issues (Gardner & Moore, 2012; Gross, Moore, Gardner, Wolanin, Pess, & Marks, 2016).

According to Gardner and Moore (2007), “the MAC approach promotes acceptance of one’s internal experience, no matter what that might be, while at the same time focusing the performer on the contextually appropriate behavioral responses required to effectively navigate through life’s ever-changing situations in order to fully engage in one’s valued activities and achieve goals that really matter” (p. 31). Gardner and Moore further state that the MAC approach encourages the enhancement of competitive behaviours and the decision-making, problem-solving, and behavioral processes involved in the client’s daily life.

MMTS. Baltzell and Akhtar's (2014) Mindfulness Meditation Training for Sport (MMTS) is a 6-week program consisting of two 30-minute sessions per week that integrates mindfulness training with traditional psychological skills training such as imagery and self-talk. The MMTS focuses on teaching open awareness, the use of positive affirmations, concentration, and tactics for coping with negative mind-states. Along with observing one's breathing, counting breaths, and engaging in labeling during these sessions, participants are encouraged to practice on their own at home (Baltzell, Caraballo, Chipman, & Hayden, 2014).

Baltzell et al. (2014) delivered their MMTS program to a Division I varsity women's soccer team. The head coach allocated 30 minutes for every group session. The facilitator educated the participants on the many concepts of mindfulness for the first 20 minutes of the session and the last 10 minutes were dedicated to mindfulness meditation exercises. Moreover, five to ten minutes of daily practice was recommended for the participants to complete throughout the duration of the MMTS program.

Koru. Rogers and Maytan (2012) developed the Koru mindfulness intervention. It is a manualized training program in mindfulness, meditation, and other mind-body skills, that specifically target young adults, such as university students. The word "Koru" is derived from a New Zealand Maori word which symbolizes balanced growth. The program trains individuals in several mind-body skills, such as abdominal breathing and guided imagery, as well as insight into meditation practice. Compared to other interventions, Koru intervention is delivered in a group format to capitalize on interactions amongst peers along with the teaching which is very active, addressing skepticism and building motivation.

BATL. The Berlin Mindfulness-based Training for Athletes (BATL) is an 8-week program. In each session, a combination of psycho-education about mindfulness and its effects

as well as mindfulness exercises were conducted. For instance, different exercises such as centering, breath meditation, body scan, and mindfulness meditation are taught. In the first two sessions, most of the time is spent on psycho-education. During the progression of the program, the amount of time spent in psycho-education decreases and mindfulness exercises increases.

Measurement of Mindfulness

The current thesis will incorporate a measurement of mindfulness that is regarded the most reliable and valid in today's literature (Brown & Ryan, 2003). The instrument developed by Brown and Ryan (2003) will be used in this study and is labeled the Mindful Attention Awareness Scale (MAAS), which assesses individual differences in the frequency of mindful states over time. Brown and Ryan (2003) detailed that the MAAS is focused on the presence or absence of attention to and awareness of what is occurring in the present. The MAAS is a 15-item self-report questionnaire. Sample questions include "I find it difficult to stay focused on what's happening in the present moment" and "I do jobs or tasks automatically, without being aware of what I'm doing." All items are scored on a 6-point Likert scale (1 = almost always to 6 = almost never), where high scores reflect using mindfulness more frequently.

A study done by Brown and Ryan (2003) examined the nature of mindfulness and its relation to psychological well-being provided evidence for the psychometric adequacy and validity of the MAAS for use with college students and general adult populations.

Mindfulness Research

One of the first studies to examine mindfulness was conducted by Kabat-Zinn, Beall, and Rippe (1985) with a group of rowers. Kabat-Zinn and colleagues (1985) found that by following mindfulness meditation training, a group of college rowers performed well above their coach's expectations, along with a group of Olympic rowers who reported feelings that the mindfulness

training had helped their performance to reach the podium. A regular flow of mindfulness research did not appear in the academic sport psychology literature until the 2000s with a strong association in sport-performance variables (Pineau, Glass, & Kaufman, 2014).

Initially, mindfulness research in sport showed that athletes who participated in mindfulness training developed a better acceptance of external events and able to focus better on internal information. For instance, athletes were able to reduce the distraction around them and were more focused on relevant moment-to-moment information to optimize performance (Bernier, Thienot, Cordon, & Fournier, 2009). Mindfulness-based interventions have also demonstrated that they are capable of enhancing athlete mindfulness (DePetrillo, Kaufman, Glass, & Arnkoff, 2009), as well as flow (Gooding & Gardner, 2009) and performance (John, Verma, & Khanna, 2011).

Relating back to the purpose of the thesis, which is to deliver a mindfulness-based intervention in a team setting with the objective to not only increase mindfulness and emotional competence but also increase perceptions of cohesion. Mindfulness and team cohesion have not been examined specifically together, however, several studies have theorized a relationship between these two variables (Deci, Ryan, Schultz, & Niemiec, 2015). The role of mindfulness in relationship satisfaction and in response to relationship stress was examined in a college study population (Barnes, Brown, Krusemark, Campbell, & Rogge, 2007). In a 10-week longitudinal design, the results showed that college students who reported higher mindfulness scores reported higher levels of satisfaction with their relationships.

In the sports realm, a study done by Baltzell et al. (2014) used the MMTS program with a collegiate female soccer team. The goal of this team-based mindfulness therapy was to develop a team caring phrase, which was reported as contributing to team bonding. Furthermore, Burke

(2009) argued that group-based mindfulness approaches should have a positive effect on group cohesion. The underlying idea of a mindfulness-based interventions as a team-building exercise to enhance perceptions of cohesion can be concluded with the following from Deci et al. (2015): Such high-quality awareness puts people in better touch with their needs, feelings, interests, and values, as well as external conditions, helping them better select goals and activities that leave them feeling more efficacious, related and connected to others, and congruent and authentic in their behaviors. All of this conduces toward greater individual and relational wellness (p.112).

Emotional Competence

This section of the thesis reviews literature pertaining to emotional competence. First, the construct of emotional competence is defined, along with its characteristics. Second, the conceptual model for emotional competence is presented. Third, measurement tool used to assess this construct is described. It should be noted that the term emotional competence and emotional intelligence refer to the same construct, however, the term emotional competence was selected since it is shown that competences can be learned unlike intelligence (Nelis, Quoidbach, Hansenne, Weytens, Dupuis et al., 2011; Kotsou, Nelis, Gregoire, & Mikolajczak, 2011).

Definition of Emotional Competence

In the last two decades, emotional competence has received increased attention from both the general public and scientific community (Brasseur, Grégoire, Bourdu, & Mikolajczak, 2013). Salovey and Mayer (1990) define emotional intelligence as “the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them and to use this information to guide one’s thinking and actions” (p. 189). In other words, it is the verbal and nonverbal appraisal and expression of emotion, the ability to adjust emotion in the self and others, and the utilization of emotional content in problem solving (Mayer & Salovey, 1993).

Conceptual Model for the Study of Emotional Competence

As emotional competence research continued to emerge, Mikolajczak (2009) argued that a model was needed that unified conflicting perspectives of emotional competence, commonly known as the ability versus the trait debate. Consequently, Mikolajczak (2009) advanced the Three-Level Model (see Figure 2) that views emotional competence as being comprised of knowledge, abilities, and dispositions. The first level of this model is knowledge, which focuses on what information the individual has about emotions and how to deal with emotion-laden situations. The second level is abilities and refers to the capability to implement a given strategy in an emotional situation. The third level focuses on emotions and refers to the propensity to behave in a certain way in emotional situations. These three levels are theorized to be loosely connected, consequently presented in a way that knowledge does not always translate into abilities, which in turn, do not always translate into practice (Lumley, Gustavson, Partridge, & Labouvie-Vief, 2005).

Measurement of Emotional Competence

In order to measure emotional competence, Brasseur, Grégoire, Bourdu, and Mikolajczak (2013) developed the Profile for Emotional Competence (PEC). The PEC is a 50-item questionnaire that measures 10 dimensions of emotional competence (identification of own emotions, identification of other's emotions; understanding of own emotions, understanding of others' emotions; expression of own emotions, listening to others' emotions; regulation of own emotions, regulation of others' emotions; use of own emotions, use of others' emotions). These 10 dimensions are associated with two higher order factors: intrapersonal and interpersonal emotional competence, which also be combined to form a single emotional competence score.

Mikolajczak, Brasseur, and Fantini-Hauwel (2014) created a shorter version of the PEC that would have adequate psychometric properties while taken less time to administer. This shorter version of the PEC was labeled the Short Profile of Emotional Competence (S-PEC; Mikolajczak, Brasseur, & Fantini-Hauwel, 2014). In order to shorten the 50 item PEC, confirmatory factor analyses were performed to remove items that displayed lowest explanatory power on their respective dimensions and/or cross-loaded on other latent factors. This resulted in a 20-item version of the S-PEC where there were two items per each of the 10 dimensions. Using a second sample, Mikolajczak et al. validated the 20-item structure through confirmatory factor analyses and compared its predictive power to the original PEC 50-item scale. Consequentially, the analyses showed that the S-PEC was as predictive on outcomes as the longer, original PEC.

Emotional Competence and Mindfulness

The relationship between emotional competence and mindfulness is similar. Chu (2009) conducted two studies to determine whether meditation helps to improve emotional competence, reduce stress, and improve mental health. In the first study, it was found that meditation was positively associated with improved emotional competence and reductions in perceived stress and increases in mental health. In the second study, an experimental study examined the improvement effects of mindfulness meditation training in relation to emotional competence, stress and mental health. The results indicated significant improvements in the meditation group after an 8-week period of training in mindfulness meditation techniques.

Shapiro, Brown, and Biegel (2007) used an experimental design with graduate students from a counseling psychology program to test the effectiveness of a 10-week stress management course using the Mindfulness Based Stress Reduction (MBSR) approach. All students completed a pre and post measures of mindfulness (Mindful Attention Awareness Scale; Brown & Ryan,

2003), distress and well-being (Positive and Negative Affectivity Schedule; Watson, Clark, & Tellegen, 1988), stress (Perceived Stress Scale; Cohen, Kamarck, & Mermelstein, 1983), anxiety (State/Trait Anxiety Inventory; Spielberger, 1983), and rumination (Reflection Rumination Questionnaire; Trapnell & Campbell, 1999). The MBSR intervention included 2-hour sessions where students in the experimental condition received training in sitting meditation, body scan, hatha yoga, guided loving kindness meditation, and how to bring mindfulness into day to day living. The participants were also asked to complete daily mindfulness practice diaries they indicated the amount of time they meditated during the day. The results showed that participants in the experimental condition increased their empathic concern for others compared to the control condition. This study and the research presented above help to show the connection between mindfulness training and emotional competence.

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Figure 1: Conceptual framework of team building for cohesion (Carron & Spink, 1993).

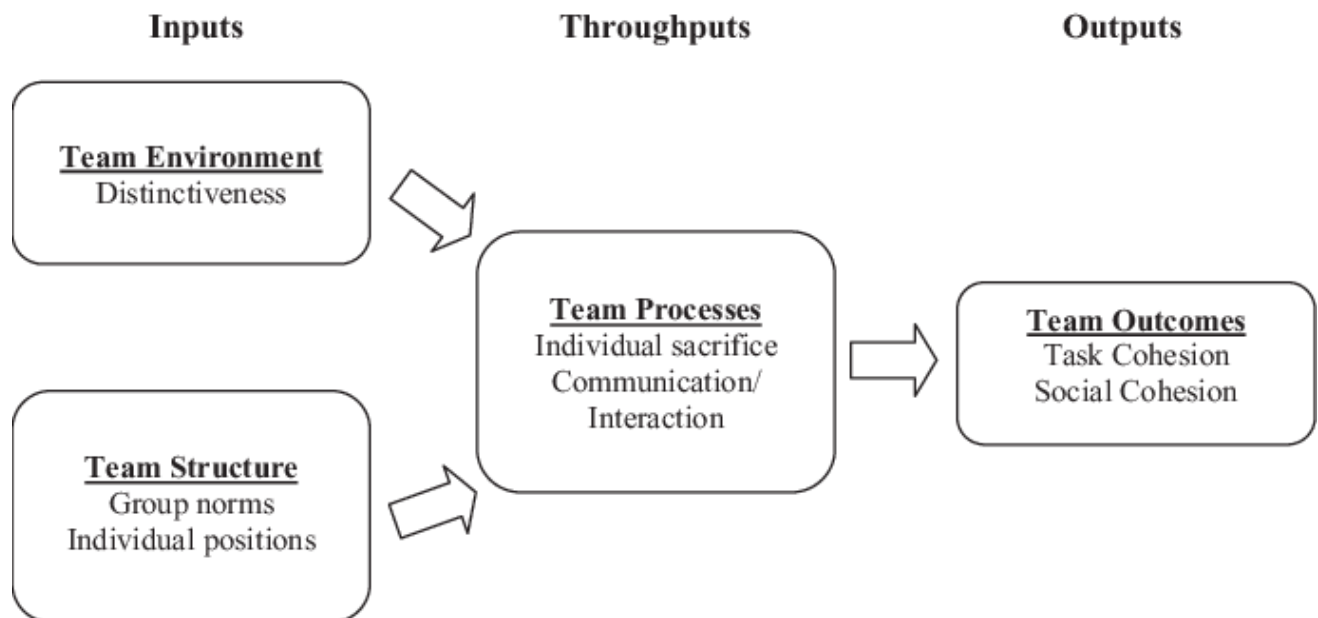
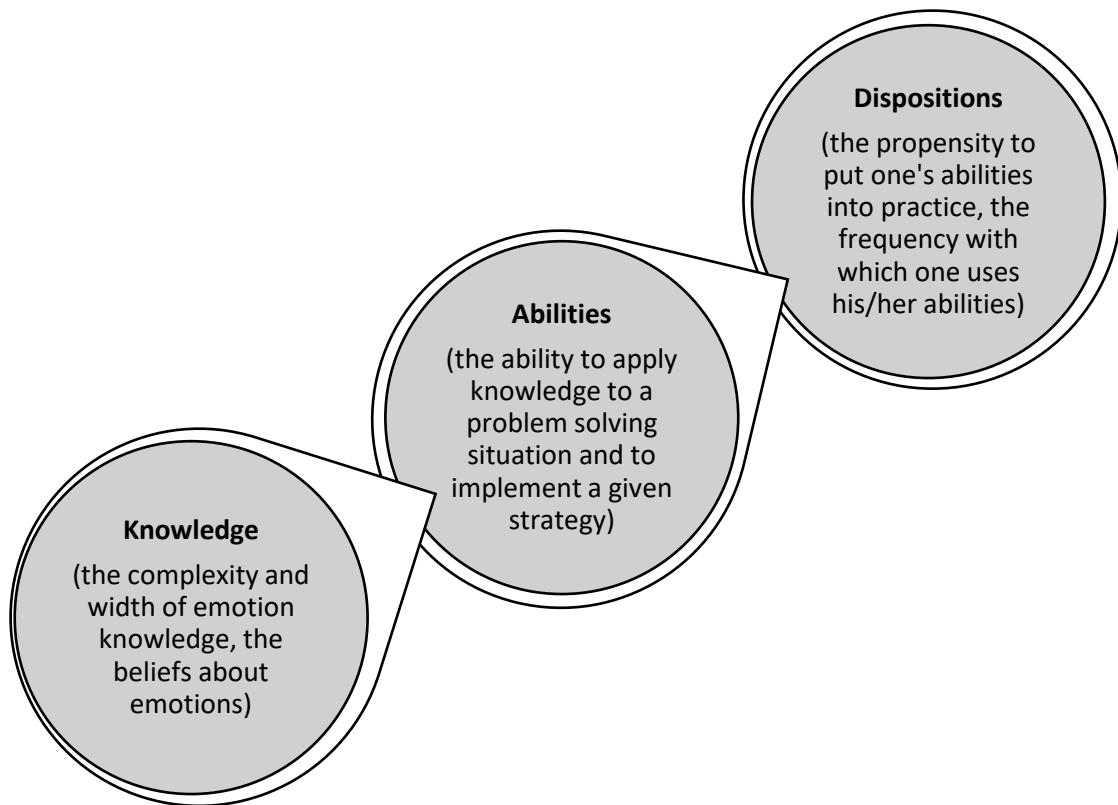


Figure 2: The Three-Level Model of Emotional Intelligence (Mikolajczak, 2009).



APPENDICES

Appendix A: Daily Log for Mindfulness and Meditation

Name: _____

Daily life mindfulness activity for the week: _____

DATE	MINDFULNESS EXERCISE	MINUTES OF PRACTICE	I'M GRATEFUL FOR...
			1. 2.
			1. 2.
			1. 2.
			1. 2.
			1. 2.
			1. 2.
			1. 2.

Appendix B

Demographics

Please fill in the details below:

First and Last Name:

Age:

Number of years with current team:

How many years have you been involved in soccer:

Appendix C

Mindfulness Attention Awareness Scale (MAAS)

Instructions: Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

1	2	3	4	5	6
Almost Always	Very Frequently	Somewhat Frequently	Somewhat Infrequently	Very Infrequently	Almost Never

	1	2	3	4	5	6
1. I could be experiencing some emotion and not be conscious of it until some time later.						
2. I break or spill things because of carelessness, not paying attention, or thinking of something else.						
3. I find it difficult to stay focused on what's happening in the present.						
4. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.						
5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention.						
6. I forget a person's name almost as soon as I've been told it for the first time.						
7. It seems I am "running on automatic," without much awareness of what I'm doing.						
8. I rush through activities without being really attentive to them.						
9. I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.						
10. I do jobs or tasks automatically, without being aware of what I'm doing.						
11. I find myself listening to someone with one ear, doing something else at the same time.						
12. I drive places on 'automatic pilot' and then wonder why I went there.						

13. I find myself preoccupied with the future or the past.						
14. I find myself doing things without paying attention.						
15. I snack without being aware that I'm eating.						

Appendix D

The Short Profile of Emotional Competence

The questions below are designed to provide a better understanding of how you deal with your emotions in daily life. Please answer each question spontaneously, taking into account the way you would normally respond. There are no right or wrong answers as we are all different on this level.

For each question, you will have to give a score on a scale from 1 to 5, with 1 meaning that the statement does not describe you at all or you never respond like this, and 5 meaning that the statement describes you very well or that you experience this particular response very often.

	1	2	3	4	5
1. When I am touched by something, I immediately know what I feel.					
2. When I feel good, I can easily tell whether it is due to being proud of myself, happy or relaxed.					
3. I do not always understand why I respond in the way I do (R).					
4. When I am feeling low, I easily make a link between my feelings and a situation that affected me.					
5. I find it difficult to explain my feelings to others even if I want to (R).					
6. I am good at describing my feelings.					
7. When I am angry, I find it easy to calm myself down.					
8. I find it difficult to handle my emotions (R).					
9. My emotions inform me about changes I should make in my life.					
10. I never base my personal life choices on my emotions (R).					
11. I am good at sensing what others are feeling.					
12. Quite often I am not aware of people's emotional state (R).					
13. I do not understand why the people around me respond the way they do (R).					
14. Most of the time, I understand why the people feel the way they do.					
15. Other people tend to confide in me about personal issues.					

16. I find it difficult to listen to people who are complaining (R).					
17. When I see someone who is stressed or anxious, I can easily calm them down.					
18. If someone came to me in tears, I would not know what to do (R).					
19. I can easily get what I want from others.					
20. If I wanted, I could easily make someone feel uneasy.					

Appendix E

Group Environment Questionnaire

This questionnaire is designed to assess your perceptions of your team. There are no wrong or right answers, so please give your immediate reaction. Some of the questions may seem repetitive, but please answer ALL questions. Your personal responses will be kept in strictest confidence.

The following questions are designed to assess your feelings about YOUR PERSONAL INVOLVEMENT with this team. Please CIRCLE a number from 1 to 9 to indicate your level of agreement with each of the statements.

1. I do not enjoy being a part of the social activities of this team.

1 2 3 4 5 6 7 8 9

Strongly Disagree

Strongly Agree

2. I'm not happy with the amount of playing time I get.

1 2 3 4 5 6 7 8 9

Strongly Disagree

Strongly Agree

3. I am not going to miss the members of my team when the season ends.

1 2 3 4 5 6 7 8 9

Strongly Disagree

Strongly Agree

4. I'm unhappy with my team's level of desire to win.

1 2 3 4 5 6 7 8 9

Strongly Disagree

Strongly Agree

5. Some of my best friends are on this team.

1 2 3 4 5 6 7 8 9

Strongly Disagree

Strongly Agree

6. This team does not give me enough opportunities to improve my personal performance.

1 2 3 4 5 6 7 8 9

Strongly Disagree

Strongly Agree

7. I enjoy other parties rather than team parties.

1 2 3 4 5 6 7 8 9

Strongly Disagree

Strongly Agree

8. I do not like the style of play on this team.

1 2 3 4 5 6 7 8 9

Strongly Disagree

Strongly Agree

9. For me, this team is one of the most important social groups to which I belong.

1 2 3 4 5 6 7 8 9

Strongly Disagree

Strongly Agree

The following questions are designed to assess your perceptions of YOUR TEAM AS A WHOLE. Please CIRCLE a number from 1 to 9 that best indicates your level of agreement with each of the statements.

10. Our team is united in trying to reach its goals for performance.

1 2 3 4 5 6 7 8 9

Strongly Disagree

Strongly Agree

11. Members of our team would rather go out on their own than get together as a team.

1 2 3 4 5 6 7 8 9

Strongly Disagree

Strongly Agree

12. We all take responsibility for any loss or poor performance by our team.

1 2 3 4 5 6 7 8 9

Strongly Disagree

Strongly Agree

13. Our team members rarely part together.

1 2 3 4 5 6 7 8 9

Strongly Disagree

Strongly Agree

14. Our team members have conflicting aspirations for the team's performance.

1 2 3 4 5 6 7 8 9

Strongly Disagree

Strongly Agree

15. Our team would like to spend time together in the off season.

1 2 3 4 5 6 7 8 9

Strongly Disagree

Strongly Agree

16. If members of our team have problems in practice, everyone wants to help them so we can get back together again.

1 2 3 4 5 6 7 8 9

Strongly Disagree

Strongly Agree

17. Members of our team do not stick together outside of practice and games.

1 2 3 4 5 6 7 8 9

Strongly Disagree

Strongly Agree

18. Our team members do not communicate freely about each athlete's responsibilities during competition or practice.

1 2 3 4 5 6 7 8 9

Strongly Disagree

Strongly Agree

Appendix F

LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

The Effectiveness of Mindfulness Meditation Training on Perceptions of Team Cohesion, Mindfulness, and Emotional Competence

You are asked to participate in a research study conducted by Piotr Piasecki (M.H.K. student) and Dr. Todd Loughhead (Ph.D., Faculty Supervisor), from the Department of Kinesiology at the University of Windsor. The results of this study will contribute to the completion of a Master's thesis in sport psychology.

If you have any questions or concerns about the research, please feel free to contact either Mr. Piotr Piasecki at 519-253-3000 ext. 4058 or piaseckp@uwindsor.ca, or Dr. Todd Loughhead at 519-253-3000 ext. 2450 or loughhead@uwindsor.ca.

PURPOSE OF THE STUDY

To examine the relationship between perceptions of cohesion, mindfulness, and emotional competence.

PROCEDURES

If you agree to participate in this study, you will be asked to take part in a eight-session mindfulness meditation training program using a workshop format. During these sessions you will meet with the investigator and other athletes from your group to participate in discussions and activities related to mindfulness. Additionally, you will be required to meet once before the

beginning of the program, the midway point, and following the completion of the program to fill out an online questionnaire pertaining to team cohesion, mindfulness, and emotional competence, which will take approximately 20 mins to complete.

POTENTIAL RISKS AND DISCOMFORTS

There are no foreseeable psychological or physical risks or discomforts associated with participation in this study.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

The information gained from this study will help advance knowledge in the field of sport psychology. The results will help to better understand how mindfulness meditation affects team cohesion and emotional competence. Mindfulness meditation also has promise to have a positive impact on emotional states that impact wellness and quality of life. This knowledge can be used by sport psychology consultants to enhance the development of team-building interventions.

CONFIDENTIALITY

Responses to the questionnaires will remain anonymous while the information from the draw will remain confidential. All data will be kept in a password protected file which will only be accessible by the primary investigators. Potentially the data may also be utilized in subsequent studies conducted by the researchers. Data will be kept secured for five years when it will then be destroyed.

PARTICIPATION AND WITHDRAWAL

Participation in this study is voluntary. If you volunteer to be in the study, you may withdraw at any time while you are completing the surveys, without consequences of any kind. However, once you have submitted the completed survey, this will be considered as your consent to participate and it is not possible to withdraw because the surveys are anonymous. You may also refuse to answer any questions and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE SUBJECTS

The results will be posted at the University of Windsor's Research Ethics Board website by September 1, 2018 (<http://www.uwindsor.ca/reb>). If you have any additional concerns or questions, you can call the investigators at the numbers above.

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies.

RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. If you have questions regarding your rights as a research subject, contact; Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; email: ethics@uwindsor.ca.

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

Piotr A. Piasecki

X

Electronic Signature

Appendix G

LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

The Effectiveness of Mindfulness Meditation Training on Perceptions of Team Cohesion, Mindfulness, and Emotional Competence

You are asked to participate in a research study conducted by Piotr Piasecki (M.H.K. student) and Dr. Todd Loughhead (Ph.D., Faculty Supervisor), from the Department of Kinesiology at the University of Windsor. The results of this study will contribute to the completion of a Master's thesis in sport psychology.

If you have any questions or concerns about the research, please feel free to contact either Mr. Piotr Piasecki at 519-253-3000 ext. 4058 or piaseckp@uwindsor.ca, or Dr. Todd Loughhead at 519-253-3000 ext. 2450 or loughhead@uwindsor.ca.

PURPOSE OF THE STUDY

To examine the relationship between perceptions of cohesion, mindfulness, and emotional competence.

PROCEDURES

If you agree to participate in this study you will be asked to complete an online questionnaire at three-time points throughout the season that may take up to 20 mins to complete.

POTENTIAL RISKS AND DISCOMFORTS

There are no foreseeable psychological or physical risks or discomforts associated with participation in this study.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

The information gained from this study will help advance knowledge in the field of sport psychology. The results will help to better understand how mindfulness meditation affects team cohesion and emotional competence. Mindfulness meditation also has promise to have a positive impact on emotional states that impact wellness and quality of life. This knowledge can be used by sport psychology consultants to enhance the development of team-building interventions.

CONFIDENTIALITY

Responses to the questionnaires will remain anonymous while the information from the draw will remain confidential. All data will be kept in a password protected file which will only be accessible by the primary investigators. Potentially the data may also be utilized in subsequent studies conducted by the researchers. Data will be kept secured for five years when it will then be destroyed.

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The results will be posted at the University of Windsor's Research Ethics Board website by September 1, 2018 (<http://www.uwindsor.ca/reb>). If you have any additional concerns or questions, you can call the investigators at the numbers above.

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SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

Piotr A. Piasecki

X

Electronic Signature

VITA AUCTORIS

NAME: Piotr A. Piasecki

PLACE OF BIRTH: Oshawa, ON

YEAR OF BIRTH: 1992

EDUCATION :
Nyack College, B. A. (Specialization)
Psychology, Nyack, NY, 2015

University of Windsor, M. H. K., Windsor, ON, 2018