

NORMATIVE INFLUENCE ON ATHLETES' INTENTIONS TO INTERVENE IN SPORT

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ABSTRACT

Previous research in the activity area has found that descriptive norms can influence individual activity (Crozier, 2014; Priebe & Spink, 2014; 2015). While important, studies examining other important outcomes in the activity area have not been conducted. For example, no research has examined whether normative information can be used to influence athletes' intentions to intervene with other teammates. In an effort to address this gap in the literature, the purpose of the current experiment was to examine whether descriptive norms, that were either supported by a coach or not, would influence a player's intentions to intervene when teammates made technical errors or did not exert enough effort. Canadian adult soccer players ($N = 106$) were recruited to participate in this online experimental study. Participants were assigned to one of three conditions: normative (teammates intervene)/coach support, normative (teammates intervene)/coach not support, or attention control. Participants in both of the normative conditions read two short vignettes describing how the players and coach on a hypothetical soccer team responded to a teammate's technical mistakes and lack of effort, respectively. While imagining themselves as a member of this hypothetical team, participants then rated their intentions to intervene with other members of this team. Results from ANCOVAs (controlling for previous intervening behaviour) revealed different results for intentions to intervene following technical mistakes versus lack of effort. Results for technical mistakes revealed a significant main effect for condition $F(2, 102) = 4.98, p < 0.01$. Post hoc results revealed that those in the normative condition that was supported by the coach reported greater intentions to intervene in the future than those in the control condition ($p < 0.05$, adj Cohen's $d = 0.71$). Conversely, intention to intervene did not differ between those in the normative condition that was not supported by the coach and those in the control group ($p > 0.05$, adj Cohen's $d = 0.13$).

There was no significant main effect for condition with respect to teammates exhibiting a lack of effort $F(2, 95) = 1.82, p > 0.1$). Results from this experiment provide initial evidence that descriptive norms supported by a coach may influence players' intentions to intervene when a teammate makes a mistake.

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CHAPTER 1 INTRODUCTION

"Life does not take place in a vacuum" is a well-known expression that few would dispute. Simply, one's thoughts, decisions, and actions are not made in isolation, but often are influenced by those around us. The idea that others influence one's individual behaviour is not new. For instance, it was suggested by Baumeister and Leary (1995) that humans possess an innate need to belong to a group, and thus it might be assumed that the behaviour of others will influence individual behaviour.

One of the corollaries stemming from the fact that humans have a strong need to belong to groups, is that humans look to others for information. Thus, it may not be surprising that a body of literature has emerged suggesting that social norms play a meaningful role in understanding human behaviour. Social norms are defined as rules that are understood and acted upon by group members without the force of law (Cialdini & Trost, 1998). Social norms exist all at levels. They exist within small groups, such as a families, and serve as a means to guide member behaviour and interactions with one another (e.g., attend weekly mass together). They also exist within larger groups, such as communities, where norms may serve to impact behaviours such as the utilization of active transportation during the daily commute. No matter the size of the group influenced by the norm, or the function of the norm itself, it is clear that social norms are present within modern society.

Over the past three decades, a number of theories have served as frameworks for researchers to examine social norms. While a variety of theories exist discussing different ways through which social norms may influence one's behaviour (e.g., social norms theory, Perkins & Berkowitz, 1986; deviance-regulation theory, Blanton, Stuart, & Van den Eijnden, 2001;

social identity/self-categorization theory, Hogg & Terry, 2000), focus theory of normative conduct (Cialdini, Reno, & Kallgren, 1990) was chosen as the theoretical framework to guide the present study for two reasons. First, focus theory has been used successfully to examine normative influence on a variety of individual behaviours in the past (e.g., recycling, Schultz, 1999; energy conservation, Nolan, Schultz, Cialdini, Goldstein, & Griskevicius, 2008); and second, it has served as the theoretical basis for a number of studies examining the influence of social norms in the activity setting (Crozier, 2014; Priebe & Spink, 2012, 2014).

1.1 Focus Theory of Normative Conduct

Focus theory of normative conduct describes how individuals' perceptions of social norms may influence their own behaviour (focus theory, Cialdini et al., 1990). Focus theory contains two main postulates. The first states that there are two different kinds of normative influence, descriptive and injunctive, and each influences behaviour in a different manner. Descriptive norms are defined as an individual's perception of the *prevalence* of others' behaviour, and according to Cialdini and his colleagues (1990), act purely as a behavioural cue. For example, if you live in a neighbourhood where you observe a majority of your neighbours walking, jogging, or biking by your house on a regular basis, it is likely that you also will be active in one or all of these different ways.

The observation that individuals will be influenced by what others are doing is not new. This effect was demonstrated empirically decades ago by Sherif (1936) in an experiment examining the autokinetic effect. In this experiment, individuals in a dark room were asked how far a point of light had moved (for the record, the light does not actually move). When asked individually, their responses were vastly different from one another; however, when asked as a group, all participants' responses converged toward a common distance.

Injunctive norms work differently. Rather than acting as a cue, they involve cognitive processing of what others perceive to be appropriate behaviour. For example, a kinesiology student may be more likely to be active than an engineering student because this student is likely to perceive that the majority of his or her classmates would approve of an active lifestyle.

The concept of injunctive normative influence also is not new, having been demonstrated empirically over six decades ago in the classic Asch (1952) line experiment. In this experiment, individual participants were placed with a group of confederates, and asked to indicate which of three lines matched a comparison line. All of the confederates responded first, and were asked to give the same wrong answer. After hearing this incorrect response multiple times, a majority of participants chose to conform to the group, and provided the incorrect group response, rather than stating the obvious correct answer. Since the participants could determine the correct answer themselves without the help of the group, it is likely that participants gave an incorrect response to “fit in” with the other respondents (i.e., receive approval from the others in the room).

Although focus theory provides two different types of norms, only descriptive norms will be examined in the present study. The choice was made to only assess descriptive norms in order to be consistent with the purpose of this research, which was to explore the influence of others' behaviour on individual intentions. As such, descriptive norms will be the only form of normative influence discussed from this point forward.

The second postulate of focus theory builds on the first, as it specifies that an individual will only act on normative information when the information presented is salient to that individual. Salience implies that normative information will only enter an individual's consciousness once he/she has chosen to focus on this information. Cialdini et al. (1990) also

mentioned that one must take into account the various conditions that would focus individuals on normative information. In a situation where an individual is not focused on a norm, it would be suggested that no effect should be observed. Essentially, individuals need to focus on normative information in order for the norm of interest to become activated.

An example demonstrating the role of salience in one's everyday encounters may help clarify this idea. Most people can relate to being exposed to various advertisements on a daily basis. In fact, a typical adult is exposed to approximately 600-625 advertisements daily ("Our Rising Ad Dosage," 2007). Obviously, not all of these advertisements enter an individual's consciousness on a daily basis; rather, this information is selectively filtered by the mind. In fact, a typical person pays attention to approximately 20% of the advertisements he or she encounters on a daily basis (Teixeira, 2014). These advertisements may enter an individual's consciousness for a variety of reasons. For example, if the information presented is shocking, relatable, or humorous, the advertisement may become more salient and subsequently grab a consumer's attention. Similarly, normative messages also are more likely to enter an individual's consciousness if the normative information presented is salient to the individual.

Following the emergence of focus theory, a number of studies have been published supporting the influence of social norms on individual behaviour. In an effort to present supporting research in a logical fashion, support for the use of descriptive norms will be discussed, followed by research supporting the salience concept captured in the second postulate of the theory. These empirical examples will be discussed as they relate to non-activity and activity behaviours, respectively.

1.2 Descriptive Norms

1.2.1 Non Activity

In an effort to understand normative influence, Cialdini et al. (1990) chose to assess the influence of descriptive norms on littering behaviour. In this experiment, researchers observed individuals' littering behaviour as they walked through clean and littered environments. The clean environment represented an anti-littering descriptive norm, as its cleanliness suggested that the majority of others did not litter in this environment. Conversely, the littered environment was used to represent a pro-littering descriptive norm, as it suggested that the majority of others did litter in this environment. Results showed that individuals littered more often in the littered environment than they did in the clean environment, thus indicating that the individuals' behaviour was influenced by situation-specific descriptive norms.

Although Cialdini et al. (1990) suggested that descriptive norms may influence individual behaviour, questions still remained regarding the relative power of normative influence in comparison to other sources of motivation. To examine this issue, Nolan and his colleagues (2008) measured the relative weight people ascribed to social norms, self-interest, environmental concerns, and social responsibility as motivators to conserve energy within their homes. In terms of motivation, participants indicated that normative beliefs had the smallest impact on their decisions to conserve energy at home. However, follow-up results indicated that descriptive norms had the strongest influence on participants' actual energy conservation behaviour.

1.2.2 Activity

Researchers also have examined whether social norms impact various types of physical activity. The earliest research to surface in the activity area involved exploring possible relationships between norms and activity. It was reported that one's perceptions of others'

activity levels predicted both an individual's overall physical activity level (Okun, Karoly, & Lutz, 2002) as well as total amount of strenuous activity (Okun et al., 2003). Priebe and Spink (2011) added to these findings by examining the effects of both normative and non-normative reasons for being active. Similar to the findings from the Nolan et al. (2008) study presented above, normative reasons predicted individuals' self-reported physical activity levels over and above perceived personal reasons for being active, even though participants rated non-normative reasons as stronger motivators of physical activity than normative reasons.

These descriptive relationships also have been extended into the sport setting. Spink, Crozier, and Robinson (2013) examined the relationship between descriptive norms and self-reported effort in sports teams, and found that individuals' perceptions of others' effort was related to their own effort in the sport setting.

Building on these correlational findings, Priebe and Spink (2012) were the first to use an experimental design to assess the influence of normative messages in the physical activity area. Results from this experiment indicated that those who received emails containing normative information surrounding being active reported a significantly greater increase in self-reported activity than did those receiving non-normative reasons for being active. Subsequently, results from other experiments also have supported the finding that descriptive norms can influence individual self-reported behaviour in the activity setting (i.e., increase light activity, decrease sedentary behaviour; Priebe & Spink, 2015).

In an effort to assess the effect of normative messages on actual behaviour in the exercise setting, Priebe and Spink (2014) measured the influence of normative feedback on muscular endurance (i.e., plank hold). Results indicated that those individuals receiving normative

information about others doing better on the second of two consecutive planks held their second plank longer than those who received no normative information.

In order to extend the growing body of research supporting the influence of descriptive norms on exercise-related behaviours, Crozier (2014) designed an experiment to assess whether descriptive norms would have a similar impact on individual behaviour in the sport setting of volleyball. As expected, exposure to normative information about others' effort resulted in greater perceptions of self-reported effort in volleyball players than exposure to information highlighting players' personal reasons for working hard.

To our knowledge, research in this area has been dominated by experiments exploring the influence of social norms on an individual's own behavior (e.g., increase muscular endurance, increase self-reported effort). The aim of the present study was to extend the current body of normative literature by examining normative influence on individuals' intentions to help others. More specifically, the focus of this study was to determine whether normative information about teammates could be used to influence athletes' intentions to intervene by altering an existing condition (Webster's dictionary, 1974).

Why should teammate intervention be an important outcome to examine? The fact is, there are many situations in sport where teammate intervention may be warranted. For example, situations in which other members on the team make mistakes (e.g., technical, tactical, mental) or exert little effort may both serve as situations where teammate intervention is justified. Given that both of these variables are integral components to individual performance, as well as team outcome (i.e., win/lose; Giacobbi, Roper, Whitney & Butryn, 2002; Howe, 2012; Johnston, Smith-Jentsch, & Cannon-Bowers, 1997), they were deemed appropriate for examination.

Two reasons emerge highlighting why teammates may serve as an effective channel for having teammates intervene. First, teammates are constantly interacting and communicating with one another during game situations; therefore, it is possible that teammates may notice problems that a coach would miss. When considering intervening with a focus on error correction, it has been suggested that if individuals were allowed or expected to provide feedback to teammates, more accurate diagnoses and productive solutions may be generated during a game (Johnston et al., 1997).

Second, while the coach in sport is ostensibly responsible for providing credible feedback, it has been suggested that supplementing coach feedback with information regarding other teammates' performance (i.e., descriptive norm) may be a viable method of improving individual motivation (Yelverton, 2014). Thus, it is possible that teammate behaviour may serve as an equally credible and accepted form of feedback than that relayed by the team coach. Since it has been suggested that feedback regarding teammate performance might increase athlete motivation (Yelverton, 2014), it may be worthwhile to explore how athletes' intentions to motivate their teammates changes, when feedback regarding the prevalence of teammate intervention is provided to the individual.

1.3 Salience

1.3.1 Non Activity

As noted above, salience refers to whether normative information becomes focal to an individual. That is, norms will only influence behaviour when the information presented is salient to the individual. Unfortunately, focus theory does not suggest how to increase the salience of normative messages, other than to highlight the need to take into account the various conditions that would incline individuals to focus attention (or not) on the norm.

In an effort to answer this issue of focus, Cialdini and colleagues (1990) used priming as a method to get individuals to focus on normative information. In order to prime the individuals involved in this experiment to reduce littering, handbills were placed on their car windshields containing information differing in contextual proximity to the normative information presented in their immediate environment. Results indicated that participants who received a handbill closest in contextual proximity to littering behaviour (i.e., littering) were the least likely to litter the handbill while walking through a littered environment. Conversely, those who received a handbill furthest in contextual similarity to littering behaviour (i.e., arts month) were more likely to litter the handbill while walking through the same environment. These results provide support for the second postulate of focus theory as they suggest that the normative information presented in the environment (i.e., an abundance scattered of litter) became more salient to those individuals who were primed with a handbill of closest contextual similarity to the normative information available to them (i.e., littered environment).

Goldstein et al. (2008) extended this idea to explore whether situational similarity would have a similar effect on message salience for towel recycling. In this field experiment, hotel guests either received a sign on their washroom towel rack containing a general descriptive norm (i.e., "the majority of guests reuse their towels") or descriptive norm closely matched to their immediate situational circumstance (i.e., "the majority of guests in this room reuse their towels"). It was found that hotel guests who received normative messages similar to their situational circumstance reused more shower towels than those who received a generic descriptive norm. These results suggest that it is possible to manipulate the salience of normative messages, and hence the effectiveness of normative messages in creating behaviour change.

1.3.2 Activity

The idea of salience has been examined recently in the activity setting. For instance, researchers have tested how the relationship between normative messages and activity changes when different reference groups are highlighted. The results of one correlational study revealed that descriptive norms were stronger predictors of activity than other personal reasons for being active (Priebe & Spink, 2011), but only when "friends" were the reference group included in the normative message. In a similar study conducted in the sport setting, a positive correlation between descriptive norms and friends' behaviour was found again, and it was also reported that group identity was highest with "friends" when compared to other reference groups (Spink et al., 2013).

In addition to evidence supporting the relationship between message salience and reference groups, results from experimental studies have also emerged. Crozier (2014) was interested in assessing whether cognitive mechanisms could be used to increase message salience. She explored whether drawing individuals' attention to the positive benefits of activity (i.e., positive outcome expectations) would increase the salience of activity-related normative messages. It was found that descriptive norms describing the high level of others' activity only influenced individuals' activity levels when the positive benefits of the behaviour experienced by many others were emphasized. Conversely, when positive benefits of activity were only experienced by a few others, no change in activity was observed. In addition to supporting the idea that positive outcome expectations can increase message salience, Crozier (2014) also provided empirical support for the second postulate of focus theory. That is, when individuals are not focused on normative information, behaviour change will not occur. This was supported in her study as participants' activity did not change when little incentive was provided to focus on

the descriptive norm (i.e., few people experienced positive benefits of activity) even though the norm was for many to be active. Collectively, the research on salience suggests that message salience can be manipulated in the activity setting.

1.4 Gap in the Literature

Getting players to intervene with teammates is likely to be difficult. Evidence from research examining the bystander effect (Darley & Latane, 1968b), for instance, speaks to the possible difficulty in getting individuals to intervene with others. The bystander effect describes the common situation wherein individuals do not offer any means to help a victim when others are present (Darley & Latane, 1968b). In these emergency situations, the descriptive norm may be to remain uninvolved, rather than to intervene. But what would happen if a descriptive norm supportive of intervening was introduced into this situation? Would these bystanders be more likely to intervene?

Research in other areas suggests that intervention using descriptive norms might be possible. Mollen, Rimal, Ruiters, Jang, and Kok (2013) found that manipulating descriptive norms increased individuals' motivation to intervene with others who were consuming excessive amounts of alcohol. Specifically, the results of the study revealed that individuals were more likely to offer their friends a safe ride home when they were presented with normative information supportive of intervening in this type of situation. Thus, it appears as if perceptions of descriptive norms can motivate one to intervene in situations where one may find it difficult, such as in the sport setting. Thus, the current study aims to fill this gap in the literature by examining the effect of descriptive norms on individual intentions to intervene with teammates on a sport team.

When examining teammate intervention in the sport setting, the role of the coach cannot be ignored. Coaches are viewed as the leaders of the team that create an environment for players to develop and succeed while achieving team goals (Vealey, 2005). Since coaches undoubtedly influence individuals in any team sport (Rodeneck, 2008), it is possible that they may serve as an untapped source of salience in the sport setting. Therefore, in accordance with the second tent of focus theory, it is predicted that athletes will focus more on normative information if their coach also supports the team descriptive norm.

1.5 Purposes and Hypotheses

The current study aimed to fill gaps present in the literature pertaining to normative influence in the activity setting. The objective of this study was to examine whether normative messages would influence athletes' intentions to intervene around two important athlete outcomes, teammates making a technical mistake and teammates exerting less than adequate effort. Further, given Cialdini's (1990) suggestion that normative information is more likely to be activated when individuals focus attention on normative information, the specific purpose of this study was to use coach support as the prompt that focused individuals on the fact that other teammates were intervening. Specific hypotheses examined included:

1a) Athletes will indicate greater intentions to intervene when the norm is for teammates to intervene and the coach supports teammate intervention around technical errors.

Support for this hypothesis was based on: (1) studies demonstrating the positive influence of descriptive norms on individual intentions (Crozier, 2014; Mollen et al., 2013; Rivis & Sheeran, 2003), (2) empirical evidence supporting the influence of norms on intentions to intervene (Mollen et al., 2013), (3) research suggesting that teammates may serve as an effective

source of error correction in the sport setting (Johnston et al., 1997), and (4) the assumption that coach support will focus individuals on normative information.

(1b) Athletes' intentions to intervene will not change when the norm is for teammates to intervene but the coach does not support teammate intervention around technical errors.

This hypothesis was predicated on the assumption that normative information would not be activated without coach support, as athletes would not focus on the norm.

(2a) Athletes will indicate greater intentions to intervene when the norm is for teammates to intervene and the coach supports teammate intervention relating to others' effort.

In addition to the empirical evidence discussed above, this hypothesis was based on: (1) past research supporting the influence of descriptive norms on athlete effort (Crozier, 2014), and (2) a study demonstrating the influence of teammate intervention on athlete motivation (Yelverton, 2014).

(2b) Athletes' intentions to intervene will not change when the norm is for teammates to intervene but the coach does not support teammate intervention around others' lack of effort.

The rationale for this hypothesis was the same as that noted above for hypothesis 1(b).

CHAPTER 2 NORMATIVE INFLUENCE ON ATHLETES' INTENTIONS TO INTERVENE IN SPORT

2.1 Methods

2.1.1 Participants

Canadian adult soccer players ($N = 106$) were recruited to participate in this study (age range = 18-51 years, $M_{age} = 24$ years, $SD = 6.5$ years). Inclusion criteria were as follows: participants needed to be at least 18 years of age, and have previous experience as a member of a soccer team with a designated team coach for at least one full season within the past five years. Females represented 56% ($n = 60$) of the sample, with the majority (64.2%) of participants indicating membership on a same sex team, as opposed to a co-ed team. Of those reporting, 65 (61%) of the participants identified themselves as a current member of a soccer team, while the remaining 42 (39%) reported being a member of a soccer team within the past year. Participants reported an average of 14 years of experience playing soccer, with 2 (2%) individuals indicating they had competed at the international level, 11 (10%) at the national level, 14 (13%) at the university level, 34 (32%) at the recreational level, and 46 (43%) at the provincial level.

2.2.2 Procedure

After approval was received from the University of Saskatchewan's Behavioural Research Ethics Board, participant recruitment began (see Appendix A). Participants were recruited over a one-month period via three different contexts. Participants were either recruited through advertisements posted on a university portal, local soccer website, or through social media (i.e., Facebook and Twitter). All individuals interested in participating who met the inclusion criteria followed a web link to complete the online study. Upon clicking this web link,

participants were asked to provide informed consent as well as respond to a brief demographic survey.

Pilot Study

In order to determine whether both dependent variables (i.e., technical mistakes and lack of effort) should be included in the present study, athletes' observations, experiences, and preferences regarding teammate intervention when others on the team made mistakes (e.g., technical, tactical, mental) and exerted little effort were examined in an online pilot study (see Appendix F). This pilot study also was utilized to determine the context in which to assess athletes' intentions to intervene, since various contexts may influence athletes' intentions to intervene differently. For example, it is possible that participants may prefer to receive intervention from teammates in game situations, but not in practice, or vice versa. Further, it is also possible that athletes' intentions to intervene could vary across different sport contexts. Therefore, both game and practice situations were examined across four different sport contexts (i.e., soccer, volleyball, curling, or hockey) in the pilot study.

Main Study

After examination of participants' responses to the pilot study, teammate intervention on soccer teams when others on the team made technical mistakes and exerted less than adequate effort in game situations were chosen as the dependent variables for the main online experiment (for complete rationale, see Appendix F). A separate sample of participants was recruited to participate in the main experiment examining teammates' intentions to intervene with one another.

In terms of design, initially participants were randomly assigned to one of three vignette conditions that described hypothetical soccer teams differing in the level of teammate

intervention and coach support for intervening behaviours surrounding technical mistakes (i.e., normative/coach support, normative/coach not support, control). After all questions pertaining to players' intentions to intervene around teammates' technical errors were answered, participants were then randomly assigned to a second vignette condition pertaining to teammate intervention when others on the team did not try hard enough (i.e., normative/coach support, normative/coach not support, control). It is important to note that no participant received two control vignettes. To clarify, if an athlete was assigned to a control vignette on the first assignment, that individual was randomly assigned to a normative condition for the second vignette assignment (i.e., no participant received two control vignettes).

Vignette Manipulation Descriptions

As noted above, the information in the vignettes described three different soccer teams. In two of these vignettes, the descriptive norm on the team was for athletes to intervene with teammates. These two normative vignettes differed from one another as one of the vignettes described a team where the coach supported teammates intervening, and in the other, the coach did not support teammates intervening. The third vignette was an attention-control condition.

Before reading the vignettes, participants were first asked to indicate their previous intervening behaviours when they noticed others on their own soccer team make a technical mistake (see Appendix I) or not try hard enough (see Appendix K). Participants were then instructed to imagine themselves as a member of the team being described while they read each vignette. The vignettes for each dependent variable, within each of the conditions, are provided below:

Teammates intervene/coach support technical mistakes. Imagine that you are playing on a soccer team that has played together for five consecutive years in the same

competitive league. Your team is composed of individuals with a variety of different skill levels and abilities and wins at least half of its games every season. As in all team sports, the individual members of your team sometimes make technical mistakes while competing in game situations. Your coach encourages members of your team to provide advice to teammates on how to correct mistakes when skills are not performed correctly. In fact, before all games this season your coach made a point to tell the entire team that individual members should provide advice to members when they make a technical mistake. Consistent with the coach, when your teammates observed another member of the team perform a skill incorrectly in a game situation, a majority of your teammates intervened by offering this person advice on how to prevent the same mistake in the future. Over the current season, more than 90% of your teammates who noticed another teammate make a technical mistake, and knew how to correct it, provided advice to the individual on how to correct the mistake.

Teammates intervene/no coach support technical mistakes. Imagine that you are playing on a soccer team that has played together for five consecutive years in the same competitive league. Your team is composed of individuals with a variety of different skill levels and abilities and wins at least half of its games every season. As in all team sports, the individual members of your team sometimes make technical mistakes while competing in game situations. Your coach encourages members of your team *NOT* to provide advice to teammates on how to correct mistakes. In fact, before all games this season your coach made a point to tell the entire team that individual members should *NOT* provide advice to teammates on how to correct mistakes when skills are not performed correctly. In contrast to the coach, when your teammates observed another

member of the team perform a skill incorrectly in a game situation, a majority of your teammates intervened by offering this person advice on how to correct the mistake. Over the current season, more than 90% of your teammates who noticed another teammate make a technical mistake, and knew how to correct it, provided advice to the individual on how to correct the mistake.

Teammates intervene/coach support effort. Imagine that you are playing on a soccer team that has played together for five consecutive years in the same competitive league. Your team is composed of individuals with a variety of different skill levels and abilities and wins at least half of its games every season. As in all team sports, individual members of your team sometimes fail to exert 100% effort while competing in game situations. Your coach encourages members of your team to recognize when teammates are not exerting themselves to the fullest, and to intervene by telling these individuals to increase their effort level. In fact, before all games this season your coach made a point to tell the entire team that individual members should tell members who are not working hard enough that they need to work harder. Consistent with the coach, when your teammates observed another member of the team fail to exert 100% effort in a game situation, a majority of your teammates intervened by telling this person that he or she needed to try harder. Over the current season, more than 90% of your teammates who noticed another teammate not working as hard as expected told this individual that he or she needed to work harder.

Teammates intervene/no coach support effort. Imagine that you are playing on a soccer team that has played together for five consecutive years in the same competitive league. Your team is composed of individuals with a variety of different skill levels and

abilities and wins at least half of its games every season. As in all team sports, the individual members of your team sometimes fail to exert 100% effort while competing in game situations. Your coach encourages members of your team to *NOT* intervene with members who are not exerting themselves to the fullest. In fact, before all games this season your coach made a point to tell the entire team that members should *NOT* say anything to individuals who are not working hard enough. In contrast to the coach, when your teammates observed another member of the team fail to exert 100% effort in a game situation, a majority of your teammates intervened by telling this person that he or she needed to try harder. Over the current season, more than 90% of your teammates who noticed another teammate not working as hard as expected told this individual that he or she needed to work harder.

Attention control. Imagine that you are playing on a soccer team that has played together for five consecutive years in the same competitive league. Your team is composed of individuals with a variety of different skill levels and abilities, and manages to win at least half of its games every season. As in most sporting activities, the issue of athlete injuries has arisen in soccer. The league that your team plays in decided to be proactive by handing out materials at the start of the season outlining best practices for preventing injury. Some of the suggestions that were made included: wear the correct equipment while participating, ensure that you are utilizing proper form and technique, develop and engage in a proper warm up and cool down, complete muscle strengthening exercises during the off season, and encourage individuals not to play when they are injured. Results from your team suggest that the circulated materials discussing injury

prevention seem to have been effective. This season there are fewer players on your team missing games and practices due to injury than in past seasons.

Post-vignette protocol. After reading the assigned vignette, participants indicated their intentions to intervene in the hypothetical scenario (see Appendix J for technical mistakes and Appendix L for effort). Additionally, all participants completed manipulation-check questions to examine their perceptions of the quality of the team descriptions as a whole (i.e., believability, readability, clarity, and distinctiveness).

The manipulation check that participants received differed based upon the condition to which they were assigned. Those assigned to a normative condition for both the technical mistake- and effort- related scenarios responded to seven questions including items assessing whether the vignettes made sense, were believable, easy to read, easy to understand, and easy to imagine. Two additional items also were included to determine whether it was clear how the coach and team members intervened when teammates made technical mistakes or did not exert enough effort (see Appendix M). Conversely, those assigned to the attention-control condition for technical mistakes or effort responded to six questions that differed slightly to those above. Specifically, only one of the items assessing the clarity of coach and teammate intervention was included so as to not confuse participants who were assigned to the corresponding control condition for technical mistakes or effort (see Appendices N and O). Participants were then debriefed about the purpose of the study and offered the opportunity to enter a draw for one of two \$50 gift certificates to Tim Horton's before exiting the survey (see Appendices P). For a visual representation of the study procedures, please refer to Figure 2.1.

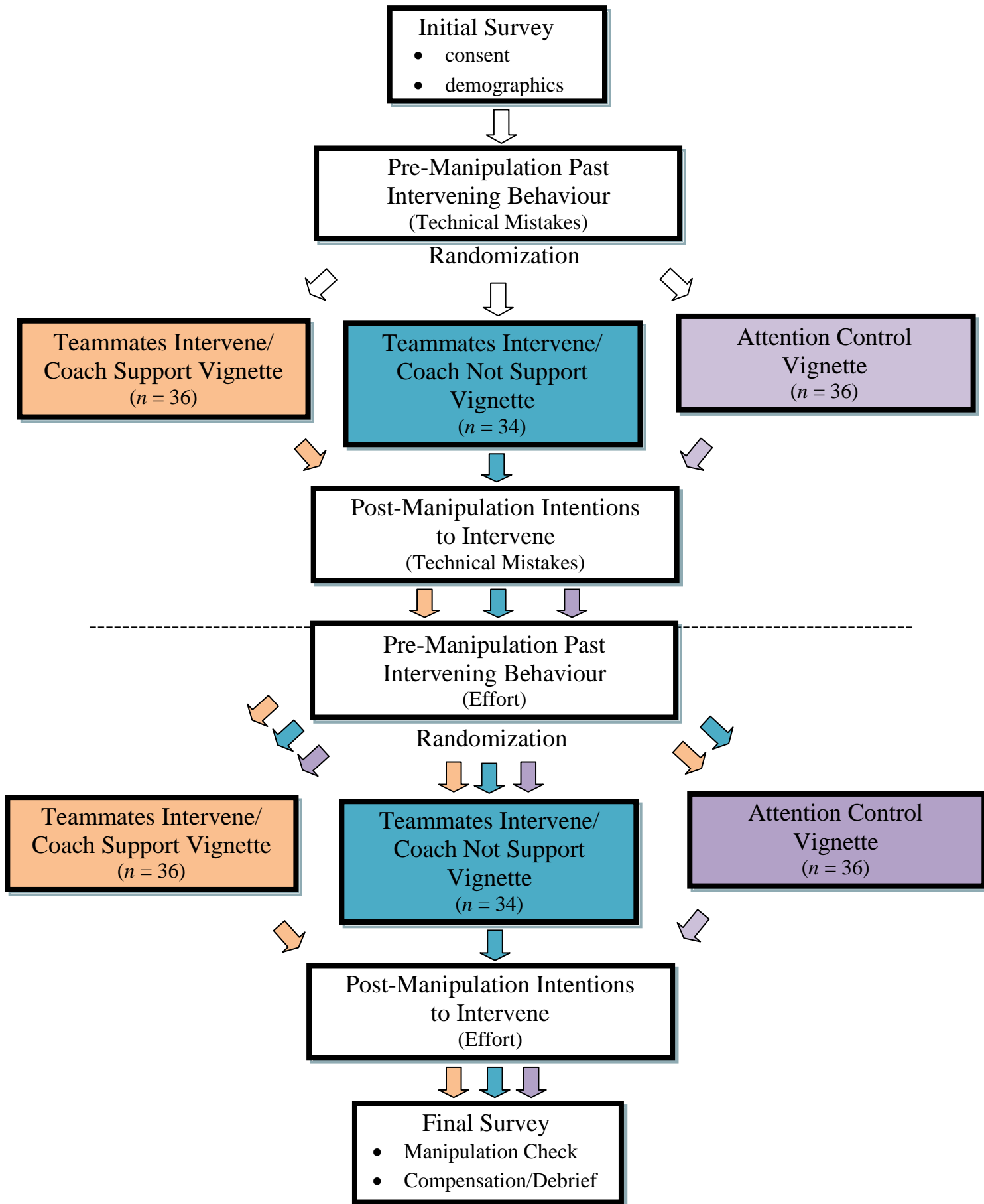


Figure 2.1 Outline of Study Procedures

2.2.3 Measures

Demographics. All participants were asked to respond to a series of basic demographic questions, including place of residence, gender, and age, as well sport-specific questions (e.g., have you played on a soccer team that had a coach in the past 5 years, what is the highest competitive level of soccer you have played, in which soccer league(s) do you compete, how many years have you played soccer). Participants were then asked to indicate whether or not they were currently a member of a soccer team. If individuals identified themselves as a current member of a soccer team, they were asked two follow-up questions (i.e., for how many seasons have you been a member of your current soccer team, does your current soccer team have a team coach). On the other hand, if individuals indicated that they were not currently a member of a soccer team, they were asked two different follow-up questions (i.e., have you been a member of a soccer team for a full season in the past 5 years and did your most recent soccer team have a team coach; see Appendix H for full demographics questionnaire). These questions were asked to ensure that all participants met the inclusion criteria.

Previous intervening behaviour. Each individual was asked to indicate how often they intervened when they noticed teammates make either technical mistakes or exert less than adequate effort in the past. Three-items were used to assess past intervention behaviour, with an example item, specific to technical mistakes, as follows, "Please think about the last soccer team you played on that had a team coach. After you noticed one of your teammates make a **technical** mistake (perform a skill incorrectly) during a **game situation**, and you knew how to correct it, how often did you: Offer this teammate advice on how to prevent the same mistake in the future." Responses were made on a scale ranging from 1 (*not often*) to 7 (*very often*). Reliability for the dependent variables was $\alpha = .93$ for technical mistakes and $\alpha = .83$ for effort

(Cronbach, 1951). As such, the average of the three items for each variable was computed, and used in the analyses as covariates (see Appendix I for technical mistakes, and Appendix K for effort).

Intentions to intervene. Two (technical mistakes and lack of effort) 3-item measures developed for this study assessed participants' intentions to intervene with teammates on a hypothetical team. These measures were constructed for the current study based on the principles outlined by Ajzen and Fishbein (1980) for accurate measurement of intention (i.e., context, target, time, and action). For technical mistakes, participants reported their intentions to intervene when a member on the team made a technical mistake in three different situations: (1) at the beginning of a game, (2) at a crucial part of a game, and (3) when the team was far ahead in the game. A similar procedure was followed to develop the intention to intervene measure when teammates exhibited a lack of effort. Responses to both dependent variables were made on scales ranging from 1 (*very unlikely*) to 7 (*very likely*). Internal consistency was $\alpha = .66$ for technical mistakes and $\alpha = .92$ for effort (see Appendix J for technical mistakes and Appendix L for effort). As rounding resulted in internal consistencies of at least .70 (Nunnally, 1978) for both measures, the average of the three items for each dependent variable was computed, and used in the analyses.

Vignette quality. To ensure that the vignettes were easy to read, made sense, were believable, easy to understand, easy to imagine, and clear, manipulation check items were included in the post-manipulation survey to assess these variables (e.g., "These scenarios...made sense to you, were easy to understand, believable" (see Appendices M, N, and O). Responses were made on a 9-point Likert scale ranging from 1 (*strongly disagree*) to 9 (*strongly agree*). Although the manipulation check questions used in this study were similar to manipulation

checks used in previous activity research (Priebe & Spink, 2014), they were modified to measure the quality of the vignettes rather than normative messages.

2.2.4 Data Analyses

Prior to beginning the analyses, all data were screened for missing values, outliers, and normality (Hutcheson & Sofroniou, 1999). An ANCOVA, controlling for past intervention behaviour, was used to test the condition main effect for technical mistakes. An ANCOVA was chosen in order to control for the relationship between past intervention behavior (i.e., covariate) and intention to intervene (i.e., dependent variable), $r = .46, p < .001$. A significant main effect for condition was followed-up with a Bonferroni post-hoc test comparing 1) normative/coach support to control and 2) normative/coach not support to control. A second ANCOVA (significant correlation between the covariate of past intervention behavior and dependent variable, $r = .78, p < .001$) and post hoc tests were conducted to test the lack of effort dependent variable

The effect sizes and confidence intervals surrounding differences across the hypothetical vignette teams were calculated when appropriate (Smithson, 2003). Finally, responses to the manipulation check questions were examined descriptively to examine the quality of each vignette.

2.3 Results

2.3.1 Descriptive Statistics

Prior to beginning the main analysis, all data were screened for outliers and normality using histograms and standardized scores. The results of this initial data screening were found to be satisfactory. Further, four participants missed one of the three-items assessing their post-manipulation intentions to intervene. An average of the two answered scores was calculated in

order to account for this missing data (Tabachnick & Fidell, 2012). Although mean substitution has been noted to attenuate variance estimates for variables with missing data (Roth, 1994), this technique was chosen to account for missing data in accordance with previous research suggesting that if less than 10% of the data is missing, then mean substitution may be an alternative worth considering (Donner, 1982).

The distribution of participants across the three conditions pertaining to technical mistakes was as follows: teammates intervene/coach support, $n = 36$; teammates intervene/coach not support, $n = 34$; attention control, $n = 36$. Due to a few drop-outs, the distribution of participants across the three conditions pertaining to effort was slightly different: teammates intervene/coach support, $n = 36$; teammates intervene/coach not support, $n = 29$; attention control, $n = 34$. Further, the results from an ANOVA testing for differences between the three conditions on demographic variables (e.g., age, years of experience) revealed no significant differences for any of the variables (all $ps > 0.1$).

2.3.2 Vignette Quality

Before testing the hypotheses, a one-way MANOVA was utilized to test for differences between the three conditions on message quality variables. The overall MANOVA was not significant, Pillai's Trace $F(10, 168) = 1.13, p > 0.1$, which indicates that vignette quality was similar across all conditions. Table 2.1 summarizes the results obtained from the manipulation check items that were similar across all the vignette assignments. Two additional items specific to each dependent variable also were examined (e.g., clarity of the technical mistake vignette and clarity of the effort vignette). Participants indicated that both vignettes were clearly understood ($M_{\text{technical}} = 7.2 (1.5), M_{\text{effort}} = 7.2 (1.7)$).

Table 2.1: Means and Standard Deviations of Manipulation Check Items by Condition

Condition	Manipulation Checks									
	Made Sense		Easy to Read		Believable		Easy to Understand		Able to Imagine	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Teammates Intervene/ Coach Support	7.42	1.64	7.64	1.50	6.61	1.94	7.67	1.36	7.27	1.70
Teammates Intervene/ Coach not Support	6.78	2.35	6.48	1.83	5.96	2.48	6.83	1.83	6.91	1.81
Attention Control	7.44	1.66	7.18	1.83	7.21	1.74	7.44	1.46	7.44	1.71

Note: All manipulation check items measured on a 9-point Likert scale (1 = strongly disagree, 9 = strongly agree).

2.3.3 Main Analyses

Prior to running the ANCOVAs, all assumptions of this statistical analysis (i.e., normal distribution, homogeneity of variance, independence of the covariate and treatment effect and homogeneity of regression slopes) were checked, and results were found to be satisfactory (Vincent & Weir, 2012). Please refer to Table 2.2 to view the means and standard deviations of athletes' intentions to intervene across all three conditions, when teammates made technical errors and exerted less than adequate effort.

Intentions to intervene when teammates made technical errors. The overall ANCOVA, controlling for previous intervention behaviour specific to technical mistakes, revealed a significant main effect for condition, $F(2, 102) = 4.977, p < 0.01, \eta_p^2 = 0.09, 90\% \text{ CI } [.01, .17]$, indicating a medium effect according to Cohen recommendations (1969). Additionally, observed power was found to be 80% ($\alpha = .05$). A pairwise post-hoc comparison (Bonferroni) revealed that the intention to intervene was significantly different ($p < .05$) between the normative/coach support condition and the control condition. In support of hypothesis 1a, those

individuals who received a normative vignette in which the coach supported teammate intervention ($M_{adj} = 4.54$) reported greater intentions to intervene around technical mistakes than those receiving a control vignette ($M_{adj} = 3.74$), with this difference approaching a large effect (estimated Cohen's $d = 0.71$, 95% CI [.26, 1.33]; see figure 2.2).

A pairwise post-hoc comparison (Bonferroni) between the normative/coach not support condition ($M_{adj} = 3.89$) and the control condition ($M_{adj} = 3.74$) was not significant, with the difference representing a small effect ($p > 0.1$, estimated Cohen's $d = 0.13$; see figure 2.2).

Intentions to intervene when teammates did not try as hard as expected. The overall ANCOVA investigating participants' intentions to intervene when others on the team did not exert adequate effort was not significant, $F(2, 95) = 1.82, p > 0.1, \eta_p^2 = .04, 90\% \text{ CI } [.00, .10]$. The observed power of this relationship (37% when $\alpha = .05$) suggests that these results might be affected by a small sample size. In other words, it is possible that a significant relationship was not found owing to a sample size that was too small to detect differences for this particular dependent variable.

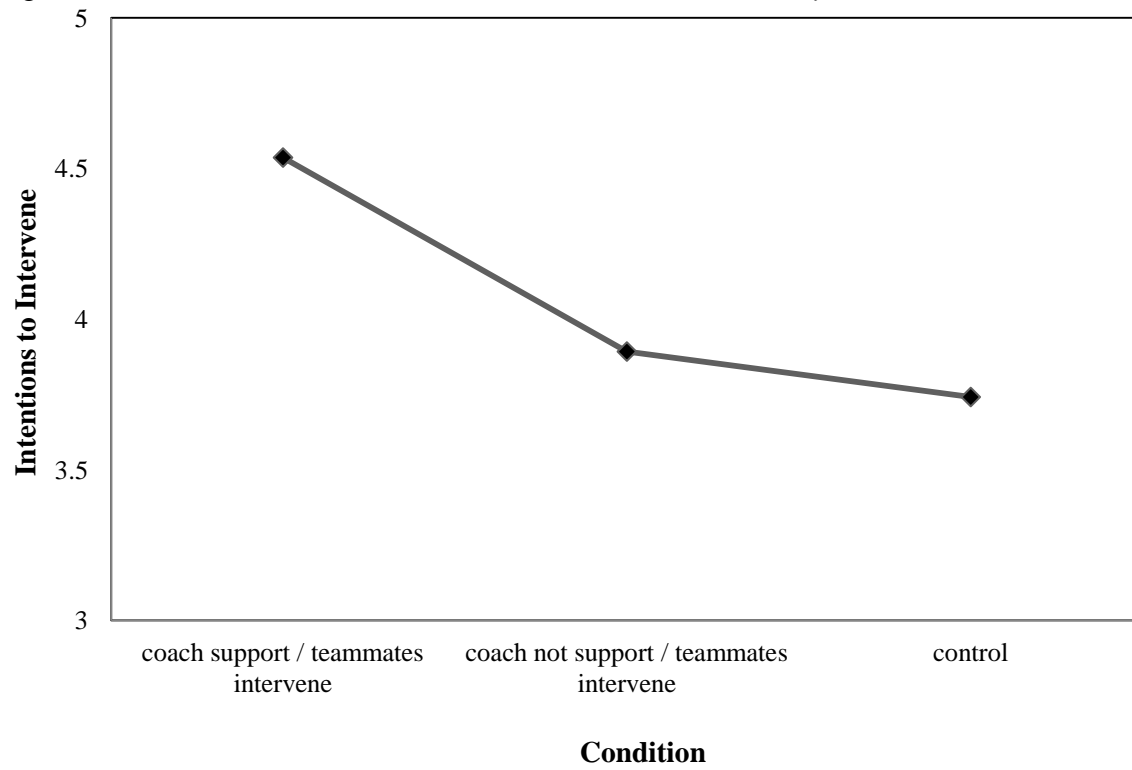
Since the overall ANCOVA assessing intentions to intervene with a focus on effort was not significant, hypotheses 2a and 2b could not be tested.

Table 2.2: *Intentions to Intervene around Technical Mistakes and Effort by Condition*

Condition	Technical Mistakes		Effort	
	Mean	SE	Mean	SE
Teammates Intervene/Coach Support	4.54	0.19	4.12	0.18
Teammates Intervene/Coach not Support	3.89	0.19	4.09	0.20
Attention Control	3.74	0.19	3.68	0.18

Note: Intentions to intervene measured on a 7-point Likert scale. Means are adjusted based on the covariate, past intervening behaviour around technical mistakes = 3.75 and effort = 3.49.

Figure 2.2: *Intentions to Intervene around Technical Mistakes by Condition*



Note: Intentions to intervene rated on a 7-point scale.

2.4 Discussion

Recent findings suggest that social norms can influence individual behaviour in the activity setting (Crozier, 2014; Priebe & Spink, 2012, 2014, 2015). Additionally, research outside of the activity realm (Mollen et al., 2013) suggests that manipulating descriptive norms may serve as a means to increase individual intervening behaviours. However, no research to date has examined whether norms may influence athletes' intentions to intervene in a similar manner. It has also been suggested that coaches have a large influence on athletes (Rodeneck, 2008). Thus, it is plausible that coaches may serve as a previously untapped source of salience in the sport setting. In terms of normative information, coaches may have the ability to selectively focus athletes' attention on team norms.

The current experimental study aimed to fill these gaps in the literature by examining whether descriptive norms, that were either supported by a coach or not, would influence a teammate's intentions to intervene when others on the team made technical errors or did not exert enough effort.

2.4.1 Technical Mistakes

Athletes indicated greater intentions to intervene with teammates when the norm for teammates was to intervene and the coach supported teammate intervention around technical errors. On the other hand, when the norm for teammates was to intervene but the coach did not support teammate intervention, athletes' intentions to intervene were no different than those who received no normative message. Both of these findings support the second postulate of focus theory, which states that norms only influence an individual when the information presented is focused upon, or salient, to that individual (Cialdini et al., 1990).

While the current results parallel other findings supporting the salience concept (Cialdini et al., 1990; Crozier, 2014; Goldstein et al., 2008; Priebe & Spink, 2011; Spink et al., 2013), this study also adds to the normative literature. First, the results of this experiment suggest that when descriptive norms are activated, they can influence athletes' intentions to intervene with teammates in the sport setting for certain player behaviours. As mentioned previously, research in other areas suggests that individuals tend to remain uninvolved in highly stressful situations when many others are present (i.e., bystander effect; Darley & Latane, 1968b). One suggestion offered to help explain the bystander effect in certain situations is referred to as "diffusion of responsibility". Diffusion of responsibility refers to the situation in which an individual feels less personally responsible to intervene because he or she shares this responsibility with others in the immediate environment (Darley & Latane, 1968a). However, in contrast to what experiments supporting the bystander effect and the diffusion of responsibility speculation may suggest, athletes in this experiment indicated that they intended to intervene with other teammates following a teammate mistake when presented with normative information supported by a coach. It may be suggested that since descriptive norms serve as a cue (Cialdini et al., 1990), thoughts of diffusing personal responsibility with other teammates did not have a chance to enter athletes' conscious mind when responding to the provided scenarios. Therefore, descriptive norms may serve as a cue to overcome hesitancy surrounding intervention with others, as suggested by others (Mollen et al., 2013).

These results also added to the current body of literature as this was the first experiment to test whether normative messages would produce no effect when individuals did not focus on the presented normative information. Focus theory explicitly states that norms will only influence behaviour or intent when normative information is activated, which is derived from

focus. It follows that when an individual is prompted to not focus on the normative information, as was done in this experiment, no effect should be observed.

In addition to this conceptual support, empirical evidence exists supporting the current results. As discussed earlier, it was reported in Crozier's (2014) experiment that descriptive norms describing the abundance of others' activity only influenced university students' activity when benefits obtained by many other students were emphasized. Alternatively, when positive benefits were experienced only by a few students, no changes in student activity were observed. Therefore, Crozier's (2014) results also support Cialdini's et al. (1990) focus theory as normative information likely did not enter participants' consciousness when they were not provided a highly prevalent positive outcome expectation prompting them to focus on the normative message.

Although the observed effect of normative vignettes on athletes' intentions to intervene supported the hypothesis for technical mistakes, these results need to be interpreted with caution. Although significant differences in participants' intentions to intervene were observed between the two conditions (normative/coach support versus control), scale responses for both conditions were mid-range. This suggests that participants may not have fully embraced teammate intervention. Therefore, the results of this experiment can be best described as a tightly controlled demonstration of the main postulates of focus theory, but should not be interpreted in terms of practical application at this stage of the research.

2.4.2 Effort

No significant results emerged for intervening around lack of teammate effort. While the fact that this result differed from that obtained for intervening around technical errors is perplexing, possible explanations for this difference can be put forward.

The limited amount of observed power (37%) for this analysis suggests that observing teammates' effort may be more difficult in the sport situation than observing technical errors. Effort is likely a more subjective observation, resulting in athletes being more hesitant to intervene with teammates. For example, it is likely difficult to distinguish between a teammate who is not exerting themselves to the fullest versus a teammate who is trying his or her hardest, but not up to team performance standards. Given this ambiguity, a larger sample size may be needed to detect an effect for this dependent variable.

It is also possible that the wording in the effort vignette was not as clear as the technical mistake vignette. In the technical mistake vignettes, it was clearly stated that teammates were to intervene with one another only when they knew how to correct the mistake they had observed. Conversely, it was not made clear when teammates were supposed to intervene if they believed someone else on the team was not exerting enough effort. For example, it was unclear whether teammates were supposed to intervene when others on the team were not meeting team standards for effort, their personal standards for effort, or possibly the coach's standards for effort. Thus, tightening up the descriptions provided in the effort vignette may have made the information clearer, possibly resulting in a significant difference between the normative/coach support condition and the control condition for lack of effort.

Alternatively, the possibility cannot be ruled out that norms simply may not influence the intentions of teammates to intervene when examining lack of effort in the sport setting.

2.4.3 Limitations and Future Directions

While the results of the present study are informative, they are not without limitations. For example, given the homogeneity of the participants, the results of this study cannot be generalized beyond this sample of soccer players. Researchers may wish to replicate this

experiment with other sport teams in the future in order to increase the generalizability of these findings.

While the results cannot be generalized beyond this sample, it is important to note that a single sport was chosen purposefully for two reasons. First, a single sport controls for other potential confounding variables (e.g., group size, differing degrees of interdependence across sports; Evans, Eyes, & Bruner, 2013). Second, soccer was chosen as the specific sport context as results from the pilot data indicated that soccer players seemed to have the lowest experience as well as the highest preference for receiving intervention surrounding technical mistakes and effort (see Appendix F).

It is worth noting that although the external validity of the results may suffer when using vignettes as a means of manipulation, the internal validity may be strengthened (Atzmuller & Steiner, 2010). For instance, respondents may be less likely to consciously bias their responses for self-presentation reasons when responding to hypothetical situations (Alexander & Becker, 1978). Moreover, uniformity of vignettes across a heterogeneous group of participants ensures greater reliability across all responses (Soydan, 1996).

The inclusion of two short vignettes (i.e., technical mistakes and lack of effort), as opposed to one long vignette, was chosen as the method to manipulate norms in this experiment so as to not overburden participants (Hughes & Huby, 2004). Also, systematically varying the characteristics of interest captured in the vignettes (i.e., coach support, teammate intervention) allowed for precise examination of the effects of these constructs on the dependent variables (Alexander & Becker, 1978).

Another factor worth mentioning is that both normative groups included a coach either strongly supporting or not supporting the team descriptive norm to intervene. As such, no

normative group was absent of coach influence. By design, the coach's perspective regarding teammate intervention was intended to influence how participants processed the normative information presented in the vignettes. Thus, no comment can be made regarding the effect of normative information discussing teammate intervention on athletes' intentions to intervene without considering possible coach influence. While the design did not include this possibility as a condition, it is important to remember that coaches play a vital role on any sport team with respect to athlete motivation (Mageau & Vallerand, 2003). Further, the inclusion of coach support was important as it was used as a means to manipulate participants' focus on the normative information. However, one future direction for researchers wishing to explore normative influence on sport athletes' intentions might be to include a normative group in which the coach is impartial regarding teammate intervention.

Another future direction might involve the examination of injunctive norms. Focus theory states that injunctive norms operate through social sanctions (i.e., perceptions of others' approval or disapproval; Cialdini et al., 1990). As suggested by Priebe and Spink (2014), injunctive norms may have a considerable influence on individual behaviour in the sport setting, where others' approval or disapproval is valued. Given the need for approval in sport, it is possible that injunctive norms may have a stronger influence on athletes' intentions in this setting. Therefore, future researchers might want to assess the influence of injunctive norms on athletes' intentions to intervene while using focus theory as a guiding theoretical framework.

Additionally, since salience was not directly measured in this study, it cannot be stated with certainty that coach support increased participants' focus on the normative vignettes. However, there is assurance in knowing that the results obtained from this experiment were in line with what would be expected when considering the second postulate of focus theory. It is

suggested that future researchers measure the functional impact of using coach support (or not) to manipulate athletes' focus on normative information in order to ensure the fidelity of manipulation in future research.

Readers should also be mindful that intentions to intervene, rather than actual intervening behaviours, were assessed in this experiment. Although intention is considered an important predictor of behaviour (Ajzen, 1985), intentions do not always translate into action. This phenomenon is often referred to as the "intention-behaviour gap", and has been specifically reported in the activity area (Rhodes & de Bruijn, 2013).

2.4.4 Strengths

Despite these limitations, this research had a number of strengths. First, the use of focus theory of normative conduct as a theoretical basis was a strength. This theory states that: (1) social norms can influence individual behaviour, and (2) that this norm-behaviour relationship is only present when the norm presented is salient to the individual (Cialdini et al., 1990). The present study provides empirical support for focus theory and its utility in the norms and activity literature.

Another strength of this research was that it was experimental in nature, which allowed one to draw causal inferences pertaining to the influence of normative perceptions on activity. Also, pilot testing was utilized to select appropriate dependent variables as well as the sport context and situation that would be best suited to test athletes' intentions to intervene in the sport setting. Since normative influence on intentions to intervene in sport had not been empirically examined previously, it was deemed important to complete a pilot study in order to determine which dependent variables should be assessed.

The inclusion of a control group in the study design served as another strength in this experiment. The control group acted as a baseline to compare with both normative conditions. This allowed the researchers to determine the extent to which norms influenced athletes' intentions. As stated by de Vaus (2001), it is only by making comparisons that observations take on meaning, and are able to eliminate alternate explanations. Further, the use of an attention control, rather than a no-information control, could be viewed as a further strength. This is the first study where an attention control group has been used to explore the influence of normative messages on individuals' intent in the activity setting. In addition to acting as a comparison group, an attention control group provides increased certainty that the results of the experiment were due to the treatment applied (i.e., control for Hawthorne effect; McCarney et al., 2007). If participants were assigned to a no-information control group, it would not be possible to rule out the conclusion that the differences observed were due to the receipt of a vignette, regardless of the content it contained.

2.5 Conclusion

In summary, descriptive normative messages were found to increase soccer players' intentions to intervene when their teammates made technical errors, but only when their coach supported this intervention. Although further research is required, the results provide preliminary evidence that norms may influence athletes' intentions to intervene, and coaches may serve as means to focus athletes' on normative information in the sport setting.

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Appendix A: Participant Consent Form (Pilot Study)

You are invited to participate in a research study involving adult participants in team sports (18 years and older). Please read this form carefully. If you have any questions now or during the study, please feel free to contact the researchers via email or phone using the information listed below. This study forms a portion of the researchers' overall program of research examining groups.

Project Title: Examining the group environment in adult sport teams

Researchers:

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Purpose: In this study, we are interested in examining your thoughts and experiences as they pertain to teammate behaviours in the sport setting. More specifically, we will be assessing three different situations that may arise in either game or practice situations:

1. When a teammate makes a mistake
2. When a teammate is perceived not to be working hard enough
3. When a teammate loses control of his or her emotions

Procedure: Your participation will involve responding to a series of questions addressing your observations, experiences, and preferences regarding teammate intervention when others make mistakes (i.e., technical, tactical, mental), exert little effort, or lose control of their emotions in game and practice situations. The total time commitment for completing the survey is approximately 20 minutes. If you choose to participate, confidentiality is assured, meaning that your identity will not be linked to your responses.

Potential Benefits: As a participant, you may be making important contributions to the research literature. There are no personal benefits to participating in this study, although the findings from this study will help sport psychology researchers to better understand group effects in sport.

Potential Risks: Participation in this study presents no anticipated risks.

Storage of Data: This survey is hosted by Fluid SurveysTM a company located in the USA and subject to US laws and whose servers are located outside of Canada. The privacy of the information you provide is subject to the laws of those other jurisdictions. By participating in this survey you acknowledge and agree that your information will be stored and accessed outside of Canada and may or may not receive the same level of privacy protection. Electronic data will be copied to an external drive and will be locked by password in read-only format. Only the researchers will have access to the data. No data will be stored on any computer hard drives

once the study is complete. The data will be stored for a minimum of five years after completion of the study. If the researcher chooses to destroy the data after the five years, it will be destroyed beyond recovery. This is standard protocol for any data that may be published in an academic journal or presented at a professional conference.

Confidentiality: Steps will be taken to ensure confidentiality. You will not be required to provide your name during any portion of the online survey, and therefore your responses will be anonymous and only be identified with an assigned participant ID. In relation to participant compensation, those wishing to be entered into the draw will be redirected to a new page whereby email addresses can be collected. This ensures that personal information cannot be linked to survey responses. When published or presented at conferences, the data will be reported in a summarized form so that it will not be possible to identify responses from individual participants.

Right to Withdraw: Your participation in this study is voluntary and you are free to answer only the questions that you are comfortable answering. You may withdraw from the research project prior to survey completion for any reason, without penalty of any sort. If you withdraw from the study before survey completion, any data that you have contributed will be destroyed. However, once you have submitted your survey responses, it will no longer be possible to withdraw your data as your responses are anonymous.

Questions: If you have any questions concerning the research project, please feel free to contact the researchers at any time using the phone numbers/email addresses provided above. This research project has been approved on ethical grounds by the University of Saskatchewan Research Ethics Board. Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office (ethics.office@usask.ca or 306-966-2975). Out of town participants may call toll-free (888-966-2975).

Study Results: If you would like a summary of the findings from this study, please email the primary researcher (kevin.spink@usask.ca).

Consent to Participate: By completing and submitting the questionnaire, **YOUR FREE AND INFORMED CONSENT IS IMPLIED** and indicates that you understand the above conditions of participation in this study. We recommend that you print a copy of this form for your records.

I consent to participate in the research project. The chance to print a copy of this Consent Form has been provided to me for my records.

Yes or No

Appendix B: Demographics Questionnaire (Pilot Study)

The following questions are designed to provide us more information about those who have completed this survey, as well as their team sport experiences.

- 1) What is your age (in years)?
- 2) What is your gender?
- 3) Where do you live (province/territory)?
- 4) What team sport do you play most often?

----- new webpage -----

****entire online study tailored to reflect sport played most often from this point forward****

- 5) What is the highest competitive level of (sport) you have played?
- 6) In which (sport) league(s) do you compete?
- 7) How many years have you played (sport)?
- 8) Are you currently a member of a (sport) team?

----- new webpage -----

**** if responded "yes" to question 8****

- 9a) For how many full seasons have you been a member of our current (sport) team?
- 10a) Does your current (sport) team have a team coach?

----- new webpage -----

**** if responded "no" to question 8****

- 9b) Have you been a member of a (sport) team within the past year?
- 10b) For how many full seasons were you a member of your most recent (sport) team?
- 11b) Did this (sport) team have a team coach?

Appendix C: Pilot Study Questionnaire

1. A Teammate Makes a Mistake

There are different reasons why players make mistakes. We would like you to think about the following three types of mistakes:

Technical mistake - teammate performs a skill incorrectly

Tactical mistake - teammate makes an incorrect decision

Mental mistake - teammate loses focus

Please answer the following questions using the sliding scale (1-7), while thinking about the last sport team you played on:

1. In *game situations*, how often did you observe teammates make *technical* mistakes (perform skills incorrectly)?

1 2 3 4 5 6 7
Never observed Often observed

2. In a *game situation*, if you noticed a teammate perform a skill incorrectly that you knew how to correct, how often did you offer advice on how to correct this mistake?

1 2 3 4 5 6 7
Not very often Very often

3. In *practice situations*, how often did you observe teammates make *technical* mistakes (perform skills incorrectly)?

1 2 3 4 5 6 7
Never observed Often observed

4. In a *practice situation*, if you noticed a teammate perform a skill incorrectly that you knew how to correct, how often did you offer advice on how to correct this mistake?

1 2 3 4 5 6 7
Not very often Very often

5. In *game situations*, how often did you observe teammates make *tactical* mistakes (incorrect decisions)?

1 2 3 4 5 6 7
 Never observed Often observed

6. In a *game situation*, if you noticed a teammate make an incorrect decision that you knew how to correct, how often did you offer advice on what you would do?

1 2 3 4 5 6 7
 Not very often Very often

7. In *practice situations*, how often did you observe teammates make *tactical* mistakes (incorrect decisions)?

1 2 3 4 5 6 7
 Never observed Often observed

8. In a *practice situation*, if you noticed a teammate make an incorrect decision that you knew how to correct, how often did you offer advice on what you would do?

1 2 3 4 5 6 7
 Not very often Very often

9. In *game situations*, how often did you observe teammates make *mental* mistakes (lose focus)?

1 2 3 4 5 6 7
 Never observed Often observed

10. In a *game situation*, if you noticed a teammate lose focus, how often did you offer advice on how to stay focused?

1 2 3 4 5 6 7
 Not very often Very often

11. In *practice situations*, how often did you observe teammates make *mental* mistakes (lose focus)?

1 2 3 4 5 6 7
 Never observed Often observed

12. In a *practice situation*, if you noticed a teammate lose focus, how often did you offer advice on how to stay focused?

1	2	3	4	5	6	7
Not very often						Very often

Thinking about ALL of the sport teams that you played on over the **last 5 years**:

13. How often did you observe players intervening to correct other teammates' mistakes:

a) During a practice?

1	2	3	4	5	6	7
Never observed						Often observed

b) During a game?

1	2	3	4	5	6	7
Never observed						Often observed

Now we are interested in exploring your preferences:

14. During a *game*, if you *perform a skill incorrectly*, to what extent do you prefer to receive information about correcting the mistake from:

a) A Knowledgeable Teammate?

1	2	3	4	5	6	7
Do not prefer						Very much prefer

b) The Coach?

1	2	3	4	5	6	7
Do not prefer						Very much prefer

15. During a *practice*, if you *perform a skill incorrectly*, to what extent do you prefer to receive information about correcting the mistake from:

a) A Knowledgeable Teammate?

1	2	3	4	5	6	7
Do not prefer						Very much prefer

b) The Coach?

1	2	3	4	5	6	7
Do not prefer						Very much prefer

16. During a *game*, if you *make an incorrect decision*, to what extent do you prefer to receive information about how to correct the decision from:

a) A Knowledgeable Teammate?

1	2	3	4	5	6	7
Do not prefer						Very much prefer

b) The Coach?

1	2	3	4	5	6	7
Do not prefer						Very much prefer

17. During a *practice*, if you *make an incorrect decision*, to what extent do you prefer to receive information about how to correct the decision from:

a) A Knowledgeable Teammate?

1	2	3	4	5	6	7
Do not prefer						Very much prefer

b) The Coach?

1	2	3	4	5	6	7
Do not prefer						Very much prefer

18. During a *game*, if you *lose focus* to what extent do you prefer to receive information about how to regain focus from:

a) A Knowledgeable Teammate?

1	2	3	4	5	6	7
Do not prefer						Very much prefer

b) The Coach?

1	2	3	4	5	6	7
Do not prefer						Very much prefer

19. During a *practice*, if you *lose focus* to what extent do you prefer to receive information about how to regain focus from:

a) A Knowledgeable Teammate?

1	2	3	4	5	6	7
Do not prefer						Very much prefer

b) The Coach?

1	2	3	4	5	6	7
Do not prefer						Very much prefer

2. A Teammate is Perceived Not to be Working Hard Enough

We would like you to think about a teammate who is perceived not to be working hard enough:

Please answer the following questions using the sliding scale (1-7), while thinking about the **last** soccer team you played on:

20. In *game situations*, how often did you observe teammates *not* working as hard as was expected?

1	2	3	4	5	6	7
Not very often						Very often

21. In a *game situation*, if you noticed a teammate *not* working as hard as expected, how often did you mention to that player that he/she needed to work harder?

1	2	3	4	5	6	7
Not very often						Very often

22. In *practice situations*, how often did you observe teammates *not* working as hard as was expected?

1	2	3	4	5	6	7
Not very often						Very often

24. In a *practice situation*, if you noticed a teammate *not* working as hard as expected, how often did you mention to that player that he/she needed to work harder?

1	2	3	4	5	6	7
Not very often						Very often

Thinking about ALL of the sport teams that you played on over the **last 5 years**:

25. How often did you observe other players mentioning to a teammate that he/she needed to work harder:

a) During a practice?

1	2	3	4	5	6	7
Never observed						Often observed

b) During a game?

1	2	3	4	5	6	7
Never observed						Often observed

Now we are interested in exploring your preferences:

26. During a *game*, if you did not work as hard as you could have, to what extent would you prefer to be told to work harder from:

a) A Teammate?

1	2	3	4	5	6	7
Do not prefer						Very much prefer

b) The Coach?

1	2	3	4	5	6	7
Do not prefer						Very much prefer

27. During a *practice*, if you did not work as hard as you could have, to what extent would you prefer to be told to work harder from:

a) A Teammate?

1	2	3	4	5	6	7
Do not prefer						Very much prefer

b) The Coach?

1	2	3	4	5	6	7
Do not prefer						Very much prefer

Appendix D: Debriefing Letter (Pilot Study)

Kevin S. Spink, PhD.
College of Kinesiology, University of Saskatchewan
87 Campus Drive,
Physical Activity Complex
Email: physical.activity@usask.ca

Dear Participant:

Thank you for taking the time to participate in our study examining intervention behaviours in sport teams. It is important that we continue to investigate how members of sport teams might intervene with their fellow teammates.

While it has been suggested that members of sport teams could help teammates by intervening to help out when necessary, we know very little about whether members of teams have observed these types of teammate interventions, and whether they would prefer them to happen at all. In this study, we were interested in examining your observations, experiences, and preferences regarding teammate intervention when others on the team make mistakes (i.e., technical, tactical, mental), exert little effort, or lose control of their emotions in game and practice situations.

If you are interested in learning more about the findings of this study, I will be pleased to provide a summary to you. To get this summary, please contact me at the address listed above and I will mail the summary to you. If you have any further questions about the study itself, please do not hesitate to contact me. I would be happy to answer any of your questions.

Once again, thank you for making a valuable contribution to our research.

Sincerely,

Kevin Spink

Appendix E: Pilot Study

Methods

Participants

A sample of 58 Canadian adult sport participants were recruited to participate in a pilot study (age range = 18-48, $M_{age} = 21.5$ years, $SD = 5.2$). In order to be eligible to participate in this study, participants had to be at least 18 years of age. Participants also were required to have been a member of a soccer, hockey, curling, or volleyball team with a designated team coach, for at least a full season, and within the past year. Within our total sample of 58 athletes, 18 soccer players, 16 hockey players, 14 volleyball players, and 10 curlers were recruited. The sample was evenly split by gender, with the majority of participants indicating membership on a same sex team, as opposed to a co-ed team. Thirty-nine (67.2%) of the participants identified themselves as a current member of a sport team, 12 (20.7%) had been a member of a sport team within the past year, while the remaining 7 (12.1%) did not answer this question. Overall, participants reported an average of 10.9 years of experience participating in their sport of choice, with 5 (8.6%) individuals indicating they had competed at the international level, 11 (19%) at the national level, 7 (12.1%) at the university level, 24 (41.4%) at the provincial level, and 9 (15.5%) at a recreational level. For a more detailed summary of participant demographics within each sport, please refer to Tables 1 and 2 below.

Table A1: *Age and Experience by Sport*

Variable	Soccer Means (SD)	Hockey Means (SD)	Curling Means (SD)	Volleyball Means (SD)
Age (years)	20.44 (2.23)	20.56 (2.16)	25.70 (11.03)	20.93 (2.73)
Experience (years)	14.33 (3.68)	14.07 (4.23)	5.40 (4.88)	6.86 (3.48)

Table A2: Gender, Team Membership, League, and Competitive Level Frequencies by Sport

Variable	Soccer	Hockey	Curling	Volleyball
Gender:				
Male	27.8%	75.0%	50.0%	50.0%
Female	72.2%	25.0%	50.0%	50.0%
Team Membership:				
Current Member	72.2%	68.8%	60.0%	64.3%
Member in Past Year	22.2%	25.0%	10.0%	21.4%
League:				
Male Only	33.3%	75.0%	70.0%	64.3%
Female Only	72.2%	31.3%	50.0%	50.0%
Co-ed	33.3%	6.3%	90.0%	42.9%
Competitive Level:				
International	0.0%	6.3%	30.0%	7.1%
National	11.1%	18.8%	40.0%	14.3%
University	11.1%	12.5%	0.0%	21.4%
Provincial	55.6%	43.8%	30.0%	28.6%
Recreational	22.2%	12.5%	0.0%	21.4%

Procedure

After ethics approval was received from the University of Saskatchewan's Behavioural Research Ethics Board (see Appendix A), participant recruitment for the pilot study commenced. Participants were recruited via advertisements posted on PAWS and social media (i.e., Facebook and Twitter). Relevant to social media, various sport clubs and teams across Canada were asked to (a) 'retweet' via Twitter or (b) 'share' via Facebook our advertisement with individuals who subscribe to their social media platforms. Individuals who were interested in completing the pilot study were instructed to follow a weblink to the online survey.

Upon clicking on the web link, participants were asked to provide consent before beginning the survey (see Appendix B). The purpose provided to participants on this consent form was, "to examine athletes' thoughts and experiences as they pertain to teammate behaviours in the sport setting". After completing the consent form, participants were asked to fill out a short demographics survey in which they identified the interactive sport they played most often

(see Appendix C); from that point on, the survey was tailored to reflect the participants' sport of interest. Immediately following the demographics questionnaire, participants were asked to respond to numerous questions pertaining to their observations, experiences, and preferences regarding intervention when teammates make mistakes (i.e., technical, tactical, or mental), and do not exert an adequate amount of effort in both game and practice situations (see Appendix D). Once all of the online pilot questions were answered, participants read a short debriefing letter and were thanked for their time (see Appendix E).

Measures

Demographics. All participants were asked to respond to a series of basic demographic questions. A number of questions were used to gather general information (e.g., participants' place of residence, gender, and age), while other questions were more sport-focused in nature (e.g., which interactive sport do you play most often, how many years have you played this sport; see Appendix C).

Observations of Teammate Behaviour. Numerous single-item measures were used to assess how often participants had observed each behaviour (i.e., mistakes, inadequate effort) in both a game and practice contexts within each sport. For example, when assessing participants' observations of technical mistakes during games, they answered the following question, "In *game situations*, how often did you observe teammates make *technical* mistakes (perform skills incorrectly)?" The participants were instructed to respond to this question using a 7-point Likert-type scale that ranged from 1 (*never observed*) to 7 (*often observed*).

Observations of Intervening. Participants were also asked to indicate how often they had observed teammate intervention in the past by responding to numerous situation and context specific questions. For example, the following question was used to measure participants'

observations of teammate intervention when other members were not exerting enough effort, "Thinking about ALL of the teams that you played on over the *last 5 years*: How often did you observe other players mentioning to a teammate that he/she needed to work harder?: a) during a practice and b) during a game". Responses ranged from 1 (*never observed*) to 7 (*often observed*).

Experiences. Several single-item measures were used to assess participants' experiences intervening with their teammates around both behaviours of interest, in game and practice situations, and across all sport contexts. For instance, the following question was asked in an effort to assess hockey players' experiences intervening with teammates who have made mental mistakes during practice, "In a *practice situation*, if you noticed a teammate lose focus, how often did you offer advice on how to stay focused?". Participants were asked to rate their degree of experience from 1 (*not very often*) to 7 (*very often*).

Preferences. To determine the extent to which participants preferred to receive teammate intervention in various situations, a two-item measure was utilized. As an example, in order to assess curlers preferences to receive teammate intervention when they are not exerting adequate effort in game situations, they responded to the following question, "During a *game*, if you did not work as hard as you could have, to what extent would you prefer to be told to work harder from: (a) a teammate, and (b) a coach." For each item, participants were asked to indicate their degree of preference on a 7-point Likert scale ranging from 1 (*do not prefer*) to 7 (*very much prefer*).

Data Analyses

In order to determine which dependent variables would be most appropriate to assess in the online normative experiment, the means of participants' observations, experiences, and preferences concerning teammate intervention when other teammates made mistakes (i.e.,

technical, tactical, mental) and did not exert adequate effort were examined. Game and practice situations were examined separately across all four sport contexts (i.e., soccer, volleyball, curling, or hockey) in order to determine the situation and context in which the chosen dependent variables should be assessed.

A particular behaviour (i.e., make mistakes, exert less than adequate effort) was only included as a dependent variable in the online study if certain conditions were met. First, all participants had to have observed others engage in the behaviour of interest, and observed other players intervene around this behaviour in order for it to be chosen as a dependent variable. Participants in the present study needed to have observed these behaviours, and more specifically, intervention around these behaviours, to increase the certainty that future participants would be able to fully understand and relate to the vignettes provided in the follow-up normative experiment.

Second, participants needed to express that they had limited experience intervening in a situation in order for it to be considered as a dependent variable. The purpose of this criterion was to control for a potential ceiling effect. If participants already had ample experience intervening in a particular situation, it would be highly unlikely that introducing a norm in favour of intervening would further increase future participants' intentions to intervene.

Finally, participants needed to indicate that they were not opposed to receiving intervention from a teammate in a specific situation in order for that situation to be included as a dependent variable in the normative experiment. This criterion was included to ensure that athletes would welcome teammate intervention, and likely pay attention to social norms discussing this behaviour.

Results

Participants' mean observations, experiences, and preferences regarding teammate intervention for both behaviours, across all four possible sport contexts, and in game and practice situations are clearly displayed in Tables 3 to 6 below. Participants indicated that they had observed teammates make mistakes ($M_{\text{mistakes}} = 4.74$) and exert inadequate amounts of effort ($M_{\text{effort}} = 4.37$) fairly often. Participants' responses also indicated that they had observed teammate intervention ($M_{\text{effort}} = 4.25$, $M_{\text{mistakes}} = 4.68$), and indicated an overall preference for intervention ($M_{\text{effort}} = 4.30$, $M_{\text{mistakes}} = 4.92$) when others on the team made technical errors and did not exert enough effort. This data also suggests that athletes observed mistakes and teammate intervention around mistakes most often, as well as indicated the highest preference for intervention when others on the team made mistakes.

In regard to teammates' mistakes during game versus practice situations, participants indicated that they had observed their teammates make mistakes more often in games than in practice situations ($M_{\text{game_mistakes}} = 4.92$, $M_{\text{practice_mistakes}} = 4.56$), and observed intervention around mistakes more often in games than in practice situations ($M_{\text{game_intervene}} = 4.85$, $M_{\text{practice_intervene}} = 4.51$). Further, participants indicated that they had slightly less experience intervening when other teammates made mistakes during games, compared to practices ($M_{\text{game_experience}} = 4.18$, $M_{\text{practice_experience}} = 4.30$) and there was relatively little difference between preference to receive intervention in game versus practice situations ($M_{\text{game_preference}} = 4.89$, $M_{\text{practice_preference}} = 4.99$).

When comparing game versus practice situations in instances where teammates did not exert enough effort, slightly different patterns emerged. For example, the results suggested that athletes observed teammates exert inadequate amounts of effort more often in practices than in games ($M_{\text{game_effort}} = 4.01$, $M_{\text{practice_effort}} = 4.72$), but observed intervention to make these

individuals work harder more often in games than in practices ($M_{\text{game_intervene}} = 4.47$, $M_{\text{practice_intervene}} = 4.03$). In terms of experience intervening and preference to receive intervention, there were little differences between game and practice situations ($M_{\text{game_experience}} = 4.03$, $M_{\text{practice_experience}} = 3.97$; $M_{\text{game_preference}} = 4.39$, $M_{\text{practice_preference}} = 4.21$).

Finally, when exploring the differences between sports (i.e., soccer, hockey, curling, volleyball), it appeared that athletes' preferences to receive intervention was fairly consistent across all sports (preference mistakes range = 5.07-4.68, preference effort range = 4.90-3.53). The results suggested that volleyball athletes observed the two specific behaviours (i.e., athletes make mistakes, not exert enough effort), intervention around these behaviours, and experienced intervening in these situations more often than athletes who played other sports. It was also clear that curlers generally observed these specific behaviours and intervention around these behaviours less often, but intervened more often than individuals who played other sports. Alternatively, hockey and soccer athletes' observations and experiences regarding teammate intervention fell in the middle between the two extremes presented by curlers and hockey players (refer to Tables 3-5 below).

Table A3: *Mean Participant Observations, Experiences, and Preferences: Technical, Tactical, and Mental Mistakes in Game vs. Practice Situations by Sport*

Variable	Technical		Tactical		Mental	
	Game	Practice	Game	Practice	Game	Practice
Observation of Behaviour:						
Soccer	4.47	4.50	5.47	4.75	4.40	4.31
Hockey	5.00	4.94	5.87	5.25	4.87	4.94
Curling	4.47	3.00	4.33	3.44	4.50	4.33
Volleyball	5.00	4.71	5.00	5.29	5.64	5.21
Experience Intervening:						
Soccer	3.33	4.27	4.60	4.40	3.73	3.60
Hockey	3.67	4.60	4.53	4.60	3.47	3.00
Curling	4.33	5.17	4.67	4.50	4.67	4.67
Volleyball	4.15	3.92	4.54	4.54	4.46	4.31
Prefer Teammate Intervention:						
Soccer	5.06	4.81	4.56	4.50	4.56	4.13
Hockey	4.88	5.00	4.25	4.56	4.12	4.25
Curling	4.67	3.89	4.22	4.56	4.89	4.56
Volleyball	4.33	4.40	4.60	4.53	4.93	4.13
Prefer Coach Intervention:						
Soccer	5.69	5.75	5.63	5.63	5.31	5.19
Hockey	4.38	4.87	4.81	5.25	5.06	4.69
Curling	4.88	5.38	5.00	6.50	5.37	6.00
Volleyball	5.67	5.87	5.40	6.00	5.07	5.33

Note: Participants' observations, experiences, and preferences were assessed on a 7-point scale

Table A4: *Mean Participant Observations of Intervening: Mistakes in Game vs. Practice Situations by Sport*

Variable	Mistakes in Games	Mistakes in Practice
Observation of Intervention		
Soccer	4.73	4.50
Hockey	4.25	4.19
Curling	5.11	4.78
Volleyball	5.29	4.57

Note: Participants' observations were assessed on a 7-point scale

Table A5: *Mean Participant Observations, Experiences, and Preferences: Effort in Game vs. Practice Situations by Sport*

Variable	Effort	
	Game	Practice
Observation of Behaviour:		
Soccer	3.89	4.35
Hockey	4.56	5.31
Curling	3.00	4.00
Volleyball	4.60	5.20
Observation of Intervening:		
Soccer	3.89	3.83
Hockey	4.81	4.19
Curling	4.33	3.11
Volleyball	4.86	5.00
Experience Intervening:		
Soccer	3.44	3.41
Hockey	3.50	3.50
Curling	4.56	4.11
Volleyball	4.60	4.87
Prefer Teammate Intervention:		
Soccer	3.72	3.78
Hockey	3.69	3.69
Curling	3.00	3.78
Volleyball	4.93	4.27
Prefer Coach Intervention:		
Soccer	5.39	5.17
Hockey	5.00	4.56
Curling	3.78	3.56
Volleyball	5.53	4.87

Note: Participants' observations, experiences, and preferences were assessed on a 7-point scale

Discussion

After analyzing the results, a variety of behaviours, across different situations, and numerous contexts could have been chosen as the dependent variables in the normative experiment. However, after careful examination of participants' responses, teammate intervention on *soccer teams* when others on the team make *technical mistakes* and *exert less than adequate effort* in game situations were chosen as the dependent variables for the online normative experiment.

Teammates making technical mistakes was chosen as one of the target behaviours because athletes had observed, experienced, and indicated preference to receive intervention

around this behaviour. Intervention surrounding technical mistakes was chosen over situations involving tactical or mental mistakes for a couple reasons. First, it was possible that participants may have had a difficult time distinguishing between mental and tactical mistakes. Mental mistakes were defined as, "when a teammate loses focus", whereas tactical mistakes were defined as, "when a teammate makes an incorrect decision". It may be hard for athletes to decipher the difference between their teammates making an incorrect decision versus losing mental focus. Secondly, the observability of mental and tactical mistakes may be questionable, whereas technical errors are much easier to be visually identified by external observers.

Technical mistakes also were chosen to be assessed specifically in game situations, as opposed to practice situations. Although preference to receive intervention did not differ across games and practices, participants' observations of technical mistakes and experience intervening when others made technical errors did differ across these situations. More specifically, athletes had observed technical errors more often in games than in practices, and had less experience intervening when others on the team made technical errors during games than in practices. Therefore, so as to ensure that participants in the normative experiment could relate to the provided vignettes and in order to control for a potential ceiling effect, it was decided that technical errors would be assessed in game situations specifically.

Another more practical reason also was included in the decision to assess teammate intervention in game versus practice situations. Being that interactive sports involve teammates playing together on the same field, court, or ice surface, this sport environment provides many opportunities for teammates to intervene with one another during game situations. Additionally, it is possible that teammates may often notice problems that coaches would regularly miss.

In addition to intervention surrounding technical mistakes, a second dependent variable was chosen to be included in the following experiment in order to increase the generalizability of our results. As was alluded earlier, teammate intervention when others on the team do not exert enough effort during game situations was chosen as the second dependent variable. Teammates exerting less effort than required during game situations was specifically chosen because athletes had observed this behaviour, and intervention around this behaviour quite often in game situations. They also had relatively little experience intervening, but indicated that they would not be opposed to receiving intervention from others in this situation.

Finally, soccer was chosen as the specific sport context in which to assess teammate intervention because soccer players seemed to have the lowest experience and have the highest preference for receiving intervention surrounding technical mistakes and effort. Further, being that recruitment for the normative experiment would begin in tandem with the beginning of the outdoor soccer season, it was expected that soccer players would be much easier to recruit than athletes specializing in other winter sports (i.e., hockey, curling).

Appendix F: Participant Consent Form

You are invited to participate in a research study involving adult soccer players (18 years and older). Please read this form carefully. If you have any questions now or during the study, please feel free to contact the researchers via email or phone using the information listed below. This study forms a portion of the researchers' overall program of research examining groups.

Project Title: Examining the group environment in adult soccer teams

Researchers:

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Purpose: In this study, we are interested in examining participant's perceptions about how a hypothetical soccer team handles teammates making technical mistakes and exerting little effort in game situations.

Procedure: Your participation will involve reading a two descriptions about hypothetical soccer teams, and then responding to a series of questions. The total time commitment for completing the survey is approximately 10 minutes. If you choose to participate, confidentiality is assured, meaning that your identity will not be linked to your responses.

Potential Benefits: All participants will be entered to win 1 of 2 \$50 Gift Cards from Tim Horton's once all portions of the study have been completed. As a participant, you may be making important contributions to the research literature. There are no personal benefits to participating in this study, although the findings from this study will help sport psychology researchers to better understand group effects in sport.

Potential Risks: Participation in this study presents no anticipated risks.

Storage of Data: This survey is hosted by Fluid SurveysTM a company located in the USA and subject to US laws and whose servers are located outside of Canada. The privacy of the information you provide is subject to the laws of those other jurisdictions. By participating in this survey you acknowledge and agree that your information will be stored and accessed outside of Canada and may or may not receive the same level of privacy protection. Electronic data will be copied to an external drive and will be locked by password in read-only format. Only the researchers will have access to the data. No data will be stored on any computer hard drives once the study is complete. This data will also be backed up using the University of Saskatchewan secure cabinet on PAWS. The data will be stored for a minimum of five years after completion of the study. If the researcher chooses to destroy the data after the five years, it will be destroyed beyond recovery. This is standard protocol for any data that may be published

in an academic journal or presented at a professional conference.

Confidentiality: Steps will be taken to ensure confidentiality. You will not be required to provide your name during any portion of the online survey, and therefore your responses will be anonymous and only be identified with an assigned participant ID. In relation to participant compensation, those wishing to be entered into the draw will be redirected to a new page whereby email addresses can be collected. This ensures that personal information cannot be linked to survey responses. Please be aware that if you choose to share or retweet our advertisement with subscribers to your social media account, it is possible that these individuals may assume you have participated in the online study. When published or presented at conferences, the data will be reported in a summarized form so that it will not be possible to identify responses from individual participants.

Right to Withdraw: Your participation in this study is voluntary and you are free to answer only the questions that you are comfortable answering. You may withdraw from the research project prior to survey completion for any reason, without penalty of any sort. If you withdraw from the study before survey completion, any data that you have contributed will be destroyed. However, once you have submitted your survey responses, it will no longer be possible to withdraw your data as your responses are anonymous.

Questions: If you have any questions concerning the research project, please feel free to contact the researchers at any time using the phone numbers/email addresses provided above. This research project has been approved on ethical grounds by the University of Saskatchewan Research Ethics Board. Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office (ethics.office@usask.ca or 306- 966-2975). Out of town participants may call toll-free (888-966-2975).

Study Results: Data from this study will be used for completion of Kayla Fesser's Master's thesis, may be published in an academic journal, or presented at a professional conference. If you would like a summary of the findings from this study, please email the primary researcher (kevin.spink@usask.ca).

Consent to Participate: By completing and submitting the questionnaire, **YOUR FREE AND INFORMED CONSENT IS IMPLIED** and indicates that you understand the above conditions of participation in this study. We recommend that you print a copy of this form for your records.

I consent to participate in the research project. The chance to print a copy of this Consent Form has been provided to me for my records.

Yes or No

Appendix G: Demographics Questionnaire

The following questions are designed to provide us more information about those who have completed this survey, as well as their team sport experiences.

- 1) What is your age (in years)?
- 2) What is your gender?
- 3) Where do you live (province/territory)?
- 4) Have you played on a soccer team that had a team coach in the past 5 years?

----- new webpage -----

- 5) What is the highest competitive level of soccer you have played?
- 6) In which soccer league(s) do you compete?
- 7) How many years have you played soccer?
- 8) Are you currently a member of a soccer team?

----- new webpage -----

** if responded "yes" to question 8**

- 9a) For how many full seasons have you been a member of our current soccer team?
- 10a) Does your current soccer team have a team coach?

----- new webpage -----

** if responded "no" to question 8**

- 9b) Have you been a member of a soccer team for a full season within the past 5 years?
- 10b) Did this soccer team have a team coach?

Appendix H: Pre-Manipulation Past Intervening Behaviour (Technical Mistakes)

Please fill out this questionnaire alone without consulting with others, and answer the following questions using the sliding scale that ranges from 1 to 7.

Please think about the last soccer team you played on that had a team coach. After you noticed one of your teammates make a *technical* mistake (perform a skill incorrectly) during a *game situation* and you knew how to correct it, how often did you:

a) Offer this teammate advice on how to prevent the same mistake in the future

1	2	3	4	5	6	7
Not Often						Very Often

b) Help correct the mistake by offering advice to him or her

1	2	3	4	5	6	7
Not Often						Very Often

c) Provide advice outlining how his or her performance could be improved

1	2	3	4	5	6	7
Not Often						Very Often

Appendix I: Post-Manipulation Intentions to Intervene (Technical Mistakes)

Continue imagining that you are a member of the team just described while answering the following questions.

a) If you noticed a member of this team make a technical mistake at the ***beginning*** of a game that you knew how to correct, how likely is it that you would intervene by offering advice to him or her on how to correct the mistake?

1	2	3	4	5	6	7
Very unlikely						Very likely

b) If you noticed a member of this team make a technical mistake at a ***crucial*** part of a game that you knew how to correct, how likely is it that you would intervene by offering advice to him or her on how to correct the mistake ?

1	2	3	4	5	6	7
Very unlikely						Very likely

c) If you noticed a member of this team make a technical mistake when your team was ***far ahead*** in the game that you knew how to correct, how likely is it that you would intervene by offering advice to him or her on how to correct the mistake?

1	2	3	4	5	6	7
Very unlikely						Very likely

Appendix J: Pre-Manipulation Past Intervening Behaviour (Effort)

Now we would like you to think about when you noticed that one of your teammates was *not* working as hard as was expected:

Please think about the last soccer team you played on that had a team coach. After you noticed one of your teammates *not* working as hard as expected during a *game situation*, how often did you:

a) Say to this teammate that he or she needs to play with more intensity

1	2	3	4	5	6	7
Not Often						Very Often

b) Tell this teammate that he or she needs to work harder

1	2	3	4	5	6	7
Not Often						Very Often

c) Convey to this teammate that he or she needs to put in more effort

1	2	3	4	5	6	7
Not Often						Very Often

Appendix K: Post-Manipulation Intentions to Intervene (Effort)

Continue imagining that you are a member of the team just described while answering the following questions.

a) If you noticed a member of this team not working as hard as was expected at the *beginning* of a game, how likely is it that you would intervene by telling this individual he or she needs to work harder?

1	2	3	4	5	6	7
Very unlikely						Very likely

b) If you noticed a member of this team not working as hard as was expected at a *crucial* part of the game, how likely is it that you would intervene by telling this individual he or she needs to work harder?

1	2	3	4	5	6	7
Very unlikely						Very likely

c) If you noticed a member of this team not working as hard as was expected when your team was *far ahead* in a game, how likely is it that you would intervene by telling this individual he or she needs to work harder?

1	2	3	4	5	6	7
Very unlikely						Very likely

Appendix L: Manipulation Check- Participant Assigned to a Normative Condition for both Technical Mistakes and Effort

The questions below refer to the *two* scenarios you just read. Please indicate the most appropriate answer.

1. The scenario made sense to you.

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

2. The scenario was easy to read.

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

3. The scenario was believable.

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

4. The scenario was easy to understand.

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

5. It was clear how the soccer coach and members of the team intervened when their teammates made technical mistakes.

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

6. It was clear how the soccer coach and members of the team intervened when their teammates did not exert enough effort.

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

7. I was able to imagine soccer teams as described in the provided scenarios.

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

Appendix M: Manipulation Check- Participant Assigned to a Control Condition for Technical Mistakes

The questions below refer to the *two* scenarios you just read. Please indicate the most appropriate answer.

1. The scenario made sense to you.

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

2. The scenario was easy to read.

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

3. The scenario was believable.

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

4. The scenario was easy to understand.

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

5. It was clear how the soccer coach and members of the team intervened when their teammates did not exert enough effort.

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

6. I was able to imagine soccer teams as described in the provided scenarios.

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

Appendix N: Manipulation Check- Participant Assigned to a Control Condition for Effort

The questions below refer to the *two* scenarios you just read. Please indicate the most appropriate answer.

1. The scenario made sense to you.

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

2. The scenario was easy to read.

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

3. The scenario was believable.

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

4. The scenario was easy to understand.

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

5. It was clear how the soccer coach and members of the team intervened when their teammates made technical mistakes.

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

6. I was able to imagine soccer teams as described in the provided scenarios.

1	2	3	4	5	6	7	8	9
Strongly disagree								Strongly agree

Appendix O: Debriefing Letter

Kevin S. Spink, PhD
College of Kinesiology, University of Saskatchewan
87 Campus Drive,
Physical Activity Complex
Tel: (306) 966-1074
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Dear Participant:

Thank you for taking the time to participate in our study examining intervention behaviours in soccer teams. It is important that we continue to investigate how members of sport teams might intervene with their fellow teammates.

The purpose of this study was to understand the influence of norms on intentions to intervene when teammates make technical mistakes or exert less than adequate effort in game situations. More specifically, we were interested in examining the effect of being told about other teammates' behaviour on individual intentions to intervene.

If you are interested in learning more about the findings of this study, I will be pleased to provide a summary to you. To get this summary, please contact me at the address listed above and I will mail the summary to you. If you have any further questions about the study itself, please do not hesitate to contact me. I would be happy to answer any of your questions.

Once again, thank you for making a valuable contribution to our research.

Sincerely,

Kevin Spink