ABSTRACT

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Female and male basketball players' preferences for specific coaching behaviors were measured by the Modification and Revision of the Leadership Scale for Sport. Ss (M = 88, F = 96) were selected from the Wisconsin State University Conference (WSUC) and the Wisconsin Women's Intercollegiate Athletic Conference (WWIAC), which compete at the NCAA Division III level. Of the 240 surveys sent, 184 were returned (77% response rate). A two way ANOVA with repeated measures showed there was a significant difference between the preferences of male and female basketball players for specific coaching behaviors ($p < .001$). Of the six subscales tested, Scheffe' post hoc comparisons indicated there were significant differences between the preferences of male and female players in Democratic Behavior ($p < .05$) and Situational Consideration Behavior subscales ($p < .05$), but not in Training and Instruction Behavior, Autocratic Behavior, Social Support Behavior, and Positive Feedback Behavior subscales. It is suggested that the gender composition of a team be considered as a situational factor which may affect the preference of subjects for specific coaching behaviors. Thus, it is recommended that coaches in the WSUC and the WWIAC provide more democratic behavior in the decision making process and consider more situational factors to enhance the performance and satisfaction of female athletes.

COMPARISON OF PREFERRED COACHING LEADERSHIP BEHAVIORS OF BASKETBALL PLAYERS AT THE NCAA DIVISION III LEVEL

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CHAPTER I

INTRODUCTION

Background

The general concept of leadership has been closely associated with the notion of management in a variety of fields (e.g., business, industry, education, and sports). Two studies in particular have looked at leadership within this last field. Soucie (1994) studied leadership in sport in the context of both leadership in sport management and leadership in coaching. In these two areas, he closely associated the notion of management with the concept of leadership. His study indicated that without leadership it is more difficult to keep things going well in any organized group, including the sport arena. Soucie (1994) also stated that many complicated terms, such as power, authority, administration, and supervision are often viewed as synonymous with leadership.

Chelladurai and Carron (1978) also examined the theories of leadership, but only from a coaching perspective. Their study looked at various coaching behaviors which either consciously or unconsciously influence the relationships between the leader-subordinate in a reciprocal manner. Therefore, a leader is supposed to organize a group, influence people in the group, create a comfortable working environment for them, and lead these people to pursue either individual or organizational success.

According to Soucie (1994), coaching behavior does not directly fit into the categories of leadership management. He explained that although similarities do exist between

coach-athlete and administrator-subordinate relationships, coaching behavior does not examine leadership in a managerial role, but rather it measures the effectiveness of coaching leadership on athletic performance. In fact, Yukl (1971) proposed a behavior theory of leadership which explained how leader behaviors affected the productivity and satisfaction of subordinates under varying situational conditions. Chelladurai and Saleh (1980) reported that the assessment of coaching leadership ought to focus on how effectively their behaviors influenced the performance of athletes. Woodman (1993) also pointed out that the task of a coach is to help athletes reach their best level of performance and to prepare them for competition. "Researchers typically define leadership from a narrow perspective, which is suitable to the aspect they wish to investigate and suitable to the purpose of their research" (Soucie, 1994, p. 2). Therefore, the concept of leadership in coaching should be separated from the theory of leadership in sport management.

Chelladurai and Carron (1978) provided a synthesis of earlier research done on leadership in general. From this synthesis they developed a multidimensional model which explained the differences between leadership in the sport arena and leadership in other settings, such as business and industry. Among their conclusions and suggestions, Chelladurai and Carron emphasized that research on the leadership of coaches should be directed toward the behavior or behaviors of coaches to examine and assess these behaviors on the performance and satisfaction of athletes (Chelladurai & Carron, 1978). Indeed, upon review of materials for the present study, as based on the multidimensional model, there is a clear indication that within the context of leadership in athletics and

physical education, coaches and coaching behaviors have been the most widely researched.

As previously mentioned, the terminology of sport leadership could be viewed in the broader perspective which included leadership in management, leadership in coaching, and leadership among athletes (e.g., the captain of a team). Chelladural (1990) however categorized research on sport leadership into three different approaches. The first approach was based on research that utilized the Coaching Behavior Assessment System (CBAS) to evaluate the various behaviors of coaches. The second approach focused on decision making styles of coaches: those who made decisions by themselves (autocratic style); or those who allowed athletes to participate (democratic or consultative style). The third approach was based on research grounded in the application of Leadership Scale for Sport (LSS) (Chelladurai & Saleh, 1980). All three approaches focused on leadership behaviors of coaches but under the name of sport leadership. For this study, in order not to confuse readers, the term leadership behaviors of coaches was used.

Until the development of the LSS proposed by Chelladurai and Saleh in 1980, research on the leadership behaviors of coaches had been limited. However, once the LSS became known, other researchers began to use it (Chelladurai, 1984; Chelladurai & Carron, 1983; Erle, 1981; Garland & Barry, 1988; Horne & Carron, 1985; Jeng, 1992; Schubiger, 1993; Terry & Howe, 1984; Weiss & Friedrichs, 1986). The LSS served as a basis to assist these researchers in investigating the effectiveness of coaching behaviors on the performance and satisfaction of athletes. Chelladurai and Saleh (1980) reported that the "LSS could be used profitably in the analysis of coaching behavior and its

effectiveness" (p. 43). Indeed, this instrument - developed to assess the "multidimensional model" as seen above - considered five dimensions of leadership behavior. Thus, it was named the "multidimensional leadership scale" (Chelladurai, 1990; Chelladurai & Saleh, 1980).

Chelladurai and Saleh (1980) indicated that the multidimensional leadership scale (LSS) included three versions - athlete's preference of coach's leadership style, athlete's perceptions of his/her own coach's leadership style, and coach's perception of his/her own leadership style. Each of these three versions consisted of 40 items. The LSS included one direct task factor -Training and Instruction (TI) - 13 items; two decision making styles - Democratic Behavior (DB) - 9 items and Autocratic Behavior (AB) - 5 items; and two motivational factors - Social Support (SS) - 8 items and Positive Feedback (PF) - 5 items. Chelladurai and Saleh (1980) also emphasized that, as far as a leadership tool was concerned, the LSS had an advantage over other instruments used in previous research because it was considered a valid, reliable, and sport-specific leadership tool. Chelladurai and Saleh (1980) administered the LSS to three groups to verify the stability of factor structure across these three samples. They reported that the "factor structure is very similar across the three analyses - a finding which lends support to the suggestion that the factor structure is stable" (Chelladurai & Saleh, 1980, p. 38). For the preference version of the LSS, they reported that the internal consistency (Cronbach's alpha) for the group of athletes' was .83 for TI, .75 for DB, .45 for AB, .70 for SS, and .82 for PF.

Chelladurai (1984, 1990) further explained the relationships between the theory of the multidimensional model and the LSS scale in his studies. He stated that the LSS served

as a tool developed to examine the validity of the multidimensional theory. In the multidimensional theory, group performance and member (team) satisfaction are deemed to be the product of actual, preferred, and required coach's leadership behaviors examined by the LSS scale. The closer the three behaviors, the better the athletes' performance and satisfaction will be. In addition, three antecedents in the multidimensional model (situational characteristics, leader characteristics, and member characteristics) are viewed to have profound influences on the required, actual, and preferred leadership behaviors of coaches (Chelladurai, 1984, 1990) (see Appendix A).

Among the three antecedents, only individual characteristics and situational characteristics were viewed to have significant influences on athletes' preferences for specific leadership behaviors of coaches. Chelladurai (1990) reported that "members' preferences for specific leadership behaviors are largely a function of the individual characteristic of the group members" (p. 331). Situational characteristics, such as task variability (Chelladurai, 1984; Celladurai & Saleh, 1978; Terry & Howe, 1984), sport competition level (Erle, 1981; Schubiger, 1993), maturity of the member (Chelladurai & Carron, 1983), and different genders (Chelladurai & Arnott, 1985; Chelladurai, Haggerty, & Baxter, 1989; Chelladurai & Saleh, 1978; Terry & Howe, 1984), also affect members' preferences (Chelladurai, 1990).

Chelladurai and Saleh (1978) used five dimensions of leadership behavior in sport to examine the effects of gender, task dependence, and task variability on the preferences of coaching behavior of 160 physical education students. Their results showed significant differences between male and female students in three of the five dimensions: females

preferred a democratic decision style whereas males preferred an autocratic one. Conversely, males desired more social support than females (Chelladurai & Saleh, 1978).

Terry and Howe (1984) investigated coaching preferences of athletes as measured by the LSS. Subjects (male = 80, female = 80) were selected from different sport areas. Comparisons were made on the basis of gender, age, and type of sport (different sports). Contrary to the findings of Chelladurai and Saleh (1978) in overall coaching preferences of male and female athletes, the results of Terry and Howe showed that "no differences in coaching preferences were found which could be attributed to the age or sex of the athletes, or the variability of the sport task" (p. 188). However, when the autocratic behavior was separated from the other four subscales, male athletes tended to prefer more autocratic behavior from the coach than did female athletes. Terry and Howe (1984) stated that this finding partially supported those of Chelladurai and Saleh (1978) and suggested that further research on gender differences in preferred leadership behaviors of coaches is necessary.

In 1985, Chelladurai and Arnott conducted their research under varying situational conditions to see if there were gender differences in preferred coaching decision making between male and female basketball players. Their results showed that female athletes preferred more participation in decision making than did male athletes. Furthermore, according to the results of statistical analysis, there was "a significant association between gender and decision style choices" (Chelladurai & Arnott, 1985, p. 19). These results contradict the findings of Terry and Howe (1984) who reported that no gender differences

were found in preferred coaching leadership behaviors, but supported the findings of Chelladurai and Saleh (1978).

Chelladurai, Haggerty, and Baxter (1989) modified the tool from Chelladurai and Arnott (1985) and distributed it to 99 basketball players (53 females and 46 males) and 22 coaches to determine their preferences of decision making under varying situations. Contrary to the findings of Chelladurai and Saleh (1978) and Chelladurai and Arnott (1985), Chelladurai et al. (1989) found no major gender differences in players' preferences for decision making styles. In fact, the finding of Chelladurai et al. (1989) revealed that three groups (male players, female players, and coaches) tended to choose more autocratic decision making than participative decision making. However, Chelladurai et al.'s study (1989) supported Chelladurai and Saleh's (1978) and Chelladurai and Arnott's (1985) studies in that situational characteristics significantly affected member's preferences for a specific decision making style. Chelladurai et al.'s study (1989) also supported the findings of Terry and Howe (1984) who reported no gender differences in athletes' preferences of coaching leadership behaviors.

Due to the importance of situational characteristics such as gender, Zhang's (1993) dissertation entitled "Modification and Revision of the Leadership Scale for Sport" (MRLSS) modified the original LSS developed by Chelladurai and Saleh (1980). Zhang was able to determine the validity and reliability of the MRLSS after consulting with experts and statistically analyzing his data. In the end, the MRLSS consisted of the three versions of the LSS questionnaire and broadened its scope with the addition of another 22 questions. According to Zhang, the "procedure FACTOR (SPSS-X User's Guide, 1988)

was employed to conduct exploratory factor analysis for testing the construct validity of each initially revised LSS version" (Zhang, 1993, p. 16). He reported that the final decision was made after "sixty-two items had factor loadings equal to or greater than .40 on the correct factor without double loading" (p. 2). The internal consistency (Cronbach's alpha) for the athletes preference version of the MRLSS was .96 for DB, .89 for SS, .89 for PF, .84 for SC, .86 for TI, and .44 for AB.

Six subscales included 'Training and Instruction Behavior' (TI) (10 items), 'Democratic Behavior' (DB) (13 items), 'Autocratic Behavior' (AB) (8 items), 'Social Support Behavior' (SS) (9 items), 'Positive Feedback Behavior' (PF) (12 items), and the new subscale 'Situational Consideration Behavior' (SC) (10 items). Each of the 3 versions has 6 subscales for a total of 62 items (Zhang, 1993). Since the MRLSS has been recently developed, no literature was found that related to this scale.

Purpose of the Study

The purpose of this study was to determine if there were significant differences of preferred coaching leadership behaviors between male and female basketball student-athletes in the Wisconsin State University Conference (WSUC) and Wisconsin Women's Intercollegiate Athletic Conference (WWIAC) at the NCAA Division III level. The recently developed MRLSS was selected to measure the preferences of student-athletes for specific coaching behaviors.

Hypothesis

The hypothesis of this study was there were no significant differences between preferences of male and female basketball players for coaching leadership behaviors in TI, DB, AB, SS, PF, and SC as measured by the MRLSS.

Definition of Terms

The following terms were used in this study:

Antecedents - In the multidimensional model, Situational Characteristics antecedent, Leader Characteristics antecedent, and Member Characteristics antecedent were deemed to have profound impact on the required, preferred, and actual leader behaviors of coaches (Chelladurai, 1990).

Autocratic Behavior - "Coaching behavior which involves independent decision making and stresses personal authority" (Chelladurai, 1990, p. 333).

Closed Skills - Chelladurai and Saleh (1978) defined closed skills for sport as "skills executed in an environment where the stimuli are relatively stable, static and unchanging" (p. 86).

Democratic Behavior - "Coaching behavior which allows greater participation by the athletes in decisions pertaining to group goals, practical methods, and game tactics and strategies" (Chelladurai, 1990, p. 333).

Discrepancy Scores - Discrepancy scores were calculated either by subtracting the scores on the preference version of the LSS from those on the perceived version of the LSS or by subtracting the scores on the perceived version of the LSS from those on the preference

version of the LSS (Chelladurai, 1984; Horne & Carron, 1985; Schubiger, 1993; Weiss & Friedrichs, 1986).

Factor Structure - Chelladurai and Saleh (1980) administered the LSS to three groups. Then, according to the scores of subjects of each group on TI, AB, DB, SS, and PF factors, a statistical analysis was performed to examine whether the responses of subjects in three groups were similar.

Open Skills - Chelladurai and Saleh (1978) defined open skills for sport as "skills used to respond to objects that move in space and require spatial/temporal adjustment on the part of the performer" (p. 86).

Positive Feedback Behavior - "Coaching behavior which reinforces an athlete by recognizing and rewarding good performance" (Chelladurai, 1990, p. 333).

Situational Characteristic/Situational Factor - It is one of the three antecedents in the multidimensional model. It refers to those factors that might affect the preference of athletes for specific coaching behaviors, such as competition level, type of sport, task complexity, gender, athletic experience, and age (Chelladurai, 1984, 1990; Chelladurai & Arnott, 1985; Chelladurai & Carron, 1978, 1983; Chelladurai et. al, 1989; Chelladurai & Saleh, 1978; Erle, 1981).

Situational Consideration Behavior - "Coaching behavior aimed at considering situational factors (such as the time, game, environment, and individual); setting up individual goals and clarifying ways to reach the goals; differentiating coaching methods at different stages; and selecting an athlete to the right game position" (Zhang, 1993, p. 47).

Social Support Behavior - "Coaching behavior characterized by a concern for the welfare of individual athletes, positive group atmosphere, and warm interpersonal relations with members" (Chelladurai, 1990, p. 333).

Training and Instruction Behavior - "Coaching behavior aimed at improving the athletes' performance by emphasizing and facilitating hard and strenuous training; instructing them in the skills, techniques, and the tactics of the sport" (Chelladurai, 1990, p. 333).

Variability - Chelladurai and Saleh (1978) defined variability for sport as "the degree of environmental changes and the extent to which the athlete responds to these changes" (p. 86).

Assumptions

1. The MRLSS is a valid and reliable instrument.
2. The individual who administered the instrument read and properly followed the directions prior to distributing the MRLSS to the subjects.
3. All subjects possessed knowledge general enough to understand the statements on the questionnaire.
4. All subjects in this study answered the MRLSS honestly and accurately.
5. The Likert scale measured interval data.

Delimitations

This study had the following delimitations:

1. Athletes selected for this study were members of basketball teams in the Wisconsin State University Conference (WSUC) and the Wisconsin Women's

Intercollegiate Athletic Conference (WWIAC) at the NCAA Division III level.

2. Subjects selected were limited to the academic year of 1996-1997 who tried out for their university's basketball teams.

3. Instrument utilized to collect data was the MRLSS developed by Zhang in 1993.

Limitations

1. Respondents to the MRLSS were volunteers and may not be representative of athletes in the WSUC and the WWIAC.

2. Due to the large geographical area in this study, the researcher was not able to personally administer the MRLSS.

3. Due to a questionnaire being used there might have been some misinterpretation of the statements which could possibly skew the data.

Significance of the Study

It is widely believed that coaching effectiveness depends largely on the similarity of the athlete's preferences of coaching behaviors, the athlete's perceptions of coaching behaviors, and the actual coaching behaviors (Chelladurai, 1984, 1990; Horne & Carron, 1985). This study examined the preferred coaching leadership behaviors of male and female athletes and could provide information for coaches when coaching different genders. Besides, if athletes' preferences of a specific coaching leadership behavior do affect performance and satisfaction, a coach may adopt specific behaviors to enhance athlete's performances and satisfy student-athlete needs. Moreover, this study examined the preferences of athletes by using the recently developed MRLSS, from which the

results might be compared to those studies done by using the LSS; thus, providing more information to the research of coaching leadership behaviors.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

The purpose of this study was to determine if there were significant differences of preferred coaching leadership behaviors between male and female basketball student-athletes in the Wisconsin State University Conference (WSUC) and Wisconsin Women's Intercollegiate Athletic Conference (WWIAC) at the NCAA Division III level. The preference version of the "Modification and Revision of Leadership Scale for Sport (MRLSS)" developed by Zhang in 1993 was used to collect data for this study. Since this scale was modified from Chelladurai and Saleh's (1980) Leadership Scale for Sport (LSS) and no study has been done by using the MRLSS, the literature review focused on those studies that used the LSS or the LSS with other similar leadership behavior instruments.

Many studies on the leadership behaviors of coaches tried to use different procedures to examine what factors affected coaching effectiveness. Research on the effects of gender, task complexity, type of sport, athlete maturity, discrepancy scores of both preferred and perceived coaching behaviors, and other situational factors were conducted to correlate or predict the influence these factors had on athletic performance and satisfaction (Chelladurai, 1984; Chelladurai & Arnott, 1985; Chelladurai & Carron, 1983; Chelladurai et al. 1989; Chelladurai & Saleh, 1978; Erle, 1981; Garland & Barry, 1988; Gordon, 1988; Horne & Carron, 1985; Jeng, 1992; Schubiger, 1993; Terry & Howe, 1984;

Weiss & Friedrichs, 1986). Accordingly, the review of literature was divided into the following sections: the multidimensional model of leadership, preferences of coaching behaviors, discrepancy scores of preferred and perceived coaching behaviors, preferred coaching behaviors under varying situations, development of the LSS and the MRLSS, and summary.

The Multidimensional Model of Leadership

The multidimensional model proposed by Chelladurai and Carron (1978) was an integration of early research on leadership in general and provided a framework for the research of leadership in sport (Chelladurai, 1984). In the multidimensional model, three antecedents (situational characteristics, leader characteristics, and member characteristics) were assumed to have significant influences on the three aspects of leader behaviors: the leader behaviors of required, actual, and preferred respectively. Accordingly, the closer the three leader behaviors, the better the performance and satisfaction of athletes (Chelladurai, 1984; Chelladurai, 1990; Chelladurai & Carron, 1978).

In 1990, Chelladurai pointed out that in the multidimensional model, situational characteristics were assumed to have influences on the preferred coaching behaviors of athletes. The preferences of athletes for specific coaching behaviors were also viewed to be positively related to the performance and satisfaction of athletes.

The Preferences of Coaching Behaviors

Chelladurai and Saleh (1978) designed a procedure to examine whether gender, task dependence (individual vs. team sports), and task variability (closed vs. open sports) influenced subjects' preferences in specific coaching behaviors. Task variability was

defined as whether the situations affected the performances of athletes. For example, tennis players were included in open sports, whereas gymnasts were included in closed sports. The performances of tennis players were affected by unstable situations, such as the ability of the other player; and performances of gymnasts were affected by stable situations, such as their own skills.

The following five factors of leadership behavior were most meaningful as far as the distinctive characteristics of sports were concerned: Training, Autocratic, Democratic, Supportive, and Rewarding (Chelladurai, 1984; Chelladurai & Saleh, 1978; Terry & Howe, 1984). These characteristics of sports developed by Chelladurai and Saleh (1978) served as the framework for the later development of the LSS (Chelladurai & Saleh, 1980) and MRLSS (Zhang, 1993).

The results of Chelladurai and Saleh's study (1978) showed significant differences between male and female subjects in their preferences for specific leadership behaviors of coaches. Male subjects preferred an autocratic coaching behavior whereas female subjects preferred a democratic one. Another finding was that male subjects demanded more social support from their coach than did female subjects. Chelladurai and Saleh (1978) concluded that it is very important for a coach to adopt different leadership behaviors according to the gender composition of the team.

Chelladurai and Carron (1983) utilized only two (Training and Instruction, and Social Support) of the five dimensions in the LSS to examine whether there were relationships between athletic maturity and preferred coaching behaviors. The subjects were asked to complete the preferred leadership version of the LSS which included all five dimensions.

According to Chelladurai and Carron (1983), training and instruction was similar to task-oriented behaviors exhibited by coaches, whereas social support was similar to relationship-oriented behaviors. Basketball players of four different levels ranged from high school freshmen, junior, senior, and university which represented the situational characteristic of 'athletic maturity' on the multidimensional model. A quadratic trend was found for preference of training and instruction, which decreased from high school freshmen teams, through junior and senior teams, then oppositely increased at the university level. A linear trend for social support also found a continuous increase from the high school freshmen teams to the university level. Chelladurai and Carron (1983) stated that it was assumed in the situational leadership theory proposed by Chelladurai and Carron in 1978 that "the less mature the athlete, the greater the likelihood that a relationship-oriented approach should be prescribed for the coach" (p. 373).

> Specifically, a relatively high relationship approach was advocated for younger, less athletically mature athletes; the relative importance attached to a task-oriented approach increased through the middle range of athletic maturity; and finally, with highly mature, older athletes, a low relationship-low task approach was proposed (Chelladurai & Carron, 1983, p. 373).

The findings of Chelladurai and Carron (1983) failed to support the situational leadership theory. They concluded that sports when viewed as a social system may not afford athletes an opportunity to achieve athletic maturity (Chelladurai & Carron, 1983). This phenomenon can be explained by the unique characteristics of sports which are different from other settings, such as business and industrial companies (Chelladurai, 1984; Chelladurai & Saleh, 1978; Terry & Howe, 1984). Athletes who had more

experience in that particular sport preferred more autocratic behavior from their coach (Chelladurai & Saleh, 1978). It can also be seen in Chelladurai and Carron's study (1983) that athletes' preferences for an autocratic behavior from their coach increased from high school freshmen, to high school junior, to high school senior, then to the university level in an additional analysis of this study. Chelladurai and Carron (1983) also indicated that sport "is generally an autocratic enterprise and autocracy does not allow for the fullest development of subordinates" (p. 378).

Terry and Howe (1984) conducted their research on coaching behaviors preferred by 80 male and 80 female athletes as measured by the LSS (Chelladurai & Saleh, 1980). Terry and Howe combined two studies by Chelladurai and Saleh (1978) and Chelladurai and Carron (1983) to examine the effects of gender, age, and sport choice on subjects' preferences. Their findings, contrary to the findings of Chelladurai and Saleh (1978) and Chelladurai and Carron (1983), revealed no significant differences in the preferences of subjects toward coaching behaviors that could be attributed to gender or age. However, they reported that "when the autocratic behavior subscale was viewed in isolation, the preference scores of the male athletes was significantly higher than those of the females" (p. 192).

In 1981, Erle studied the effects of several situational factors on preferred coaching behaviors of athletes. The results showed that male athletes preferred more training behavior, social support, and autocratic behavior from their coach than female athletes. However, he pointed out the preference for autocratic behavior should be viewed with caution, because "the sex differences found in the study could be a function of differences

in experience rather than sex itself" (Erle, 1981, p. 80). The male athletes in this study also had participated 2 times greater than the female athletes, thus providing them more experience in sport.

Jeng (1992) examined the relationship between coaching behaviors and athletes' satisfaction by using a revised scale modified from the LSS. The results showed that male athletes preferred more positive feedback behavior, autocratic behavior, and social support behavior from their coach than female athletes. On the contrary, female athletes preferred more democratic and fair behaviors from their coach than male athletes.

Discrepancy Scores of Preferred and Perceived Coaching Behaviors

The following research was grounded on two beliefs: coaching effectiveness is a function of the similarity between preferred coaching behavior and perceived coaching behavior and the discrepancy scores could be predictors of athletes' satisfaction and performance. Thus, the closer the discrepancy scores, the higher the satisfaction and performance will be.

Chelladurai (1984) examined the relationships between discrepancy scores of preferred and perceived coaching behaviors and athletes' satisfaction. Subjects were selected from basketball (n = 87), wrestling (n = 52), and track and field (n = 57). Each athlete was asked to complete the LSS questionnaire (Chelladurai & Saleh, 1980) and four questionnaires of satisfaction (their satisfaction with individual performance, team performance, coach, and overall involvement in general). The findings of Chelladurai (1984) showed that three of the four measures of satisfaction (satisfaction with Team

Performance, with Leadership, and with Overall involvement) were found to be significantly related to the discrepancy scores of preferred and perceived coaching behaviors.

Chelladurai (1984) emphasized that the discrepancy scores in each of the five subscales of the LSS were significantly associated with 'Satisfaction with Leadership' in the interdependent group (basketball). Chelladurai (1984) stated that the linear relationship reflected a greater satisfaction when basketball players perceived higher Training and Instruction (TI), Democratic Behavior (DB), Social Support (SS), and less Autocratic Behavior (AB) from their coach relative to what they preferred. Chelladurai (1984) concluded that coaching behaviors in TI, and Positive Feedback (PF) positively affected athletes' satisfaction (basketball, wrestling, and track and field).

Horne and Carron (1985) focused their study on coach-athlete relationships. Different questionnaires were used to obtain the data. Data were utilized to predict athletes' perceptions of their performance and satisfaction with leadership behaviors of coaches. Horne and Carron (1985) found that the discrepancy scores in the subscale 'Training and Instruction' of the LSS (Chelladurai & Saleh, 1980) was the best predictor of the athlete's satisfaction with coaching behavior. This result partially supported the finding of Chelladurai (1984) who reported that TI and PF were leadership behaviors which positively affected member satisfaction. Another finding by Horne and Carron (1985) was that coaches perceived themselves as exhibiting more TI, DB, SS, and PF in leadership behaviors than perceived by athletes.

Weiss and Friedrichs (1986) examined the relationships of coaching behaviors, coaches' attributes, and situational factors (institutional variables) on team performance (win/loss percentage) and basketball player satisfaction. They found that two subscales of the LSS were predictive of team performance and members' satisfaction. Social support behavior (SS) was the most predictive of team performance because a negative linear relationship indicated that the more SS coaches provided to athletes, the low he team performance would be. On the other hand, the more rewarding behavior provided by coaches, the more athletes' satisfaction. Weiss and Friedrichs's (1986) finding suggested that coaches with democratic behavior, frequent rewarding behavior, and more social support behavior produced more satisfied players.

Garland and Barry (1988) focused their study on football players' personalities, perceived coaches' behaviors, and individual performance. Individual success was operationally defined as Regulars, Substitutes, and Survivors. The LSS was administered to players to measure their perceived behaviors of coaches. They found that four of the 16 personality traits (Cattell's Sixteen Personality Factor Questionnaire) combined with five subscales of the LSS contributed significantly to the prediction of individual performance. They concluded that players who were more group dependent, self-confident, and perceived their coach to exhibit more TI, DB, SS, and PF were associated with higher levels of performance, whereas players who perceived their coach exhibiting AB were related to lower levels of performance.

Gordon (1988) indicated that " an examination of the appropriateness of coaching decision styles should also take into account the opinions and perceptions of athletes" (p.

58). Gordon's study (1988) examined the similarity of decision styles perceived and preferred by soccer players as well as preferred by coaches. Gordon (1988) concluded that athletes, as a group, preferred a consultative style more than an autocratic decision style. Thus, this study supported the discrepancy theory which emphasized that the closer the discrepancy, the greater the athletes' satisfaction will be.

Preferred Coaching Behavior Under Varying Situations

Two studies (Chelladurai & Arnott, 1985; Chelladurai et al., 1989) used similar procedures to examine preferred coaching decision styles of basketball players and coaches. Chelladurai and Arnott (1985) designed 16 cases under varying situations to measure the preferences of players, while Chelladurai et al. (1989) based on the research of Chelladurai and Arnott (1985) extended their study to 32 cases and included coaches' preferences. A difference in their findings was that coaching decision styles were found to be associated significantly with gender (Chelladurai & Arnott, 1985), whereas Chelladurai et al. (1989) reported that no gender differences were associated with specific coaching decision style preferences. However, both studies acknowledged that situational factors influenced athletes' and coaches' preferences for decision-making styles. Other findings reported by Chelladurai et al. (1989) were that coaches preferred more autocratic styles than both male and female players, and players (male and female) tended to favor an autocratic style rather than a participative style exhibited by their coaches.

Development of the LSS and the MRLSS

The LSS

Chelladurai and Saleh (1978) first proposed the multidimensional scales to measure coaching leadership from a situational-behavior point of view. It provided a framework for the development of the LSS (Chelladurai & Saleh, 1980).

The major effort of their study (Chelladurai & Saleh, 1980) was to construct the validity and reliability for the LSS. Five factors were selected to be the most meaningful for describing coaching behaviors in the sport context. Forty items describing each of the five factors were selected from the 99 items in the original pool. These five factors included one direct task factor, two decision-making styles, and two motivational factors. Training and Instruction (TI) reflected the coach's behaviors aimed at improving the performance of athletes (13 items). Democratic Behavior (DB) reflected the extent to which the coach allowed athletes' participation in decision-making (9 items). Autocratic Behavior (AB) reflected the extent to which the coach made decisions (5 items). Social Support (SS) reflected the extent to which the coach provided warmth and care to athletes regardless of how the athletes performed (8 items). Positive Feedback (PF) indicated how frequently the coach expressed appreciation and compliments to athletes for their performance and contribution (5 items) (Chelladurai & Saleh, 1980).

Chelladurai and Saleh (1980) suggested the LSS could be used to assess coaching behaviors and its effectiveness. They also indicated that the LSS could be administered in different sports to evaluate the appropriateness of specific coaching behaviors. In their study, they administered the LSS to three groups to verify the stability of factor structure

across the three samples. Their result showed a stable factor structure for the LSS. For the preference version, they reported that the internal consistency (Cronbach's alpha) for the group of athletes' was .83 for TI, .75 for DB, .45 for AB, .70 for SS, and .82 for PF.

The MRLSS

Zhang's study (1993) modified the LSS proposed by Chelladurai and Saleh (1980). Zhang reported that if the validity and reliability of the LSS could be carefully and critically constructed and if more situational factors would be taken into consideration, the LSS would be more effective and powerful.

Zhang (1993) reported that two additional factors (Group Maintenance Behavior & Situational Consideration Behavior) were added to the LSS at the first stage with the assistance of advisory members, dissertation committee, and coaches from different sports. There were 280 items in the MRLSS including the original 40 items from the LSS. Then, three English linguistic experts tested all items, followed by 17 coaching leadership experts at the second stage. Student athletes (n = 696) and coaches (n = 206) were involved to determine validity and reliability at the third stage. Several statistical techniques were used to investigate the initially revised scale at the fourth stage. Finally, six factors were chosen to be most meaningful representing coaching leadership behaviors; Training and Instruction Behavior (TI) (10 items), Democratic Behavior (DB) (13 items), Autocratic Behavior (AB) (8 items), Social Support Behavior (SS) (9 items), Positive Feedback Behavior (PF) (12 items), and Situational Consideration Behavior (SC) (10 items). The new SC subscale emphasized coaching behavior which aimed at considering situational factors, such as gender, environment, competition level, individual differences,

and the coach's ability to select the right player for the right position (Zhang, 1993). A total of 62 items which included 23 original items from the LSS were retained at the final stage.

Zhang (1993) also suggested the MRLSS be carefully applied: careful interpretation of the subscale AB is needed because it is weak in "the eigenvalue, the variance explained, the number of items retained, and the internal consistency" (p. 29); the six subscales should be interpreted individually; and finally, because the subjects were from college/university level, the application of the MRLSS should be limited to people within this population.

Summary

There is no doubt that most of the research on leadership styles of coaches focused on coaching behaviors. In fact, the purposes of these studies were to investigate what factors influenced coaching effectiveness and to provide information to coaches who may want to enhance the performance and satisfaction of athletes by adopting specific behaviors. Behaviors of coaches significantly influence an athlete's growing process, not only physically but also psychologically, and that is why research on sport leadership behaviors always centers around the behaviors of coaches.

The nature of the LSS indicated that the examination of coaching leadership behaviors is multidimensional. Researchers examined situational factors, coaches' characteristics, and athletes' personalities to determine if these three antecedents have any impact on required, actual, and preferred behaviors of coaches (Chelladurai, 1984, 1990). Some studies focused on the discrepancy scores of athletes' perceived and preferred coaching

behaviors. Other studies focused upon the discrepancy scores of coaches' preferred and perceived their own coaching behaviors to investigate their relationship with or prediction on the performance and satisfaction of athletes. Chelladurai and Haggerty (1978) stated that "existing approaches to the study of leadership emphasize the view that the effectiveness of leadership styles or leader behavior is dependent on the situational variables" (p. 6). Due to the significant influence of situational variables on leader behaviors, some studies designed questionnaires with varying situational factors to investigate preferred coaching decision styles between male and female athletes.

In conclusion, the debate of whether male and female athletes preferred different coaching behaviors was raised. The second issue was whether gender could be considered as a situational factor. Therefore, the purpose of the present study was to examine if there were different preferences for specific coaching behaviors between male and female athletes by using the newly developed MRLSS which was modified from the LSS with an added 'Situational Consideration Behavior' factor. According to Zhang (1993), the new SC emphasized the influence of situational factors under which gender was included. Moreover, the MRLSS is a valid and reliable instrument.

The findings of this study could help clarify the debate of gender differences. Since the MRLSS has been recently developed, no related literature was found. Therefore, the findings of this study could lend support or refute it. Furthermore, the results of this study could contribute knowledge to the research area of leadership behaviors of coaches.

CHAPTER III

METHODS AND PROCEDURES

Introduction

The newly developed MRLSS (Zhang, 1993) was used to measure subjects' preferences for specific coaching behaviors. Comparisons of male and female preferences for coaching behaviors under six subscales of the MRLSS were made after data collection.

Subject Selection

The subjects for this study were basketball players from the Wisconsin State University Conference (WSUC) and the Wisconsin Women's Intercollegiate Athletic Conference (WWIAC), who compete at the NCAA Division III level. There are nine member institutions each in the WSUC and the WWIAC. All subjects to be surveyed were limited to the semester of Fall, 1996, who enrolled at the institutions in the WSUC and the WWIAC and tried out for their basketball teams. At some institutions all players who tried out for the team were included in this study, because they had not made final team selections at the time of data collection, and others only included selected team members. Subjects who completed the adapted MRLSS were deemed as volunteers.

Measuring Instrument

The questionnaire (see Appendix B) used to collect the data was adapted from the MRLSS (Zhang, 1993) (see Appendix C). This study only focused on athletes' preferences of coaching leadership behaviors, thus, the athlete preference version of the MRLSS was adapted to measure the subjects' preferences. Subjects were asked to pencil their responses to the adapted MRLSS on the UW-L General Answer Sheet (hereafter referred to as the "bubble sheet"). Little changes were made from the MRLSS for the convenience of collecting data.

The MRLSS has six subscales: Training and Instruction (TI), Democratic Behavior (DB), Autocratic Behavior (AB), Social Support Behavior (SS), Positive Feedback Behavior (PF), and Situational Consideration Behavior (SC). Each of these subscales described a specific behavior that a coach may exhibit. Sixty-two items were randomly arranged in a questionnaire format with 10 items under TI, 13 items under DB, 8 items under AB, 9 items under SS, 12 items under PF, and 10 items under SC. Each item was proceeded with the phrase 'I prefer my coach to' for the preference version. The subjects were asked to indicate their preferences on the 5-point Likert scale (Zhang, 1993).

The only modification made was for the convenience of data collection: the five response categories used for this study were: (A) always (100%), (B) often (75%), (C) occasionally (50%), (D) seldom (25%), and (E) never (0%) in place of (1) always (100%), (2) often (75%), etc. This allowed the researcher to use an existing scoring sheet to assist with computer analysis. The category of A was assigned a score of 1, B was assigned a score of 2, C was assigned a score of 3, D was assigned a score of 4, and E was assigned a

score of 5. All subjects were asked to score on the bubble sheets. The lower the score, the higher the preference for that particular category.

The score range on TI is 10-50. A score of 50 would indicate the lowest amount of preference on TI, whereas a score of 10 would indicate the highest amount of preference on TI. The score range on DB is 13-65. A score of 65 would indicate the lowest amount of preference on DB, whereas a score of 13 would indicate the highest amount of preference on DB. The score range on AB is 8-40. A score of 40 would indicate the lowest amount of preference on AB, whereas a score of 8 would indicate the highest amount of preference on AB. The score range on SS is 9-45. A score of 45 would indicate the lowest amount of preference on SS, whereas a score of 9 would indicate the highest amount of preference on SS. The score range on PF is 12-60. A score of 60 would indicate the lowest amount of preference on PF, whereas a score of 12 would indicate the highest amount of preference on PF. The score range on SC is 10-50. A score of 50 would indicate the lowest amount of preference on SC, whereas a score of 10 would indicate the highest amount of preference on SC.

Procedures

A proposal of this research was prepared and submitted to the University of Wisconsin-La Crosse Institutional Review Board for the Protection of Human Subjects (IRB) (see Appendix D) for approval. Letters were mailed to the athletics directors of institutions in the WSUC and the WWIAC to determine interest and to obtain permission to use their basketball players as subjects (see Appendix E). According to the IRB policy, subjects who completed the questionnaire would be deemed as completing informed

consent. Follow-up phone calls were made to those athletics directors who did not respond 10 days after sending the first letter. Athletics directors who consented to participate in the study were asked to administer the questionnaires to the athletes, without any of their basketball coaches present. Packets of materials were sent to the athletics directors immediately after receiving the approval from the IRB. The packet of materials sent to the athletics directors included the adapted MRLSS questionnaires, instructions concerning the administration of the MRLSS (see Appendix F), bubble sheets, and a self-addressed, stamped packet. Each packet of materials was coded by number to ensure subjects' anonymity. All institutions were asked to return only the bubble sheets and the letter indicating the interest in receiving a summary of results upon completion of this study.

Follow-up phone calls were made to those athletics directors who did not return the bubble sheets 3 weeks after sending the packages. Second follow-up phone calls were made to those athletics directors who did not return the bubble sheets 2 weeks after the first follow-up phone calls. A third follow-up phone call was made to those athletic directors who did not return the bubble sheets 2 weeks after the second follow-up phone calls. All data were received by December 13, 1996. Following the collection of all surveys, responses were scanned by using the Scan Tools Application Base software through the National Computer System machine and the results were then downloaded onto a computer disk. The results on the disk were converted to Microsoft Excel program 5.0 on Macintosh computer. Missing data were replaced with group means.

Statistical Analysis

The statistical treatment chosen for this study was a 2 × 6 factorial ANOVA with repeated measures followed by Scheffe' post hoc comparisons. Fisher's tests of skewness and kurtosis were performed to establish normality. Alpha was set at .05. The SPSS 6.1 statistical package was used to perform analyses for this study.

CHAPTER IV

RESULTS AND DISCUSSION

Introduction

Out of the possible 18 basketball teams, 11 participated in this study, five from the WSUC and six from the WWIAC. A total of 240 surveys were sent to the athletics directors who agreed to participate in the present study at six Wisconsin universities. Over an 8 week period and three follow-up phone calls, 184 surveys out of the 240 sent were returned, making the response rate of 77% (M = 88, F = 96).

Comparisons of male and female basketball players' preferences for coaching behaviors were made after the data were analyzed. The results of the data analyses are presented under the following headings: results, preferences for specific coaching behaviors, discussion, and summary.

Results

The raw scores for each subject, listed under six subscales, are presented in Appendix G. The results of Fisher's tests of skewness and kurtosis for the observations of male and female subjects showed normal distribution, except for the skewness of female subjects for TI (S = 2.45).

A two way ANOVA with repeated measures was used to test the null hypotheses for the six subscales: there were no significant differences between preferences of male and female basketball players for coaching leadership behaviors in TI, AB, DB, SS, PF, and

SC. The result of the ANOVA showed that there was a significant difference for subjects' preferences in at least one specific coaching behavior ($p < .001$). Thus, the null hypotheses were rejected. A summary of the data analyses for the six subscales is presented in Table 1.

Table 1. Summary of Data Analyses for the Six Subscales

Subscales	Mean	SD
Female		
TI	17.781	4.102
AB	23.094	5.266
DB	31.235	6.153
SS	22.938	4.36
PF	22.729	5.269
SC	18.167	4.244
Male		
TI	19.045	4.656
AB	22.477	3.632
DB	34.75	5.954
SS	23.011	4.129
PF	23.705	6.523
SC	19.92	5.12

The Scheffe' post hoc comparisons were performed to determine where the differences were to be found. The results showed there were significant differences in the subscales of DB and SC, but not in the subscales of TI, AB, SS, and PF.

Preferences for Specific Coaching Behaviors

After a two-way ANOVA with repeated measures showed that there was a significant difference between the preferences of male and female basketball players for coaching behaviors, the Scheffe' test was performed to determine where the differences were. The results showed that there were significant differences between the preferences of male and female players for coaching behavior in the subscales of DB ($p < .05$) and SC ($p < .05$): female players (mean = 31.125) preferred a greater degree of democratic behavior from their coach than did male players (mean = 34.75) and female players (mean = 18.167) also expressed a greater degree of preferences for subscale SC than did male players (mean = 19.92). The Scheffe' tests also indicated that there were no significant differences in the subscales of TI, AB, SS, and PF (See Table 2).

Table 2. Scheffe' Post Hoc Comparisons for Males and Females in Six Subscales

Subscales	Scheffe' test
TI	3.833
AB	.84
DB	16.435*
SS	.014
PF	1.254
SC	6.439*

* $p < .05$

Discussion

The main emphasis of this study was to examine the differences between the preferences of male and female basketball players for specific coaching behaviors measured by the MRLSS. Despite the fact that Fisher's test of skewness for female subjects for TI exceeded a .05 level of significance, this was not an issue because according to Glass, Peckham, and Sanders (as cited in Stevens, 1990), the nonnormality for very skewed distributions has only a slight effect on the Type I error rate. Thus, ANOVA is still robust with respect to the assumption of normality. In addition, there were no differences between the preferences of male and female subjects found in the TI subscale.

It was not surprising that the results clearly indicated that female players preferred more DB and SC from their coaches than male players. That is, there were differences between male and female subjects for specific coaching behaviors. These findings were partly supported by Chelladurai and Saleh (1978), Erle (1981), Chelladurai and Arnott (1985) and Jeng (1992).

Two interesting patterns emerged from the findings of the present study and the literature reviewed. The first pattern was whenever male athletes expressed their preference for one coaching behavior, they also expressed their preference for another one. For example, autocratic and social support behaviors were chosen together. This first pattern was also seen in Chelladurai and Saleh's (1978) and Erle's (1981) studies, even though the LSS with five dimensions of coaching behavior was used. This pattern

also appeared in Jeng's study (1992) which used a revised scale with seven dimensions of coaching behaviors.

The second pattern, consistent with the findings of the present study and with Chelladurai and Saleh (1978), Chelladurai and Arnott (1985), and Jeng (1992), showed that female players preferred more democratic behavior from their coaches than did male players. Chelladurai defined democratic behavior as "coaching behavior which allows greater participation by the athletes in decisions pertaining to group goals, practice methods, and game tactics and strategies" (Chelladurai, 1990, p. 333). Although four different scales were used in these four different studies (the LSS, preferred coaching behavior under varying situations, the revised scale, and the MRLSS), the results, indicating that females preferred more democratic behavior from their coaches than did males, were consistent. This suggested that the second pattern might be true. Further research on this pattern by using any of those four scales is encouraged.

The finding of this study on DB indicated that, compared to male athletes, female athletes preferred to have their coaches ask for input from players on important coaching matters, such as involving them in decision making when conducting practices, setting up group goals or individual goals, and when developing strategies for competition. They would like to be encouraged by their coach for making suggestions and be respected when they have made them.

The other finding of this study on SC indicated that female players preferred more SC from their coaches than did male players. According to Zhang, the SC emphasized "coaching behavior aimed at considering situational factors, such as the time, game,

environment, and individual" (Zhang, 1993, p. 47). Females would like their coaches to consider their abilities when setting up individual and team goals and they would like their coaches to help them through the process of reaching these goals. They also would like their coaches to adapt a coaching style to suit the situation, such as arranging different training procedures depending on conditions and team maturity. As can be expected from the results on democratic behavior, females preferred their coaches to consider the situational factors which might affect their performances either in practices or competitions. The reason why females preferred a democratic coach may be because it is one way to ask coaches to consider particular situational factors. Autocratic coaches would like to make decisions on their own without regard to what their athletes' opinions and needs may be.

The SC was a new subscale on the MRLSS and was recently developed, thus no literature was found related to it. Therefore, the finding on this subscale could not be compared to any study. Further study on this dimension of coaching behavior and its relationship with DB by using the MRLSS is needed.

Based on the findings on DB and SC, this study failed to support the results of Terry and Howe (1984) and Chelladurai et al. (1989). These authors found that there were no significant differences between male and female athletes' preferences for coaching behaviors. However, Chelladurai et al. (1989) acknowledged the influence of situational differences on subjects' preferences for decision style choices. This latter concept supported the findings of this study.

The findings of the present study supported the multidimensional model of leadership proposed by Chelladurai and Carron (1978). The present study used the MRLSS to examine the situational characteristics (genders) on the multidimensional model and suggested that genders should be considered as one of those situational characteristics which may influence the preferences of athletes for specific coaching behaviors. Furthermore, in the multidimensional model, the preferences of athletes for specific coaching behaviors may positively influence the performance and satisfaction of athletes. Thus, if coaches adapt their own coaching behaviors according to gender composition of the team, it is expected that the athletes will have higher performance and satisfaction for their sport.

The finding of this study on SC also implies that there may be other dimensions of coaching behavior which need to be examined. There is no doubt that the examination of coaching behaviors is directed toward a multidimensional viewpoint. The developments of the LSS (5 dimensions), the MRLSS (6 dimensions), and the revised scale (7 dimensions) corresponded to the fact that there are other dimensions of coaching behavior which may influence the preferences of athletes.

Although this study used the MRLSS which has six dimensions of coaching behaviors, the researcher did not examine the athletic experiences of both genders. The findings of Chelladurai and Saleh (1978) and Erle (1981) raised a question of whether the differences in DB and SC found in this study were because of the athletic experiences of both genders or simply because of the gender composition of the team. Further research by using the MRLSS may shed some light on this question.

Summary

Compared to male players, female players expressed more preferences for DB and SC from their coach. These findings were not surprising. From a historical point of view, females have been living in a male-dominated society, not only in America but also in other countries such as Taiwan, China, Japan, and Korea. They have been fighting for rights and equal opportunities for centuries. Democracy is the hope for their rights and equality.

There is no exception in the sports' context. Females indicated they would like to be part of a team by expressing their preferences for specific coaching behaviors. They preferred to participate in coaching decisions regarding practices, training schedules, strategies for competitions, and even setting up the goals for groups and themselves according to their abilities. They also preferred their coaches to encourage them to make suggestions for the team and to be respected after making suggestions. Jeng (1992) reported that female athletes preferred their coaches to be fair in all coaching matters. Since these factors are all situational, female players also expressed their preference for SC which emphasized that coaches take into account these situational variances. Woodman (1993) indicated that effective coaching is to coach to the level of the athletes. She also pointed out that a coach is "responsible for preparing the athlete physically, technically, tactically, and psychologically" (p. 3). Sharing the process of coaching with athletes, a coach may communicate with athletes more thoroughly by explaining the purpose of a specific training technique, a strategy for competition, and obtaining feedback from the athletes. Therefore, the athletes may have a better understanding of

why they are asked to do certain things. If the athletes have any problems about a strategy or a training program, the coach may have opportunities to reiterate, reconsider, or modify his/her plan to enhance the performance of the team or athletes before putting the plan into practice or continuing with it. The communication between coach and athletes may provide more motivation in training and accelerate their development (Woodman, 1993).

In summary, the results of this study suggested that coaches in the WSUC and the WWIAC should adapt their coaching behaviors according to the gender composition of the team. As Gordon (1988) pointed out, to make coaching more effective, a coach should take into account what his/her athletes need. In the multidimensional model, it is proposed that the more closely the required, perceived, and preferred coaching behavior is, the better the satisfaction and performance of athletes will be. So, it is suggested that a coach should adapt specific coaching behaviors to enhance the performance and satisfaction of the athletes.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to determine if there were significant differences of preferred coaching leadership behaviors between male and female basketball players in the WSUC and the WWIAC at the NCAA Division III level. Preferences of subjects for specific coaching behaviors were measured by the MRLSS. Subjects were limited to those enrolled at institutions in the WSUC and the WWIAC who tried out for their basketball teams in Fall, 1996. The final number of basketball teams that participated in this study was 11, five from the WSUC and six from the WWIAC. Of the 240 surveys sent, 184 were returned over 8 weeks, making the response rate 77% (M = 88, F = 96).

A two way ANOVA with repeated measures indicated a difference between male and female basketball players' preferences for specific coaching behaviors. Of the six subscales tested, Scheffe' post hoc comparisons identified DB and SC as statistically different. These results suggested that females preferred their coach to exhibit more DB and SC than males.

Conclusions

Based on the results of this study, the following conclusions were reached:

1. There were significant differences between male and female players' preferences for DB and SC. Females preferred more DB and SC from their coach than males.

2. There were no significant differences between the preferences of male and female players for TI, AB, SS, and PF.
3. The gender composition of a team may be considered as a situational factor which may affect the preference of subjects for specific coaching behaviors.
4. Coaches in the WSUC and the WWIAC may provide more democratic behavior in the decision making process and consider more situational factors which might affect the performance and satisfaction of female athletes.

Recommendations

Based on the results of this study, it is recommended that future studies:

1. Investigate the relationship between gender, experience, and preference of coaching behaviors by using the MRLSS.
2. Examine if there is a correlation between AB and SS, and DB and SC by using different samples, such as the athletes from NCAA Division I and Division II levels.
3. Investigate if there are any other coaching behaviors which may affect the preferences of athletes.
4. Investigate the influence of athletes' preference for specific coaching behaviors on their performance and satisfaction.
5. Apply the four scales (the LSS, preferred coaching behavior under varying situations, the revised scale, and the MRLSS) to different sports, competition levels, and different countries to shed more light on the research of leadership behaviors of coaches.

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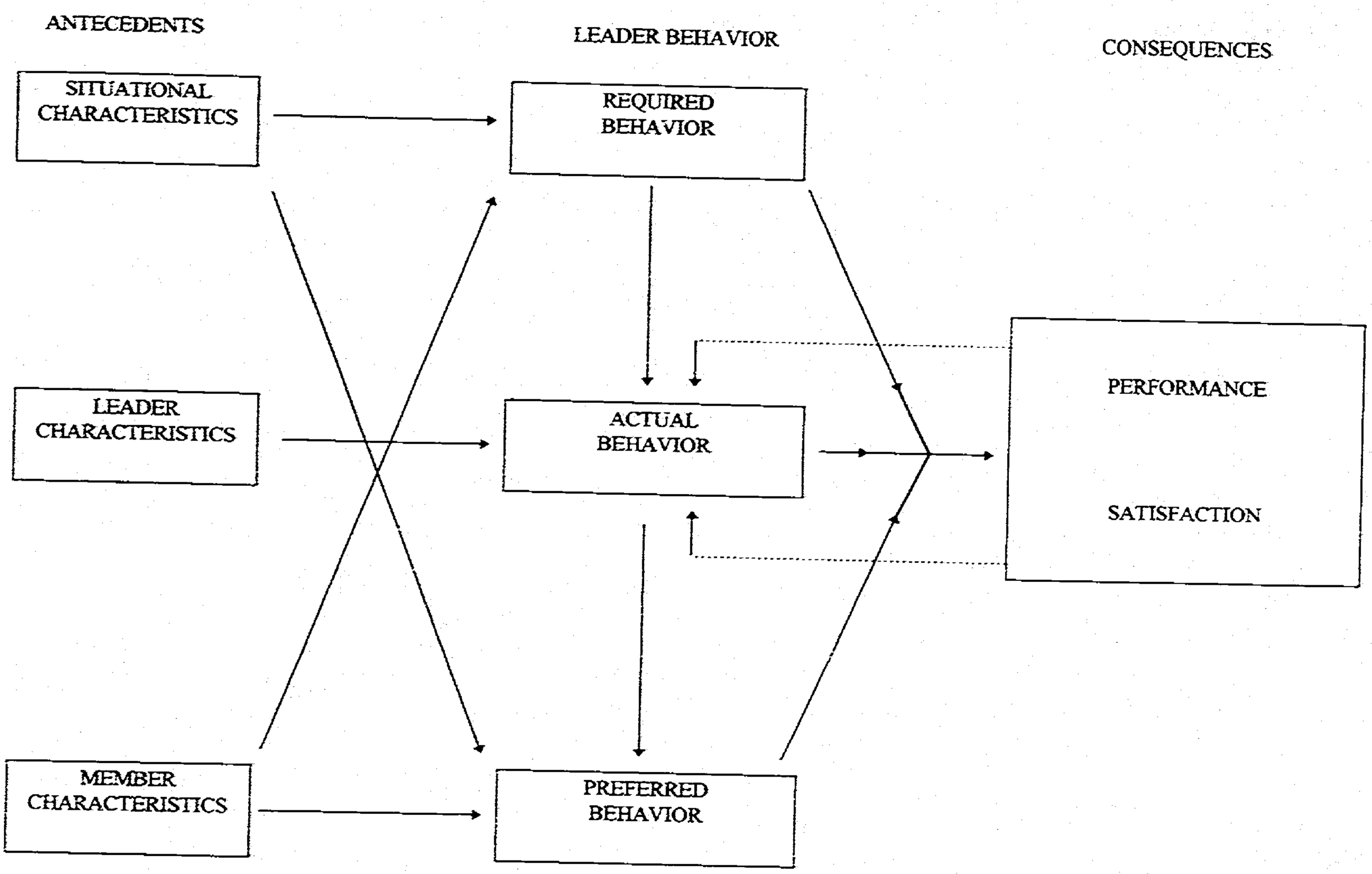
APPENDIX A

THE MULTIDIMENSIONAL MODEL OF LEADERSHIP



The multidimensional model of leadership (Chelladurai, 1990, p. 330)

APPENDIX B

QUESTIONNAIRE

(ADAPTED FROM ZHANG, 1993)

The Revised Leadership Scale for Sport*
(Athlete Preference Version)

Directions:

Thank you for your cooperation with this study. The information you provide will be valuable to this study and will be treated as group data. Therefore, please DO NOT fill in any personal data on the bubble sheet.

Each of the following statements describe a specific behavior that a coach may exhibit. For each statement there are five alternatives: A means 'always' (100% of the time); B means 'often' (75% of the time); C means 'occasionally' (50% of the time); D means 'seldom' (25% of the time); E means 'never' (0% of the time).

Please indicate your preference by filling in the appropriate space using a # 2 pencil only on the bubble sheet. Answer all items even if you are unsure of a response. Please note that this is **not an evaluation** of your present coach or any other coach. It is your **own personal preference** that is required. There are no right or wrong answers. Your spontaneous and honest response is important for the success of the study.

	always (100%)	often (75%)	occn (50%)	seldom (25%)	never (0%)
Example: I prefer my coach to like each athlete on the team.	A	B	C	D	E

* Adapted from Zhang (1993).

The Revised Leadership Scale for Sport
(Athlete Preference Version)

I prefer my coach to:

	always (100%)	often (75%)	occa (50%)	seldom (25%)	never (0%)
1. reward the athletes at the end of a season.	A	B	C	D	E
2. set up specific safety measures.	A	B	C	D	E
3. pat an athlete after a good performance.	A	B	C	D	E
4. know the most important equipment needed for a specific training.	A	B	C	D	E
5. like an athlete no matter how the athlete plays.	A	B	C	D	E
6. involve everybody on the team in formulating policies.	A	B	C	D	E
7. remain sensitive to the needs of the athletes.	A	B	C	D	E
8. set goals that are compatible with the athletes' abilities.	A	B	C	D	E
9. use objective measurements for evaluation.	A	B	C	D	E
10. help athletes with their personal problems.	A	B	C	D	E
11. coach to the level of the athletes.	A	B	C	D	E
12. present ideas forcefully.	A	B	C	D	E
13. put the suggestions made by the group into operation.	A	B	C	D	E
14. supervise athletes' drills closely.	A	B	C	D	E
15. tell an athlete when the athlete does a particularly good job.	A	B	C	D	E
16. let the athletes try their own way even if they make mistakes.	A	B	C	D	E
17. encourage an athlete when the athlete makes mistakes in performance.	A	B	C	D	E

	always (100%)	often (75%)	ocea (50%)	seldom (25%)	never (0%)
18. clarify goals and the paths to reach the goals for the athletes.	A	B	C	D	E
19. compliment an athlete for good performance in front of others.	A	B	C	D	E
20. express interest for an athlete's hobbies.	A	B	C	D	E
21. give the athletes freedom to determine the details of conducting a drill.	A	B	C	D	E
22. visit with the parents/guardians of the athletes when they come to a competition.	A	B	C	D	E
23. speak in a manner which discourages questions.	A	B	C	D	E
24. use a variety of drills for a practice.	A	B	C	D	E
25. possess good knowledge of the sport.	A	B	C	D	E
26. recognize individual contributions to the success of each game.	A	B	C	D	E
27. refuse to compromise on a point.	A	B	C	D	E
28. let the athletes share in decision making.	A	B	C	D	E
29. pay special attention to correcting athletes' mistakes.	A	B	C	D	E
30. give credit when it is due.	A	B	C	D	E
31. see the merits of athletes' ideas when differ from the coach's.	A	B	C	D	E
32. adapt coaching style to suit the situation.	A	B	C	D	E
33. make most of the decisions for the team.	A	B	C	D	E
34. ask for the opinion of the athletes on important coaching matters.	A	B	C	D	E
35. let the athletes set their own goals.	A	B	C	D	E

	always (100%)	often (75%)	occa. (50%)	seldom (25%)	never (0%)
	A	B	C	D	E
36. perform personal favors for the athletes.					
37. ask for the opinion of the athletes on strategies for specific competitions.	A	B	C	D	E
38. congratulate an athlete after a good play.	A	B	C	D	E
39. prescribe the methods to be followed.	A	B	C	D	E
40. assign tasks according to each individual's ability and needs.	A	B	C	D	E
41. stay ready for the unexpected developments.	A	B	C	D	E
42. keep aloof from the athletes.	A	B	C	D	E
43. plan for the team relatively independent of the athletes.	A	B	C	D	E
44. show "O.K." or "Thumbs Up" gesture to the athletes.	A	B	C	D	E
45. explain to each athlete the techniques and tactics of the sport.	A	B	C	D	E
46. make complex things easier to understand and learn.	A	B	C	D	E
47. encourage athletes to make suggestions for ways to conduct practices.	A	B	C	D	E
48. get input from the athletes at daily team meetings.	A	B	C	D	E
49. express any affection felt for the athletes.	A	B	C	D	E
50. fail to explain his/her actions.	A	B	C	D	E
51. express appreciation when an athlete performs well.	A	B	C	D	E
52. clarify training priorities and work on them.	A	B	C	D	E
53. get group approval on important matters before going ahead.	A	B	C	D	E

	always (100%)	often (75%)	occa (50%)	seldom (25%)	never (0%)
54. encourage the athlete to confide in the coach.	A	B	C	D	E
55. reward an athlete as long as the athlete tries hard.	A	B	C	D	E
56. put the appropriate athletes in the lineup.	A	B	C	D	E
57. let the athletes decide on plays to be used in a game.	A	B	C	D	E
58. adjust the training to fit the athletes' intellectual and neuromuscular skill levels.	A	B	C	D	E
59. praise the athletes' good performance after losing a game.	A	B	C	D	E
60. decide on different training procedures depending on the athletes' condition and team maturity.	A	B	C	D	E
61. encourage close and informal relations with the athletes.	A	B	C	D	E
62. stress the mastery of greater skills.	A	B	C	D	E

APPENDIX C

QUESTIONNAIRE

(THE ORIGINAL MRLSS)

The Revised Leadership Scale for Sport
(Athlete Preference Version)

Directions:

Each of the following statements describe a specific behavior that a coach may exhibit. For each statement there are five alternatives, as follows: 5 means 'always' (100% of the time); 4 means 'often' (75% of the time); 3 means 'occasionally' (50% of the time); 2 means 'seldom' (25% of the time); 1 means 'never' (0% of the time).

Please indicate your preference by circling the appropriate space. Answer all items even if you are unsure of a response. Please note that this is **not an evaluation** of your present coach or any other coach. It is your **own personal preference** that is required. There are no right or wrong answers. Your spontaneous and honest response is important for the success of the study.

Example: I prefer my coach to like each athlete on the team. 1 2 3 4 5

I prefer my coach to:

1. Reward the athletes at the end of a season. 1 2 3 4 5
2. Set up specific safety measures. 1 2 3 4 5
3. Pat an athlete after a good performance. 1 2 3 4 5
4. Know the most important equipment needed for a specific training. 1 2 3 4 5
5. Like an athlete no matter how the athlete plays. 1 2 3 4 5
6. Involve everybody on the team in formulating policies. 1 2 3 4 5
7. Remain sensitive to the needs of the athletes. 1 2 3 4 5
8. Set goals that are compatible with the athletes' abilities. 1 2 3 4 5
9. Use objective measurements for evaluation. 1 2 3 4 5
10. Help athletes with their personal problems. 1 2 3 4 5
11. Coach to the level of the athletes. 1 2 3 4 5

12. Present ideas forcefully.	1	2	3	4	5
13. Put the suggestions made by the group into operation.	1	2	3	4	5
14. Supervise athletes' drills closely.	1	2	3	4	5
15. Tell an athlete when the athlete does a particularly good job.	1	2	3	4	5
16. Let the athletes try their own way even if they make mistakes.	1	2	3	4	5
17. Encourage an athlete when the athlete makes mistakes in performance.	1	2	3	4	5
18. Clarify goals and the paths to reach the goals for the athletes.	1	2	3	4	5
19. Compliment an athlete for good performance in front of others.	1	2	3	4	5
20. Express interest for an athlete's hobbies.	1	2	3	4	5
21. Give the athletes freedom to determine the details of conducting a drill.	1	2	3	4	5
22. Visit with the parents/guardians of the athletes when they come to a competition.	1	2	3	4	5
23. Speak in a manner which discourages questions.	1	2	3	4	5
24. Use a variety of drills for a practice.	1	2	3	4	5
25. Possess good knowledge of the sport.	1	2	3	4	5
26. Recognize individual contributions to the success of each game.	1	2	3	4	5
27. Refuse to compromise on a point.	1	2	3	4	5
28. Let the athletes share in decision making.	1	2	3	4	5
29. Pay special attention to correcting athletes' mistakes.	1	2	3	4	5
30. Give credit when it is due.	1	2	3	4	5
31. See the merits of athletes' ideas when differ from the coach's.	1	2	3	4	5

32. Adapt coaching style to suit the situation.	1	2	3	4	5
33. Make most of the decisions for the team.	1	2	3	4	5
34. Ask for the opinion of the athletes on important coaching matters.	1	2	3	4	5
35. Let the athletes set their own goals.	1	2	3	4	5
36. Perform personal favors for the athletes.	1	2	3	4	5
37. Ask for the opinion of the athletes on strategies for specific competitions.	1	2	3	4	5
38. Congratulate an athlete after a good play.	1	2	3	4	5
39. Prescribe the methods to be followed.	1	2	3	4	5
40. Assign tasks according to each individual's ability and needs.	1	2	3	4	5
41. Stay ready for the unexpected developments.	1	2	3	4	5
42. Keep aloof from the athletes.	1	2	3	4	5
43. Plan for the team relatively independent of the athletes.	1	2	3	4	5
44. Show "O.K." or "Thumbs Up" gesture to the athletes.	1	2	3	4	5
45. Explain to each athlete the techniques and tactics of the sport.	1	2	3	4	5
46. Make complex things easier to understand and learn.	1	2	3	4	5
47. Encourage athletes to make suggestions for ways to conduct practices.	1	2	3	4	5
48. Get input from the athletes at daily team meetings.	1	2	3	4	5
49. Express any affection felt for the athletes.	1	2	3	4	5
50. Fail to explain his/her actions.	1	2	3	4	5
51. Express appreciation when an athlete performs well.	1	2	3	4	5

52. Clarify training priorities and work on them.	1	2	3	4	5
53. Get group approval on important matters before going ahead.	1	2	3	4	5
54. Encourage the athlete to confide in the coach.	1	2	3	4	5
55. Reward an athlete as long as the athlete tries hard.	1	2	3	4	5
56. Put the appropriate athletes in the lineup.	1	2	3	4	5
57. Let the athletes decide on plays to be used in a game.	1	2	3	4	5
58. Adjust the training to fit the athletes' intellectual and neuromuscular skill levels.	1	2	3	4	5
59. Praise the athletes' good performance after losing a game.	1	2	3	4	5
60. Decide on different training procedures depending on the athletes' condition and team maturity.	1	2	3	4	5
61. Encourage close and informal relations with the athletes.	1	2	3	4	5
62. Stress the mastery of greater skills.	1	2	3	4	5

APPENDIX D

SUBMISSION OF PROPOSAL TO IRB

Narrative Statement of the Proposal

1. The purpose of this study was to determine if there are significant differences between male and female athletes' preferences in coaching leadership behaviors as measured by the MRLSS (Zhang, 1993). The subjects, who are basketball players in the Wisconsin State University Conference (WSUC) and Wisconsin Women's Intercollegiate Athletic Conference (WWIAC), are asked to complete the questionnaires. Data collection is expected to begin around the second week in October, 1996 and end on November 15, 1996.

2. The total number of subjects is about 270. Subjects are currently enrolled in college/university which are members of WSUC and WWIAC.

3. N/A

4. Packets of materials including questionnaires and relevant information concerning how to complete the questionnaires will be sent to the athletic director or designee of each institution in the WSUC and WWIAC. Subjects who complete the questionnaire would be deemed as informed consent.

5. Each packet will be assigned a code number in order to analyze the data. Subjects will be notified not to write down their name, address, and telephone number on the questionnaires.

6. It will take subjects about 15-20 minutes to complete the questionnaires.

7. N/A

8. The results of subjects' preferences for a specific coaching leadership behavior could provide information for their coaches to consider the needs of student-athletes. Furthermore, if their coaches adopt the behavior according to their needs, it is anticipated that student-athletes may have more satisfaction and enhanced performance.

APPLICATION FOR REVIEW AND DEPARTMENTAL REVIEW
(ATTACHMENT A)
(ALL submissions must be typewritten)

Date: September 27, 1996

1 a. Principal Investigator/Project Director (if thesis, student's name):
Hsiao-hwei Peng

b. Applicant Status: (Check one)

☐ Faculty ☒ Graduate Student
☐ Academic Staff ☐ Undergraduate Student

c. Investigator/Project Director Local Address:
3800 Cliffside Pl. Apt 7 La Crosse, WI 54601

d. Investigator/Project Director Local Telephone Number: (608) 788-4365

2. a. Title of Proposed Project: Comparison of preferred coaching leadership styles of basketball players at the NCAA Division III level.

b. Project Period: Begin date: October 11 End Date: November 15

c. If Thesis, Faculty Advisor's Name, Department, and Phone:
Name: Dr. Jane C. Meyer
Department: Exercise and Sport Science
Phone Number: (608) 785-8194

3. Does the Investigator believe his/her research activities to be exempt from Full IRB review?

☒ yes ☐ no

a. If yes: Please indicate the number(s) of the exempt category or categories (from pages 4-5) the Investigator believes may qualify his/her research activities for an IRB expedited review.
2

4. By signing this application, I agree to comply with:

•any decisions made by the University of Wisconsin-La Crosse IRB in regard to the above named research project, and or the standards of professional ethics in my field of study.

(signature) Hsiao-Hwei Peng (date) Sep. 27, 1996

This department has reviewed the above research project and finds:
(Please check appropriate response)

1. ✓ **NO RISK**
that the protocol of the proposed research dose not contain procedures which place human subjects at risk; Department recommends expedited review.

2. _____ **MINIMAL RISK**
that the protocol of the proposed research contains procedures which place human subjects at minimal but acceptable risk; Department recommends expedited review.

3. _____ **RISK**
that the protocol of the proposed research contains or is likely to contain procedures that may place human subjects at greater than minimal risk, and therefore recommends a full IRB review.

Department Review Committee Members

Name	Signature	Date
JANE C MEYER	Jane C. Meyer	09.27.14
Richard P. Mikat	Richard P. Mikat	9-27-96
Leslee Poulton	Leslee Poulton	9-27-96

IRB REVIEW FORM
(ATTACHMENT B)

This section is to be completed by the chairperson of the IRB after departmental review and IRB review of proposal.

Title of proposed research project:

Comparison of preferred coaching leadership styles of basketball players at the NCAA Division III level

The IRB has reviewed the above research project and has determined that:

1. ✓ APPROVAL IS GRANTED-As Submitted or As Modified per attached

(check one)

- ■ a. the protocol does not contain procedures which place human subjects at risk, or
- ☐ b. the protocol contains procedures which place human subjects at minimal but acceptable risk, or
- ☐ c. the protocol contains or is likely to contain procedure(s) that may place human subjects at greater than minimal risk; however, the risk(s) are outweighed by the sum of the anticipated benefits of the research.

2. _____ APPROVAL NOT GRANTED

The following IRB members participated in this review:

Glenn Brice	
N K Bulls	
L A Dachenbach	

On behalf of the board:

Harold Grayson — 10-17-96

IRB Chairperson Signature — Date

APPENDIX E

FIRST LETTER TO ATHLETICS DIRECTOR

October 4, 1996

Dear :

I am currently a graduate student majoring in Sport Administration at the University of Wisconsin - La Crosse. I am interested in conducting research concerning basketball players' preferences for coaching leadership styles in the Wisconsin State University Conference and Wisconsin Women's Intercollegiate Athletic Conference. The purpose of my study is to determine if male and female basketball players have different preferences for a specific coaching leadership behavior. The results of this study may provide information for your coach as to the behaviors preferred by players to meet their needs.

I was a basketball player for ten years in Taiwan and this is one of my reasons for investigating the preferences of basketball players. As a former player, I understand how important coach-player relationships are and can be improved if the coach considers his/her athletes' needs.

Enclosed is a copy of the proposed questionnaire for your review. The questionnaire should only take 15-20 minutes to complete. The data collection is expected to begin around the fourth week in October and would include all male and female basketball players trying out for each team. Your assistance with this study is very important for the investigation process. If granted permission by you, I will send a packet of materials including questionnaires and relevant information about how to administer the questionnaires. All responses will be treated in a strictly confidential manner and will be treated only as group data. Your institution will not be identified and questionnaires will be destroyed once the final analysis has been completed.

Please indicate your interest by filling out the enclosed form and return it to me by **October 11th.**

Thank you for your valuable time and consideration in assisting with this study. A summary of the results will be sent to you after completion of the study upon your request. If you have any questions concerning this study, please contact me at (608) 788-4365.

Sincerely,

Hsiao-hwei Peng
3800 Cliffside Pl. Apt. 7
La Crosse, WI 54601
608-788-4365
peng_h@students.uwlax.edu

Jane C. Meyer, Ph. D.
Assistant Professor/Thesis Chair
Associate Athletics Director
130 Mitchell Hall
UW-La Crosse
La Crosse, WI 54601
608-785-8194
meyer_jc@mail.uwlax.edu

Please indicate your interest in the spaces provided and return this form to me by October 11th:

_____ **YES**, our institution is interested in participating in this study.

If yes, approximately how many questionnaires should be forwarded to you.

_____ Number of male basketball players.

_____ Number of female basketball players.

_____ **NO**, our institution is not interested in participating in this study.

Thank you for your time and consideration!

Name of individual who will administer the questionnaires: _____
(Athletics Director or designee preferred, no coaches please)

Questionnaire Mailing Address: _____

_____

_____

Phone Number: _____

FAX: _____

Please return this form to: **Hsiao-hwei Peng**
3800 Cliffside Pl. Apt 7
La Crosse, WI 54601

APPENDIX F

INSTRUCTIONS CONCERNING THE ADMINISTRATION OF THE MRLSS

October 18, 1996

Dear :

Thank you again for assisting with this study. The directions of administering the questionnaires are as follows:

Please read the following directions to the student-athletes:

1. The purpose of this study is to determine if male and female athletes have different preferences for specific coaching behaviors.

2. Your completion of this questionnaire will be deemed as informed consent.

3. Your responses on this questionnaire will not be seen by the head coach and will not affect your status as a student-athlete on the basketball team.

4. Use a pencil only to record your responses.

5. Please read the directions of the questionnaire on the cover page before filling in your responses on the bubble sheets.

6. Please indicate your gender by filling in 1 for male and 2 for female in column 1 under the section of **SPECIAL CODE** in the top right corner of the bubble sheet. For example:
   For male player: For female player:

   ⓪⓪⓪⓪⓪⓪ ⓪⓪⓪⓪⓪⓪
   ●①⓪⓪⓪⓪ ⓪①⓪⓪⓪⓪
   ②②②②②② ●②②②②②

7. The questionnaire takes about 15-20 minutes to complete.

Once all questionnaires are completed:

1. Please put **only bubble sheets** in the enclosed envelope and return it by **November 1st**.
   (It is your decision either to keep the copies of questionnaires or to throw them away).

2. Please indicate your interest in the space provided below if you would like to receive a summary of the results. Please return this letter and the bubble sheets to me in the enclosed stamped, self-addressed envelope.
   _____ YES
   _____ NO

   If yes, a copy of the results will be forwarded to you as soon as the research is completed.

If you have any questions concerning administration of the questionnaires, please contact me at (608) 788-4365.

Thank you very much.

Hsiao-hwei Peng
3800 Cliffside Pl. Apt. 7
La Crosse, WI 54601
608-788-4365
peng_h@students.uwlax.edu

Jane C. Meyer, Ph. D.
Assistant Professor/Thesis Chair
Associate Athletics Director
130 Mitchell Hall
UW-La Crosse
La Crosse, WI 54601
608-785-8194
meyer_jc@mail.uwlax.edu

APPENDIX G

RAW DATA

Preference scores of each subject for six subscales

Sex	AB	DB	PF	SC	SS	TI
M	25	35	17	10	17	14
M	25	21	14	14	21	16
M	22	43	26	20	18	17
M	17	27	12	16	16	10
M	27	42	17	10	21	11
M	21	27	17	16	17	20
M	22	35	24	15	27	18
M	26	24	24	19	24	17
M	24	31	20	15	21	18
M	29	42	18	18	28	12
M	21	37	28	12	19	12
M	20	25	17	15	23	13
M	29	33	22	19	21	17
M	22	32	22	16	19	18
M	19	32	17	23	24	11
M	26	34	16	14	16	14
M	17	37	30	22	29	21
M	21	28	13	12	26	10
M	20	33	15	17	22	17
M	28	33	18	24	21	21
M	27	28	13	18	18	15
M	21	49	16	15	21	17
M	25	32	26	20	23	20
M	21	26	16	19	18	13
M	27	37	29	19	18	22
M	25	37	32	26	30	27
M	19	32	16	16	21	21
M	20	46	26	19	27	15
M	17	30	23	28	21	21
M	28	35	27	23	22	23
M	23	38	19	15	23	20
M	23	34	23	24	17	22
M	21	38	21	20	27	18
M	24	33	18	12	17	12
M	27	40	24	25	26	25
M	22	32	21	13	17	16
M	25	35	23	15	28	20
M	17	36	36	21	25	21

Sex	AB	DB	PF	SC	SS	TI
M	20	29	20	22	20	14
M	27	34	28	25	26	28
M	26	46	16	20	28	15
M	25	31	18	17	19	19
M	19	36	27	11	27	10
M	16	29	15	14	18	18
M	14	27	26	15	21	18
M	21	30	15	16	19	16
M	21	38	32	24	32	20
M	20	34	28	21	25	20
M	19	23	20	20	23	18
M	25	39	16	17	26	19
M	24	39	31	21	23	25
M	29	35	19	17	19	14
M	18	40	23	14	20	22
M	26	27	22	14	20	21
M	23	33	32	24	25	20
M	16	36	35	24	28	16
M	23	41	26	21	27	20
M	22	37	19	14	25	13
M	29	28	25	16	23	15
M	19	38	19	34	27	25
M	26	37	19	17	20	16
M	22	40	26	24	29	25
M	20	34	24	20	21	20
M	18	29	28	17	24	24
M	18	24	18	19	15	16
M	26	40	22	22	26	18
M	16	32	23	20	22	18
M	24	55	40	24	35	21
M	18	37	28	29	24	28
M	24	46	32	21	25	18
M	19	27	24	19	21	20
M	22	30	20	24	19	23
M	31	29	23	24	22	15
M	20	36	27	25	22	23
M	20	32	26	23	25	25
M	23	37	28	21	23	19
M	19	35	27	24	24	22
M	22	35	26	22	23	22
M	23	37	29	20	26	18

Sex	AB	DB	PF	SC	SS	TI
M	22	38	19	28	25	31
M	28	39	28	27	22	20
M	24	39	32	26	28	23
M	23	38	35	25	30	25
M	20	43	34	25	26	27
M	26	40	37	30	24	29
M	25	36	39	31	18	25
M	22	35	35	31	33	25
M	22	39	29	19	24	19
F	20	34	14	19	28	16
F	20	31	23	21	30	19
F	21	19	14	13	12	12
F	22	30	23	21	30	17
F	22	34	26	14	25	15
F	32	26	23	16	24	19
F	30	33	15	11	16	13
F	23	38	27	17	26	20
F	33	25	17	12	25	15
F	26	35	27	19	24	19
F	23	32	23	13	22	15
F	25	17	14	12	24	15
F	23	45	16	15	19	12
F	23	37	20	16	27	17
F	25	34	24	19	24	17
F	27	39	26	22	32	17
F	20	44	29	21	23	14
F	32	33	23	14	25	13
F	22	41	26	26	23	21
F	25	36	33	30	29	23
F	29	22	17	17	25	15
F	24	35	16	12	22	13
F	33	39	26	16	32	16
F	29	36	32	18	29	17
F	25	32	19	20	22	17
F	33	29	24	20	28	20
F	26	30	31	18	24	15
F	26	31	29	18	20	21
F	24	37	20	18	20	13
F	26	38	18	17	25	13
F	25	24	21	18	25	14
F	28	37	29	21	25	15

Sex	AB	DB	PF	SC	SS	TI
F	27	32	27	19	26	17
F	26	26	21	16	26	14
F	18	24	21	23	23	24
F	22	31	24	20	25	18
F	27	24	18	13	16	19
F	25	36	32	14	26	13
F	23	45	26	21	29	14
F	19	26	29	20	20	22
F	20	26	22	16	24	17
F	26	21	20	15	25	18
F	27	32	22	21	19	16
F	22	47	37	25	30	28
F	15	27	17	10	21	14
F	21	27	25	16	26	15
F	31	38	17	19	17	18
F	24	29	23	17	24	10
F	15	19	15	12	16	13
F	15	25	26	21	25	19
F	24	38	31	18	27	23
F	23	34	24	21	28	21
F	27	30	18	21	23	23
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F	27	32	15	13	22	14
F	24	29	14	10	16	12
F	15	26	22	20	20	16
F	29	31	25	19	26	18
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F	28	37	28	23	26	20
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F	26	30	22	18	21	17
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F	29	38	27	14	24	11
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F	18	26	20	13	22	16
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Sex	AB	DB	PF	SC	SS	TI
F	22	30	28	18	25	22
F	24	20	14	18	16	12
F	17	35	27	23	19	24
F	14	24	20	17	16	17
F	16	23	16	17	16	14
F	22	38	25	29	28	29
F	13	28	26	25	26	23
F	21	34	27	25	19	29
F	13	28	17	18	16	19
F	14	26	17	15	17	19
F	17	29	16	15	17	17
F	21	31	32	26	24	21
F	10	21	19	15	16	17
F	15	25	16	17	18	18
F	16	32	25	20	28	29
F	14	28	25	24	19	24
F	19	23	23	19	20	19
F	21	31	29	27	24	23
F	24	32	17	21	27	22
F	22	34	29	25	24	23
F	32	34	17	17	29	19
F	18	30	17	17	19	19
F	17	31	29	25	22	15