

Running head: RELATIONSHIP OF PERCEIVED COACHING BEHAVIORS

THE UNIVERSITY OF CENTRAL OKLAHOMA  
Edmond, Oklahoma  
Jackson College of Graduate Studies

Relationship Between Perceived Coaching Behaviors and Pre-Season Skills of Collegiate  
Volleyball Players

A THESIS

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements

for the degree of

MASTERS OF SCIENCE

by

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Edmond, Oklahoma

2010


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Volleyball Players

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APPROVED FOR THE DEPARTMENT OF KINESIOLOGY AND HEALTH STUDIES

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# RELATIONSHIP OF PERCEIVED COACHING BEHAVIORS

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### **Acknowledgements**

With great minds working together, great things can be accomplished. There were several tremendous people who dedicated their time and attention to accomplishing this venture. The encouragement, strength, drive, and determination they bestowed upon me during this project cannot be appreciated enough.

First, I would like to thank the members of my committee, Dr. Darla Fent, Dr. Debbie Traywick, and Dr. Cynthia Murray, who guided me every step of the way in completing my thesis. Dr. Fent, my committee chair, never gave up on me or this project. She stood by me when brick walls were put up in my way, and always encouraged me to battle those walls down. If those diversions were not overcome, I would have not been able to complete this project. Dr. Fent, thank you for your encouragement, help, guidance, and for the countless hours directed at completing this project. I also had the pleasure of working with Dr. Traywick who shared the same passion and knowledge of the game of volleyball. My last committee member, Dr. Murray, proved to be a crucial asset to me; providing me with a better understanding of statistics. Without these key people, my thesis would not have been completed. I thank you all for the time and effort directed at working with me in the completion of my thesis.

Next, I would like to thank Oklahoma City University's and University of Central Oklahoma's Varsity Volleyball teams. Thank you to all the players who participated in this research project and the coaches who allowed me to take time out of their busy practice schedules enabling their players to participate in my study. This project could not have been completed without your help. Thank you for your time and I wish you the best of luck with the rest of your season.

Lastly, I would like to thank my family who stood beside me showing love and support every step of the way. They were there with me during the hard times and kept encouraging me to continue and pursue my goal of achieving a Masters degree. Thank you to everyone who made this venture possible; I am grateful for all of you in my life.

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**Abstract**

The purpose of this study was to examine the relationship between the hitting and serving percentages of collegiate volleyball players and perceived coaching behaviors of their respective coaches. The study included 23 participants, 18 to 22 years old, from Oklahoma City University's ( $n = 11$ ) and the University of Central Oklahoma's ( $n = 12$ ) varsity volleyball teams. The subjects' hitting and serving percentages were recorded after each match during their pre-season competition. Once the pre-season was over, the researcher administered the Coaching Behaviour Scale for Sports (CBS-S) survey which measured perceived coaching behaviors for each athlete in six different categories. A Pearson's correlation coefficient was used to examine the relationships among all the categories of the survey and the hitting and serving percentages for both schools. The results indicated that there were no significant relationships between the perceived coaching behaviors and the hitting and serving percentages of the collegiate volleyball players from either program.



## Chapter One: Introduction

Coaches play a vital role in an athlete's life. From youth coaches who teach the young the importance of teamwork, to college coaches who teach the importance of succeeding in life, to professional coaches who teach the importance of being a good role model for the sport, coaches shape athletes into who they can become. It is not uncommon for an athlete to say their coach is more than a coach; they are more of a teacher, mentor, friend, and even a parental figure (Becker, 2009). For young athletes, "a good coach-athlete relationship tends to enhance motivation, induce pleasant emotions, and create a satisfactory and positive climate, while decreasing stress and burnout" (Martin, Jackson, Richardson, & Weiller, 1999). Martin et al. also stated that youth coaches who are supportive and encouraging, knowledgeable and instructive, as well as enthusiastic and motivated are more likely to enjoy the sport within which they are involved.

Many coaches do not understand that the way they behave can affect the way the team performs and how the athlete responds to the coach. Motivation of the coach is an important psychological characteristic due to the impact that it personally has on form, direction, intensity, and duration of how the coach behaves (Jowett, 2008). Conversely, coaching behaviors can be "influenced by player perception and recall," and "coach perceptions of players' attitude and players' evaluative reactions" (Côté, Yardley, Hay, Sedgwick, & Baker, 1999). Boardly, Kavussanu, & Ring (2008) reported that athletes' perceived motivation of the coach was positively related to effort and commitment of the athlete. The researchers also concluded that self-efficacy was positively related to perceived technique instruction, and that perceived character building positively affected sportsmanship (Boardly et al., 2008).

**Significance of the Problem**

While many studies look at coaching behaviors and team cohesion, very little research has been conducted examining how coaching behaviors affect the overall performance of the team and sport-specific skills of individual athletes. Moreover, fewer studies have been conducted utilizing collegiate volleyball teams. Therefore, the purpose of this study was to examine the relationship between perceived coaching behaviors and hitting and serving percentages of volleyball players from two collegiate teams during pre-season competition.

**Hypotheses**

The Coaching Behaviour Scale for Sports (CBS-S) is constructed of 47 questions in 6 different coaching behavior categories. The behaviors examined in the survey are physical training and conditioning, technical skills, mental preparation, goal setting, competition strategies, and personal and negative rapport (Côté et al., 1999). Specific null hypotheses identified for the current study include:

1. No significant relationship will exist between the total score of the perceived coaching behaviors survey and individual hitting and serving percentages.
2. No significant relationship will exist between the physical training and conditioning subscale and individual hitting and serving percentages.
3. No significant relationship will exist between the technical skills subscale and individual hitting and serving percentages.
4. No significant relationship will exist between the mental preparation subscale and individual hitting and serving percentages.
5. No significant relationship will exist between the goal setting subscale and individual hitting and serving percentages.

6. No significant relationship will exist between the competition strategies subscale and individual hitting and serving percentages.
7. No significant relationship will exist between the personal and negative rapport subscale and individual hitting and serving percentages.

**Limitations**

1. The teams utilized in the study were comprised of female athletes.
2. Conformity in recording statistics was not controlled.
3. The coach and the athletes were aware that the study examined perceived coaching behaviors.
4. Every player did not have the same opportunity to hit or serve during competition.

**Delimitation**

1. The researcher used two collegiate volleyball teams.
2. Each collegiate team provided a statistician to record game statistics.
3. The researcher examined the pre-season competition statistics.
4. The researcher examined the hitting and serving percentages of the individuals on each team.

**Assumptions**

1. The statisticians correctly and adequately recorded the statistics.
2. A normal distribution of the population existed in the current sample with regards to volleyball hitting and serving skills and preferred leadership style.
3. The participants answered honestly and understood the questions asked.
4. The survey measured preferred coaching styles.

**Identification of Variables**

The independent variable for this study was the athletes' perceptions of coaching behavior that was assessed by the CBS-S. The dependent variables were the hitting and serving percentages of individual players. Therefore, the study examined the relationship between perceived coaching behaviors and the hitting and serving percentages of each volleyball player.

**Definition of Terms**

1. Pre-Season Competition – This variable represents time from when the team starts competition, not including scrimmages, to the time that conference competition starts. For collegiate volleyball, that is approximately 10 matches.
2. Hitting Percentage – Each time a player hits the ball, an attempt was counted. If the player killed the ball, successfully ending the play, then a kill was counted. If the athlete made an error when hitting (e.g., hitting the ball into the net, out, or missing the ball completely), an error was counted. A hitting percentage was calculated by taking the total kills for the game, subtracting them from the total errors, and dividing by the total attempts made.
3. Serving Percentage – Each time a player serves the ball, an attempt was counted. If the player made an error, whether it be serving the ball out or into the net, an error was counted. A serving percentage was calculated by taking the total attempts, subtracting the total errors, and then dividing by the total attempts.
4. Perceived Coaching Behaviors – This variable was measured using the CBS-S survey that informs the researcher how an athlete perceives their current coaches' behaviors.

Due to the lack of research with coaching behaviors and volleyball players, the purpose of this study was to examine the relationship between perceived coaching behaviors and hitting and

serving percentages of volleyball players from two collegiate volleyball teams during pre-season competition.

## **Chapter Two: Literature Review**

The purpose of this literature review is to explore previous research conducted on coaching behaviors and how they can affect team performance, individual performance, coach-athlete relationships, and the young athletes. Additionally, this review will examine research utilizing volleyball teams and coaches.

### **Coach-Athlete Relationship**

Coach-athlete relationships are an important part of sports. Athletes have stated that this relationship is key for them to achieve a successful athletic career, as well as having an impact on the athletes' lives (Vealey, Armstrong, & Comar, 1998; Baker, Côté, & Hawes, 2000). How an athlete views their coach's behaviors is often impacted by the relationship between the coach and athlete. Coaches who display motivation and pleasant emotions create a more positive environment for the athletes to work (Kenow & Williams, 1999; Bortoli, Robazza, & Giabardo, 1995). However, it is also the coach who is in a position that can affect how the team members react to one another; creating good or bad team cohesion (Gardner, Shields, Bredemeier, & Bostrom, 1996).

Kenow and Williams (1999) conducted a study to determine the type of relationship that exists between the coach and athlete, the effects of athletes' perceptions of the coaching behaviors, and if that relationship affects self-confidence and anxiety of the athlete. The researchers chose to use female college basketball players ( $n = 68$ ) who had at least one year of experience under the current head coach. The Coaching Behavior Questionnaire (CBQ) and the Sport Competition Anxiety Test (SCAT) were administered to the participants at a practice session without having a game at least two days prior to testing. A Pearson's product moment correlation was run on the variables. The result of the CBQ indicated that those athletes who had

higher anxiety viewed the coach as having more negative behaviors than those who had lower anxiety (Kenow & Williams, 1999). A multiple regression analysis was run to determine the compatibility between the coach, athlete, and the coaching behaviors. The results indicated that athletes who felt that they had a more highly compatible relationship with the coach were the ones who perceived their coaches behavior more positively ( $\beta = -.58$ ; Kenow & Williams, 1999).

In a similar study, Olympic coaches were evaluated on how their relationship with their athletes affected the performance of the athletes (Gould, Greenleaf, Duinan, & Chung, 2002). The researchers gathered information from coaches at the 1996 Atlanta Summer Olympic games ( $n = 46$ ) and the 1998 Nagano Winter Olympic games ( $n = 19$ ) by having the coaches complete the Atlanta Olympic Coaching Evaluation Survey and Nagano Olympic Coaching Evaluation Survey, respectively. While there were several aspects that led to a better performance of the athletes (e.g., the venue, the supportive crowd, and team selection), the researchers noted that having a positive coach-athlete relationship was an important factor for improving athletic performance (Gould et al., 2002). From this study, it is easy to infer that, even at a high level of competition, the coach-athlete relationship is still very important to maintain for a positive performance outcome.

In continuing with the theme of Olympic coach – athlete relationship, Trzaskoma-Bicsérdy, Bognár, Révész, and Géczi (2007) examined four well-known male coaches and one male Olympic medalist from Hungary. The athletes were asked 50 open-ended interview questions ranging from topics about how long they had been in the sport, their record on the national team, how long they had been on the national team, and how many time they had changed coaches or sports. The coaches were asked specific questions identifying the length of their careers and their experience. For the coach – athlete relationship to work, Trzaskoma-

Bicsérdy et al. (2007) reported that respect, belief, intimacy, trust, communication, and expectation were the most important components for cooperation and achievement to occur in the coach-athlete relationship.

Relationships between coaches and athletes can also influence the amount of anxiety an athlete can handle (Baker et al., 2000). Baker et al. conducted a study utilizing 228 athletes with an average age of 18 years. Participants from 15 different sports were used to compare how coaching behaviors affected player anxiety. The researchers used the CBS-S and the Sport Anxiety Scale surveys to generate data for the study. Results indicated that as negative rapport behaviors increased so did sports anxiety. Also, as competition strategies behaviors increase, the athlete's concentration levels increased while worry levels decreased (Baker et al., 2000).

Vealey, Armstrong, and Comar (1998) conducted a similar study regarding how coaching behaviors affect sport anxiety in female athletes. Researchers used female college athletes ( $n = 149$ ) and 12 college coaches (female,  $n = 11$ ; male,  $n = 1$ ). The Eades Athlete Burnout Inventory, the Sport Anxiety Scale, the Relationship Inventory, and the Coaching Behavior Inventory were administered to the athletes. The coaches received the Interpersonal Communication Inventory and the Maslach Burnout Inventory. Interestingly, the results indicated that perceived coaching behaviors were linked to athletes' burnout. However, perceived coaching behaviors were not related to an increase athletes' anxiety levels (Vealey et al., 1998), which disagrees with what Baker et al. (2000) found. Also Vealey et al. reported that a coaches' personal accomplishment can positively affect how the coach communicates with the team.

Coach-athlete relationships can affect more than just the outcome of the game; they can affect how an individual responds to the coach. Turman and Schrodts (2004) reported that if a



coach is perceived as displaying autocratic behaviors, the athletes had lower affective learning. However, the opposite was true for democratic coaching behaviors. If the coach displayed democratic behavior, athletes felt they received social support, were provided training, instruction, and positive feedback. Martin, Rocca, Cayanus, & Weber (2009), examined the relationship between the coach's positive or negative actions and words from a coach and the team's reaction. Two hundred ninety-four freshmen students were given the Behavior Alteration Techniques (BATs), the Verbal Aggressiveness Scale, and the Student Motivation Scale. Students were asked to recall how one of their high school coaches behaved for the study. The results of the study showed that the player had more negative motivation and affect if their coach had negative BATs scores (Martin, et al., 2009). Martin et al. also reported that male coaches who coached male players were more verbally aggressive than female coaches coaching female players or a male coach coaching female players.

The purpose of Gardner, Shields, Bredemeier, and Bostrom's (1996) study was to examine if higher levels of task and social cohesion were related to leadership from the coach. The study also examined if there was a gender or competitive level difference in the responses. The participants consisted of baseball players ( $n = 189$ ) and softball players ( $n = 118$ ) from the junior college ( $n = 6$ ) level and the high school level ( $n = 6$ ). Three surveys were administered to the athletes, including the Leadership Scale for Sports (LSS), the Group Environment Questionnaire (GEQ), and a demographic questionnaire. Data collected from the study was run through several analyses including: a multiple regression, canonical correlation analyses, as well as a MANOVA. The results of those analyses showed that there was a significant ( $p = .0001$ ) relationship between perceived coaching behaviors and team cohesion. Similarly, coaches who

had more positive feedback had higher levels of both task and social cohesion (Gardner et al., 1996).

### **Youth and Coaching Behaviors**

Youth participation in sport can be characterized both positively and negatively. The benefits of participating in youth sports include getting the youth involved in physical activity, creating a wealth of health benefits and socialization. Youth also learn the value of sportsmanship particularly if they have a positive coach. One of the negative consequences involved with participating in youth sports is the possibility of becoming injured. Similarly, if the young athlete is paired with negative coach interaction, the performer most likely would develop poor sportsmanship, or worse, lose interest in the game. Becker (2009) stated “coaches are responsible for developing athletes’ mental, physical, technical, and tactical abilities.” Since coaches spend a great deal of time with the athlete, coaches of youth sports influence the youths’ lives (Martin et al., 1999; Hopper & Jeffries, 1990). Youth coaches need to be more conscious of their behaviors to maintain the child’s interest in the sport (Martin et al., 1999).

Martin et al. (1999) examined how youth athletes and their parents preferred their youth coaches to behave. Two hundred and thirty-nine families were used to help examine this research question. The participants were given the Leadership Scale for Sports to identify their preferred coaching styles. Results indicated that young athletes prefer to have their coach display a more democratic style of coaching and provide positive feedback. The researchers also reported that young athletes are less likely to respond to the autocratic style of coaching (Martin et al., 1999).

Arthur-Banning, Wells, Baker, and Hegreiness (2009) examined the relationship between parent’s and coach’s behaviors and how each impacted youth performance. Students from the

third and fourth grade were on one basketball team and students from the fifth and sixth grade were on another basketball team. Each team was split into three groups including a control group (no intervention), the first treatment group (simple positive sportsmanship intervention), and the second treatment group (simple positive sportsmanship intervention and referees who encourages positive play). Researchers observed the players, coaches, and parents during each quarter of the basketball games identifying specific sportsmanship behaviors. Surprisingly, results showed that the older team (fifth and sixth graders) had about four times more positive behaviors per game than the younger team of (third and fourth graders). In addition, positive spectator and coach behaviors were associated with positive player behavior. Similarly, negative spectator and coach behaviors led to more negative player behavior (Arthur-Banning et al., 2009).

Another youth related research study involving 23 youth basketball teams was conducted by Smith, Zane, Smoll and Coppel (1983). The researchers collected post-season attitude and self-esteem data from the athletes to evaluate the coaches' behaviors during the season. Results indicated that over half of the post-season attitudes reported contributed to coaching behaviors. Interestingly, the researchers concluded that positive reinforcement did not have any effect on the attitudes of the athletes, and technical instruction was the dominant factor for impacting attitudes of the youth studied. Punishment was negatively correlated to the youth enjoying the coach (Smith et al., 1983).

Youth use their environment to develop socially, take in what they see, and apply it to their life. However, not all behaviors displayed in a sport environment are ones that should be learned. This statement particularly applies to coaching behaviors. Chow, Murray, and Feltz (2009) examined the problem of social learning factors creating a tendency for the youth to act

aggressively. Soccer players ages 12 to 18 ( $n = 258$ ) and their head coaches ( $n = 23$ ) were used. Demographic information and responses to the Judgments About Moral Behavior in Youth Sport Questionnaire were collected. This questionnaire asked the players about judgments concerning lying to an official, cheating by breaking a rule, or hurting an opponent in a game situation. The Coaching Efficacy Scale was given to the coaches to assess their confidence in affecting the learning and performance of their athletes. The researchers concluded that the years played had a significant relationship ( $p < .01$ ) to the team norms of aggression and self-aggression. At the coach level, the researchers found that game strategy efficacy was significantly and positively correlated ( $p < .05$ ) with the years of coaching, experience, playing-experiences, and self-aggression (Chow et al., 2009).

McCullagh, Matzkanin, Shaw, and Maldonado (1993), looked at youth's participation in sports and perceived competency. Eighty-one youth, ages 7 to 14, who played recreational soccer, participated in the study. Research assistants helped the children complete the Participation Motivation Survey and Perceived Competency Inventory. The parents also completed both surveys keeping in mind why their child participated in sport and their child's perceived competencies in both the sport and social aspects. Results of this study showed both the parents and youth played for intrinsic motivational reasons (McCullagh et al., 1993).

### **Motivation, Leadership, and Coaching Effectiveness**

Part of coaching includes decision-making, motivating, giving feedback to the athletes, establishing relationships with the athletes, and facilitating team cohesion (Vaez Mousavi & Shojaei, 2005). Coaches are not just there "on the court" but they also have a presence off the court. Coaches' behaviors have the potential to change the athletes' behaviors (Vaez Mousavi & Shojaei, 2005). Therefore, coaches need to pay close attention to their own behaviors.

Boardley, Kavussanu, and Ring (2008) conducted a study observing how athletes perceived coaching effectiveness in the four coaching efficacy dimensions of motivation, game strategy, technique, and character building. Data was examined with respect to its impact on effort, commitment, enjoyment, self-efficacy, and sportsmanship of the athlete. The researchers had three hypotheses: a) athletes with higher levels of perceived motivation would increase their effort, commitment, and enjoyment for the athlete; b) athletes self-efficacy would increase through perceived technique instruction; and c) athletes perceiving higher levels of character building would positively affect their sportsmanship. The participants consisted of 166 male rugby players from nine different rugby clubs. The participants varied in level of experience (recreational to professional athletes), age (18-35 years old), years played (2 to 26 years), and years with the same coach (1-10 years) (Boardley et al., 2008). The Coaching Efficacy Scale was used to measure the athletes' perceptions of their coach's effectiveness. To measure the athletes' effort, the Intrinsic Motivation Inventory was used. Enjoyment, self-efficacy, and sportsmanship were all measured using a questionnaire developed by the researcher. The results of the study indicated the athletes' perceived motivation was positively related to effort and commitment of the athlete. Boardley et al. also concluded that self-efficacy is positively related to perceived technique instruction, and that perceived character building positively affected sportsmanship. The only limitation to this study was that the researchers did not add a multilevel dimension to their study (e.g., adding more teams and gender). However, these results align with previous research, indicating that positive coaching styles have a positive effect on the athlete's motivation.

Black and Weiss (1992) examined how swimmers' motivation can be influenced by their coach's behaviors. The researchers used members of swim clubs (individuals  $n = 312$ ; teams  $n$

= 11) in Oregon and administered the Coaching Behavior Assessment Scale, Self-Perceptions Ability Scale, Motivational Orientation in Sport Scale, and the Intrinsic Motivation Inventory. Results showed that perceived coaching behaviors predicted how well the athletes were motivated. Interestingly, both genders perceived higher positive coaching behaviors (e.g., praise and encouragement from the coach) to increase perceived rate of performing success. The 12-14 year old athletes perceived their coaches were able to motivate the athletes using positive coaching behaviors. However, 15-18 year old athletes perceived the ability of the coach to decrease criticism offered allowed the athletes to perceive higher amounts of motivation (Black & Weiss, 1992).

Smith, Fry, Ethington, and Li (2005) and Olympiou, Jowett, and Duda (2008) conducted studies similar to Black and Weiss (1992). These studies examined how high school student-athletes perceived coaching behaviors as a factor in the athlete perceived motivational climate. Smith et al. used female basketball players ( $n = 143$ ), from the freshmen, junior varsity, and varsity levels. Olympiou et al. collected data from 591 athletes with ages ranging from 16 to 36 years. Both Smith et al. & Olympiou et al. gave the student-athletes the Perceived Motivational Climate in Sport Questionnaire-2 which asked questions regarding if the environment was task-involving (team cooperation) or ego-involving (each man for themselves). Smith et al. used the Coaching Feedback Questionnaire which examined how the coach responded to certain events in a positive or negative manner. Olympiou et al. used the Coach-Athlete Relationship Questionnaire to get the athletes' direct and meta-perceptions of the coach-athlete relationship. There was a positive relationship between perceived task-involving environment and positive feedback, and a negative relationship between perceived task-involving environment and ignoring mistakes (Smith et al., 2005; Olympiou et al., 2008). However, there was a negative

relationship between ego-involving environment and positive feedback, but positively correlated with punishment feedback (Smith et al., 2005; Olympiou et al., 2008). The results of these studies reflected that athletes were more motivated when the perceived task-involving environment was present indicating that a coach should be positively motivating their athletes to create better success rates (Smith et al., 2005).

Intrinsic motivation is one of the main reasons athletes play their sport. Intrinsically motivated athletes choose to participate and work harder even when there is no extrinsic reward and/or punishment available (Vallerand & Losier, 1999). Those athletes are more likely to have lower levels of sport-related anxiety and have a greater level of skill learning (Vallerand & Losier). However, scholarship status can ultimately determine how motivated an athlete can be. Hollembeak and Amorose (2005) and Amorose and Horn (2001), both looked at the relationship between intrinsic motivation and scholarship status with perceived coaching behaviors.

Hollembeak and Amorose (2005) used 280 student –athletes (146 males and 134 females) from a midwestern university. They separated the athletes into three scholarship status groups: full athletic scholarship ( $n = 136$ ); partial scholarship ( $n = 94$ ); and no scholarship ( $n = 50$ ). The athletes were given the Leadership Scale for Sports, Sport Motivation Scale, and Feelings of Relatedness Scale. Hollembeak and Amorose also assessed perceived competence and assessed autonomy by developing questions and a six item scale for the study. The researchers found that intrinsic motivation was positively correlated with five coaching behaviors. The one exception was autocratic behaviors which had a negative relationship. Male athletes felt that their coaches displayed more autocratic behavior than democratic behavior when compared to the female responses. Those athletes who were not on scholarship perceived that their competence was

lower than those athletes who were on partial or full scholarship (Hollembek & Amorose, 2005).

Amorose & Horn (2001) choose to use first year college athletes to examine the relationship between intrinsic motivation classified by scholarship status and coaching behaviors. Seventy-two Division I college athletes were assessed in the study. The study did pre-season and post-season testing using slightly different instruments. For pre-season testing, the researcher gathered background information prior to athletes completing the Intrinsic Motivation Inventory Survey. The post-season data collection utilized the Intrinsic Motivation Inventory Survey, as well as the Leadership Scale for Sports. The results of the study were not anticipated. Scholarship status had no effect on the intrinsic motivation of the first year athlete; which was different from what Hollembek and Amorose (2005) later observed. However, Amorose and Horn (2001) identified a strong relationship between changes in intrinsic motivation and perceived coaching behaviors. The athletes stated that their motivation was higher when the coach provided more training and instructional behaviors and less autocratic behaviors. A major limitation in Amorose and Horn's (2001) study was there were no athletes who were on a full athletic scholarship. Since a true representation of all levels of scholarship status (e.g., athletes on full scholarship) was lacking, Hollembek and Amorose may have been able to find that scholarship status did impact motivation whereas Amorose and Horn found no significant relationships between these two variables.

Jowett (2008) put an interesting spin on intrinsic motivation and examined whether intrinsic and/or extrinsic factors in a coach can affect how they perform their job. The intrinsic factors included things like personal enjoyment, achievement, and interest in the job. Extrinsic factors encompassed things like payment issues, work conditions, and policies. This study



looked at two different hypotheses: how intrinsic and extrinsic motivations can positively affect the coach-athlete satisfaction relationship; and how those motivations will affect the satisfaction variables as either positive or negative reactions. The participants consisted of 138 males and female coaches who had different levels of coaching experience ranging from 1-3 years to 31 years or more. The surveys that the researcher used included the Coach Motivation Scale (measuring the intrinsic and extrinsic motivations of the coaches) and the Athletic Satisfaction Questionnaire (measuring the satisfaction of both the athletes and coaches performance and instruction). The researcher found that a moderate amount of intrinsic and extrinsic motivations affects the satisfaction of the coach-athlete relationship. They also found that, if the motivation of intrinsic items is low, the motivation of extrinsic items has a negative effect on the performance and instruction of the coaches. However, when the motivation of intrinsic items is high, the extrinsic motivation has a positive impact on the performance and instruction on the coach (Jowett, 2008). Understanding how a coach gets motivated will have an impact on how coaches perform their job. If the coach does not enjoy their job, their behavior will most likely be more negative towards their athletes, causing their athletes to dislike what their coach is doing; the converse is also true.

Leadership styles of a coach plays an important role in the athletes' career. Beam, Serwatka, and Wilson (2004) tested 408 student-athletes from NCAA Division I and II teams concerning preferences in leadership behaviors of their coaches. The student-athletes completed the Revised Leadership Scale for Sport comprised of six behaviors dimensions including: autocratic, democratic, positive feedback, situational consideration, social support, and training and instruction. The researchers identified several interesting results including that "male student-athletes had significantly greater preferences for autocratic ( $p = .0209$ ) and social support

behaviors" ( $p = .0271$ ; Beam et al., 2004). However, female student-athletes preferred situational consideration ( $p = .0383$ ) and training and instruction behaviors ( $p = .0478$ ; Beam et al., 2004).

Mondello and Janelle (2001) conducted a similar study and looked at coaching leadership styles of head and assistant coaches. The researchers were able to get 13 head coaches and 24 assistant coaches to return the Leadership Scale for Sports Survey. The survey measured five of the six items that Beam et al. (2004) looked at. The behavior dimension excluded from this survey was situational conditioning. Results of Mondello and Janelle's study indicated that coaches of the male teams had significantly ( $p < .05$ ) higher levels of positive reinforcement than those teams with female coaches. Head coaches reported a higher level of social support compared to the responses of the assistant coaches. Among the other items on the Leadership Scale for Sports, autocratic, democratic, and training instruction had low correlations with perceived leadership styles (Mondello & Janelle, 2001).

The way a coach addresses aggression can affect how an athlete displays sportsmanship qualities. Vaez Mousavi and Shojaei (2005) collected data from high school students ( $n = 1531$ ) who were part of a national high school championship in 2004. A panel of experienced high school male and female coaches who had a university degree in sport science collected research for the study. The panel of coaches took part in a two-day workshop to allow everyone to collect similar data. The panel learned the behaviors utilized in the Coaching Behavior Assessment Survey, and were assigned to the sport that they previously coach to observe the behaviors. Results indicated that the most visible behavior observed was that the coach was ignoring mistakes. Surprisingly, general encouragement and general unrelated communication was the least frequent behavior displayed by the coach.

### **Volleyball Related Studies**

Volleyball is a unique sport requiring all six players on the court to be engaged in every play with each of the position playing a vital role. Lacy and Martin (1994) examined the coaching behaviors of collegiate volleyball coaches during preseason practices. The researchers videotaped preseason practices from eight collegiate volleyball teams. Four of the teams had male coaches and four of the teams had female coaches. Taping started as soon as the warm-up began and ended at the end of the last drill. The behaviors that were being examined included: use of first name, preinstruction, concurrent instruction, correction, praise-skill, praise-conduct, scold-skill, scold-conduct, questioning, hustle, management, other, silence, and absence. The researchers were able to conclude that silence (measured by five seconds or longer of no interaction with anyone) was the most frequent behavior that was exhibited by the head coaches. The researchers stated that this might be due to the nature of the coach's job requiring him or her to monitor and observe what is going on with the athletes. Unexpectedly, the next four most frequently observed behavior categories reflected instruction. These behaviors included: correction, concurrent instruction, preinstruction, and praise-skill. The researchers believe that this could be explained by the nature of preseason being a time in which most of practice is spent working on the fundamental skills of the team (Lacy & Martin, 1994).

Stewart and Bengier (2001) used the work of Lacy and Martin's (1994) study to conduct research looking at college volleyball coaches' behaviors when conducting a high school summer volleyball camp. Four college coaches were videotaped for four days. The coaching behaviors being observed included: providing feedback, asking questions, use of names, general positive skill feedback, specific positive skill feedback, general negative skill feedback, specific negative skill feedback, and corrective skill feedback. The results of the four day videotaping of

the coaches showed that the coaches used more positive tones than negative. The coaches also displayed more general positive skill feedback and corrective skill feedback, with less use of general negative skill feedback. However, since this was observed during a summer camp coaches tend to provide more positive feedback to keep the athlete engaged in the sport than when they are coaching their own team when the goal is to win games (Stewart & Bengier, 2001).

Humor is often used in the education setting. As a result, students often enjoy their teachers and feel like they learn better in an environment that includes humor. Burke, Peterson, and Nix (1995) applied this concept to coaching volleyball. They examined the impact of a humorous coach on player performance. Fifty-one female high school volleyball players were asked three questions from the Coach Evaluation Questionnaire: "I feel my coach has a sense of humor," "I like my coach," and "Overall, I feel my coach is a good volleyball coach." The results of the study showed that "there was a low to moderate ( $r = .379$ ) relationship between the coach's sense of humor and the perceived coaching ability." The researchers also reported that there was a moderate relationship ( $r = .567$ ) between the sense of humor from the coach and if the player likes their coach. The strongest relationship ( $r = .782$ ) was between how much the athlete liked the coach and how well they perceived the coaches' ability to coach (Burke et al., 1995).

The purpose of the literature review was to explore the research that has been conducted examining coaching behaviors and impact on athletes and athletic performance. From the literature, it can be inferred that coaching behaviors do indeed have an effect on athletes of all ages and all levels of competition. Young athletes learn to develop sportsmanship skills from their environment and elite athletes learn to channel their attention at more important aspects of

the game when positive coaching behaviors exist. Based on the literature, volleyball coaches, should display more positive behaviors to improve performance of their athletes. However, more research is need in the field of volleyball and coaching behaviors.

### **Chapter Three: Methods**

The purpose of this study was to examine the relationship between perceived coaching behaviors and hitting and serving percentages of volleyball players from two collegiate volleyball teams during the pre-season competition. The null hypotheses for the current study include:

1. No significant relationship will exist between the total score of perceived coaching behaviors survey and individual hitting and serving percentages.
2. No significant relationship will exist between the physical training and conditioning subscale and individual hitting and serving percentages.
3. No significant relationship will exist between the technical skills subscale and individual hitting and serving percentages.
4. No significant relationship will exist between the mental preparation subscale and individual hitting and serving percentages.
5. No significant relationship will exist between the goal settings subscale and individual hitting and serving percentages.
6. No significant relationship will exist between the competition strategies subscale and individual hitting and serving percentages.
7. No significant relationship will exist between the personal and negative rapport subscale and individual hitting and serving percentages.

#### **Participants**

The study was conducted using 23 female volleyball players between the ages of 18-22 years from the University of Central Oklahoma's (UCO) and Oklahoma City University's (OCU) varsity volleyball teams. Athletes younger than 18 years old were not recruited for the study. Development of the study occurred after obtaining written permission from the head coaches to

recruit from their team (Appendix D). Institutional Review Board (IRB) approval was secured from both University of Central Oklahoma and Oklahoma City University (Appendix B and C). Once approval was obtained, informed consent was collected from the participants before the pre-season competition began (Appendix A). As a result of this being a unique study, power analysis and sample size determination was not possible. The alpha level was set at 0.05.

### **Instrumentation**

The Coaching Behavior Scale for Sport (CBS-S; Appendix E) was administered to the participants. The CBS-S is constructed of 47 questions in six different coaching behaviors subscales. The behaviors examined in the survey include: physical training and conditioning; technical skills; mental preparation; goal setting; competition strategies; and negative and personal rapport (Côté et al., 1999). The subscales are described in more detail in Table 1.

The first section of the CBS-S asks the participant about demographic information. The questions asked included: age, school currently attending, education level, years of sports participation, position currently played, gender of previous coaches, gender they prefer for a coach, and the age of the coach. Participant data were coded in order to identify the survey and match it to the correct statistics for each participant. The CBS-S is a Likert scale survey with 1 indicating “never”, 2 indicating “rarely”, 3 indicating “sometimes”, 4 indicating “fairly often”, 5 indicating “often”, 6 indicating “very often”, and 7 indicating “always”. All of the questions asked in the survey are asked in a positive manner, except for questions 40-47. And, each category is labeled with the appropriate category heading (Appendix E).

### **Procedures**

An email was sent out to both coaches before pre-season started asking permission to allow their team to participate in the study. Because the study examined the relationship of pre-

season performance and leadership skills, the survey was administered mid-September prior to beginning of conference play. After IRB approval, there was a meeting before pre-season competition began to inform the team members about the current study and the procedures that were to follow. At that time, if a team member was interested in participating in the current study, the informed consent was signed indicating that the athlete volunteered for the study and could quit the study without any consequences at any time.

Once the informed consents were signed, the researcher began to gather participants' statistics from the university's athletic website. The statistics were kept in a Microsoft Excel spreadsheet that was saved on a flash drive used only for the current study, and the researcher was the only one with access to the information. After each game, the researcher updated the spreadsheet with the newest statistics for the participants. Upon completion of the pre-season, a date and time was identified for the researcher to come back and administer the CBS-S survey to the participants. The survey took approximately 15 minutes to complete. After all of the surveys were returned to the researcher, the participants were thanked for their time and effort in taking part in the study. The researcher then began to match the surveys with the statistics of the individuals to begin data analysis.

The surveys were scored two different ways. First, the researcher added all of the responses to come up with an overall score for each participant. Second, scores were generated for each subscale, resulting in six different scores for each participant. In the end, the researcher had seven scores for each individual.

Hitting was classified by counting an "attempt" each time a player hit the ball. If the player killed the ball ending the play, a kill was counted. If the athlete hit the ball into the net, hit the ball out of bounds, or missed the ball completely, an error was counted. The hitting



percentage was calculated by taking the total kills for the game, subtracting them from the total errors, and dividing that number by the total attempts taken.

A serve was recorded each time a player attempted to serve the ball. An “error” was counted if the serve went out of bounds or into the net. The serving percentage was calculated by dividing the total serving errors by the total number of attempts

### **Statistical Analysis**

A Pearson’s correlation coefficient was computed to determine the relationship between overall perceived coaching behaviors and the hitting and serving percentages. For each subscale another Pearson’s correlation coefficient was computed to determine the relationship between each subscale and the hitting and serving percentages. The alpha level for all Person’s correlation coefficient was set at 0.05. Data analysis was performed by school to see if differences existed for each school. Based on background information, players were analyzed by *t*-test to determine if there were significant differences between mean total scores.

## Chapter Four: Results

### Descriptive Statistics

Twenty – three subjects participated in the current study. The mean age of the 11 female student-athletes at Oklahoma City University (OCU) was 19.5 years and 20.18 years was the mean age of subjects at the University of Central Oklahoma (UCO). The mean athlete classification was sophomore. Outside Hitter was the most common position at OCU (36%) and Middle Blocker at UCO (33%). At both schools, nine years was the mean number of years that the athletes had been participating in volleyball. Overall, student-athletes had more male coaches (61%) over the course of their career. However, both schools' athletes did not have a preference with regard to the gender of their coach (87%) but did prefer to have a coach between the ages 31-40 years old (55%).

The mean hitting percentage for OCU was 12% and UCO was 11% (Table 2). The mean serving percentage for OCU was 55% and UCO was 49% (Table 2). There was no significance between the mean hitting and serving percentage for either school ( $p = 0.791$  for hitting;  $p = 0.662$  for serving).

When comparing the means of the results of the surveys (Table 3), there were several significant differences between the schools: Technical Skill ( $p = 0.019$ ), Mental Preparation ( $p = 0.003$ ), Goal Settings ( $p < 0.001$ ), Competition Strategies ( $p = 0.011$ ), and total score of the survey ( $p = 0.020$ ).

### Results of the Hypotheses

The results of correlating hitting and serving percentages to the survey results (Table 4) indicate that the hypotheses could not be rejected. There was no significant difference between the hitting or serving percentages and any category of the CBS-S including the total score.

**Additional Statistical Analysis**

The researcher further examined each school separately. For OCU, a positive relationship ( $r = .614$ ) exists between serving percentages and Physical Training, with relationships that are approaching significance between the hitting percentage and Technical Skill ( $p = 0.062$ ) and Competition Strategies ( $p = 0.056$ ); and with serving percentage and Technical Skill ( $p = 0.094$ ). For UCO, there was a negative relationship ( $r = -.590$ ) between hitting percentage and Goal Setting. Also, at both schools there were significant relationships between Physical Training, Technical Skill, and Mental Preparation.

## Chapter Five: Discussion

### Summary of Findings

This study looked at the relationship between the hitting and serving percentage of collegiate volleyball players and perceived coaching behaviors. The results of the study indicated there were no statistically significant relationships between the variables. This lack of statistical significance could be precipitated by the sample size. Had the researcher been able to include more subjects, the results might be different.

Another variable that could impact statistical significance was the choice to use pre-season performance stats. During the pre-season, many coaches are trying to find the best dynamic among players to win games. There is a lot of trial-and-error related to line-up and utilization of players at various positions. Therefore, some players who had negative hitting and serving percentages during pre-season, might not actually play a lot during the season.

When looking at the schools separately, there were areas in which there was a significant relationship between the hitting and serving percentages and categories of the survey. For OCU, a moderate, positive relationship ( $p = 0.045$ ;  $r = 0.614$ ) was found for the serving percentage and physical training and conditioning subscale. For UCO, a moderate, negative relationship ( $p = 0.044$ ;  $r = -0.590$ ) was found between the hitting percentage and goal setting. Including more participants would include more coaches as well; adding more types of coaching styles, with different behaviors to compare results against.

### Interpretation of the Results

The results of the study indicate that a relationship does exist between the way an athlete perceives their coaches' behavior and the way the athlete performs. However, because of the nature of the study, it cannot be inferred that the perceived coaching behaviors caused the

performance of the athlete to either increase or decrease; there is merely a relationship between the two.

Athletes can use the results of the current study to hopefully enhance their performance. If they agree with their coach's behavior, they are more likely to have a good performance. However, if the athlete disagrees with their coach's behaviors, athletes should inform their coach. The coach's behaviors could be hindering the athletes' ability to perform to their potential. The same is true with the coach. The coach should want to know if their athletes are not responding to their behaviors. Improving the coach's behavior could have the potential to improve the athletic performance leading to more productive team.

This study will add to the body of research examining coaching behaviors, especially for volleyball related studies. The results indicated there were moderate relationships between coaching behaviors and some of the subscales on the survey for schools individually, and those subscales should be examined in more detail with females volleyball athletes

### **Relationship of Results to the Review Literature**

Although there is a lack of research with is type of study, some implications can be made with regards to past research and coaching behaviors. Coaching behaviors affect many aspects of the relationship with the athlete. Creating a positive environment to allow for more productivity for a team starts with a good coach-athlete relationship (Kenow & Williams, 1999; Bortoli, Robazza, & Giabardo, 1995). However, it is not just the performance that can be affected; the way an athlete views their coach and their behaviors can alter the coach-athlete relationship (Turman & Schrod, 2004). The results of this study showed that there was no significant relationships between performance and perceived coaching behaviors; however, the

number of teams use in the sample size could negatively impact the results. This study will add to the literature examining coaching behaviors with respect to volleyball skills.

### **Recommendations for Future Study**

As previously stated, there are several factors that could have been different in the current study that might change the results. The biggest recommendation for future studies would be to make sure the sample size is large. In the current study, only two teams were used. In the future, multiple teams with a mixture of male and female head coaches should be examined.

Having a single researcher to personally keep the statistics of each game might increase the consistency of the volleyball statistics. Similarly, lengthening the study to include the whole season would allow data to be collected that would be more representative of the population. The pre-season is a time when coaches are learning the dynamic of their team by utilizing athletes in different positions to identify the combination that will win games. Also, it may be helpful to include more data to see if relationships exist with other areas of the game such as: the win-loss record, setting assists, blocking, reception percentages, and perceived coaching behaviors. However, a larger number of teams would be needed to achieve statistical significance.

### **Conclusions**

Future research should be done to determine if perceived coaching behaviors related to skill performance and then to investigate further to see if the coaching behaviors can cause a performance change. This study, with a small sample size, has proven that a significant statistical relationship does not exist between perceived coaching behaviors and the hitting and serving percentages of collegiate volleyball when scores are combined. However, more

research, with more teams, is needed to determine if the trends found are consistent for volleyball skills.

### References

- Amorose, A. J. & Horn, T. S. (2001). Pre- to post-season changes in the intrinsic motivation of first year college athletes: Relationships with coaching behavior and scholarship status. *Journal of Applied Sport Psychology, 13*, 355-373. Retrieved from <http://appliedsportpsych.org/publications>
- Arthur-Banning, S., Wells, M. S., Baker, B. L., & Hegreness, R. (2009). Parents behaving badly? The relationship between the sportsmanship behaviors of adults and athletes in youth basketball games. *Journal of Sport Behavior, 32*, 3-18. Retrieved from <http://www.southalabama.edu/psychology/journal.html>
- Baker, J., Côté, J., & Hawes, R. (2000). The relationship between coaching behaviours and sport anxiety in athletes. *Journal of Science and Medicine in Sport, 3*, 110-119. Retrieved from [http://www.elsevier.com/wps/find/journaldescription.cws\\_home/707423/description#description](http://www.elsevier.com/wps/find/journaldescription.cws_home/707423/description#description)
- Beam, J. W., Serwatka, T. S., Wilson, W. J. (2004). Preferred leadership of NCAA division I and II intercollegiate student-athletes. *Journal of Sport Behavior, 27*, 3-17. Retrieved from <http://www.southalabama.edu/psychology/journal.html>
- Becker, A. (2009). It's not what they do, it's how they do it: Athlete experiences of great coaching. *International Journal of Sports Science and Coaching, 4*, 93-119. Retrieved from <http://www.multi-science.co.uk/sports-science&coaching.htm>
- Black, S. J., & Weiss, M. R. (1992). The relationship among perceived coaching behaviors, perceptions of ability, and motivation in competitive age-group swimmers. *Journal of Sport and Exercise Psychology, 14*, 309-325. Retrieved from <http://hk.humankinetics.com/jsep/journalAbout.cfm>



- Boardly, I.D., Kavussanu, M., & Ring, C. (2008). Athletes' perceptions of coaching effectiveness and athlete-related outcomes in rugby union: An investigation based on the coaching efficacy model. *The Sport Psychologist, 22*, 269-287. Retrieved from <http://hk.humankinetics.com/TSP/journalAbout.cfm>
- Bortoli, L., Robazza, C., & Giabardo, S. (1995). Young athletes' perception of coaches' behavior. *Perceptual and Motor Skills, 81*, 1217-1218. doi: 10.2466/PMS.81.7.1217-1218
- Burke, K., Peterson, D., & Nix, C. L. (1995). The effects of the coaches' use of humor on female volleyball players' evaluation of their coaches. *Journal of Sport Behavior, 18*, 83-90. Retrieved from <http://www.southalabama.edu/psychology/journal.html>
- Chow, G. M., Murray, K. E., & Feltz, D. L. (2009). Individual, team, and coach predictors of players' likelihood to aggress in youth soccer. *Journal of Sport and Exercise Psychology, 31*, 425-443. Retrieved from <http://hk.humankinetics.com/jsep/journalAbout.cfm>
- Côté, J., Yardley, J., Hay, J., Sedgwick, W., & Baker, J. (1999). An exploratory examination of the coaching behavior scale for sport. *AVANTE, 5*, 82-92. Retrieved From <http://www.phecanada.ca/eng/>
- Gardner, D. E., Shields, D. L. L., Bredemeier, B. J. L., & Bostrom, A. (1996). The relationship between perceived coaching behaviors and team cohesion among baseball and softball players. *The Sport Psychologist, 10*, 367-381. Retrieved from <http://hk.humankinetics.com/TSP/journalAbout.cfm>

- Gould, D., Greenleaf, C., Guinan, D., & Chung, Y. (2002). A survey of U.S. Olympic coaches: Variables perceived to have influenced athlete performances and coach effectiveness. *The Sport Psychologist, 16*, 229-250. Retrieved from <http://hk.humankinetics.com/TSP/journalAbout.cfm>
- Hollembeak, J. & Amorose, A. J. (2005) Perceived coaching behaviors and college athletes' intrinsic motivation: A test of self-determination theory. *Journal of Applied Sports Psychology, 17*, 20-36. doi:10.1080/104133200590907540
- Hopper, C., & Jeffries, S. (1990). Coach-parent relations in sport. *The Journal of Physical Education, Recreation, and Dance, 61*, 28-32.
- Jowett, S. (2008). What makes coaches tick? The impact of coaches' intrinsic and extrinsic motives on their own satisfaction and that of their athlete. *Scandinavian Journal of Medicine and Science in Sports, 18*, 664-673. doi:10.1111/j.1600-0838.2007.00705.x
- Kenow, L., & Williams, J. (1999). Coach-athlete compatibility and athlete's perception of coaching behaviors. *Journal of Sport Behavior, 22*, 251-259. Retrieved from <http://www.southalabama.edu/psychology/journal.html>
- Lacy, A. C. & Martin, D. L. (1994). Analysis of starter/nonstarter motor-skill engagement and coaching behaviors in collegiate women's volleyball. *Journal of Teaching in Physical Educatio, 13*, 95-107. Retrieved from <http://hk.humankinetics.com/JTPE/journalAbout.cfm>
- Martin, M.M, Rocca, K.A., Cayanus, J.L., & Weber, K. (2009). Relationship between coaches' use of behavior alteration techniques and verbal aggression on athletes' motivation and affect. *Journal of Sport Behavior, 32*, 227-241. Retrieved from <http://www.usouthal.edu/psychology/journal.html>

- Martin, S. B., Jackson, A. W., Richardson, P. A., & Weiller, K. H. (1999). Coaching preferences of adolescent youths and their parents. *Journal of Applied Sport Psychology, 11*, 247-262. Retrieved from <http://appliedsportpsych.org/publications>
- McCullagh, P., Matzkanin, K. T., Shaw, S. D., & Maldonado, M. (1993). Motivation for participation in physical activity: A comparison of parent-child perceived competencies and participation motives. *Pediatric Exercise Science, 5*, 224-233. Retrieved from <http://hk.humankinetics.com/pes/journalAbout.cfm>
- Mondello, M. J. & Janell, C. M. (2001). A comparison of leadership styles of head coaches and assistant coaches at a successful division I athletic program. *International Sports Journal, 5*, 40-49.
- Olympiou, A., Jowett, S., & Duda, J. L. (2008). The psychological interface between the coach-created motivational climate and the coach-athlete relationship in team sports. *The Sport Psychologist, 22*, 423-438. Retrieved from <http://hk.humankinetics.com/TSP/journalAbout.cfm>
- Smith, R. E., Zane, N. W. S., Smoll, F. L., & Coppel, D. B. (1983) Behavioral assessments in youth sports: Coaching behaviors and children's attitudes. *Medicine and Science in Sport and Exercise, 15*, 208-214.
- Smith, S. L., Fry, M. D., Ethington, C. A., & Li, Y. (2005). The effect of female athletes' perceptions of their coaches' behaviors on their perceptions of the motivational climate. *Journal of Applied Sport Psychology, 17*, 170-177. doi:10.1080/10413200590932470
- Stewart, M. & Bengier, D. (2001). An analysis of volleyball coaches' coaching behavior in a summer volleyball team camp. *Physical Educator, 58*, 86-102. Retrieved from [http://www.periodicals.com/html/ihp\\_e.html?ep05670](http://www.periodicals.com/html/ihp_e.html?ep05670)

- Trzaskoma-Bicsérdy, G., Bognár, J., Révész, L., & Géczi, G. (2007). The coach-athlete relationship in successful Hungarian individual sports. *International Journal of Sports Science and Coaching*, 2, 485-495. Retrieved from <http://www.multi-science.co.uk/sports-science&coaching.htm>
- Turman, P. D., & Schrodt, P. (2004). New avenues for instructional communication research: Relationships among coaches' leadership behaviors and athletes' affective learning. *Communication Research Reports*, 21, 130-143. Retrieved from <http://www.tandf.co.uk/journals/titles/08824096.asp>
- Vallerand, R. J. & Losier, G. F. (1999). An integrative analysis of intrinsic and extrinsic motivation in sport. *Journal of Applied Sport Psychology*, 11, 142-169. Retrieved from <http://appliedsportpsych.org/Home>
- Vaez Mousavi, S. M. & Shojaei, M. (2005). Association between coaches' behaviors and players' aggressive and assertive actions. *International Journal of Applied Sport Sciences*, 17, 35-43. Retrieved from <http://www.sports.re.kr/main/main.jsp>
- Vealey, R. S., Armstrong, L., & Comar, W. (1998). Influence of perceived coaching behaviors on burnout and competitive anxiety in female college athletes. *Journal of Applied Sport Psychology*, 10, 297-318. Retrieved from <http://appliedsportpsych.org/Home>

Table 1

*Coaching Behaviour Scale for Sports Subscales and Definitions*

| Categories                         | Definitions   |
|------------------------------------|---|
| Physical Training and Conditioning | Assesses how well the coach has prepared the athlete for competition and physical training  |
| Technical Skills                   | Assesses the perceived coaching feedback and demonstrations to the athletes   |
| Mental Preparation                 | Assesses how the athletes perceive the coach's involvement in helping the athlete being mentally tough, staying focused and be confident in the sport and themselves                    |
| Goal Setting                       | Assesses how the coach is involved in the development and monitoring of goals   |
| Competition Strategies             | Assesses how well the coach prepares the team for competition and keeps the team focused  |
| Negative & Personal Rapport        | Assesses how approachable, available, and understanding the coach is (Personal)<br>Assesses how the coach expresses fear and anger, and how they deal with athletes opinions (Negative) |

*Note.* The subscales represent the questions asked on the Coaching Behavior Scale for Sports. Adapted from "An Exploratory Examination of the Coaching Behavior Scale for Sports," by J. Côté, J. Yardley, J. Hay, W. Sedgwick, and J. Baker, 1999, *AVANTE*, 5, p. 82-92.

Table 2

*Hitting and Serving Percentages for OCU and UCO*

|         | OCU      |           | UCO      |           |
|---------|----------|-----------|----------|-----------|
|         | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |
| Hitting | 0.12     | 0.15      | 0.11     | 0.11      |
| Serving | 0.55     | 0.38      | 0.49     | 0.32      |

*Note.* OCU = Oklahoma City University; UCO = University of Central Oklahoma; *M* = Mean; *SD* = Standard Deviation. The alpha level was set at  $p = 0.05$ .

Table 3

*Comparison of Results from the CBS-S between OCU and UCO*

|           | OCU      |           | UCO      |           | p-value |
|-----------|----------|-----------|----------|-----------|---------|
|           | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |         |
| PT & Cond | 38.64    | 7.65      | 40.58    | 6.20      | .508    |
| Skill     | 47.64    | 7.23      | 39.25    | 8.45      | .019    |
| Mental    | 26.82    | 6.03      | 17.58    | 6.95      | .003    |
| Goal      | 31.27    | 6.50      | 18.75    | 7.35      | <.001   |
| Compet.   | 41.18    | 7.40      | 33.58    | 5.70      | .011    |
| Coach     | 50.73    | 10.22     | 55.42    | 11.50     | .315    |
| Total     | 236.27   | 31.09     | 205.00   | 28.00     | .020    |

*Note.* OCU = Oklahoma City University; UCO = University of Central Oklahoma; *M* = Mean; *SD* = Standard Deviation; PT & Cond = Physical Training and Condition; Skill = Technical Skill; Mental = Mental Preparation; Goal = Goal Setting; Compet = Competition Strategies; Coach = My Head Coach. The table includes the p-values for the relationship. The alpha level was set at  $p = 0.05$ .

Table 4

*Relationship Between Hitting and Serving Percentages and the CBS-S*

|         | PT &<br>Cond | Skill | Mental | Goal | Compet | Coach | Total |
|---------|--------------|-------|--------|------|--------|-------|-------|
| Hitting | .316         | .168  | .631   | .329 | .272   | .311  | .380  |
| Serving | .412         | .690  | .346   | .501 | .138   | .422  | .190  |

*Note.* PT & Cond = Physical Training and Condition; Skill = Technical Skill; Mental = Mental Preparation; Goal = Goal Setting; Compet = Competition Strategies; Coach = My Head Coach. The table includes the p-values for the relationship. The alpha level was set at  $p = 0.05$ .



Table 5

*Relationship Between Hitting and Serving Percentages and the CBS-S for OCU*

|         | PT & Cond              | Skill | Mental | Goal | Compet | Coach | Total |
|---------|------------------------|-------|--------|------|--------|-------|-------|
| Hitting | .336                   | .062  | .877   | .678 | .056   | .248  | .424  |
| Serving | .045<br>( $r = .614$ ) | .094  | .212   | .849 | .577   | .687  | .158  |

Note. PT & Cond = Physical Training and Condition; Skill = Technical Skill; Mental = Mental Preparation; Goal = Goal Setting; Compet = Competition Strategies; Coach = My Head Coach. The table includes the p-values for the relationship. The alpha level was set at  $p = 0.05$ .

Table 6

*Relationship Between Hitting and Serving Percentages and the CBS-S for UCO*

|         | PT & Cond | Skill | Mental | Goal                    | Compet | Coach | Total |
|---------|-----------|-------|--------|-------------------------|--------|-------|-------|
| Hitting | .880      | .582  | .319   | .044<br>( $r = -.590$ ) | .703   | .765  | .467  |
| Serving | .258      | .207  | .954   | .619                    | .103   | .398  | .875  |

*Note.* PT & Cond = Physical Training and Condition; Skill = Technical Skill; Mental = Mental Preparation; Goal = Goal Setting; Compet = Competition Strategies; Coach = My Head Coach. The table includes the p-values for the relationship. The alpha level was set at  $p = 0.05$ .

**APPENDICES**

**Appendix A: Informed Consent Forms****OKLAHOMA CITY UNIVERSITY****INFORMED CONSENT FORM**

**Research Project Title:** Relationship Between Perceived Coaching Behaviors and Pre-Season Skills of Collegiate Volleyball Players

**Researcher (s):** Victoria George

**A. Purpose of this research:** The purpose of this study is to examine the relationship between perceived coaching behaviors and hitting and serving percentages of volleyball players from two collegiate volleyball teams during pre-season competition.

**B. Procedures/treatments involved:** The subjects will resume normal activity of the pre-season volleyball season. During pre-season the researcher will be collecting the statistics of the participants, via the internet. Before the conference season starts, the researcher will come back to the teams and administrator the survey, regarding their perceptions of the coaching behavior for the pre-season, which will take approximately 30 minutes to complete. Group results will be reported to the coach. Individual players will receive their personal results..

**C. Expected length of participation:** The length of the entire study will take approximately four weeks to collect the statistics, however, only 30 minutes to complete the survey.

**D. Potential benefits:** This study will provide insights into the impact of coaching behaviors on performance variables (e.g., hitting and serving) of collegiate volleyball players. The student-athlete will have a better understanding of their individual coaching behaviors that they favor.

**E. Potential risks or discomforts:** None

**F. Medical/mental health contact information (if required):** None

**G. Contact information for researchers and UCO IRB:** You can contact the researchers, Victoria George, at anytime via email at [vgeorge2@uco.edu](mailto:vgeorge2@uco.edu) or by phone at (405) 503-5163 or Dr. Stefanie Latham via email at [slatham@okcu.edu](mailto:slatham@okcu.edu) or by phone at 208-5490. Dr. Terry Conley is the Chairperson of the Oklahoma City University's Institutional Review Board who oversees all

research conducted at OCU. He may be contacted at 208-5446 or via email at tconley@okcu.edu.

**H. Explanation of confidentiality and privacy:** All personal information and data collected will be held in strictest confidence. Data will be reported anonymously excluding personal identification. The coach and other players will not know the answers marked on the survey, nor will their name be attached to anything that is in the final publication. Only the primary investigators, Victoria George and Dr. Stefanie Latham, as well as, Dr. Cynthia Murray, statistician, will have access to this information and it will be stored in a locked filing cabinet for 5 years. After this time, the paper data will be shredded and the electronic files will be deleted.

Coaches will only be reported the aggregated data. Players will receive their individual results.

**I. Assurance of voluntary participation:** Your participation in this study is totally voluntary. You may refuse to answer any question during this process and you may stop participation at any time by contacting Victoria George vgeorge2@uco.edu or by phone at (405) 503-5163) with no negative consequences from the researcher, coach, or teammates during the current study or at any time in the future.

#### **AFFIRMATION BY RESEARCH SUBJECT**

I hereby voluntarily agree to participate in the above listed research project and further understand the above listed explanations and descriptions of the research project. I also understand that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time without penalty. I acknowledge that I am at least 18 years old. I have read and fully understand this Informed Consent Form. I sign it freely and voluntarily. I acknowledge that a copy of this Informed Consent Form has been given to me to keep.

Research Subject's Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

# UNIVERSITY OF CENTRAL OKLAHOMA

## INFORMED CONSENT FORM

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**Researcher (s):** Victoria George

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**E. Potential risks or discomforts:** None

**F. Medical/mental health contact information (if required):** None

G. Contact information for researchers and UCO IRB: You can contact the researcher, Victoria George, at anytime via email at vgeorge2@uco.edu or by phone at (405) 503-5163. Dr. Jill Devenport is the Chairperson of the University of Central Oklahoma's Internal Review Board who oversees all research conducted at UCO. She may be contaced at 974-5479 or via email at irb@uco.edu.

H. Explanation of confidentiality and privacy: All personal information and data collected will be held in strictest confidence. Data will be reported anonymously excluding personal identification. The coach and other players will not know the answers marked on the survey, nor will their name be attached to anything that is in the final publication. Only the primary investigator, Victoria George, and Dr. Cynthia Murray, statistician, will have access to this information and it will be stored in a locked filing cabinet for 5 years. After this time, the paper data will be shredded and the electronic files will be deleted. Coaches will only be reported the aggregated data. Players will receive their individual results.

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Research Subject's Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date \_\_\_\_\_

**APPROVAL**  
JUL 22 2011  
**EXPIRES**

**APPROVED**  
JUL 23 2010  
**UCO IRB**

**Appendix B: Institutional Review Board Applications**



# UNIVERSITY OF CENTRAL OKLAHOMA INSTITUTIONAL REVIEW BOARD

UCO IRB Number \_\_\_\_\_

*For Office Use Only*

## APPLICATION FOR REVIEW OF HUMAN SUBJECTS RESEARCH

*(Pursuant to Title 45 - Code of Federal Regulations – Part 46)*

**TITLE OF PROJECT:** Relationship Between Perceived Coaching Behaviors and Pre-Season Skills of Collegiate Volleyball Players

**PRINCIPAL INVESTIGATOR(S):**

Name of Primary PI Victoria George Dr.  Ms.  Mr.

PI Status: (check one):  Faculty  Graduate Student  Undergraduate Student  
 Staff  Other \_\_\_\_\_

Kinesiology and Health Studies  
Department

College of Education and Professional Studies  
College

\_\_\_\_\_  
Campus Box

\_\_\_\_\_  
Campus Phone

vgeorge2@uco.edu

E-Mail (required; on-campus preferred)

4800 NW 77<sup>th</sup> ST. Oklahoma City, OK 73132

Preferred Mailing address

(405) 503-5163

Daytime phone

Co-PI or Faculty Sponsor (if applicable)

Darla Fent

Name of Co-PI Dr.  Ms.  Mr.

PI Status: (check one):  Faculty  Undergraduate Student  Graduate Student  
 Staff:  Other: \_\_\_\_\_

Kinesiology and Health Studies  
Professional Studies

Department

College of Education and

College

189

Campus Box

3599

Campus Phone

dfent@uco.edu

E-Mail (required)

\_\_\_\_\_  
Preferred Mailing address

\_\_\_\_\_  
Daytime phone

\_\_\_\_\_  
Cell phone

Funding Information:  External Grant  UCO Grant  Other Award  Unfunded project

**SIGNATURE / AFFIRMATION / REPRESENTATION OF PRINCIPAL INVESTIGATOR(S):**

*(Primary PI must read and initial by hand at each of the below.)*

1. \_\_\_\_\_ *(initial)* This application represents an accurate and complete description of my (our) proposed research project.
2. \_\_\_\_\_ *(initial)* I (we) agree to provide the proper surveillance of this project to ensure that the rights and welfare of the human subjects are properly protected.
3. \_\_\_\_\_ *(initial)* I (we) agree to comply fully with any requirements made by the UCO IRB.
4. \_\_\_\_\_ *(initial)* The human contact portion of my (our) research will not begin until the UCO IRB has given its written approval.
5. \_\_\_\_\_ *(initial)* Any additions or changes after the project has been approved will be submitted to the IRB for approval prior to implementation.

*(Primary and Co PI must sign below.)*

Name of Primary PI: Victoria George

\_\_\_\_\_  
Signature of Primary PI

Date: \_\_\_\_\_

Name of Co-PI: Darla Fent

\_\_\_\_\_  
Signature of Co-PI

Date: \_\_\_\_\_

If additional Co-PIs are associated with this project, please attach an additional sheet with name, signature, and date.

1. Describe the purpose of the project or the research problem in enough detail that we can ascertain what the project is about and why it is being done.

Coaches play a vital role in an athlete's life. From youth coaches who teach the young the importance of teamwork, to college coaches who teach the importance of succeeding in life, to professional coaches who teach the importance of being a good role model for the sport, coaches shape athletes into who they can become. It is not uncommon for an athlete to say their coach is more than a coach; they are more of a teacher, mentor, friend, and even a parental figure (Becker, 2009). For young athletes, "a good coach-athlete relationship tends to enhance motivation, induce pleasant emotions, and create a satisfactory and positive climate, while decreasing stress and burnout" (Martin, Jackson, Richardson, & Weiller, 1999). Martin et al. (1999) also states that youth coaches who are supportive and encouraging, knowledgeable and instructive, as well as enthusiastic and motivated are more likely to enjoy the sport within which they are involved. However, many coaches do not understand that the way they behave can affect the way the team performs and how the athlete responds to the coach. Motivation of the coach is an important psychological characteristic, due to the impact that it has on form, direction, intensity, and duration of how the coach behaves (Jowett, 2008). Coaching behaviors can be "influenced by player perception and recall, coach perceptions of players' attitude and players' evaluative reactions" (Côté, Yardley, Hay, Sedgwick, & Baker, 1999).

While most studies look at coaching behaviors and team cohesion, very little research has been performed to examine how coaching behavior can affect the performance, specifically the individual statistics of a team. Even fewer studies have been conducted among collegiate volleyball teams. Therefore, the purpose of this study is to examine the relationship between perceived coaching behaviors and hitting and serving percentages of volleyball players from two collegiate volleyball teams during pre-season competition.

2. Describe the subjects in this project and, at a minimum, provide the following information:

a. The type of individuals needed as subjects.

The type of individual needed for this project are female collegiate volleyball players.

b. The procedures to be used to recruit subjects.

The participants will be recruited after obtaining written permission from the head coach to recruit from their team.

c. Site of recruitment of subjects.

University of Central Oklahoma Volleyball team and Oklahoma City Univeristy Volleyball teams assigned locker rooms or a team meeting area. The coaches will be aware of the process and will be given results in aggregate.

d. Do you plan to recruit subjects from classes, businesses, or other organizations?

Yes       No

*If "yes", attach a copy of the required written permission (email or letter) from the course instructor or appropriate person authorized to grant such permission.*

e. Do you plan to recruit subjects via email or conduct any of your research via the internet?

Yes       No

*If "yes", you must give a copy of your IRB application to the UCO Office of Information Technology for authorization. This may be done simultaneous to OR&G submission.*

f. Do you intend to use an oral or written script or any materials (flyer, letter, advertisement, announcements) as part of the recruitment of research subjects?

Yes       No

*If "yes", attach a copy of these scripts/documents.*

g. What is the maximum number of subjects you expect to participate?

The maximum number of subjects that is expected is 30.

Provide a justification for that number, e.g., effect size, variability.

Having 30 participants is a managable amount of participants for the researcher to handle and adequate to identify statistically significant differences among variables.

h. Will you be specifically targeting any of the following groups for research subjects?  
(Check all that apply)

pregnant women       minors (less than 18 yr old)       prisoners  
 students in PI's or Co-PI's class

*If "yes", you must contact the IRB Chair to discuss the special responsibilities and requirements for this type of subject before you submit this IRB application form.*

i. Will you be specifically excluding any of the following groups for research subjects?  
(Check all that apply)

pregnant women       minors (less than 18 yr old)       cognitively impaired  
 psychologically impaired       over 65 years old       non-English speaking  
 Native Tribes

If "yes", explain how that will be accomplished.

The subjects who are under 18 will not be recruited for the study.

3. a. Describe the group assignments, measurements or observations of subjects or their environments, and explain what subjects will experience.

An email will be sent out to both the coaches before pre-season starts asking permission to allow their team to participate in the study. Because the study is examining the relationship of the pre-season, performance, and leadership skills, the survey will be administered once the pre-season is over. Pre-season will end approximately mid-September. After IRB approval, there will be a meeting before pre-season competition begins to inform the team members about the current study and the procedures that will follow. At that time, if a team member is interested in participating in the current study, the informed consent will be signed, stating that they are volunteers for the study and at anytime can quit the study without any consequences.

Once the informed consents are signed, the researcher will begin to gather the match statistics for participants, after being posted on the university's athletic website. The statistics will be kept in a Microsoft Excel spreadsheet that will be saved on a flash drive used only for the current study, and the researcher will be the only one with access to the information. After each game, the researcher will update the spreadsheet with the newest statistics for the participants. Upon completion of the pre-season, a date and time will be identified for the researcher to come back and administrator the survey to the participants. The survey will take approximately 30 minutes to complete. When all of the surveys are returned to the researcher, the participants will be thanked for their time and effort in taking part of the study. The researcher will then begin to match the surveys with the statistics of the individuals to begin the data analysis process.

The surveys will be scored two different ways. First, the researcher will add all of the responses and come up with an overall score for each participant. The second method will generate scores for each subscale, resulting in six different scores for each participant. In the end, the researcher will have seven scores for each individual.

Hitting Percentage is calculated by each time a player goes to hit the ball, an attempt is counted. If the player killed the ball, ending the play, then a kill is counted. If the athlete makes an error when hitting, whether it be they hit it into the net, out, or missed the ball completely, an error is counted. A hitting percentage is calculated by taking the total kills for the game subtracting them from the total errors, divided by the total attempts taken.

Serving Percentage is calculated by each time a player attempts serve the ball. If the player makes an error, whether it be serving it out or in the net, an error is counted. A percentage is calculated by taking the total errors performed by the player divided by the total attempts

- b. Will you be using questionnaires, surveys, tests or other written instruments?

Yes       No

*If "yes", please attach a copy of these documents.*

c. Where will data actually be collected?

Hitting and serving data will be collected in the home setting of the researcher via the internet. Surveys will be administered and informed consent signed in the locker room or at the team meeting of each respective team.

d. Will you be using existing data?

Yes       No

If "yes", are data de-identified?

Yes       No

If "yes", is database available to the public?

Yes       No

e. Will tissue or blood samples be collected for data?

If "yes", explain the procedures for disposal.

\_\_\_\_\_

f. Projected Start Date: 8/1/2010 [Cannot precede approval date]

Projected End Date: 11/8/2010

4. Will the subjects encounter the possibility of stress or psychological, social, physical, or legal risks which are greater, in probability or magnitude, than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests?

Yes       No

*If "yes", describe the situation, justify your position and indicate what provisions you have made to provide assistance (e.g., contact information for counseling services listed on the Informed Consent Form, etc.)*

\_\_\_\_\_

5. Will medical clearance be necessary for subjects to participate because of tissue or blood sampling, or administration of food or drugs, or physical exercise conditioning?

Yes       No

*If "yes", explain how the medical clearance will be obtained.*

\_\_\_\_\_

6. Will the subjects be deceived or misled in any way?

Yes       No

*If "yes", describe and justify the necessity and explain how and when subjects will be debriefed.*

\_\_\_\_\_

7. Will information be requested which subjects might consider to be personal or sensitive?

Yes       No

*If "yes", describe and justify the necessity.*

\_\_\_\_\_

8. Will the subjects be presented with materials which might be considered offensive, threatening, or degrading?

Yes       No

*If "yes", describe and justify the necessity.*

\_\_\_\_\_

9. Will any inducements be offered to the subjects for their participation?

Yes       No

*a. If "yes", please describe the inducements.*

\_\_\_\_\_

*b. If extra course credit is offered to research subjects who are students, what alternative means of obtaining additional credit are available to those students who do not wish to participate in the research project?*

\_\_\_\_\_

10. a. Will a written consent form be used?

Yes       No

*If "yes", attach a copy of the consent form. (See Informed Consent Form Guidelines.)  
If "no", indicate why not and how voluntary participation will be secured.*

\_\_\_\_\_

b. Who will be consented? (Check all that apply)

Participant     Child (<18)     Parent/Legal Guardian

c. Where will consenting occur?

In a pre-season meeting with the team and without the coach, in the team locker room or team meeting area.

d. Is a Waiver of Consent requested or obtained?

Yes       No

11. a. Will any aspect of the data be made a part of any record that can be identified with the subject?

Yes       No

*If "yes", describe and justify the necessity.*

\_\_\_\_\_

b. Will any data be coded for purposes of identity security?

Yes       No

*If "yes", explain the process and protection of code sheets for identity.*

The researcher will be using an excel spreadsheet to collect the statistics of the individuals who wish to participate. The file will only be saved to a flash drive that will only be accessed by the researcher. Once the survey's have been collected, number codes will be used to identify the results with. Code sheets will be stored securely in a locked filing cabinet separate from the data.

c. Does the study involve?

|                    |                              |  |
|--------------------|------------------------------|--|
| Audio taping       | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Video taping       | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Taking Photographs | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

*If "yes", explain necessity and protections of anonymity. Attach a copy of release or permission form.*

\_\_\_\_\_

12. Please describe, in detail, the steps you will take to ensure the confidentiality of the data you collect, especially regarding the following:

a. how will the data be reported or disseminated (e.g., single subject vs. aggregate);  
The data will be reported in aggregate.

b. where and how will the data be securely stored;

The data will be stored on a flash drive that only the researcher will have access to. It will be the only thing on the flash drive as well. The completed survey's will be placed in a locked filing cabinet, with the researcher having the only access.

c. who will have access to the data and/or password;

Only the researcher will have access to the data and passwords.

d. what will be the length of time the data will be kept;

The researcher will keep hard copies and electronic data locked in a filing cabinet for five years, and then destroy them appropriately. The code sheet, with the names of the players, will be destroyed immediately after the study is complete.

e. how and when will the data will be destroyed. Be sure to specify for electronic data, paper data, and code sheets (as relevant).



Electronic data that will be collected, after five years will be deleted off the flash drive, into the recycling bin on the computer, and then deleted off the hard drive completely. For the surveys, the researcher will personally shred every survey, collect the remains and throw them away in several different trash recypticals.

f. provide any other information in this regard you deem pertinent.

\_\_\_\_\_

13. Will the fact that a subject did or did not participate in a specific experiment or study be made a part of any record available to supervisor, teacher, or employer?

Yes       No

*If "yes", describe and justify the necessity.*

\_\_\_\_\_

14. Describe the benefits of your study to society and to individual subjects (if any). [If there is none, say so.]

The benefits of the study will enable coaches to take a better look at how their coaching behavior relates to their team's performance. This study will also benefit the coaches by them becoming more aware of performance feedback (e.g., motivating feedback vs. negative feedback) and the influence of an open line of communication between coach and athlete. The researcher will provide the athletes with their individual results for them to understand what type of coaching behaviors they favor, as well as, their statistics of the pre-season.

#### **REQUIRED AUTHORIZATION SIGNATURES**

*I affirm that the information in this application is true, to the best of my knowledge, and I agree to comply fully with any requirements made by the UCO IRB.*

Signature of Primary Principal Investigator:

Signature of Co-Principal Investigator(s):

*I have reviewed this Application For Review of Human Subjects Research, and, subject to approval by the UCO Institutional Review Board, I authorize the Principal Investigator(s) to conduct this research. My signature acknowledges that I am aware of this research project.*

Department: Kinesiology and Health Studies

Name of Department Chair: Donna Cobb

\_\_\_\_\_  
Signature of Department Chair

\_\_\_\_\_  
Date

College: College of Education and Professional Studies  
College Dean: Dr. James Machell

Name of

\_\_\_\_\_  
Signature of College Dean

\_\_\_\_\_  
Date

Office of UCO Office of Information Technology (*for all e-based research*)

Name of UCO IT Representative: Dr. Cynthia Rolfe

\_\_\_\_\_  
Signature of UCO IT Representative

\_\_\_\_\_  
Date

**CHECKLIST FOR IRB APPLICATION SUBMISSION:**

*Please mark which documents you have attached to your IRB Application.*

|  | Attached                            | Not applicable                      |
|--|-------------------------------------|-------------------------------------|
| Research Proposal  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| Recruitment script/documents   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| Informed Consent Form  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| Instrument(s) (questionnaires, surveys, etc)                             | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| Written authorization – classes, organizations                           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| Protecting Human Research Participants (PHRP)<br>Training Certificate(s) | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| Office of Information Technology Approval                                | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |

**CONTACT INFORMATION FOR QUESTIONS OR CONCERNS:**

Dr. Jill A. Devenport

Chair, UCO Institutional Review Board  
405-974-5479  
[irb@uco.edu](mailto:irb@uco.edu)

Submit **one hard copy** of your IRB application, with all required signatures to:  
UCO-IRB Office  
ADM 216, Office of Research & Grants  
Campus Box 159  
Edmond, OK 73034  
405-974-2526  
405-974-3825 fax

AND

Submit **one electronic file** (Microsoft Word Document) without signatures to: [irb@uco.edu](mailto:irb@uco.edu).

Please note your application will not be processed until the original with all required signatures is received in the Office of Research & Grants.

## APPENDIX A

List all study personnel who will interact with subjects or private, identifiable data

| Research Staff (Last, First) | Degree (PH.D., Ed.D.) | Affiliation (UCO or other)                                  | Role in this research (PI, Co-investigator, Data Entry, Conduct Interviews, etc.) | PHRP* Training Completion Date | E-mail Address     |
|------------------------------|-----------------------|---|---|--------------------------------|--------------------|
| George, Victoria             | B. S.                 | University of Central Oklahoma and Oklahoma City University | PI  | PHRP 8/2009                    | vgeorge2@uco. edu  |
| Fent, Darla                  | Ed.D                  | University of Central Oklahoma                              | Co-Investigator   |                                | dfent@uco. edu     |
| Traywick, Debbi              | Ed. D                 | University of Central Oklahoma                              | Co- Investigator  |                                | dtraywick@uco. edu |
| Murray, Cynthia              | Ph. D                 | University of Central Oklahoma                              | Co-Investigator   |                                | cmurray@uco. edu   |
|                              |                       |   |   |                                |                    |
|                              |                       |   |   |                                |                    |
|                              |                       |   |   |                                |                    |
|                              |                       |   |   |                                |                    |
|                              |                       |   |   |                                |                    |
|                              |                       |   |   |                                |                    |
|                              |                       |   |   |                                |                    |

\*Protecting Human Research Participants (PHRP) is a National Institutes of Health on-line training course as required by the Department of Health and Human Services regulations. Visit <http://phrp.nihtraining.com/users/login.php> Copies of Certificates should be attached to the application.

Recertification is required every two years and CITI certification can be substituted.



**INSTITUTIONAL REVIEW BOARD APPLICATION FORM**

**Oklahoma City University**

**I. THE RESEARCH PROPOSAL**

Title: Relationship between Perceived Coaching Behaviors and Pre-Season Skills of Collegiate Volleyball Players.

Phase I   X   Phase II \_\_\_\_\_ Phase III \_\_\_\_\_ Phase IV \_\_\_\_\_

Does this IRB application replace and/or continue an existing IRB approved study?  
Yes \_\_\_\_\_ No   X   If Yes, provide IRB Number of this existing IRB project: \_\_\_\_\_

Project Director (PD) Dr. Stefanie Latham Degree \_\_\_\_\_  
College/Department Petree College of Arts and Science/Kinesiology & Exercise Studies  
Title Assistant Professor of Kinesiology and Exercise Studies  
Campus Address LO 116  
Phone 405-208-5490 Fax 405-208-5411

Co-PD Victoria George Degree Wellness Management  
SSN \_\_\_\_\_ College/Department College of Education and Professional Studies/Kinesiology (University of Central Oklahoma)  
Title \_\_\_\_\_  
Campus Address LO 116 with Dr. Latham  
Phone 405-503-5163 Fax \_\_\_\_\_

Collaborating Investigators (indicate Colleges and Departments for each):  
Dr. Darla Fent and Dr. Debbie Traywick – College of Education and Professional Studies at the University of Central Oklahoma in the Kinesiology Department. Dr. Cynthia Murray – College of Mathematics and Science at the University of Central Oklahoma in the Mathematics and Science Department.

Sponsor (funding agency or department):  
University of Central Oklahoma Kinesiology Department.

Study Sites (specify OCU Bldg./Rm.):  
Hitting and serving data will be collected in the home setting of the researcher via the internet. Surveys will be administered and inform consent signed in the locker room or at the team meeting in the Oklahoma City University Freede Center.

Off-campus sites (specify all non-OCU locations):  
Hitting and serving data will be collected in the home setting of the researcher via the internet. Surveys will be administered and inform consent signed in the locker room or at the team meeting of each respective team.

The following issues are relevant only if study sites are locations not covered by the OCU IRB. Please check your procedures & guidelines handbook or with the IRB if you are unsure of the status of a particular facility.

Is IRB approval required at other outside sites? Y X N \_\_\_  
 If so, has it been obtained? Y X N \_\_\_

**II. STUDY POPULATION**

Age Range: 18 to 25 (include low/high age)  
 Gender: Males: \_\_\_\_\_ Females: X Both: \_\_\_\_\_  
 Special Qualifications: Collegiate Volleyball Player from the University of Central Oklahoma or Oklahoma City University.  
 Source of Subjects: University Volleyball Teams  
 Number of Healthy Volunteers: Approximately 30 volunteers.  
 Exclusions (attach separate sheet if necessary): The exclusions are males, due to the nature of the sport and the study, as well as anyone under the age for 18.

**III. PROTECTED GROUPS** (check any protected groups included in the study):

Children (under 18)\*\* \_\_\_\_\_ Pregnant Women \_\_\_\_\_ Fetuses \_\_\_\_\_  
 Mentally Disturbed \_\_\_\_\_ Elderly (65 & older) \_\_\_\_\_ Prisoners \_\_\_\_\_

\*\*With few exceptions, the Consent of both parents is required by regulation where the research involves greater than minimal risk and will not directly benefit the individual child research subject. If both parents' consent is not going to be obtained, please explain why:

---

**IV. PROTOCOL/CONSENT FORM REFERENCES**

Indicate page numbers within the protocol and consent form(s) which address the following:

| PROTOCOL                     |              | CONSENT FORM   |            |
|------------------------------|--------------|--|------------|
| Inclusion/Exclusion Criteria | <u>10</u>    | Purpose  | <u>20</u>  |
| Duration of Participation    | <u>12-13</u> | Status of Drug/Device Procedure                          | <u>20</u>  |
| Early Termination Criteria   | <u>12-13</u> | Description of Study                                     | <u>20</u>  |
| Drugs and Dosages            | <u>N/A</u>   | Costs  | <u>N/A</u> |
| Devices                      | <u>11</u>    | Risks  | <u>20</u>  |
| Surgical Procedures          | <u>12-13</u> | Benefits   | <u>20</u>  |
| Data Collection              | <u>12-13</u> | Alternative to Participation                             | <u>N/A</u> |
| Data Analysis                | <u>13</u>    | Compensation and Injury                                  | <u>N/A</u> |
| Confidentiality of Data      | <u>12-13</u> | Subjects Assurances                                      | <u>21</u>  |
|                              |              | Contact for questions about Rights as a research project | <u>21</u>  |

**V. REQUEST FOR EXEMPT STATUS OR EXPEDITED REVIEW**

I request this application be considered for:

Exempt # \_\_\_\_\_ Expedited# \_\_\_\_\_

Please refer to the list of Exempt/Expedited Categories and indicate the specific number which you feel applies to your study. The IRB Chair may grant exempt or expedited approval, but reserves the right to require full Board review of any IRB application.

**VI. CERTIFICATION/SIGNATURES**

I certify that the information contained herein (application, research protocol and consent form, if required) is true and correct, and that I have received approval to conduct this research project from all persons named as collaborating investigators and from officials of the project sites.

*Include Original Signatures (No Reproductions) and Dates In the Spaces Below*

Project Director \_\_\_\_\_ Date \_\_\_\_\_

Co-Project Director \_\_\_\_\_ Date \_\_\_\_\_

Co-Project Director \_\_\_\_\_ Date \_\_\_\_\_

Dean of School \_\_\_\_\_ Date \_\_\_\_\_



**Appendix C: Institutional Review Board Approval Letters**



## OKLAHOMA CITY UNIVERSITY

Petree College of Arts and Sciences • Office of the Dean  
2501 N. Blackwelder • Oklahoma City, Oklahoma 73106-1493 • (405)208-5446 • Fax (405)208-5447

September 1, 2010

Dr. Stefanie Latham  
Department of Kinesiology and Exercise Studies  
Oklahoma City University

Dear Dr. Latham:

Your research proposal, Relationship between Perceived Coaching Behaviors and Pre-Season Skills of Collegiate Volleyball Players, with Ms. Victoria George (Co-PD and University of Central Oklahoma graduate student) and Dr. Darla Fent and Dr. Debbie Traywick (University of Central Oklahoma Department of Kinesiology) has been found to meet the criteria for exempt status and is therefore approved in accordance with the Code of Federal Regulations governing human subjects research (Title 45, Part 6, *Protection of Human Subjects*) and Oklahoma City University Institutional Review Board policies and procedures.

This approval expires September 1, 2011. On or before that date please submit either a Periodic Progress Report (PPR) if the project will continue, or a final PPR if the project has ended (this form is available on the OCU IRB website). Please note that if it becomes necessary to modify the protocol or consent form you have described in your proposal, an amending request must be submitted to the IRB chairperson for review and approval before implementing any such changes.

Sincerely yours,

A handwritten signature in black ink that reads "Terry R. Conley". The signature is fluid and cursive.

Terry R. Conley  
IRB Chairperson

C: Ms. Victoria George, Co-PD  
Dr. Susan Barber, Acting Provost and VPAA  
Dr. Mark Y.A. Davies, Dean of the Petree College of Arts and Sciences

RELATIONSHIP OF PERCEIVED COACHING BEHAVIORS

Effective January 26, 2005

Oklahoma City University

Institutional Review Board (IRB)
Approval Form

Proposal Number SL0910 69
Mark one:
[X] First year proposal
Periodic Progress Report (PPR),
specify phase:

Title of Proposal: Relationship between Perceived Coaching Behaviors and Pre-Season Skills of Collegiate Volleyball Players
Project Director: Dr. Stefanie Latham (OCU) with Victoria George (Co-PD, UCO graduate student) and Dr. Darla Fent and Dr. Debbie Traywick, UCO Department of Kinesiology
(See attached approval letter from UCO IRB)
Date of Application: August 17, 2010

Step 1. Initial review by the Chairperson of the IRB.

Mark one:

- [X] Exempt status. Approved without further action.
Exempt status. Disapproved for the following reasons:
Expedited review. Approved without further action.
Expedited review. Disapproved for the following reasons:
Full IRB review required (proceed to Step 2 below)

Signature of IRB Chairperson [Handwritten Signature] September 1, 2010
Date

Step 2. Decision by the IRB, if required.

Mark one:

- Approval
Approval contingent upon changes or clarifications
Deferral with the protocol and/or consent form needing significant revision before submission can be reviewed again by the IRB
Disapproval

Signature of IRB Chairperson [Handwritten Signature] Date

Expiration date: September 1, 2011

PPR (continuation or final) due date: September 1, 2011

C: Dr. Susan Barber, Acting Provost and VPAA
Dr. Mark Y.A. Davies, Dean of the Petree College of Arts and Sciences



July 23, 2010

*Academic Affairs*

Ms. Victoria George  
Dr. Darla Fent  
Department of Kinesiology and Health Studies  
College of Education and Professional Services  
Campus Box 189  
University of Central Oklahoma  
Edmond, OK 73034

Dear Ms. George and Dr. Fent:

**Re: Application for IRB Review of Research Involving Human Subjects**

We have received your revised application (UCO IRB# 10103) entitled, "Relationship between perceived coaching behavior and pre-season skills of collegiate volleyball players", and find all major stipulations in order. The UCO Institutional Review Board is pleased to inform you that your IRB application has been approved. A stamped, approved Informed Consent form will be sent to you by campus mail.

This project is approved for a one year period but please note that any modification to the procedures and/or consent form must be approved prior to its incorporation into the study. A written request is needed to initiate the amendment process. You will be notified in writing prior to the expiration of this approval to determine if a continuing review is needed.

On behalf of the UCO IRB, I wish you the best of luck with your research project. If our office can be of any further assistance, please do not hesitate to contact us.

Sincerely,

Jill A. Devenport, Ph.D.  
Chair, Institutional Review Board  
Director of Research Compliance, Academic Affairs  
Campus Box 159  
University of Central Oklahoma  
Edmond, OK 73034  
405-974-5479  
[jdevenport@uco.edu](mailto:jdevenport@uco.edu)

**Appendix D: Coaches Approval Letter**

Written Permission from the Head Coach of Oklahoma City University

To Whom it May Concern:

I, Coach Jennifer Gomez, give permission to Victoria George, a graduate student at University of Central Oklahoma, to recruit the members of my volleyball team for her thesis study.

If there are any problems or questions, please feel free to either contact myself or Victoria, as we can help you.

Thanks,

*Jennifer J. Gomez*

Head Volleyball Coach

Oklahoma City University

2501 N. Blackwelder Avenue

Oklahoma City, OK 73106

405-208-6205

[JGomez@okcu.edu](mailto:JGomez@okcu.edu)



UNIVERSITY OF  
**CENTRAL OKLAHOMA**

*Office of the Head Volleyball Coach  
Jeff Boyland*



April 30, 2010

To Whom it May Concern:

I, Coach Jeff Boyland, give permission to Victoria George, a graduate student at University of Central Oklahoma (UCO), to recruit the members of my volleyball team for her thesis study provided that such study doesn't violate any UCO Athletic Department, University, Lone Star Conference, or NCAA rules/regulations and bylaws.

If there are any problems or questions, please feel free to either contact myself or Victoria for clarification.

Respectfully,

*Jeff Boyland*

Head Volleyball Coach  
University of Central Oklahoma  
Email: [jboyland1@uco.edu](mailto:jboyland1@uco.edu)  
Office: 405-974-2148

**Appendix E: Data Collection Instrument**

Code Number \_\_\_\_\_

**Background Information****Please clearly identify the appropriate responses for the following questions:**

Age \_\_\_\_\_

**What school do you attend:** UCO OCU**Education Level:** Freshman Sophomore Junior Senior**Years of Participation in Volleyball:** 0 1 2 3 4 5 6 7 8 9  $\geq 10$ **What position(s) do you play:**

Middle Blocker Outside Hitter Libero Defensive Specialist Utility

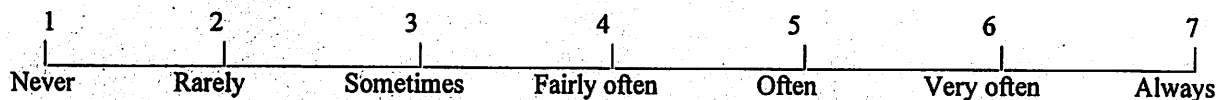
**When participation in volleyball I mostly had a:** Male Coach Female Coach**I would prefer my volleyball coach to be a:** Male Coach Female Coach It doesn't matter**I would prefer my volleyball coach to be:**20-30 years old 31-40 years old 41-50 years old  $\geq 51$  years old It doesn't matter

# COACHING BEHAVIOUR SCALE for SPORT (CBS-S<sup>©</sup>)

## HOW FREQUENTLY DO YOU EXPERIENCE THE FOLLOWING COACHING BEHAVIOURS

Some athletes have a single coach and others work with a coaching team. If you have more than one coach, think of the coach, or coaches, most responsible for that area.

Please use the scale below to answer all the sections.



### The coach(es) most responsible for my physical training and conditioning.....

|  | Never |   |   | Fairly often |   |   | Always |
|--|-------|---|---|--------------|---|---|--------|
| 1. provides me with a physical conditioning program in which I am confident. | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 2. provides me with a physically challenging conditioning program.           | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 3. provides me with a detailed physical conditioning program.                | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 4. provides me with a plan for my physical preparation.                      | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 5. ensures that training facilities and equipment are organized.             | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 6. provides me with structured training sessions.                            | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 7. provides me with an annual training program.                              | 1     | 2 | 3 | 4            | 5 | 6 | 7      |

### The coach(es) most responsible for my technical skills.....

|   | Never |   |   | Fairly often |   |   | Always |
|---|-------|---|---|--------------|---|---|--------|
| 8. provides me with advice while I'm performing a skill.                    | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 9. gives me specific feedback for correcting technical errors.              | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 10. gives me reinforcement about correct technique.                         | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 11. provides me with feedback that helps me improve my technique.           | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 12. provides visual examples to show how a skill should be done.            | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 13. uses verbal examples that describe how a skill should be done.          | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 14. makes sure I understand the techniques and strategies I'm being taught. | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 15. provides me with immediate feedback.                                    | 1     | 2 | 3 | 4            | 5 | 6 | 7      |

### The coach(es) most responsible for my mental preparation.....

|  | Never |   |   | Fairly often |   |   | Always |
|--|-------|---|---|--------------|---|---|--------|
| 16. provides advice on how to perform under pressure.            | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 17. provides advice on how to be mentally tough.                 | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 18. provides advice on how to stay confident about my abilities. | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 19. provides advice on how to stay positive about myself.        | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 20. provides advice on how to stay focused.                      | 1     | 2 | 3 | 4            | 5 | 6 | 7      |

### The coach(es) most responsible for my goal setting.....

|  | Never |   |   | Fairly often |   |   | Always |
|--|-------|---|---|--------------|---|---|--------|
| 21. helps me identify strategies to achieve my goals.      | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 22. monitors my progress toward my goals.                  | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 23. helps me set-short term goals.                         | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 24. helps me identify target dates for attaining my goals. | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 25. helps me set long-term goals.                          | 1     | 2 | 3 | 4            | 5 | 6 | 7      |
| 26. provides support to attain my goals.                   | 1     | 2 | 3 | 4            | 5 | 6 | 7      |



**The coach(es) most responsible for my competition strategies.....**

|  | Never |   |   | Fairly often |   | Always |   |
|--|-------|---|---|--------------|---|--------|---|
| 27. helps me focus on the process of performing well                     | 1     | 2 | 3 | 4            | 5 | 6      | 7 |
| 28. prepares me to face a variety of situations in competition.          | 1     | 2 | 3 | 4            | 5 | 6      | 7 |
| 29. keeps me focused in competitions.                                    | 1     | 2 | 3 | 4            | 5 | 6      | 7 |
| 30. has a consistent routine at competition.                             | 1     | 2 | 3 | 4            | 5 | 6      | 7 |
| 31. deals with problems I may experience at competitions.                | 1     | 2 | 3 | 4            | 5 | 6      | 7 |
| 32. shows confidence in my ability during competitions.                  | 1     | 2 | 3 | 4            | 5 | 6      | 7 |
| 33. ensures that facilities and equipment are organized for competition. | 1     | 2 | 3 | 4            | 5 | 6      | 7 |

**My head coach.....**

|   | Never |   |   | Fairly often |   | Always |   |
|---|-------|---|---|--------------|---|--------|---|
| 34. shows understanding for me as a person.   | 1     | 2 | 3 | 4            | 5 | 6      | 7 |
| 35. is a good listener.   | 1     | 2 | 3 | 4            | 5 | 6      | 7 |
| 36. is easily approachable about personal problems I might have.                      | 1     | 2 | 3 | 4            | 5 | 6      | 7 |
| 37. demonstrates concern for my whole self (i.e., other parts of my life than sport). | 1     | 2 | 3 | 4            | 5 | 6      | 7 |
| 38. is trustworthy with my personal problems.   | 1     | 2 | 3 | 4            | 5 | 6      | 7 |
| 39. maintains confidentiality regarding my personal life.                             | 1     | 2 | 3 | 4            | 5 | 6      | 7 |
| 40. uses fear in his/her coaching methods.  | 1     | 2 | 3 | 4            | 5 | 6      | 7 |
| 41. yells at me when angry.   | 1     | 2 | 3 | 4            | 5 | 6      | 7 |
| 42. disregards my opinion.  | 1     | 2 | 3 | 4            | 5 | 6      | 7 |
| 43. shows favoritism towards others.  | 1     | 2 | 3 | 4            | 5 | 6      | 7 |
| 44. intimidates me physically.  | 1     | 2 | 3 | 4            | 5 | 6      | 7 |
| 45. uses power to manipulate me.  | 1     | 2 | 3 | 4            | 5 | 6      | 7 |
| 46. makes personal comments to me that I find upsetting.                              | 1     | 2 | 3 | 4            | 5 | 6      | 7 |
| 47. spends more time coaching the best athletes                                       | 1     | 2 | 3 | 4            | 5 | 6      | 7 |

### **Appendix E: Thesis Summary Statement**

Most research tends to examine the relationships between coaching behaviors and cohesion rather than the relationship between coaching behaviors and athletic performance. There are even fewer studies examining these variables in the sport of volleyball. The purpose of this study was to examine the relationships between the hitting and serving percentages of collegiate volleyball players and perceived coaching behaviors during the pre-season competition.

Coaches have more responsibilities than just leading the team on the field. They must establish relationships with their players, as well as, motivate their athletes. Athletes have said that the coach-athlete relationship is the most valuable determinant of personal success for the athlete (Vealey, Armstrong, & Comar, 1998; Baker, Côté, & Hawes, 2000). Studies have shown that perceived coaching behaviors were good predictors of how well the athletes were motivated (Black & Weiss, 1992). Coaches need to understand that their behaviors do impact the way their athletes view them as a coach, as well as, how they respond to them on the court.

No significant relationship will exist between any of the subscales and total of the Coaching Behaviour Scale for Sports and the hitting and serving percentage of collegiate volleyball players.

A Pearson's correlation coefficient was run for the quantitative analysis of the current study. Additional *t*-tests were run to determine relationships within the teams.

The results of the study showed that the coaching behaviors measured by the CBS-S, had no statistically significant relationship to the hitting and serving percentages of both teams combined. However, when each team compared their statistics to their completed surveys there were relationships found. For Oklahoma City University, a moderate, positive relationship was

found between the serving percentages and Physical Training. The University of Central Oklahoma had a moderate, negative relationship between the hitting percentages and goal setting.

The null hypotheses are accepted. There were no significant differences between the hitting or serving percentages and any category of the CBS-S including the total score. In past research, coaching behaviors have been shown to have a relationship with team cohesion. In the current study, the results did not indicate a significant relationship when team results were combined. However, previous research has not compared volleyball statistics; therefore, the current study is adding to the research in the field of volleyball coaching behaviors and the relationship it has with performance of their athlete.

There are some things that can be changed for future research including: a larger sample size, more teams, and to collect data for an entire season instead of the pre-season.