

STRENGTH AND CONDITIONING PROGRAMS AND  
DRIVING MOTIVATIONS IN COLLEGIATE  
CHEERLEADING IN THE UNITED STATES

By

MIKAYLA ELIZABETH RALEIGH

Bachelor of Science in Human Biology  
North Carolina State University  
Raleigh, NC  
2017

Submitted to the Faculty of the  
Graduate College of the  
Oklahoma State University  
in partial fulfillment of  
the requirements for  
the Degree of  
MASTER OF SCIENCE  
May 2019

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Thesis Approved:

Dr. Jason Defreitas

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Thesis Adviser

Dr. Eric Conchola

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Committee Member

Dr. Nathaniel Jenkins

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Committee Member

## ACKNOWLEDGEMENTS

I would like to sincerely thank everyone who has helped me to complete this six year journey to a master's degree. I ask a lot of questions and many people along the way have always been there to help provide me with answers and guidance. The following list is certainly not all inclusive but I would like to extend special thanks to all of my committee members for supporting my highly specialized thesis topic and for providing me with the tools I needed to be successful. A huge shout out goes to Chantel Anthony for always being my sounding board, an encourager, and most importantly my friend. I am so lucky that God placed you in my life.

The support I received from the cheerleading community in terms of encouragement and volunteers to help me with this project has been incredible and I hope that everyone knows how much their enthusiasm means to me. Everyone at both NC State and OSU who pushed me, both in and outside of the classroom, played an instrumental role in setting me up for success in my master's program. Thank you. Kim Beard, I appreciate you being the best boss ever and for showing interest and support as I worked on my thesis. And finally, thank you to my family for always being there for me. I know that I can be a bit intense with my ideas and excitement, especially when it comes to cheerleading, but you all will forever be the best part of my life. I sincerely appreciate all that you do to support me!

Name: MIKAYLA ELIZABETH RALEIGH

Date of Degree: MAY 2019

Title of Study: STRENGTH AND CONDITIONING PROGRAMS AND DRIVING  
MOTIVATIONS IN COLLEGIATE CHEERLEADING IN THE  
UNITED STATES

Major Field: MASTERS OF SCIENCE IN APPLIED EXERCISE SCIENCE

#### Abstract

The present study investigated the types of strength and conditioning programs (SCP) offered to competitive, collegiate cheerleaders in the United States. Specifically, collegiate cheer coaches' motivations for requiring outside of practice workouts, athlete motivations for participating in workouts, and athlete motivations for participating in cheerleading in general. Further analysis assessed potential relationships between SCP and motivation. A total of 225 coaches and athletes participated in the Google Form survey. Participants represented multiple universities, regions, levels, and team types in the US. All participants answered questions about the workouts associated with their program and the top five reasons they chose to either require (coaches) them or to participate (athletes) in them. In addition, athletes completed the Sport Motivation Scale-6 (SMS-6) to determine their primary motivational drivers for participating in collegiate cheerleading. Data was analyzed with independent t-tests in Microsoft Excel and ANOVA in SPSS. Bonferroni correction was applied to the ANOVAs.

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## **CHAPTER I**

### **INTRODUCTION**

Cheerleading has grown into one of the most popular sports for females to participate in (Schulz et al., 2004). Males have increased their participation in cheerleading as well, with some teams having more guys than girls. Cheer athletes are not restricted to the sidelines anymore either; they can compete at high pressure cheerleading competitions where teams battle to exhibit the highest level of skill and execution in incredibly challenging routines. In college, many teams embrace both of these roles. They cheer on university teams such as football, basketball, volleyball, and gymnastics, and then embark on their own competition season, which culminates in to a performance at the prestigious UCA or NCA College National competition. Often times these seasons overlap, keeping collegiate cheerleaders busy all year long.

The athleticism required to perform the advanced stunting and tumbling maneuvers in cheerleading is now widely acknowledged in scientific literature (Goodwin, Adams, Shelburne, Debeliso, & Journal, 2004; Jacobson, Redus, & Palmer, 2005; Krivoruchko, Masliak, Bala, Skripka, & Honcharenko, 2018; Labella et al., 2012; Lutsenko & Bodrenkova, 2013; Merten & quarterly, 1996; Moritz, 2011; Nakajima, Valdez, & Dance, 2013; Reel, Gill, & Journal, 1998; Schulz et al., 2004; Shields, Fernandez, & Smith, 2009; Shields & Smith, 2009; Steinberger, 2004; Thomas, Seegmiller, Cook, Young, & research, 2004; Torres-McGehee, Monsma, Dompier, & Washburn, 2012). With an increased athletic rigor comes an increased importance

of adequate strength and conditioning programs (SCP) to keep athletes healthy and in peak performance shape (Goodwin et al., 2004; Steinberger, 2004). Multiple studies have found that the most common types of injuries seen in cheerleading are strains and sprains, most frequently in the lower extremity, and especially in the ankle (Goodwin et al., 2004; Jacobson et al., 2005; Labella et al., 2012; Shields et al., 2009; Shields & Smith, 2009). A study on injuries of collegiate female athletes reported that lower extremity injuries were more likely to occur if either leg was 15% stronger or 15% more flexible than the other side (Knapik, Bauman, Jones, Harris, & Vaughan, 1991). Strength and conditioning programs are therefore important, because they can correct these strength and flexibility imbalances and potentially offset injuries. In order to execute routines successfully, cheerleaders not only have to focus on staying healthy but also on improving strength, power, flexibility, coordination, quickness, and balance (Goodwin et al., 2004; Lutsenko & Bodrenkova, 2013).

Motivation dictates the amount of time and effort spent on achieving these fitness and performance goals. The source of motivation in sports has become an increasingly interesting subject as many sports have developed from simple, fun activities into more organized and institutionalized enterprises (Alderman, 1974). Motivation can be measured on a scale, the Self-Determination Continuum, and ranges from intrinsic to extrinsic (Deci & Ryan, 1985). Athletes are exposed to all sorts of external rewards, yet still maintain a strong, internal drive and passion for their sports (C. J. Mallett, Hanrahan, & exercise, 2004). Collegiate cheerleaders in particular have been shown to be highly motivated by both intrinsic factors and the external reward of performing in front of crowds (Moritz, 2011; Raabe, Readdy, & sport, 2016; Steinberger, 2004). Additionally, there are often many physique related pressures associated with cheerleading due to revealing uniforms and heightened exposure on TV during big time athletic events (Moritz, 2011; Reel et al., 1998; Schwitzer, Rodriguez, Thomas, & Salimi, 2001; Torres-McGehee et al., 2012; WELLS, CHIN, TACKE, & BUNN, 2015). Despite this, many cheerleaders that compete cite that they place a much greater emphasis on the athletic performance elements of their sport, rather than aesthetic qualities (Steinberger, 2004). No study to date has collected extensive data on SCP of

collegiate cheerleaders. Additionally, no study has done a comprehensive investigation on the motivational profiles of these athletes. This research project will attempt to improve the knowledge that leaders in the cheerleading industry have about both SCP and motivations of collegiate cheerleaders. Adding information to the knowledge base on this unique population should help to improve collegiate cheerleading programs in the United States.

### **Statement of Problem**

Research on the strength and conditioning regimes of cheerleaders, especially those at the collegiate level, is scarce and inconsistent in comparison to the knowledge about training for other sports. While football players usually have access to a well-trained and knowledgeable strength and conditioning staff upon arrival at a university, collegiate cheerleading teams might not be as lucky. To date, there has been no comprehensive study done on different types of SCP offered to collegiate cheerleaders in the US.

There has only been one study (Raabe et al., 2016) dedicated to assessing the motivational profiles of collegiate cheerleaders. Based upon the small sample size ( $N = 12$ ) and participation characteristics (did not compete) the aforementioned study is not a good representation of collegiate cheerleading as a whole in the United States. Additionally, the competition aspect of cheerleading is very important to many universities. To ignore this component of collegiate cheerleading is to ignore a significant factor influencing the motivational profile of this population.

### **Purpose**

There are two primary purposes of this study. One is to obtain data on the types of SCP available to collegiate cheerleaders, as well as to investigate the congruence of coach and athlete motivations for participating in them. The second purpose is to analyze the driving motivations that collegiate cheerleaders have to partake in their sport in general. As a secondary objective, the two data sets will be analyzed for potential relationships.

## **Research Questions**

1. What types of strength and conditioning programs are offered to collegiate cheerleaders?
2. What are coaches' motivations for encouraging participation in these programs?
3. What motivations drive cheerleaders to participate in these programs and to practice their sport?
4. Are there any relationships between strength and conditioning programs and collegiate cheerleader's driving motivations?

## **Hypothesis**

The researcher predicts that there will be a wide range of SCP types in collegiate cheerleading across the US. It is anticipated that those programs with more successful competition resumes will have SCP driven by motivations to improve athletic performance (i.e. strength, power, speed, explosiveness, etc.), rather than aesthetic qualities (i.e. body weight, body fat percentage, certain “look” in uniform, etc.). It is also anticipated that programs with more successful competition resumes will have a higher percentage of self-determined athletes, as opposed to extrinsically motivated athletes. The researcher believes that the majority of competitive, collegiate cheerleaders will display a tendency towards IM. It is possible that additional, significant relationships will be found among other survey questions, such as, but not limited to, position specificity of SCP and competition success and scholarship availability and extrinsic motivation.

## **Significance of Study**

There is minimal research on the sport of cheerleading and even less research dedicated to collegiate cheerleading in particular. It is acknowledged that “these student-athletes are an underrepresented population within collegiate athletics as they are often neglected by both governing bodies (e.g., the National Collegiate Athletic Association [NCAA]) and the sport psychology literature” (Raabe et al., 2016, p. 78). This study will help establish a foundation of knowledge for future studies to build upon by providing information on strength and conditioning programs, as well as motivational drivers, in this specific population.

## **Delimitations**

This study is delimited to current, collegiate cheerleading coaches and athletes in the United States.

## **Limitations**

The following are identified as limitations in this research study:

1. The online nature of the survey prevents a more in-depth and in-person explanation of the Likert scale and certain terms specific to this study. The consent form attempts to convey such information but written forms of communication are rarely as effective as face to face conversation.
2. Due to the online nature of the survey, the researcher cannot be 100% certain that surveys were taken individually and that responses were completely honest and taken in a pressure free environment.
3. Due to the researcher's personal contacts being targeted in recruitment, the demographics of the sample favor those athletes similar to her, in regard to gender and competition type (NCA).

## **Assumptions**

The following are assumed in the conduction of this research project:

1. Subjects thoroughly read all information sheets and understand the questions being asked of them.
2. Subjects have enough self-awareness to honestly complete the motivation survey and to identify the true reasons that they participate in sport.
3. Subjects do not consult with other subjects while completing surveys and thus have unique, personal responses.

4. Subjects feel free to answer survey questions truthfully, without any outside pressures from their coaches or universities.

### **Definitions of Terms**

Autonomy: Having an “internal perceived locus of causality” (R. M. Ryan & E. L. J. C. e. p. Deci, 2000).

Bases/Backspots: “Person with at least 1 foot on the floor who is in direct, weight-bearing contact with the performing surface and who provides primary support for another person (flyer)” (Labella et al., 2012, p. 970).

Coach: For the purposes of this study, a coach is defined as the individual/s that lead cheerleading practices. For example, a strength and conditioning coach that only leads out of practice workouts would not be considered a coach because they are not instructing actual cheerleading skills.

Competence: The ability to successfully complete tasks.

Competitive cheerleading: A type of cheerleading where the primary objective of the team is to compete against other cheer athletes while performing a routine compromised of stunts, tumbling, baskets, and pyramids.

Extrinsic motivation (EM): Performing a task in order to achieve a separable outcome (Deci & Ryan, 1985).

Fitness trainer: Someone who holds a nationally acclaimed certification, such as Certified Strength and Conditioning Specialist, Certified Personal Trainer, Certified Group Fitness Instructor, etc.

Flyers: “Person who is elevated and/or tossed in the air by a base and may perform twists and/or flips before being caught by 1 or more bases” (Labella et al., 2012, p. 970).

Intrinsic motivation (IM): Performing a task for its inherent enjoyment (Deci & Ryan, 1985).

Lean sport: Sporting activities where a competitive or aesthetic value is placed on leanness (Reel et al., 1998; Schwitzer et al., 2001; Torres-McGehee et al., 2012; WELLS et al., 2015).

Motivation: “An internal state or process that energizes, directs and maintains goal-directed behavior” (Cashmore, 2006, p. 287)

Relatedness: The aspect of IM concerning feelings of connectedness and belonging (R. M. Ryan & E. L. J. C. e. p. Deci, 2000).

Self-determination: The conscious choice that individuals have to make decisions about their actions (Deci & Ryan, 1985).

Sideline cheerleading: A type of cheerleading where the main objective is to support other athletic teams at games and events.

Sport motivation: “The inclination to pursue and persist in activities related to one’s sport” (Taylor & Wilson, 2005, p. 5).

Strength and conditioning program: For the purposes of this study, a strength and conditioning program refers to any workout regime that collegiate cheerleaders partake in outside of normal practice time.

Stunts: “Maneuvers in which 1 or more bases supports 1 or more flyers off the ground” (Labella et al., 2012, p. 970)

## **CHAPTER II**

### **Review of Literature**

#### **The Self-Determination Theory on Motivation**

Motivation is a highly researched construct due to its variation in amount and orientation, depending on the specific task being performed by an individual. It “consists of factors (both internally and externally) that impel behavior and ultimately includes and influences: effort, persistence, self-control, and commitment” (Stokowski, Huffman, Aicher, & Education, 2013, p. 136). Self-Determination Theory (SDT) is one specific theory that explores the driving factors of performance (Deci & Ryan, 1985). The “why” of people’s behaviors is important because it can have a significant effect on the quality and impact of their experiences (R. M. Ryan & E. L. J. C. e. p. Deci, 2000). SDT defines two basic types of motivation: intrinsic and extrinsic. Traditionally, EM has been viewed with a more negative connotation while IM has been associated with higher levels of achievement and more sustainable success (R. M. Ryan & E. L. J. C. e. p. Deci, 2000; Vallerand & Losier, 1999).

EM occurs on a continuum, ranging from less to more self-determined forms (Deci & Ryan, 1985). The more self-determined in nature a form of motivation is, the stronger its association with a more desired mindset and outcome (R. M. Ryan & E. L. J. C. e. p. Deci, 2000; Vallerand & Losier, 1999). Organismic Integration Theory (OIT) is a subset of SDT that explains the different types of EM (Deci & Ryan, 1985). On one end of the scale is the state of



amotivation, or a lack of motivation. Four different types of EM then progress to a state of IM, with each type of EM being slightly more self-determined than the one before. External regulation is the least self-determined form of EM because it refers to doing an activity in order to obtain a particular reward, or to avoid a particular consequence. Next on the continuum is introjection, which is controlled by the ego and a desire to receive approval from the self and others. Identification begins to trend towards self-determination because it involves a conscious self-endorsement of the activity for the sake of achieving goals one deems as important. Integrated regulation is the most self-determined form of EM because it occurs when one has decided that a certain activity is in congruence with one's values and other activities (Deci & Ryan, 1985; Pelletier, Vallerand, Sarrazin, & Exercise, 2007). For example, a young athlete who loves soccer may place a high value on being fast, therefore partaking in sprint workouts with zeal and enthusiasm. While working out is integrated in to their sense of values, and their actions are largely self-determined, the motivation is not intrinsic for this activity. The athlete is not sprinting for the joy of sprinting itself, but rather for their burning desire to improve and to be a better soccer player. As EM becomes more self-determined, it may become more difficult to differentiate from IM, but the distinguishing factor between the two motivation types is that activities based on IM have no ulterior motive or purpose.

Cognitive Evaluation Theory (CET) is a second sub theory of SDT that explains variations in IM (Deci & Ryan, 1985). IM is controlled by three factors: autonomy, competence, and relatedness (Deci & Ryan, 1985). Autonomy is the belief that one is in control of what happens to them in life, competence refers to an individual's ability to successfully complete tasks, and relatedness concerns feelings of connectedness and belonging (R. M. Ryan & E. L. J. C. e. p. Deci, 2000). CET views these three aspects in the context of how they facilitate or inhibit IM (Deci & Ryan, 1985). These three factors permit internalization (process of taking in a value or regulation) and integration (process by which an individual more fully transforms regulation so it emanates from their sense of self), which are necessary for the gold standard of IM to be reached (R. M. Ryan & E. L. J. C. e. p. Deci, 2000). An individual is more likely to

internalize a goal if they understand it and feel as if they have the relevant skills (competence) necessary to succeed at it (R. M. Ryan & E. L. J. C. e. p. Deci, 2000). Optimal challenges, combined with effective feedback and freedom from demeaning evaluations have been shown to promote competence, and therefore IM in individuals (R. M. Ryan & E. L. J. C. e. p. Deci, 2000). Relatedness is usually viewed as a more distal aspect of needs satisfaction (Frederick-Recascino, 2002; Raabe et al., 2016). Within the IM construct, there are three main reasons individuals are intrinsically motivated: to acquire knowledge, to provide stimulation (excitement or fun), and to produce accomplishment (Deci & Ryan, 1985). These categories do not represent different types of IM; they are simply motives for self-determined action. It is important to note that since CET deals with intrinsic motivation, its concepts only apply to those activities which are inherently interesting to subjects (R. M. Ryan & E. L. J. C. e. p. Deci, 2000).

### **Motivation and SDT in a Sports Context**

Sports motivation is defined as “the inclination to pursue and persist in activities related to one’s sport” (Taylor & Wilson, 2005, p. 5). Participation motivation and the athlete’s mindset in regard to SDT have been the focus of a wide variety of studies in sports literature. It has been established that motivation is a task-specific construct (Deci & Ryan, 1985), thus an athlete’s motivation in sport might differ from their motivation in other aspects of their life. Sports represent an interesting opportunity in regard to studying motivation because they are inherently intrinsically based. When individuals start out participating in sports, it is usually for the love of the game and for the sake of having fun (Deci & Ryan, 1985). However, the increasing social importance placed on sports has turned them in to “play activities that have been institutionalized” (Deci & Ryan, 1985, p. 314). As sports have increased in spectator appeal and competition level, their motivations have shifted to higher levels of extrinsic reasoning (Deci & Ryan, 1985).

There is a motivational sequence that connects the sporting experience with SDT. The social factors in an athletic experience, such as successes and failures, competition and cooperation, and coach

behavior, influence the psychological aspects of competence, autonomy, and relatedness. As established, these three constructs are integral parts of IM. Thus the perception of competence, autonomy, and relatedness determines the type of motivation (IM, EM, or amotivation) an athlete will demonstrate (Vallerand, 1997). Motivation type has a direct effect on the consequences of athletic participation as they relate to factors such as sportsmanship and persistence (Deci & Ryan, 1985; Vallerand, 1997). There are three general types of consequences: cognitive, affective, and behavioral (Vallerand, 1997). Cognitive consequences deal with such things as memory, conceptual learning, concentration, and attention. Affective consequences are concerned with factors related to mood and perception, such as interest, satisfaction, and emotions. Finally, behavioral consequences are more action based; persistence, intensity, intentions, and performance are examples of behavioral outcomes (Vallerand, 1997).

There are two different orientations athletes can take when participating in sport that determine whether they are primarily motivated by intrinsic or extrinsic factors. Task orientation, sometimes called mastery-goal orientation, is linked to IM because it focuses on initiating challenges, exerting effort, and persisting in sport for the enjoyment of achieving these competence-related objectives (Ames, 1995). On the other hand, ego orientation is more extrinsic in nature because it focuses on performance goals and evaluations. Often times in ego orientation athletes find their self-worth in comparing themselves to others (Ames, 1995). A study was conducted on the motivation of subjects to participate in a sport activity versus a fitness program (Frederick & Ryan, 1993). The idea was that the sport activity would generate greater feelings of fun and interest, whereas the fitness programs would be seen as more of a means to an end goal of achieving a certain weight or physique. The fitness program group is comparable to athletes who partake in “lean sports”, sports that place a competitive value on aesthetics, such as cheerleading, gymnastics, figure skating, and track and field (Schwitzer et al., 2001). The research revealed that when participants were focused more on engagement in the activity itself (sports group), rather than outcomes (appearance for the fitness group), competence motivation, and therefore IM were higher (Frederick & Ryan, 1993). This is important because greater levels of IM have been positively

correlated with persistence (Deci & Ryan, 1985). Subjects driven predominantly by EM worked out for the same number of days per week as those driven by IM, however the total hours they spent working out, and therefore their persistence to the activity were lower (Frederick & Ryan, 1993).

### **Sport Motivation in Elite and Collegiate Athletes**

For sports that do not have a professional league or that do not have an Olympic team, such as cheerleading, the collegiate level often represents the most elite level of the sport. Note that professional teams such as the Dallas Cowboy Cheerleaders are not considered to be a true cheerleading team by the researcher, in the context of this study, due to an emphasis placed on dancing, rather than stunting and tumbling elements that are more associated with present day competitive cheerleading. Elite and college athletes (there is overlap) are both special subsets of the athlete population that need to be examined in regard to sport motivation.

“The primary goal in elite sport is to win” (C. J. Mallett et al., 2004, p. 188). A study on track and field athletes from Olympic and/or World championships found that participants could be classified into three groups: those that were highly driven by personal goals and accomplishment, those who had a strong self-belief, and those whose lives revolved around track and field. Personal goals were both task and ego oriented but achievement of either resulted in a strong sense of accomplishment that encouraged self-determined forms of motivation. Participants frequently voiced the idea of knowing that sport was their forte, exhibiting competence belief, while also wanting to prove their talents to others, exhibiting ego orientation and EM (C. J. Mallett et al., 2004). Thus, at the elite level there is more of an overlap in intrinsic and extrinsic forms of motivation, which often displays itself as integrated regulation, the most self-determined form of EM. For example, participants placed a high value on training hard because of the opportunity it provided for talent realization, one of their core beliefs. This aligns with the idea that achievement motivation represents a complex of intrinsic and extrinsic factors (McClelland, Atkinson, Clark, & Lowell, 1953). When athletes do reach the highest levels of their sport, achievement motivation

is more relevant than general participation motivation. Sport is more than a leisure activity to this group of athletes, as shown by the theme “whose lives revolved around track and field” (C. J. Mallett et al., 2004, p. 191).

Collegiate athletes also represent a unique subset of the athlete population. Often extremely talented, these athletes are still considered to be amateurs because they aren't being paid to play. However, payment can take the forms of gifts such as scholarships and team apparel, thus offering a plethora of extrinsic sources of motivation. When extrinsic factors are increased, research has shown conflicting results on its effects on athlete motivation. For example, in one study both international and domestic student athletes were primarily intrinsically motivated, unaffected by the external reward of scholarship (Stokowski et al., 2013). In another study, non-scholarship athletes were shown to be more intrinsically motivated than scholarship athletes (Cremades, Flournoy, Gomez, & Coaching, 2012). In yet another, scholarships were shown to undermine IM in males, but not in females (Ryan & sport, 1980). Other extrinsic factors such as competition pressure, which are heightened at the collegiate level, have been shown to decrease IM (Reeve, Deci, & Bulletin, 1996). However, winning increases IM (Reeve, Olson, & Cole, 1987; Weinberg, Ragan, & Dance, 1979) and winning is not possible without competition. Thus, competition in sports represents a fine balance. On one end, it can be controlling if an athlete feels as if they must win, promoting EM. On the other end, it can be informational, providing positive competence feedback, which can then fuel IM (Deci & Ryan, 1985).

One could argue that all aspects of motivation in higher levels of sports represents a fine balance. Money, medals, scholarships, recognition, and other external factors can all promote EM. But, they can also promote IM if viewed by the athlete as increasing their competence, autonomy, or relatedness. The way outcomes interact with individual personality differences ultimately determine levels and type of motivation (Reeve et al., 1987). Thus, the specific environment unique to a high-level athlete represents a fascinating opportunity to study the constructs of SDT.

## **Role of Coaches in Athlete Motivation**

A coach's job is to push a team and individuals to their full, competitive potential. In that process, they must know what drives each individual athlete to participate and to succeed in sport. There are four key dimensions to why coaches coach: connection with the sport, coach and athlete development, external influences, and internal influences (McLean, Mallett, & pedagogy, 2012). Applying the motivational sequence (Vallerand, 1997) to this relationship reveals that a coach's behaviors, motivated by the above factors, influence athlete psychological need satisfaction, which in turn affects athlete motivation, which then plays a key role in how athletes think, feel, and act. It has already been mentioned that it is not so much the factors that an athlete is presented with, but rather their perception of these factors and their individual personality differences, that dictate whether they are driven primarily by intrinsic or extrinsic motivation. There is no one in a better position to provide perspective to an athlete than their primary mentor in sport, a coach. Otherwise put: "The coach is considered the architect of the motivational climate" (McLean et al., 2012, p. 22).

Five coaching behaviors: training and instruction, democratic behavior, autocratic behavior, social support, and positive feedback affect athlete motivation. All behaviors of coaches promote IM, except autocratic behavior. The decision making style of the coach (i.e. democratic or autocratic) has the strongest relationship to IM when compared to other factors (Hollembek & Amorose, 2005). Athletes who view coaches as more cooperative, committed, and close in their relationship (i.e. autocratic behaviors) are more likely to endorse a mastery-goal orientation to sport (Adie & Jowett, 2010), which promotes IM (Ames, 1995). Additionally, training and instruction have a negative effect on autonomy (Hollembek & Amorose, 2005), thus suggesting that athletes are appreciative of opportunities to have increased input in establishing goals for training and competition, rather than following regimes strictly laid out by coaches (Dale & Wrisberg, 1996). Autocratic behaviors exhibit a significant, negative relationship with feelings of relatedness in athletes (Hollembek & Amorose, 2005). Together, these results suggest that athletes feel empowered to act in self-determined ways when they feel as if they are a

part of the decision-making process. In fact, coach autonomy support is associated with higher levels of identified regulation and IM in gymnasts (Gagne, 2003). It is interesting to note that coach autonomy support also correlates positively with the number of practices attended by gymnasts a week (Gagne, 2003), thus supporting previous research that satisfying the basic psychological needs (competence, autonomy, and relatedness) associated with IM increases persistence (Frederick & Ryan, 1993).

### **Cheerleading as a Sport**

In order to apply the above principles to this study on collegiate cheerleaders, a case must be made legitimizing cheerleading's classification as a sport. According to a federal judge, cheerleading is too "underdeveloped and disorganized" to be considered a sport (Goldman, 2010). However, many factors prove this to be untrue. In the 1950s, Lawrence R. Herkimer founded the National Cheerleaders Association (NCA) to run clinics and summer camps teaching new skills to cheer athletes. In 1975, Jeff Webb started the Universal Cheerleaders Association (UCA) to continue to teach athletes how to execute difficult stunting and tumbling techniques (Moritz, 2011). Today both companies are multi-billion dollar corporations, quite the opposite of underdeveloped and disorganized. Additionally, USA Cheer was established in 2007 to be the National Governing Body for Sport Cheering in the United States. One of the functions of the organization is to provide training to coaches and athletes to promote sport safety, thus furthering cheerleading's organization and development ("USA Cheer,"). ESPN even started televising the national cheerleading championships in 1983, advancing cheerleading's progress in sports status (Moritz, 2011). Combining high school, All Star, and recreation teams, there were 3.5 million cheerleaders in the USA in 2002 – an increase of 18% since 1990 (Shields & Smith, 2009). It can safely be assumed that participation has only continued to increase since then, further proving the sport's development. In fact, high school level competitive cheerleading is ranked as one of the top ten most popular girls' sports (Schulz et al., 2004).

Sports are generally acknowledged as activities that require skill and/or challenge an athlete's physical capabilities. They must also include some form of competition. Many sources support that cheerleading has evolved from simply waving pom poms into a rigorous activity that requires skill mastery, technique development, and physical training. (Jacobson et al., 2005; Labella et al., 2012; Moritz, 2011; Nakajima et al., 2013; Raabe et al., 2016; Shields et al., 2009; Shields & Smith, 2009; Thomas et al., 2004) Nowadays, cheerleaders focus on gymnastics-like tumbling skills and acrobatic stunts, playing much more than a merely supportive role to other athletic teams at their schools (Labella et al., 2012; Nakajima et al., 2013; Shields & Smith, 2009). Additionally, all-star cheerleading teams have been developed whose sole purpose is to compete; they do not even partake in sideline activity. In fact, interviews of multiple cheerleaders reveal that having the opportunity to compete is one of their main purposes in participating in cheerleading (Moritz, 2011; Steinberger, 2004). Many high school and college teams that do cheer on the sidelines for their schools also have their own competition season. There are hundreds of national and international competitions every year for cheerleaders to bid for championships. For example, the Cheerleading Worlds competition in April hosts over 11,000 cheer athletes from more than forty countries in Orlando each year ("USASF, "). In light of these statistics and research, one can see that cheerleading is indeed developed and organized. It requires skill, physical prowess, and has opportunities for competition, thus satisfying the components of sport.

### **Fitness of Collegiate Cheerleaders**

Cheerleading requires a "wide range of intensive motor actions" (Krivoruchko et al., 2018, p. 128). In a study on 15-17 year old girls, practicing cheerleading improved strength in three separate tests: the amount of pushups that could be performed in one minute, the distance covered by three single leg jumps, and hand grip strength (Krivoruchko et al., 2018). In another study, participants identified cheerleading as a strong contributor to their athletic development (Steinberger, 2004). Collegiate cheerleaders in particular achieve fitness test results comparable to other collegiate athletes. For example, VO<sub>2</sub> max scores for female cheerleaders are comparable to female basketball, dance, gymnastics,



swimming, tennis, and volleyball athletes. Male bench press scores are comparable to male baseball and basketball players (Thomas et al., 2004). Although many spectators notice the aesthetic merits of cheerleading, participants primarily identify with the strength required to perform their skills in routines (Steinberger, 2004).

The collegiate cheerleading season in particular is a long and taxing journey on the body. A typical season (for teams that compete at NCA Nationals) begins with tryouts in April or May, continues with camp practices and preparation over the summer, extends into football and basketball season in the fall and spring, and concludes with competition season January through April. Often times these phases overlap and athletes must focus on multiple objectives at once. Training for cheerleaders must be all-around and intensive (Steinberger, 2004). It is paramount that collegiate cheerleaders be offered supplemental strength and conditioning programs in order to achieve peak performance and to minimize injuries throughout their difficult seasons (Goodwin et al., 2004; Labella et al., 2012; Steinberger, 2004).

Even though multiple articles can be found supporting the fitness demands of cheerleading, there are still limited resources dedicated to formulating conditioning regimes to improve and maximize this fitness potential. While “training for competitive cheerleading is seen as equivalent to other highly competitive sports (Steinberger, 2004, p. 87), some collegiate cheerleaders “[do] not follow a regimented conditioning program” and “fitness training [is] left to the discretion of the individual cheerleader” (Thomas et al., 2004, p. 252). 79% of the collegiate cheerleaders surveyed in one study worked out 2-3 times per week, but didn’t specify whether the workouts were planned as a team, or were individual efforts (Shields et al., 2009). 92.9% of the collegiate cheerleaders in a different study participated in weight training programs (Jacobson et al., 2005). Clearly there are discrepancies in the literature over how many collegiate cheer athletes are actually receiving fitness training. Obviously, there is a need for additional data on the subject.

Regardless of the number of athletes participating in conditioning programs, there is even less knowledge on the objectives cheerleaders should accomplish with their workouts. The little data that does exist on this subject states that the ideal cheerleading training program for a nationally competitive female cheerleader should focus on increasing strength and power, while maintaining flexibility and a lean body mass (Goodwin et al., 2004). In addition to these components of fitness, training for cheerleaders also needs to stress coordination, quickness, and balance so that the complex, rhythmic movements of routines can be executed well (Lutsenko & Bodrenkova, 2013).

### **Motivation in Cheerleaders**

Motivation in cheerleading is an interesting conundrum. Cheerleading is considered a high status activity, meaning it is associated with high levels of esteem and prestige (Merten & quarterly, 1996). This is logical considering that regardless of if a cheerleader only competes, only cheers on the sidelines, or does a combination of both, they are in front of large crowds. In fact, many cheerleaders acknowledge the external reward of performing as one of their principle motivations for cheering (Raabe et al., 2016; Steinberger, 2004). Some even feel that they are “born to perform” (Steinberger, 2004, p. 40). 67% of the collegiate cheerleaders in one study reported loving being in front of people (Raabe et al., 2016). Coupled with its high status is the fact that cheerleading is also classified as a lean sport, meaning that a competitive or aesthetic value is placed on leanness (Reel et al., 1998; Schwitzer et al., 2001; Torres-McGehee et al., 2012; WELLS et al., 2015). Often times the pressure to look good in front of crowds, especially in the collegiate cheerleading environment at big games and on TV, can encourage an emphasis on body weight and physique. Revealing uniforms only add to this pressure. (Moritz, 2011; Reel et al., 1998; Torres-McGehee et al., 2012; WELLS et al., 2015). This is of considerable importance when considering cheerleaders’ motivations for working out outside of practice. However, not all studies support that cheerleading emphasizes aesthetics. In some research the aspects of physical beauty, popularity, and body shape scored very low in level of importance to cheer athletes, while the aspects of fitness, strength, discipline, dedication, and goal setting scored very high (Steinberger, 2004). It is

important to note that the athletes surveyed in Steinberger's study (2004) were competitive cheerleaders for a gym and did not partake in any sideline activity, while the cheerleaders studied in Raabe & Readdy's (2016) research were strictly sideline-based. There is no present knowledge on motivations of collegiate cheerleaders that embrace both roles: cheering on their university's teams, as well as competing at UCA or NCA College Nationals.

Regardless of the external factors contributing to cheerleaders' motivations, athletes' drive to participate in this sport are still largely self-determined (Moritz, 2011; Raabe et al., 2016; Steinberger, 2004). 92% of cheerleaders in research identified with both competence and relatedness needs being satisfied as a result of their participation in collegiate cheerleading. Over half of them experienced IM and/or internalized the external reward of performing, thereby exhibiting self-determined forms (integrated regulation) of EM (Raabe et al., 2016). In statistical analysis, integrated regulation and IM are often indistinguishable (C. Mallett et al., 2007). One important theme that has emerged in the research on cheerleaders' motivations is the importance of relatedness (Moritz, 2011; Raabe et al., 2016; Steinberger, 2004). As noted previously, this aspect of needs satisfaction is sometimes downplayed in sporting environments (Frederick-Recascino, 2002; Raabe et al., 2016). It is believed that the importance of relatedness in cheerleading is heightened due to the close proximity of athletes in stunts and the teamwork required to make stunts work (Raabe et al., 2016; Steinberger, 2004).

In sum, while many collegiate cheerleaders often do not receive external rewards, such as scholarships, like other college athletes (Raabe et al., 2016), they do experience the extrinsic reward of performance. A love of performing is often internalized in many of these athletes, contributing to self-determined forms of motivation in the sport (Raabe et al., 2016; Steinberger, 2004). While the performance aspects of cheerleading can contribute to weight related stressors (Reel et al., 1998; Torres-McGehee et al., 2012; WELLS et al., 2015), the competitive aspects of the sport also contribute to a drive to achieve skill mastery, an important factor in self-determined motivation (Moritz, 2011; Raabe et al.,

2016; Steinberger, 2004). Thus, in the literature, both intrinsic and extrinsic factors have been shown to play a significant role in determining the motivational profiles present in collegiate cheerleaders.

## **Summary**

Self-determination theory is a theory developed to help explain the intrinsic and extrinsic factors that compel individuals to act the way that they do in specific situations (Deci & Ryan, 1985). Sports represent a unique context in which to study SDT because while athletes are often compelled to participate in sport because of a passion for the game, as competition levels and spectator visibility increase, extrinsic factors begin to play a more significant role in motivation (Alderman, 1974; Deci & Ryan, 1985). However at elite and collegiate levels the way in which an athlete views extrinsic factors (i.e. as competence affirmation or as pressure-inducing) ultimately determines the level of self-determination in their actions (Reeve et al., 1987). A coach plays a powerful role in helping to shape an athlete's perspective (C. J. Mallett et al., 2004) and the way in which they lead their team (i.e. autocratic or democratic style) has been shown to have the most significant effect on an athlete's motivation type when compared to other coaching behaviors (Adie & Jowett, 2010; Dale & Wrisberg, 1996; Hollebeak & Amorose, 2005).

The legitimacy of cheerleading as a sport has been supported in many, current research studies (Jacobson et al., 2005; Labella et al., 2012; Moritz, 2011; Nakajima et al., 2013; Raabe et al., 2016; Shields et al., 2009; Shields & Smith, 2009; Thomas et al., 2004). Physical training is an important aspect of sport development. However, conflicting results have been reported on the types of fitness programs that collegiate cheerleaders use to improve performance (Goodwin et al., 2004; Jacobson et al., 2005; Shields et al., 2009; Thomas et al., 2004). Cheerleading also presents conflicting opportunities for both extrinsic, performance factors and intrinsic, skill-mastery factors to prevail in determining motivation type (Moritz, 2011; Raabe et al., 2016; Reel et al., 1998; Steinberger, 2004; Torres-McGehee et al., 2012;

WELLS et al., 2015). To clarify these inconsistencies, more research is needed about both the strength and conditioning programs and motivational drivers in collegiate cheerleading.

## **CHAPTER III**

### **METHODOLOGY**

#### **Subjects**

The population studied was competitive, collegiate coaches and cheerleaders in the United States. Competitive was defined as being part of a program that competes at either the UCA or NCA College National competition. All subjects were consenting adults of at least 18 years of age. Male and female cheerleaders of various skill levels were encouraged to participate, as well as those from both junior colleges and four-year universities. The goal was to obtain data that was representative of the many types of college cheer programs in the US. Athletes and coaches from multiple team types (i.e. All-Girl, Small Coed, Large Coed, Advanced, Intermediate, etc.) were included in the sample. Due to the online nature of the study, coaches and athletes who did not have access to a computer or other device with internet capabilities were excluded.

#### **Recruitment**

Beginning January 13, 2019, the researcher sent out recruitment messages (Appendix A) via multiple social media platforms in order to contact interested participants. Social media platforms included Facebook, Twitter, Instagram, the Group Me app, and the researcher's personal cheerleading fitness blog. All messages were sent via the researcher's personal accounts

in order to utilize her extensive network of contacts in the cheerleading industry. The researcher also employed her personal contact lists and snowball sampling methods to reach out to collegiate cheerleading coaches and athletes via email and text messages. Individuals indicated a desire to partake in the study by either "liking" or commenting on social media posts with a message along the lines of "yes", "I am interested", "I want to participate", etc. If contacted via email or phone, interest was signified in a response via those mediums. Eligible participants were then sent a message, per the platform they were recruited from, inviting them to partake in the study and requesting their email address. After the initial social media recruitment messages were posted, snowball methods were the primary method for attracting participants. They were employed for three additional weeks until a satisfactory number of email addresses were obtained. Post-recruitment, consent forms (Appendix B) and unique survey links were sent out to coaches and athletes via email (Appendix C). Participants were given one week to fill out the survey. A follow-up email was sent five days after the original email thanking participants for their responses, as well as providing one final reminder to take the survey for those who had yet to do so (Appendix D).

## **Instruments**

Two different, but related, surveys were employed in this study using Google Forms. One survey was sent to collegiate cheer coaches (Appendix E) and the other survey (Appendix F) was sent to collegiate cheer athletes. Both requested information about SCP associated with participants' cheer programs and both contained questions regarding motivations for partaking in the SCP. The athlete survey included the Sport Motivation Scale-6 (C. Mallett et al., 2007) to inquire about motivations for partaking in cheerleading in general.

**Coach Survey.** Section 1 of the coach's survey collected background information. Questions were based on factors that might be related to SCP and athlete motivation, such as program type, scholarships, and competition wins. The section finished by asking if coaches required workouts outside of practice. Based on their response, coaches were either directed to a SCP information section, or to complete the survey. The SCP information section inquired about the type of instruction that athletes receive for workouts, gender/position specificity, workout volume, coach's motivations for requiring participation, and perceived value of the workout program in comparison to those of other colleges. In order to analyze if coaches and athletes were motivated to require/participate in SCP by similar factors, coaches were asked to answer a question about what they perceive their athletes' motivations to be for working out. In turn, athletes were asked the same question about what they perceive their coaches' motivations to be for requiring workouts.

**Athlete Survey.** The athlete's survey also started with background and SCP information sections that paralleled those of the coach's survey. This included a question inquiring about athlete's motivations for working out outside of practice. Additionally, all athletes were directed to complete the Sport Motivation Scale-6, abbreviated SMS-6 (C. Mallett et al., 2007), to measure their motivations for participating in cheerleading in general.

The SMS-6 is a survey with Likert-scale responses to the statement "Please indicate to what extent each of the following items corresponds to one of the reasons for which you are presently practicing your sport" (C. Mallett et al., 2007, p. 612). Participants chose a number from 1 ("Does not correspond at all") to 7 (Corresponds exactly). Based on the level of agreement to certain questions, the primary motivational drivers of athletes were established. (Pelletier et al., 1995). All participants were also given the opportunity to review their answers before submitting their completed response.



## **Procedure**

After subjects were selected for participation, they were contacted via a blind copy email from the researcher containing study information, a consent form, and a survey link. Separate emails were sent to coach and athlete participants, as each group had a unique survey link. The rest of the information in the emails was the same. The surveys were completed via Google Forms. The first question of the survey required confirmation of consent in order to continue and submit responses. Completed surveys were sent back to the researcher's private OSU email account as a Google Form response for data analysis. Email addresses of respondents were not connected to their survey answers. Surveys may have contained information that allowed for indirect identification of individuals, but this was not the intent of the research process. Five days after the initial email, subjects were sent a follow up email reminding them to take the survey if they had not and thanking them for their time if they had. Participation and contact between subjects and the researcher then ceased to occur, unless additional questions were asked by individual subjects.

## **Data Analysis**

Descriptive statistics were obtained via the Google Forms response spreadsheet. Based on the answer key for the SMS-6 (C. Mallett et al., 2007), scores for each motivational driver (Amotivation, external regulation, introjected regulation, identified regulation, integrated regulation, and IM) were tabulated in Google Sheets. The most prominent driver for each athlete surveyed was calculated by determining their highest scoring category. The overall mean and standard deviation for each driver in the athlete population were also calculated in Google Sheets. Microsoft Excel (Version 15.37) was used to run independent t-tests on the relationships between competition type (UCA vs. NCA), gender, required workouts (yes or no), scholarship availability and the scores for each motivational driver. Statistically significant relationships were cross-

checked in IBM SPSS (Version 24). SPSS was also used to run One-Way Analysis of Variance (ANOVA) on the relationships between years cheered for a college program, competition frequency, scholarships, and the scores for each motivational driver. In the ANOVA between scholarships and motivational drivers, a distinction was made between programs that provide only partial scholarships and those that provide a combination of both partial and full scholarships. This distinction was not made in the independent t-test that was ran in Excel. The level of significance for all statistics was set at  $\alpha=.05$ . Bonferroni post hoc tests were used to correct the ANOVAs.

## **CHAPTER IV**

### **FINDINGS**

#### **Participants**

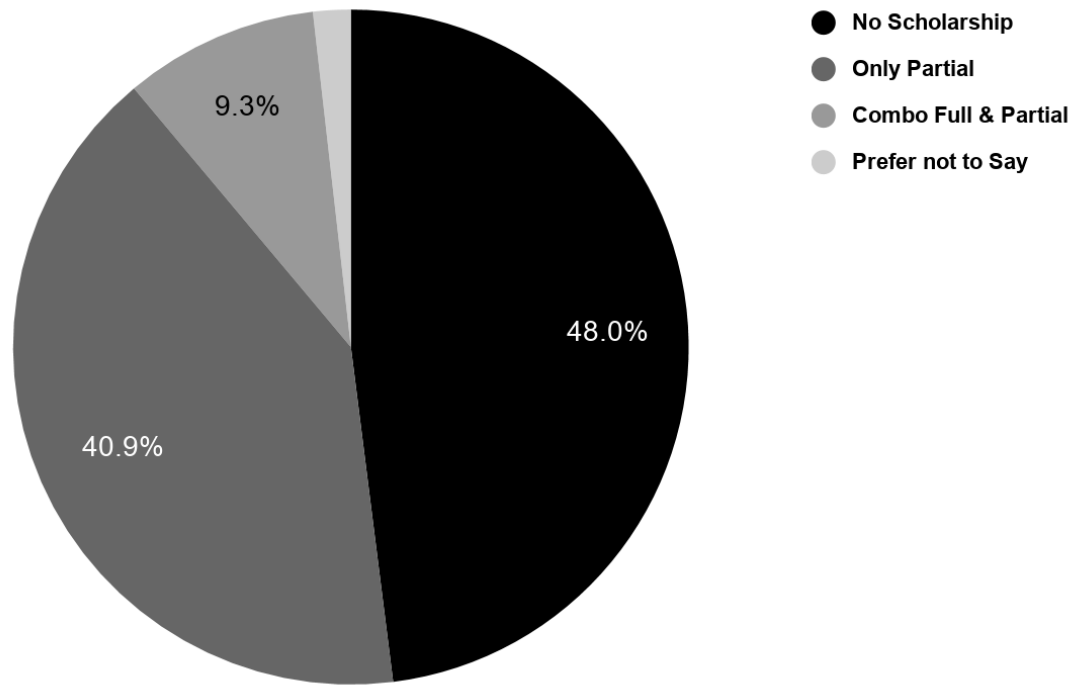
There was a 54% response rate among athletes surveyed and a 64% response rate among coaches surveyed. In total, one hundred and ninety-nine athletes (199) and twenty-six coaches (26) submitted surveys that were usable based on eligibility criteria. Final sample size was two hundred and twenty-five participants (225).

Of the athletes surveyed, 73.4% were female and 26.6% were male. In regard to college national competition type, 20.1% of athletes competed at UCA Nationals and 79.9% competed at NCA Nationals. Thirty-six different colleges across the US were represented by the athletes surveyed. One hundred and twenty-nine athletes had been cheering for their current program for two years or less, and seventy athletes had three or more years of experience. The fact that the majority of athletes had a relatively low amount of experience was reflected in the question asking them how many times they had competed at a collegiate national competition. Over half of the athletes surveyed (62.8%) had competed one, or less, times and 74.4% of them had never won a national competition.

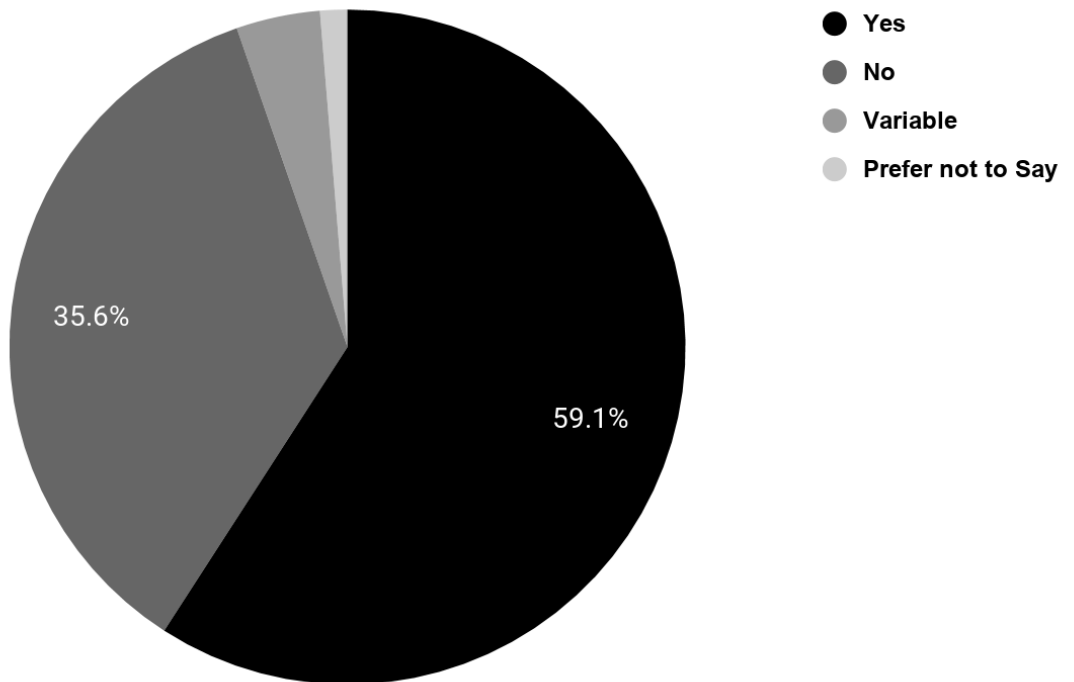
Of the coaches surveyed, 65.4% were female and 34.6% were male. UCA and NCA schools were more evenly split in the coach sample with 42.3% of coaches leading their teams to UCA Nationals and 57.7% of coaches leading their teams to NCA Nationals. Twenty different colleges were represented by the coaches surveyed. However, some of the coaches were from the same schools as the athletes surveyed. Total coaching experience varied among participants with the majority of those surveyed coaching for greater than three, but less than 10 years. Over half of the coaches surveyed had never won a national competition with their current program but 26.9% of the coaches surveyed had only led their current program to a national competition one time. It was interesting to note that all but one coach surveyed cheered in college as an athlete. In both the athlete and coach samples multiple division types were represented. Participants competed in the all-girl, small coed, large coed, and game day divisions, and were affiliated with DI, DII, and DIII universities. No junior colleges were represented. Due to the variability in responses to the open-ended division type question, it was impossible to accurately quantify the specific number of participants in each of these categories.

### **Cheer Program Information**

Figures 1 and 2 provide visual representation of scholarship availability and workout requirements for collegiate cheerleaders by combining coach and athlete responses in to one graph. Within the survey, some athletes gave variable responses to the question “Are you required to work out outside of practice?” Examples of variable responses included “It is expected”, “It is highly recommended”, and “When practice isn’t occurring on that day”.



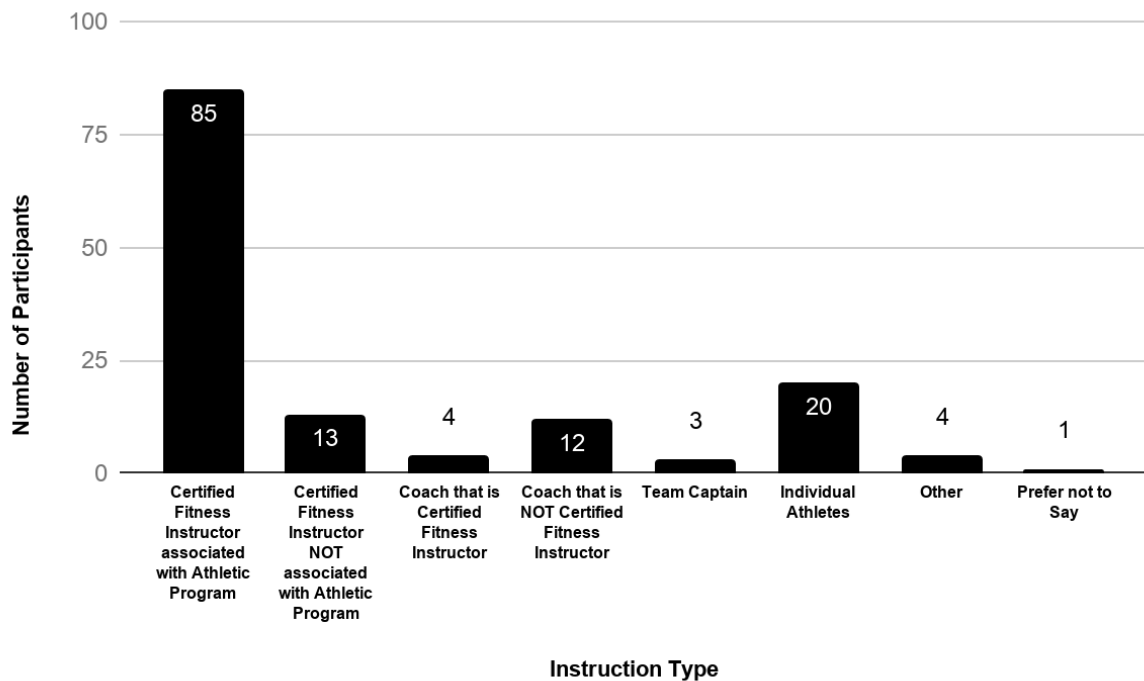
**Figure 1. Scholarship Options Available to Collegiate Cheerleaders**



**Figure 2. Workout Requirements for Collegiate Cheerleaders**

## Workout Program Information

One hundred and forty-two participants (16 coaches and 126 athletes) answered questions about the workouts associated with their collegiate cheer program. Participants who answered “No” or “Prefer not to Say” to the question about required workouts skipped this section of the survey. Responses revealed that the majority of required, collegiate cheer workouts are led by a certified fitness instructor associated with the university athletic program (Figure 3). In the survey, a certified fitness instructor was described as someone with a nationally acclaimed certification such as Certified Strength and Conditioning Specialist (CSCS), Certified Personal Trainer (CPT), and/or Certified Group Fitness Instructor (CGFI).

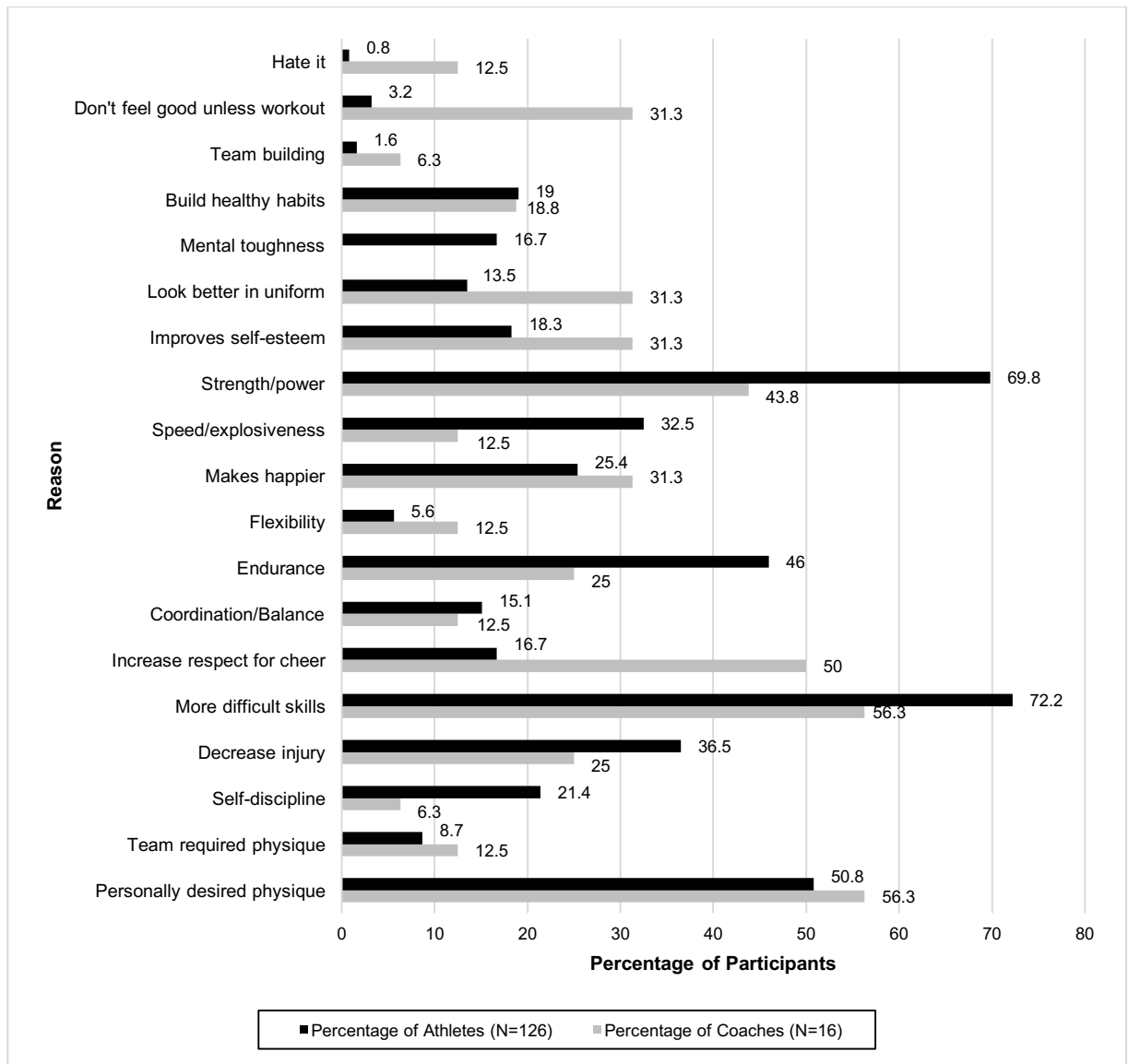


**Figure 3. Instruction Type Associated with Required Workouts of Collegiate Cheerleaders**

Based on responses from the participants, two days a week was the typical, expected number of days for athletes to work out outside of practice with 76% of participants choosing this answer. In regard to the specificity of workout plans, 51.4% of participants had gender specific

workouts but much fewer (26.8%) had position specific workouts. Position specificity refers to giving flyers, bases, and backspots different workout programs. It was interesting to note that 44% of participants felt that their workout program was better than the workout program of other collegiate cheer programs, 18% felt that theirs was worse, 31% felt that it was about the same, and 7% preferred not to answer.

Athletes and coaches named their top five reasons (not in ranked order) for working out, or for requiring workouts, respectively. Additionally, athletes named the top five reasons they thought that their coaches required them to work out. Comparatively, coaches named the top five reasons they thought that their athletes worked out outside of practice. The most commonly cited reasons athletes gave for working out were “It increases my ability to perform more difficult skills” (72.2%), “It improves my strength and power” (69.8%), and “It helps me to meet a personally desired weight, body fat percentage, or other physique related measurement” (50.8%). The most commonly picked reasons that coaches thought their athletes worked out were to reach a personally desired physique related measurement and to increase ability to perform more difficult skills (both 56.3%). Increasing strength and power was picked by 43.5% of coaches. Interestingly, 50% of coaches thought that athletes would be motivated to work out to “increase respect for cheerleaders as athletes” when in reality, only 16.7% of cheerleaders cited this as one of their top five reasons. Figure 4 provides more information on why cheer athletes worked out outside of practice and the perceptions coaches had of their motivations to do so.

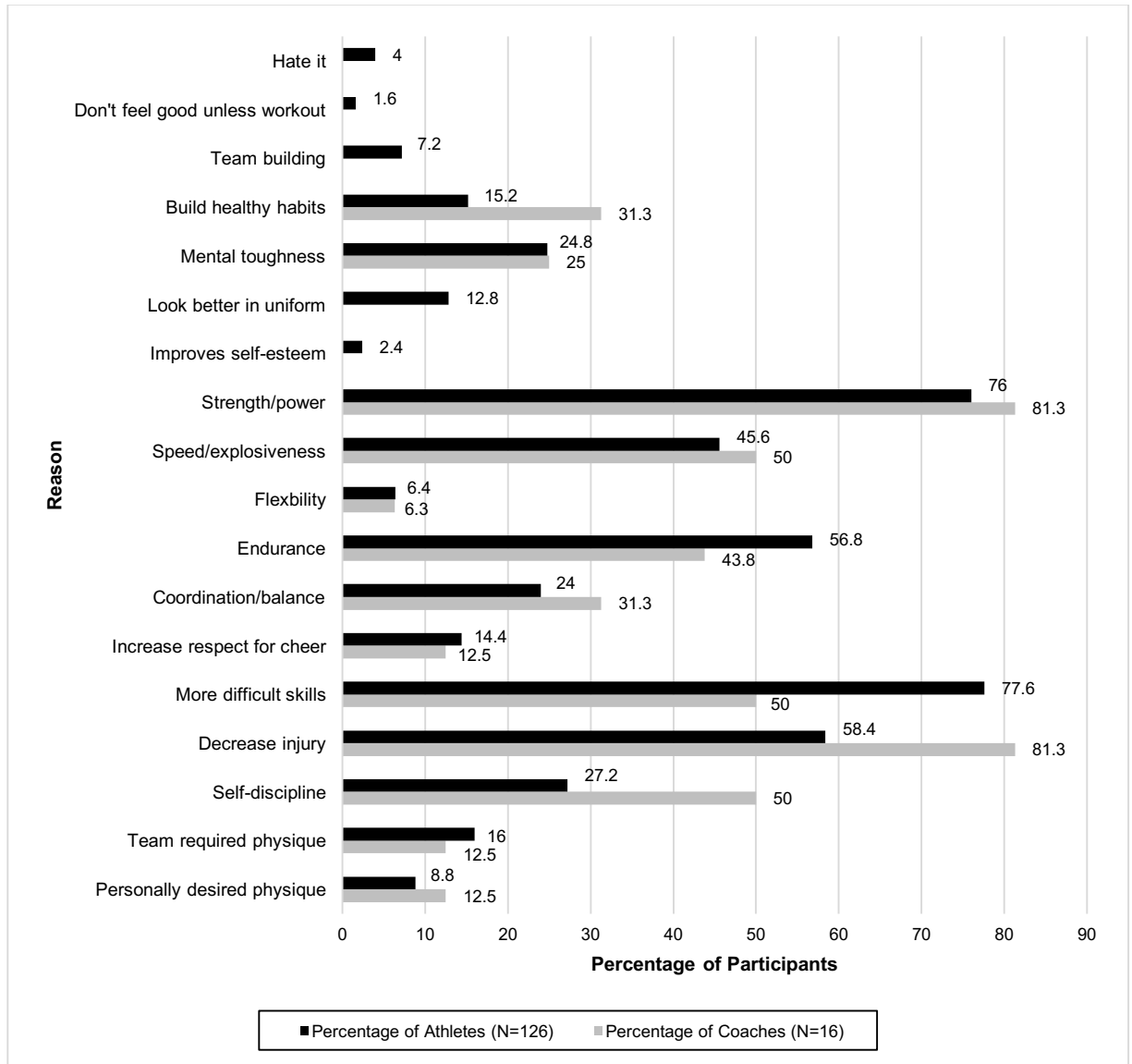


**Figure 4. Reasons Collegiate Cheer Athletes work out and Coaches' Perceptions of why they work out.** Athletes selected their top five reasons for wanting to work out outside of cheer practice and coaches selected the top five reasons they thought their athletes did so. Results are displayed side by side to show how athletes' reality and coaches' perceptions compared.

The main reasons coaches gave for requiring workouts were “It decreases chance of injury” and “It increases strength and power” (both 81.3%). The next most commonly cited reasons, all being picked by 50% of coaches, were “It builds self-discipline”, “It increases ability to perform more difficult skills”, and “It increases speed and explosiveness”. Athletes identified the ability to perform more difficult skills (77.6%), improving strength and power (76%), and decreasing chance of injury (58.4%) as their coaches' main reasons for requiring workouts.



However, more athletes assumed that improving endurance (56.8%) was a reason for requiring workouts than improving speed and explosiveness (45.6%). Only 27.2% of athletes acknowledged that their coaches required workouts to build self-discipline. Figure 5 shows the reasons that coaches required cheerleaders to work out and the perceptions cheerleaders have for why they did so.



**Figure 5: Why Collegiate Cheer Coaches want their Athletes to work out and Athletes' Perceptions of why Coaches want them to work out.** Coaches selected their top five reasons for requiring athletes to work out outside of cheer practice and athletes selected the top five reasons they thought that their coaches required them to do so. Results are displayed side by side to show how coaches' reality and athletes' perceptions compared.

## SMS-6 Responses

The SMS-6 establishes six different categories of athlete motivation: Amotivation, external regulation, introjected regulation, identified regulation, integrated regulation, and intrinsic motivation. Higher scores represent a higher affiliation with a specific motivational driver. The mean scores and standard deviations for the entire athlete sample (199 participants) are listed in Table 1. Twenty-eight was the highest possible score one could have for each category of motivation.

	<b>Amotivation</b>	<b>External Regulation</b>	<b>Introjected Regulation</b>	<b>Identified Regulation</b>	<b>Integrated Regulation</b>	<b>Intrinsic Motivation</b>
<b>Mean Scores</b>	9.13	16.79	13.67	21.65	21.66	22.77
<b>Standard Deviation</b>	5.82	5.65	5.73	4.26	4.63	3.78

Several participants had multiple drivers that tied for their most prominent motivation type but IM most frequently scored the highest for participants with 50.2% of responses either having it as the sole top driver or having it tie for the top spot. The next most prominent drivers were integrated regulation (34.2%) and identified regulation (27%). The least prominent motivational driver was introjected regulation (3.5%).

## **Significant Relationships**

The data collected revealed a few significant relationships. Independent t-tests showed that females had significantly higher scores in integrated regulation than males ( $T(197) = 2.127$ ,  $p = .035$ ). Athletes from programs that did not require workouts had significantly higher scores in integrated regulation than athletes from programs that did require workouts ( $T(195) = -2.273$ ,  $p = .024$ ). College cheerleaders who had competed at one college national competition had significantly higher introjected regulation scores than those that had competed four times ( $F(4, 194) = 3.888$ ,  $p < .05$ ). ANOVA results for the relationship between competition frequency and introjected regulation is depicted in Table 2.

Table 2						
<i>One-Way Analysis of Variance of Competition Frequency and Motivational Drivers</i>						
		Sum of Squares	df	Mean Square	F	Sig.
<b>IM</b>	<b>Between Groups</b>	38.392	4	9.598	.666	.616
	<b>Within Groups</b>	2794.975	194	14.407		
	<b>Total</b>	2833.367	198			
<b>Integrated</b>	<b>Between Groups</b>	28.745	4	7.186	.330	.857
	<b>Within Groups</b>	4220.019	194	21.753		
	<b>Total</b>	4248.764	198			
<b>Identified</b>	<b>Between Groups</b>	52.581	4	13.145	.722	.578
	<b>Within Groups</b>	3532.796	194	18.210		
	<b>Total</b>	3585.377	198			
<b>Introjected</b>	<b>Between Groups</b>	482.879	4	120.720	3.888	.005*
	<b>Within Groups</b>	6022.890	194	31.046		
	<b>Total</b>	6505.769	198			
<b>External</b>	<b>Between Groups</b>	134.184	4	33.546	1.051	.382
	<b>Within Groups</b>	6192.369	194	31.919		
	<b>Total</b>	6326.553	198			
<b>Amotivation</b>	<b>Between Groups</b>	13.927	4	3.482	.101	.982
	<b>Within Groups</b>	6683.932	194	34.453		
	<b>Total</b>	6697.859	198			
<p><i>Note.</i> For this question cheerleaders were divided in to groups based on how many years they had competed at a college national competition (0, 1, 2, 3, or 4 times). Statistical analysis analyzed the relationship of competition frequency with each motivational driver (listed in the far-left column) of the SMS-6. There was a significant relationship found between introjected regulation and the number of times athletes had competed at collegiate national cheerleading competitions, with athletes that had competed one time having significantly higher introjected regulation scores than those that had competed four times. * indicates significance at the <math>p &lt; 0.05</math> level.</p>						

Significance was also found when analyzing the relationship between years athletes had cheered for their current collegiate program and motivational drivers. Note that the outlier athlete

who had cheered for their program for greater than five years was excluded in order to obtain more accurate results. This relationship was only concerned with years involved with a collegiate cheer program, not number of competition participations. Analysis of the revised data set revealed that two year athletes had significantly higher introjected regulation scores than athletes who had cheered for their current program for less than one year, three years, four years, and five years ( $F(5, 192) = 4.355, p < .05$ ). Table 3 shows additional, significant relationships between IM and integrated regulation and years cheered, but Bonferroni post hoc analyses only confirmed significance between introjected regulation and years cheered.

Table 3  
*One-Way Analysis of Variance of Years Cheered and Motivational Drivers*

		Sum of Squares	df	Mean Square	F	Sig.
<b>IM</b>	<b>Between Groups</b>	157.412	5	31.482	2.271	.049*
	<b>Within Groups</b>	2661.679	192	13.863		
	<b>Total</b>	2819.091	197			
<b>Integrated</b>	<b>Between Groups</b>	237.796	5	47.559	2.281	.048*
	<b>Within Groups</b>	4003.866	192	20.853		
	<b>Total</b>	4241.662	197			
<b>Identified</b>	<b>Between Groups</b>	179.809	5	35.962	2.029	.076
	<b>Within Groups</b>	3402.837	192	17.723		
	<b>Total</b>	3582.646	197			
<b>Introjected</b>	<b>Between Groups</b>	661.343	5	132.269	4.355	.001*
	<b>Within Groups</b>	5830.864	192	30.369		
	<b>Total</b>	6492.207	197			
<b>External</b>	<b>Between Groups</b>	206.183	5	41.237	1.294	.268
	<b>Within Groups</b>	6119.736	192	31.874		
	<b>Total</b>	6325.919	197			
<b>Amotivation</b>	<b>Between Groups</b>	71.710	5	14.342	.422	.833
	<b>Within Groups</b>	6528.153	192	34.001		
	<b>Total</b>	6599.864	197			

*Note:* For this question cheerleaders were divided in to groups based on how many years they had cheered with their current program (less than 1, 1, 2, 3, 4, or 5 years). Statistical analysis analyzed the relationships between these groups and the different motivational drivers (listed in the far-left column) of the SMS-6. Significant relationships were found between years cheered and IM, integrated regulation, and introjected regulation. However, Bonferroni post hoc analyses only confirmed significance between years cheered and introjected regulation, with 2-year athletes having significantly higher introjected regulations scores than all other groups except 1-year athletes. \* indicates significance at the  $p < 0.05$  level.

## **CHAPTER V**

### **DISCUSSION**

#### **General Workout Program Information in Collegiate Cheerleading**

The results obtained in the current study partially supported some of the researcher's initial hypotheses. Specifically, there was a range of strength and conditioning program types among the athletes and coaches surveyed, as originally predicted. The majority of programs that did have required workouts utilized certified fitness instructors associated with the athletic programs at their universities to instruct them. Certified fitness instructors were classified as individuals with nationally acclaimed certifications, such as CSCS, CPT, and CGFI. This bodes well for the continued growth and increasing difficulty of collegiate cheerleading because certified fitness instructors associated with university athletic programs are most likely able to provide the highest degree of knowledge and the most advanced equipment to cheer athletes. However, 35.6% of respondents in the survey said that their cheer program did not require outside of practice workouts. These results reveal a much lower workout program participation rate and conflict with reports that 92.9% of collegiate cheerleaders participate in some sort of weight lifting program (Jacobson et al., 2005). The differences between the present study and Jacobson et al. (2005) could be related to college division (DIA vs. D1, DII, DIII), as the aforementioned study only assessed Division IA universities and Division IA universities tend to have greater resources to invest in training programs for their cheerleaders. Schools from multiple

division types were represented in the sample of the present study.

In contrast to the high percentage of cheerleaders with required workout programming in Jacobson et al. (2005), the NCAA Division I collegiate cheerleading team studied by Thomas et al. (2004) did not follow a regimented workout program, even though their fitness levels were equivalent to those observed in other college-level athletes. The results of the present study also revealed that many collegiate cheerleaders work out on their own, as 35.6% of respondents did not have a required workout program. Among the programs that did have some sort of required workout program, twenty-three respondents said that instruction came from either a team captain or that individual athletes were required to create their own workouts. Either option is more similar to an independent workout program, rather than a required regime led by a certified individual. This means that a total of 46% of those surveyed had variability in the quality of workouts they were exposed to, as often times individuals without fitness certifications or degrees in exercise science have limited knowledge in regard to designing strength and conditioning programs.

### **Strength and Conditioning Program Motivations in Collegiate Cheerleading**

In the initial hypotheses, the researcher predicted that schools with greater competition success would have SCP driven by athletic performance, as opposed to aesthetic goals. Due to the largest segment of athletes cheering with their current program for less than one year, and thus not having the opportunity to compete yet, analyzing athlete responses in regard to this relationship was not valid. The researcher did not anticipate such a large fraction of participants having a lower level of experience. An opportunity therefore exists for future studies to examine associations between competition wins/losses and SCP.

Of the coaches surveyed, 61.5% had not won a national competition with their current program. However regardless of competition success, coaches consistently picked athletic



performance-related objectives over aesthetic ones as motivating them to require athletes to work out. In fact, not a single coach chose “It makes them (athletes) look better in their uniform” as a reason for requiring workouts. All things considered, this research suggests that most of the aesthetic pressures associated with lean sports, such as cheerleading, comes from the athletes themselves. Of the coaches surveyed, 56.3% predicted that one of athletes’ top reasons for working out was to reach a personally desired physique-related measurement goal and 50.8% of athletes did indeed choose this reason. Past research has revealed that “many cheerleading squads enforce a weight standard of 120 pounds and body fat limit between 9% and 17% for female cheerleaders” (Reel et al., 1998, p. 3). The findings of this study contradict this statement, as only 8.7% of athletes cited team required physique measurements as one of their top five reasons for working out. Other research suggests that media coverage and revealing uniforms are a significant source of body image dissatisfaction in collegiate cheerleaders (Torres-McGehee et al., 2012). In the present study, 31.3% of coaches acknowledged that athletes might work out to look better in their uniform, but only 13.5% of athletes did indeed select this reason. A more fit physique may help to improve athlete self-image, as 18.3% of the athletes surveyed acknowledged that working out helps to improve their self-esteem. However, other athletically-based reasons were chosen more frequently than improving self-esteem. Both the Steinberger (2004) and Moritz (2011) study revealed that cheer athletes are proud of, and place a high importance on the strong physical requirements of cheer routines, thus agreeing with the information presented in this study. Therefore, the present findings suggest that while physique related pressures may be present in collegiate cheerleading, most athletes are much more concerned with being competitive and performing well than they are with obtaining a certain image.

Since the present study exhibited a focus on athletic performance goals it is interesting to note that, in general, endurance was more popularly chosen as a reason to work out than speed

and explosiveness. However, “increasing strength and power”, which is similar to increasing speed and explosiveness, was frequently picked as a top reason for working out. Regardless, this is interesting because competitive cheerleading routines are less than three minutes long and skills within a routine normally require quick bursts of energy lasting no longer than three to five seconds. Gymnastics is very similar to competitive cheerleading in regard to type of movement and it is estimated that 90% of the movements in gymnastics are generated with energy from the ATP-CP metabolic system and only 5% come from the aerobic system (Hoffman, 2012). The ATP-CP system is more often associated with strength and power sports and the aerobic system is more often associated with endurance sports (Hoffman, 2012). The popularity of increasing endurance as a reason to workout therefore represents an opportunity to increase education regarding metabolic demands and fitness program objectives in competitive, collegiate cheerleading so that athletic performance goals may be more effectively accomplished.

### **General Motivations to Participate in Collegiate Cheerleading**

The present study originally hypothesized that competitive, collegiate cheerleaders would trend towards intrinsic motivation. The present study supports this hypothesis. IM had the highest mean score (22.7) of all motivational drivers and was also the highest scoring driver for 50% of the athletes surveyed. Integrated regulation was the highest scoring driver for 34% of the athletes surveyed. As a reminder, integrated regulation is the most self-determined form of EM that occurs when athletes decide that their participation in a certain activity is in congruence with their personal values (Deci & Ryan, 1985; Pelletier et al., 2007). Since IM and integrated regulation are the most self-determined types of motivation, it can be inferred that most collegiate cheerleaders had a mastery-goal orientation towards their sport. They enjoyed initiating challenges, exerting effort, and persisting in cheerleading for competence related objectives. Raabe and Ready (2016), Moritz (2011), and Steinberger (2004) concluded that the actions of cheerleaders were largely governed by self-determined motivation. Specifically, Raabe and

Readdy (2016) found that 58% of the collegiate (non-competitive) cheerleaders in their study exhibited IM by expressing that they had fun cheering, learning and accomplishing tasks, and experiencing the sensations associated with the sport. They also revealed that many cheerleaders displayed integrated regulation because crowd performance was part of their identity. Overall in the present study, 84% of the athletes surveyed most identified with either IM or integrated regulation, the two most self-determined motivational drivers in the SMS-6. These results are encouraging because self-determined motivation is linked to positive aspects of sport, such as persistence and work ethic (Deci & Ryan, 1985).

### **Significant Relationships**

There are a few possible explanations for the significant relationships between athlete characteristics and specific motivational drivers. For example, females scored significantly higher in integrated regulation than males. At the college level, many female cheerleaders have more years of cheerleading experience than males. Often times male cheerleaders participate in other sports throughout high school and decide to cheer at the collegiate level if they are not quite advanced enough to pursue other sporting options at their universities. Cheerleading is a high-status activity for female athletes in which a lot of personal and social significance is associated with being on the team (Barnett, 2006). For males, athletics in general, and not cheerleading in particular, provides this high status achievement (Barnett, 2006). Sometimes males in cheerleading are stereotyped as feminine, so involvement in cheerleading might not always be something that more masculine males take pride in identifying with. The combination of a lesser time spent with the sport and a more negative identity connotation could therefore explain why males scored lower in integrated regulation in the present study.

Athletes who were not required to work out as a part of their cheer program scored significantly higher in integrated regulation than athletes who were required to work out. It would

seem that the more time athletes were required to spend practicing an activity, the more they would associate it with their personal values. However, it has been established that autonomy is a required pillar of IM (Deci & Ryan, 1985). Since integrated regulation is the most self-determined form of EM, it can be inferred that some level of autonomy is also required to possess this type of motivation. Training and instruction have a negative effect on autonomy (Hollembek & Amorose, 2005) and athletes have exhibited a preference towards having input in practices and workouts over following a strict regime prescribed to them (Dale & Wrisberg, 1996). Thus, requiring workouts may be undermining self-determination in collegiate cheer athletes. The present findings appear to support previous research conclusions that giving athletes more of a say in their practice prescription increases self-determined forms of motivation (Dale & Wrisberg, 1996; Hollembek & Amorose, 2005). It is acknowledged that there is a fine balance between allowing athletes autonomy and running an effective program, however, based on the research, the suggestion is to still require workouts but to allow athletes to feel like they are more of an integral part of the decision-making process when creating them. This could potentially lead to higher levels of self-determination and the positive characteristics of persistence and work ethic associated with it. Thus, future studies should look at how different levels of control in the workout planning process affect athlete motivation to participate in sport.

Findings from the present study revealed two significant relationships in regard to introjected regulation. As a reminder, introjected regulation is the type of motivation where individuals are driven by their egos and a desire to receive approval from themselves and others (Deci & Ryan, 1985). This focus relies on receiving outside affirmation of worth and competence. Athletes who had competed four times at a college national competition scored significantly lower in this motivational driver than athletes who had competed one time. The present study suggests that athletes with greater competition experience are more confident and self-assured in their own abilities than those who are newer to college cheerleading, thus relying

less on outside approval and explaining the lower scores. Similarly, athletes with two years of college cheerleading experience (in general, not related to number of times competing) scored significantly higher in the category of introjected regulation than athletes with less than one year of experience, as well as those with three, four, and five years of experience. In this relationship, perhaps the two-year mark represents the peak of needing other's approval and ego reinforcement. Much like the relationship with competition frequency, two year athletes have had less experience than three, four, and five-year athletes and thereby lesser opportunities to gain confidence in their abilities at the collegiate level. However, they may need more outside affirmation than those with even less experience than them (the less than one year of experience athletes) because they have had more of an opportunity to fully recognize their prominent image at university events. In this way, perhaps being a part of the collegiate cheerleading culture for a longer amount of time than the less experienced athletes heightens preoccupation with status and explains why two-year athletes had the highest introjected regulation scores in comparison to the rest of the experience levels.

### **Limitations**

There are a few limitations in the present study. First, some discrepancies were observed between coaches' and athletes' responses about required workouts. For example, a coach from a certain university would answer that workouts were required as a part of their program, but then athletes from the same program would answer that workouts were not required. It is unclear how this could be miscommunicated but it raises concern about the validity of some of the survey responses and the percentage data obtained from them. Second, the researcher did not anticipate the variety in responses that were recorded for the question asking coaches and athletes what division they competed in. The researcher assumed that participants would simply fill out this open-ended question with the name of their division exactly how it appears at college national competitions. In reality, participants varied in the specificity of their responses. For example,

some participants merely answered Division I, Division II, or Division III, without specifying team type (All-Girl, Small Coed, Large Coed, etc.). For this reason, the researcher was unable to analyze relationships between division type, SCP, and motivational drivers as originally planned. Third, in some SMS-6 responses, participants had similar scores across all categories of motivation. It is not possible to have similar strengths of IM and amotivation for the same activity. It appears as if some athletes might have either misunderstood the Likert scale or rushed through their responses without fully reading instructions. This could also negatively affect the validity of the data. Despite these issues, the researcher is still confident that this study provides valuable insight to both the scientific and cheerleading communities. Athletes in this survey were from multiple states, had various levels of talent, and came from several different team sizes and types. The sample was much more diverse than those used in previous studies. The various perspectives are therefore useful in painting a more comprehensive picture of collegiate cheerleading in the US.

### **Future Recommendations**

While the current research certainly adds to the body of knowledge on SCP and motivations in competitive, collegiate cheerleading, there is still much research to be done. One area of particular interest is the effect of team type (i.e. All Girl, Small Coed, Large Coed, etc.) on motivation. It would also be interesting to measure motivation using instruments that do not utilize a Likert scale to see if similar results are obtained. Qualitative research on the specific workout plans of university cheerleaders could provide more in-depth information on SCP of collegiate cheerleaders. Additionally, looking at program competition success as a whole, rather than just over the tenure of one specific athlete's or coach's time with the program, could lead to more conclusive results on the effects of different workout regimes on athletic performance. As cheerleading increases in popularity across the world, including other countries in studies could provide valuable, relevant information for comparisons as well. Clearly there are many different

directions one could take with the current data. It is the desire of the researcher that her work be used as a springboard for advancing knowledge of collegiate cheerleading and for improving the sport for all of those involved in it.

## **Conclusion**

Overall, the results of the present study help to increase knowledge of both the fitness and motivational climates in competitive collegiate cheerleading in the United States. Findings both conflicted and agreed with other previous research. It appears that collegiate cheerleaders have less access to sport specific conditioning programs than previously reported (Jacobson et al., 2005). As observed before, there is considerable variability in workout requirements for collegiate cheerleaders (Thomas et al., 2004). Additionally, there seems to be less of a preoccupation with image in collegiate cheerleading than what other studies have communicated (Reel et al., 1998; Torres-McGehee et al., 2012). IM, achieving performance goals, and satisfying competence objectives were the prominent focus of collegiate cheer coaches and athletes in this study, similar to participants in Raabe and Ready (2016), Moritz (2011), and Steinberger (2004). The motivational driver of integrated regulation was significantly associated with gender and workout requirements. While there is less of an opportunity to change the way males and females feel about cheerleading, there is more of a chance to increase self-determined motivation in this sport by giving cheerleaders a greater voice in creating workout programs for themselves. Introjected regulation was shown to have significant associations with competition frequency and years of collegiate cheerleading experience in the population surveyed. Lesser experienced athletes generally relied more on outside opinions for motivation than those with more experience. Therefore an opportunity exists for coaches to provide more support to newer athletes to help improve their competence belief, which in turn could also help achieve greater levels of self-determined motivation (R. M. Ryan & E. L. J. A. p. Deci, 2000; Vallerand, 1997). All in all, the present study produced encouraging results regarding self-determination in collegiate

cheerleading and offers valuable insight to how coaches and program leaders could help to further improve the motivational climate of the sport.



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## APPENDICES

### Appendix A

#### Recruitment Messages

Group Me Message (also sent to some Facebook groups that researcher had more of a personal connection with): Hi everyone! I'm starting my thesis on strength and conditioning programs and sources of motivation for college cheerleaders. I need current coaches AND athletes to help! You just have to take a 15-20 min survey that I will email out. Like this message if you're interested and I will be in touch! Spread the word to other people you know who might want to help and have them contact me! 919-632-1771 or [miralei@okstate.edu](mailto:miralei@okstate.edu) Thanks guys! :)

Researcher's Personal Cheerleading Fitness Blog: Are you currently part of a college cheerleading program? If so I could use your help! I am starting my thesis on strength and conditioning programs and sources of motivation for collegiate cheerleaders and I need current coaches AND athletes to participate. My goal is to use a diverse group of participants from multiple levels and types of programs so that I can get a good feel for collegiate cheerleading as a whole in the US. All participation will be via email and the survey should only take 15-20 minutes. If interested, email me (words linked to email message). If you know others who might want to help, spread the word!

The following image was used in conjunction with the above blog message:



Facebook (posted on researcher's personal page and in specific cheerleading groups, posted with "Calling all Cheerleaders" graphic): Are you currently part of a college cheerleading program? If so I could use your help! I am starting my thesis on strength and conditioning programs and sources of motivation for collegiate cheerleaders and I need current coaches AND athletes to participate. My goal is to use a diverse group of participants from multiple levels and types of programs so that I can get a good feel for collegiate cheerleading as a whole in the US. All participation will be via email and the survey should only take 15-20 minutes. If interested comment below, DM me, or email [miralei@okstate.edu](mailto:miralei@okstate.edu) so I can get in touch. Help me spread the word if you know of others who might want to help!

Instagram (used "Calling all Cheerleaders" graphic as picture): Are you currently part of a college cheerleading program? If so I could use your help! I am starting my thesis on collegiate cheerleading and I need CURRENT athletes and coaches to participate! You just have to take a 15-20 min survey and it's all via email. Comment or DM me your email if you're interested and tag friends who might be willing to help!

Twitter: Tweeted out a link to both the Instagram and blog message.

Email to Personal Contacts:

To: Insert email address here

From: [miralei@okstate.edu](mailto:miralei@okstate.edu)

Subject: Please help me with my thesis on college cheerleading!

Message:

Hi (insert name here),

I hope you and your team are doing well! I am reaching out because I am starting my thesis and I am studying the different types of strength and conditioning programs that are available to collegiate cheerleaders, as well as the sources of motivation for this population. My goal is to use a diverse group of participants from multiple levels and types of programs so that I can get a good feel for collegiate cheerleading as a whole in the US. I need current coaches and athletes to participate, so I immediately thought of you and your program. I would need you and as many athletes as you could get to fill out a survey online. It should only take 15-20 minutes! Everything will be done via email so if you are interested and could send me the emails of athletes that are as well, I would really appreciate it. There isn't a lot of research that is done on collegiate cheerleading in particular so I am hoping that this information will help add to the body of knowledge about our sport and help to improve it for everyone involved.

If you know of other programs that might be interested, please give their coach my email or phone number (919-632-1771) so I can get in contact with them.

If you have any questions please don't hesitate to ask and thank you so much for taking the time to read this email!

Also, if you don't want me to contact you any more about this, please just let me know and I will make sure to take you off my list.

Best,

Mikayla Raleigh

## Appendix B

### Consent Form for Participation in Mikayla Raleigh's Thesis

**Project Title:** Strength and Conditioning Programs and Driving Motivations in Collegiate Cheerleading in the US

**Investigators:** Mikayla Raleigh, CSCS, CPT

**Faculty Adviser:** Dr. Jason Defreitas, CSCS\*D

**Purpose:** There are two primary purposes of this study. One is to obtain data on the types of strength and conditioning programs available to collegiate cheerleaders, as well to investigate the congruence of coach and athlete motivations for participating in them. The second purpose is to analyze the driving motivations that collegiate cheerleaders have to partake in their sport in general. As a secondary objective, the two data sets will be analyzed for potential relationships.

**Inclusion Criteria:** Coaches and athletes must be part of a collegiate program that attends either UCA or NCA College Nationals. Males and females of all experience levels are encouraged to participate, as well as subjects from a wide range of championship divisions (ex. All-Girl, Coed, and Small Coed teams of different university sizes). Coaches and athletes from junior colleges, as well as four-year universities are permitted. Due to the online nature of the study, participants must have access to a computer or other device with Internet capabilities.

**Exclusion Criteria:** Coaches and athletes that are not *currently* part of a competitive, college program are excluded from this study. Due to the online nature of the study, coaches and athletes who do not have access to a computer or other device with Internet capabilities are also excluded.

**Procedures:** You will participate in this study via an online survey link. You should expect 2 emails from the principal investigator. Total time spent participating should not total more than thirty minutes. The sequence of events for participation (post-recruitment) are as follows:

1. Subject will be contacted by the principal investigator via email. The first email will contain a consent form and a Google Form link to the survey.

2. The first question of the survey is acknowledgement of consent. Checking “yes” is required to continue participation. Take the survey and submit after reviewing answers for accuracy.
3. Subject will receive a follow-up email thanking them for their time and efforts.

**Benefits to Society:** You will be helping to increase knowledge about collegiate cheerleading.

There are few research projects dedicated to studying this unique population. The more information that is collected on collegiate cheerleading, the more knowledge those in the cheerleading industry will have to improve it.

**Risks of Participating:** There are no risks associated with participating in this study beyond the normal scope of day to day living.

**Obligation to Participate:** If at any point in the survey you wish to stop participating, you can simply exit the Google Form and not submit your responses. If you would rather not answer a specific question, you can select “Prefer not to say” without any penalty. Participation in this study is completely voluntary.

**Confidentiality:** Your email address and name will not be associated with your response. There is a slight possibility that some of the answers to questions (program name, years cheered, number of competition wins, etc.) could indirectly reveal your identity to the researcher. The researcher is the only one who will have access to this information and all data will be de-identified in the finished thesis. School names will not be associated with responses. For example, Oklahoma State University would be referred to as “a division one school with a large and small coed team”. Thus, participants can feel reasonably confident that their responses will be anonymous in the presentation of data.

Survey responses will be received by the principal investigator through her personal OSU email account. Therefore, she will be the only one with authorized access to responses. The account is password protected. Additionally, results will be stored on a flash drive that will be kept in a locked filing cabinet in her office (Seretean Wellness Center, 113). Email contact information



will also be secured via both of these venues. If you have any concerns about the confidentiality of your answers, please contact Mikayla Raleigh ([miralei@okstate.edu](mailto:miralei@okstate.edu)) directly.

**Contact Information:** This study has been reviewed and approved by the Oklahoma State University Review Board (IRB). If you have questions about the research project, you may contact Mikayla Raleigh ([miralei@okstate.edu](mailto:miralei@okstate.edu)) or Dr. Jason Defreitas ([jason.defreitas@okstate.edu](mailto:jason.defreitas@okstate.edu)). Additional questions can be directed to the OSU IRB office, 218 Scott Hall, Stillwater, OK 74075, 405-744-3377, [irb@okstate.edu](mailto:irb@okstate.edu).

\*\*Participants acknowledged consent by checking a box in the survey, therefore there is no signature line on this form.

## Appendix C

### Initial Email with Survey Link

To: BCC email list of participants (separate emails sent to coaches and athletes)

From: [miralei@okstate.edu](mailto:miralei@okstate.edu)

Subject: Coach/Athlete Survey for Mikayla Raleigh's Thesis Research on Collegiate Cheerleading

Message:

Hi Coaches/Athletes,

Thank you so much for volunteering to be a part of my thesis research. I am excited to help expand the knowledge we have of collegiate cheerleading and sincerely appreciate your role in helping me. Attached to this email is a consent form with all the information you need to know about the study. Please take the time to read over it before accessing the survey below. The survey should only take 15-20 minutes to complete. **Please submit responses by FRIDAY FEBRUARY 8<sup>TH</sup>, 2019.**

Here is the link for your survey: (insert either coach or athlete Google Form link).

There is a different survey link for coaches and athletes, so if you have been mistakenly included in the wrong group, please let me know ASAP so I can send you the proper link. If you have accidentally been sent the survey twice, please only take it one time.

Please take the survey by yourself so that your answers are unique to you and not influenced by others' opinions. Your personal and school name will not be associated with your responses so please answer questions freely. Participation in this survey is optional and you can choose "Prefer not to say" without penalty on any of the questions.

If you have any concerns at all, please feel free to reach out to me.

Thank you again,

Mikayla Raleigh

Appendix D  
Follow Up Email

To: Insert email address here (BCC)

From: [miralei@okstate.edu](mailto:miralei@okstate.edu)

Subject: Participation in Mikayla Raleigh's Thesis!

Message:

Dear Coaches/Athletes,

Thank you so much for those who have already taken the time to be involved in my thesis research on collegiate cheerleading. I sincerely appreciate the thoughtfulness of your responses and your willingness to help me out. I am looking forward to analyzing the results and providing collegiate cheerleaders and coaches with valuable information that can be used to improve their programs.

Unfortunately, only about half of you have responded so far. If you have forgotten to take the survey you can access it at the following link: (insert Coach/Athlete survey link here) I need all responses by **SUNDAY FEBRUARY 10<sup>TH</sup>, 2019** in order to start analyzing the data. After this day, I will no longer be able to accept responses. Please take 5-10 minutes to fill out the survey; other participants have said it is very quick and easy!

I hope you have a great rest of the day. Please feel free to contact me with any follow-up questions about the study, or if you feel you incorrectly submitted any responses.

Best,

Mikayla Raleigh

## Appendix E

### Coach Survey

1. Do you CURRENTLY coach a collegiate cheerleading team?
  - a. Yes
  - b. No
  
2. Does your team CURRENTLY compete at either UCA or NCA College Nationals?
  - a. Yes- UCA
  - b. Yes- NCA
  - c. No
  
3. Select the option that best describes you below:
  - a. Male
  - b. Female
  - c. Other
  - d. Prefer not to say
  
4. What is the name of the college where you coach? If you prefer not to say please indicate below. (short answer response)
  
5. How many years have you coached THIS team?
  - a. Less than 1 year
  - b. 1 year
  - c. Greater than 1 but less than 3 years
  - d. Greater than 3 but less than 5 years
  - e. Greater than 5 but less than 10 years
  - f. Greater than 10 years
  - g. Prefer not to say

6. How many TOTAL years of COLLEGIATE cheerleading coaching experience do you have?

- a. Less than 1 year
- b. 1 year
- c. Greater than 1 but less than 3 years
- d. Greater than 3 but less than 5 years
- e. Greater than 5 but less than 10 years
- f. Greater than 10 years
- g. Prefer not to say

7. Did you cheer in college as an athlete?

- a. Yes
- b. No
- c. Prefer not to say

8. How many times has your current program competed at UCA or NCA Nationals with you as their coach? Please include only participation as a team; partner/group stunt participation is excluded.

- a. 0
- b. 1
- c. 2
- d. 3
- e. 4
- f. 5
- g. 6
- h. 7
- i. 8
- j. 9

- k. 10
- l. Greater than 10 times
- m. Prefer not to say

9. Under what division/s does your current program compete? Please list all team divisions.

If you prefer not to say please indicate below.

10. How many times have you won UCA or NCA Nationals with your current program as a coach? (include team wins only; partner/group stunt is excluded)

- a. 0
- b. 1
- c. 2
- d. 3
- e. 4
- f. 5
- g. 6
- h. 7
- i. 8
- j. 9
- k. 10
- l. Greater than 10 times
- m. Prefer not to say

11. How many times have you coached a partner/group stunt with this program that has competed at UCA or NCA Nationals?

- a. 0
- b. 1
- c. 2
- d. 3

- e. 4
- f. 5
- g. 6
- h. 7
- i. 8
- j. 9
- k. 10
- l. Greater than 10 times
- m. Prefer not to say

12. How many times have you coached a partner/group stunt with this program that has won UCA or NCA Nationals?

- a. N/A- A partner/group stunt has never competed in this program with me as their coach.
- b. 0- Choose this answer if you have coached a partner/group stunt but they have not won.
- c. 1
- d. 2
- e. 3
- f. 4
- g. 5
- h. 6
- i. 7
- j. 8
- k. 9
- l. 10
- m. Greater than 10 times

- n. Prefer not to say
13. Are scholarships offered to your athletes?
- a. Yes- only full scholarships are given
  - b. Yes- only partial scholarships are given
  - c. Yes- a combination of full and partial scholarships is given
  - d. No
  - e. Prefer not to say
14. Do you require your athletes to work out outside of practice?
- a. Yes
  - b. No
  - c. Prefer not to say

Depending on answer choice here, the subjects will either be directed to a section asking for more information on their strength and conditioning program or will skip it and go to the next section.

Strength and Conditioning Program Information Section

15. What type of instruction do athletes receive in outside of practice workouts? A fitness trainer is someone who holds a nationally acclaimed certification such as Certified Strength and Conditioning Specialist, Certified Personal Trainer, Certified Group Fitness Instructor, etc.
- a. Workouts are led by a certified fitness trainer associated with the athletic program at our university.
  - b. Workouts are led by a certified fitness trainer NOT associated with the athletic program at our university.
  - c. I (or another coach) lead the team workouts and I (or another coach) is a certified fitness trainer.
  - d. I (or another coach) lead the team workouts but I (or another coach) am NOT a certified fitness trainer.



- e. A team captain/leader is in charge of outside of practice workouts.
- f. Athletes are responsible for coming up with their own workouts.
- g. Prefer not to say.

16. How many times a week are athletes expected to participate in outside of practice workouts?

- a. 1
- b. 2
- c. 3
- d. 4
- e. 5
- f. 6
- g. 7
- h. Greater than 7
- i. Prefer not to say

17. Do males and females do different workouts?

- a. Yes
- b. No
- c. N/A- We only have one gender in our program.
- d. Prefer not to say

18. Do athletes in different positions (i.e. flyers/bases/backspots) do different workouts?

- a. Yes
- b. No
- c. Prefer not to say

19. Why do you want your athletes to work out? Choose the reasons that are most important to you. (Pick at most 5) \*This is not a required question so coaches do not have to select anything here if they wish not to.

- a. It helps athletes meet a personally desired weight, body fat percentage, or other physique related measurement.
- b. It helps athletes meet a team required weight, body fat percentage, or other physique related measurement.
- c. It builds self-discipline.
- d. It decreases chance of injury.
- e. It increases ability to perform more difficult skills.
- f. It increases respect for cheerleaders as athletes.
- g. It increases coordination and balance.
- h. It increases endurance.
- i. It increases flexibility.
- j. It makes athletes happier.
- k. It increases speed and explosiveness.
- l. It increases strength and power.
- m. It improves self-esteem.
- n. It makes athletes look better in their uniform.
- o. It improves mental toughness.
- p. It helps to build healthy habits that will be beneficial to athletes when they are done cheering.
- q. It is a good opportunity for team building/bonding.
- r. It makes athletes feel better about themselves.
- s. I have to force my athletes to work out because they wouldn't do it on their own.
- t. Other

20. Why do you think your athletes want to work out? Choose what you think THEY find most important. (Pick at most 5) \*This is not a required question so coaches do not have to select anything here if they wish not to.

- a. It helps them meet a personally desired weight, body fat percentage, or other physique related measurement.
- b. It helps them meet a team required weight, body fat percentage, or other physique related measurement.
- c. It builds their self-discipline.
- d. It decreases their chance of injury.
- e. It increases their ability to perform more difficult skills.
- f. It increases respect for cheerleaders as athletes.
- g. It increases their coordination and balance.
- h. It increases their endurance.
- i. It increases their flexibility.
- j. It makes them happier.
- k. It increases their speed and explosiveness.
- l. It increases their strength and power.
- m. It improves their self-esteem.
- n. It makes them look better in their uniform.
- o. It improves their mental toughness.
- p. It helps to build healthy habits that will be beneficial to them when they are done cheering.
- q. It is a good opportunity for team building/bonding.
- r. It makes them feel better about themselves.
- s. They hate working out and wouldn't do it if it wasn't required to be a part of the team.
- t. Other

21. How do you think the workout program of your cheer team compares to other collegiate cheerleading teams' workout programs in the US?

- a. It is better.
- b. It is worse.
- c. It is about the same.
- d. Prefer not to say.

Final Questions Section

22. Were you encouraged by someone other than the researcher to take this survey? (i.e.

Athletic director, spirit coordinator, etc.)

- a. Yes
- b. No
- c. Prefer not to say.

23. Would you like to review your answers?

- a. Yes, please take me back to the first page of the survey.
- b. No, please take me to the submission page.

24. From here, subjects will either go back to the beginning of the survey to check over their answers or will continue on to confirm that they are satisfied with their responses before submitting.

Appendix F

Athlete Survey

1. Do you CURRENTLY cheer for a collegiate cheerleading program?
  - a. Yes
  - b. No
2. Does your team CURRENTLY compete at either UCA or NCA College Nationals?
  - a. Yes- UCA
  - b. Yes- NCA
  - c. No
3. Select the option that best describes you below:
  - a. Male
  - b. Female
  - c. Other
  - d. Prefer not to say
4. What is the name of the college where you currently cheer? If you prefer not to say please indicate below. (short answer response)
5. How many years have you cheered for THIS program?
  - a. Less than 1 year
  - b. 1
  - c. 2
  - d. 3
  - e. 4
  - f. 5
  - g. More than 5
  - h. Prefer not to say

6. How many times have you competed at UCA or NCA Nationals (as a team, exclude partner/group stunt) with THIS program? \*only include years where you were an official alternate and/or were on the mat
- a. 0
  - b. 1
  - c. 2
  - d. 3
  - e. 4
  - f. 5
  - g. More than 5
  - h. Prefer not to say
7. How many times have you won UCA or NCA Nationals with your current program AS A TEAM? (only include team wins where you were an official alternate or were on the mat; partner/group stunt is excluded)
- a. N/A- have never competed as official alternate or on the mat
  - b. 0 (select this answer if have competed but have not won)
  - c. 1
  - d. 2
  - e. 3
  - f. 4
  - g. 5
  - h. More than 5
  - i. Prefer not to say
8. Under what division does the team you are currently on compete? If you prefer not to say please indicate below.

9. How many times have you competed group and/or partner stunt at UCA or NCA Nationals with THIS program?
- a. 0
  - b. 1
  - c. 2
  - d. 3
  - e. 4
  - f. 5
  - g. More than 5
  - h. Prefer not to say
10. How many times have you won UCA or NCA partner and/or group stunt with your current program?
- a. N/A- have never competed partner/group stunt
  - b. 0 (select this answer if have competed but have not won)
  - c. 1
  - d. 2
  - e. 3
  - f. 4
  - g. 5
  - h. More than 5
  - i. Prefer not to say
11. Does your school offer scholarships to cheerleaders?
- a. Yes- only full scholarships are given
  - b. Yes- only partial scholarships are given
  - c. Yes- a combination of full and partial scholarships is given
  - d. No

- e. Prefer not to say

12. Are you required to work out outside of practice?

- a. Yes
- b. No
- c. Prefer not to say

Depending on answer choice here, the subjects will either be directed to a section asking for more information on their strength and conditioning program or will skip it and go to the next section.

Strength and Conditioning Program Information Section

13. What type of instruction do you receive in outside of practice workouts? A fitness trainer is someone who holds a nationally acclaimed certification such as Certified Strength and Conditioning Specialist, Certified Personal Trainer, Certified Group Fitness Instructor, etc.

- a. Workouts are led by a certified fitness trainer associated with the athletic program at our university.
- b. Workouts are led by a certified fitness trainer NOT associated with the athletic program at our university.
- c. One of our coaches is a certified fitness trainer and they lead our workouts.
- d. One of our coaches leads our workouts but they are NOT a certified fitness trainer.
- e. A team captain/leader is in charge of leading our workouts.
- f. We are required to make up our own workouts.
- g. Prefer not to say.

14. How many times a week are you expected to participate in outside of practice workouts?

- a. 1
- b. 2
- c. 3



- d. 4
- e. 5
- f. 6
- g. 7
- h. Greater than 7
- i. Prefer not to say

15. Do males and females do different workouts?

- a. Yes
- b. No
- c. N/A- We only have one gender in our program.
- d. Prefer not to say

16. Do athletes in different positions (i.e. flyers/bases/backspots) do different workouts?

- a. Yes
- b. No
- c. Prefer not to say

17. Why do you work out? Pick the reasons that are most important to you. (Choose at most 5). \*This is not a required question so athletes do not have to select anything here if they wish not to.

- a. It helps me meet a personally desired weight, body fat percentage, or other physique related measurement.
- b. It helps me meet a team required weight, body fat percentage, or other physique related measurement.
- c. It builds my self-discipline.
- d. It decreases my chance of injury.
- e. It increases my ability to perform more difficult skills.
- f. It increases respect for cheerleaders as athletes.

- g. It increases my coordination and balance.
- h. It increases my endurance.
- i. It increases my flexibility.
- j. It makes me happier.
- k. It increases my speed and explosiveness.
- l. It improves my strength and power.
- m. It improves my self-esteem.
- n. It makes me look better in my uniform.
- o. It improves my mental toughness
- p. It helps me to build healthy habits that will be beneficial when I am done cheering.
- q. It's a good opportunity for team building/bonding.
- r. I don't feel good about myself unless I work out.
- s. I hate working out and I wouldn't do it if it wasn't required to be a part of the team.
- t. Other

18. Why do you think your coach wants you to work out? Choose what you think THEY find most important. (Pick at most 5) \*This is not a required question so athletes do not have to select anything here if they wish not to.

- a. It helps me meet a personally desired weight, body fat percentage, or other physique related measurement.
- b. It helps me meet a team required weight, body fat percentage, or other physique related measurement.
- c. It builds my self-discipline.
- d. It decreases my chance of injury.
- e. It increases my ability to perform more difficult skills.

- f. It increases respect for cheerleaders as athletes.
- g. It increases my coordination and balance.
- h. It increases my endurance.
- i. It increases my flexibility.
- j. It makes me happier.
- k. It increases my speed and explosiveness.
- l. It improves my strength and power.
- m. It improves my self-esteem.
- n. It makes me look better in my uniform.
- o. It improves my mental toughness
- p. It helps me to build healthy habits that will be beneficial when I am done cheering.
- q. It's a good opportunity for team building/bonding.
- r. It makes me feel better about myself.
- s. They want to force me to work out because they know I wouldn't do it on my own.
- t. Other

19. How do you think the workout program of your cheer team compares to other collegiate cheerleading teams' workout programs in the US?

- a. It is better.
- b. It is worse.
- c. It is about the same.
- d. Prefer not to say.

#### Athlete Motivation Survey Section

Directions: Using a scale of 1-7 please indicate to what extent each of the following items corresponds to one of the reasons for which you are presently practicing your sport

(cheerleading). Please note that these answers should be related to why you practice cheerleading NOT why you work out.

1-does not correspond at all

2 and 3- corresponds a little (3 would be slightly more than 2)

4- corresponds moderately

5 and 6- corresponds a lot (6 would be slightly more than 5)

7- corresponds exactly

20. For the excitement I feel when I am really involved in the activity.
21. Because it's part of the way in which I've chosen to live my life.
22. Because it is a good way to learn lots of things which could be useful to me in other areas of my life.
23. Because it allows me to be well regarded by people that I know.
24. I don't know anymore; I have the impression of being incapable of succeeding in this sport.
25. Because I feel a lot of personal satisfaction while mastering certain difficult training techniques.
26. Because it is absolutely necessary to do sports if one wants to be in shape.
27. Because it is one of the best ways I have chosen to develop other aspects of my life.
28. Because it is an extension of me.
29. Because I must do sports to feel good about myself.
30. For the prestige of being an athlete.
31. I don't know if I want to continue to invest my time and effort as much in my sport anymore.
32. Because participation in my sport is consistent with my deepest principles.
33. For the satisfaction I experience while I am perfecting my abilities.
34. Because it is one of the best ways to maintain good relationships with my friends.

35. Because I would feel bad if I was not taking time to do it.
36. It is not clear to me anymore; I don't really think my place is in sport.
37. For the pleasure of discovering new performance strategies.
38. For the material and/or social benefits of being an athlete.
39. Because training hard will improve my performance.
40. Because participation in my sport is an integral part of my life.
41. I don't seem to be enjoying my sport as much as I previously did.
42. Because I must do sports regularly.
43. To show others how good I am at my sport.

#### Review Submission

44. Would you like to review your answers?
  - a. Yes, please take me back to the first page of the survey.
  - b. No, please take me to the submission page.
45. From here, subjects will either go back to the beginning of the survey to check over their answers or will continue on to confirm that they are satisfied with their responses before submitting.

#### Submission

46. Were you encouraged by someone other than the researcher (i.e. coach, athletic director, etc.) to take this survey?
  - a. Yes
  - b. No
  - c. Prefer not to say
47. Please check the box below to confirm that you have reviewed your answers and are happy with your responses.

## Appendix G

### IRB Approval Letter



#### Oklahoma State University Institutional Review Board

Date: 01/10/2019  
Application Number: ED-19-3  
Proposal Title: Strength and Conditioning Programs and Driving Motivations in Collegiate Cheerleading in the US

Principal Investigator: Mikayla Raleigh  
Co-Investigator(s):  
Faculty Adviser: Jason Defreitas  
Project Coordinator:  
Research Assistant(s):

Processed as: Exempt

#### **Status Recommended by Reviewer(s): Approved**

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The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

The final versions of any recruitment, consent and assent documents bearing the IRB approval stamp are available for download from IRBManager. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be approved by the IRB. Protocol modifications requiring approval may include changes to the title, PI, adviser, other research personnel, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2. Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3. Report any unanticipated and/or adverse events to the IRB Office promptly.
4. Notify the IRB office when your research project is complete or when you are no longer affiliated with Oklahoma State University.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact the IRB Office at 223 Scott Hall (phone: 405-744-3377, [irb@okstate.edu](mailto:irb@okstate.edu)).

Sincerely,  
Oklahoma State University IRB

VITA

Mikayla Elizabeth Raleigh

Candidate for the Degree of

Master of Science

Thesis: STRENGTH AND CONDITIONING PROGRAMS AND DRIVING  
MOTIVATIONS IN COLLEGIATE CHEERLEADING IN THE UNITED  
STATES

Major Field: Health and Human Performance, Applied Exercise Science concentration

Biographical:

Education:

Completed the requirements for the Master of Science in Applied Exercise  
Science at Oklahoma State University, Stillwater, Oklahoma in May 2019.

Completed the requirements for the Bachelor of Science in Human Biology at  
North Carolina State University, Raleigh, NC in 2017.

Experience:

Graduate Assistant, Seretean Wellness Center: August 2017-present

Personal Trainer, Colvin Recreation Center: January 2018-present

National Cheerleader's Association Head Instructor, Simple Score  
Administrator, and Social Media Team Member: May 2015- present

Head Cheerleading Coach, Perry High School: August 2017-March 2019

Professional Memberships:

National Strength and Conditioning Association, Certified Strength and  
Conditioning Specialist

American College of Sports Medicine, Certified Personal Trainer