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Using Self-Assessment to Build Self-Efficacy and Intrinsic Motivation in Athletes: A Mixed Methods Explanatory Design on Female Adolescent Volleyball Players

Allan Knight Dr.

Nova Southeastern University, aruby139@gmail.com

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Abstract

The aim of this mixed-methods study was to address the issue of burnout and lack of motivation in middle and high school student-athletes. As young athletes cope with school and stresses of extracurricular activities, they often react negatively to external feedback and motivation. The athletes often find themselves in a low state of self-efficacy due to perceived external pressures. This can lead to burnout and ultimately quitting the sport. This study utilized a model that was designed to use self-assessment to increase self-efficacy among athletes to promote a higher sense of accomplishment and motivation toward success. The athletes were all female volleyball players ranging from ages 10-18. Each athlete received a pretest to ascertain her level of motivation prior to the beginning of the athletic season. During their athletic seasons, 30 of the athletes participated in a weekly self-assessment program producing measurable quantitative data to be used as predictors. A sample selection of the athletes was also interviewed to allow for reflection on the study and produce qualitative data intended to predict possible outcomes of the study. Upon completion of the season the athletes took a post-test to measure their levels of motivation. The outcome of the study produced a statistical effect that demonstrated an increase in self-efficacy and self-determination in athletes, and subsequently increased motivation. The qualitative interview data corroborated the effect produced by the quantitative data.

Keywords

Self-Assessment, Self-Efficacy, Motivation, Burnout, Self-Determination Theory, Competence Motivation Theory, Expectancy-Value Theory, Mixed-Methods

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Using Self-Assessment to Build Self-Efficacy and Intrinsic Motivation in Athletes: A Mixed Methods Explanatory Design on Female Adolescent Volleyball Players

Allan Knight

Nova Southeastern University, Fort Lauderdale, Florida, USA

The aim of this mixed-methods study was to address the issue of burnout and lack of motivation in middle and high school student-athletes. As young athletes cope with school and stresses of extracurricular activities, they often react negatively to external feedback and motivation. The athletes often find themselves in a low state of self-efficacy due to perceived external pressures. This can lead to burnout and ultimately quitting the sport. This study utilized a model that was designed to use self-assessment to increase self-efficacy among athletes to promote a higher sense of accomplishment and motivation toward success. The athletes were all female volleyball players ranging from ages 10-18. Each athlete received a pretest to ascertain her level of motivation prior to the beginning of the athletic season. During their athletic seasons, 30 of the athletes participated in a weekly self-assessment program producing measurable quantitative data to be used as predictors. A sample selection of the athletes was also interviewed to allow for reflection on the study and produce qualitative data intended to predict possible outcomes of the study. Upon completion of the season the athletes took a post-test to measure their levels of motivation. The outcome of the study produced a statistical effect that demonstrated an increase in self-efficacy and self-determination in athletes, and subsequently increased motivation. The qualitative interview data corroborated the effect produced by the quantitative data. Keywords: Self-Assessment, Self-Efficacy, Motivation, Burnout, Self-Determination Theory, Competence Motivation Theory, Expectancy-Value Theory, Mixed-Methods

Background and Justification

As the emphasis of adolescent sports in America continues to grow, so does the emphasis on the training and care of these athletes. Seventy-five percent of American families have school-aged children participating in organized sports (Merkel, 2013). These adolescents often face demanding practice and training schedules to coincide with potentially rigorous academic demands. These student-athletes are regularly faced with challenges of balancing scheduled practices and training, along with at-home training, to maintain pace with the requirements inherent in the competitive nature of participation. Stress and anxiety among student athletes exist not only in the emphasis on winning, but also in the interpersonal competition between peers for starting positions and desired roles and ranks on the teams and field of play. These athletes can become so disempowered that they reach a developmental dead-end and arrive at a feeling of having no meaningful control over an important part of their lives (Coakley, 1992).

Approximately 35% of adolescent athletes quit participation in a sport. By age 15, 60-80% of young athletes are no longer engaged in sports (Merkel, 2013). Middle and high school level coaches are very underequipped to manage the motivation and self-efficacy required to

counsel student-athletes. The challenge of balancing demanding schedules, along with the emotional impact of competitive sports, can have deleterious effects on self-esteem and peer relationships. Less than 10% of middle and high school level coaches receive any formal training yet may still excel in teaching the skills required to participate; however, they are likely deficient in other areas such as using age appropriate motivational techniques (National Association for Sport and Physical Education, 2008). With such a low percentage of coach education, it is easy to understand how many coaches could be ignorant to adolescent athletes that are struggling with motivational issues and considering quitting the sport.

Imbedded in the approach to analyzing the motivation of the adolescent athlete is the focus on self-determination theory SDT (Reeve, 2002; Ryan & Deci, 2000) and Expectancy-Value Theory (Eccles, 1983). Self-Determination Theory approaches human motivation with empirical methods that highlight inner resources for behavioral self-regulation. SDT focuses on three basic innate needs—competence, autonomy and relatedness. Athletics provides a keen opportunity for adolescent athletes to seek competence and relatedness. Yet, autonomy seems to be at the heart of the self-determination model. Exploring elements that could promote self-determination and autonomy in the adolescent athlete could be essential to building self-efficacy and motivation in sports. Emphasizing the importance of the learner's voice encourages a process that allows learners to contribute meaningfully toward the design and delivery of their own development (Walters, Silva, & Nikolai, 2017). Expectancy-Value Theory is the idea that individuals' choice, persistence, and performance can be explained by their beliefs about how well they will do on the activity and the extent to which they value the activity (Wigfield & Eccles, 2000). This is particularly applicable to athletics in that it addresses the core individual motivation as to why people pursue athletics. Adolescents, in particular, are most indicated in this theory because their motivations for participation are often loosely justified and explained. Thus, if the adolescent athlete gains a sense of poor performance or lack of acceptance, it becomes very easy for them to quit the activity and move on to something else that can provide a potentially higher expectancy-value motivation.

Self-assessment in an athletic environment can be the key to building self-determination and self-efficacy in the adolescent athlete. Designed to raise the expectancy-value and motivation, this study numerically measured adolescent athletes' levels of motivation, implemented a self-assessment intervention model over a period of eight weeks, and then numerically tested their levels of motivation to determine if there was an effect that can be attributed to the self-assessment intervention. However, in order to support the quantitative data, qualitative data, in the form of player interviews, were utilized to give definition and meaning to the measurements. These qualitative data allow for a deeper interpretation of what the athletes experience both through the intervention model and the athletic season.

The Research Problem

Adolescent athletes constantly deal with the issue of burnout and lack of motivation toward success. Factors such as demanding schedules, avoidance of disapproval from parents and coaches, social dynamics, and ineffectiveness create low self-efficacy and diminish the expectancy-value motivation within these athletes. Often this lack of motivation leads to poor performance. Adolescent athletes reach a point where the external factors become overpowering, or they conclude that they are incapable of pleasing the external elements. The adolescent athlete will claim burnout is the issue (Coakley, 1992). Yet, it is widely believed that self-determination and self-efficacy are the true causes of burnout in the adolescent athlete (Ryan & Deci, 2000; Ulrich-French & Cox, 2009).

Coaches and athletic directors are often faced with the difficulty of athletes quitting the sport due to lack of motivation. Losing 60-80% of adolescent athletes by age 15 (Merkel, 2013)

is an alarming number of potential athletes missing out on making positive contributions down the road to athletic programs and the athletes' own self-determination. Gould (1996) described the problem as athletes who once saw enjoyment and fulfillment in a sport lose motivation due to chronic stress and lack of meeting outcome goals. There can be a tendency among athletes to look toward external motivators, i.e. coaches, family, social issues, workload, etc., yet it is often the lack of intrinsic motivation that is the source of the problem.

Vallerand (2004) theorized that it is difficult to observe levels of intrinsic motivation among athletes. It is hard to determine what motivators will work on one athlete and why they will not work on another. He also questioned if it is possible for coaches to facilitate intrinsic motivation among athletes. The traditional approach has been to use motivational banners, slogans, speeches and imploring to encourage the athlete to build intrinsic motivation to strive toward success and accomplishment. Thus, the problem doesn't exist in the concept, but in the approach. Athletes do not need to be "pumped-up" and encouraged if they possess the intrinsic self-determination to want to be successful. Instead of seeking ways of motivating athletes through extrinsic methods, the solution to the problem lies within creating an opportunity for the adolescent athlete to enhance their own intrinsic motivation. The problem is best addressed by the athletes themselves. The problem needs to be brought to the attention of the adolescent athletes for them to see that addressing the matter on an intrinsic level would be the best approach.

Problem Statement and Theoretical Framework

The problem addressed by this study was to help adolescent athletes build self-determination and self-efficacy during the scope of an athletic season. The results of this study will be useful for the coaches and athletic departments to determine a possible method to address athlete burnout and dropout. It is believed that self-assessment will help adolescent athletes improve self-efficacy and raise intrinsic motivation. The theoretical framework behind this study was to measure the motivational levels of adolescent athletes prior to the season and use the self-assessment model to increase the motivational measurement by the end of the season. Qualitative data were also collected to record the experience of the athletes as they progress through the season and the experience of focusing on the study emphasis of analyzing one's own athletic abilities and shortcomings. Thus, the first objective was to measure the pre-test and post-test results of the motivational level of the athletes in a longitudinal study. The second objective was to document the quantitative data the athletes produced on a weekly basis as they answered questions on how they assess their performance and other key factors that contribute to athletic success. The final objective was to use qualitative interview data of the athletes to further interpret what type of impact the self-assessment model had on their season, approach to training, self-determination, athletic success, and self-efficacy. The overall objective of the study was driven toward improving the longevity of the athletic experience, building athletic programs, and better serving the student-athletes.

Literature Review

Early attempts at motivating adolescent athletes have often resided in the form of external factors. Coaches and sport administrators utilized external motivators to boost morale and determination toward team success. While these methods showed some short-term results, they did very little for the self-determination and self-efficacy of the individuals. Allen and Howe (1998) studied the connection between positive coach feedback and athletic ability on female adolescents. Their findings showed that both ability and coach feedback were significantly related to perceived competence and satisfaction. Most notable in the study was

the participants showing a higher perception of self-confidence correlating to a reduced amount of corrective feedback after errors and poor performance from the coaches. Thus, the absence of external corrective feedback helps to improve self-efficacy but does not necessarily improve growth and performance within the sport.

External motivation factors for adolescent athletes were further explored by Keegan, Spray, Harwood, and Lavalley (2010). Adolescent athletes were studied to determine if coaches, parents and peers had any effect on the individual motivation of the athletes. While there seems to be no direct correlation to coach, parent and peer influence on motivation of adolescent athletes, what did appear was causally related to the event surrounding the interactions. Motivational effects were evident in the athletes, but it was possible to pinpoint a direct connection to the cause without considering situational and environmental factors. The study suggests a narrower focus on the motivational influences of coaches, parents and peers, perhaps addressing each individually.

To understand the motivational factors in the adolescent athlete, it would require an examination in goal perspective of the individual athletes (Duda, 1996). The adolescent athletes' goal perspective impacts how they cognitively and affectively respond to and act in achievement settings. Duda suggests that the inherent levels of motivation and goal perspective are directly linked to task involvement and ego involvement. Task involvement encompasses what the athletes learn and accomplish in their sports. Ego involvement is a perception of competence the athlete obtains through beating others and demonstrating superior ability and are strictly the basis of subjective success. Adolescent athletes are at risk of developing a higher sense of self-efficacy based on ego involvement and task involvement. Duda suggests further study to eliminate or minimize the task involvement and ego involvement of athletics to more closely examine motivation and self-efficacy in the athletes.

Burnout in Adolescent Athletes

The concept of burnout in athletics surfaced in the 1980s. Athletes were recording a state of extreme emotional duress as the reason for dropping out of their sport. This theoretical framework of psychology and social behaviorism has been theorized by sport scientists to explain burnout (Gould, 1987; Smith, 1986). Burnout is characterized by physical/emotional exhaustion, reduced sense of accomplishment, and devaluation. Burnout from athletics typically evolves from stress. Athletes find that the stresses of competition and high performance are taxing their comfort and pleasure levels. Strategies for preventing burnout emphasize techniques that help athletes control stress and adjust to the conditions of sport participation (Coakley, 1992). Coakley suggested two methods of preventing stress-based burnout: change the way sport experiences are integrated into the lives of young athletes and change the structure and dynamics of relationships between athletes and their significant others. While these external efforts produce a lower-stress environment, Coakley also recognizes the concept that external efforts seldom truly help the individual athlete and that significant change is more likely to come from altering individual character.

Some of the proposed causes of burnout in adolescent athletes have been directed at the stresses of school and academics, parent pressure, peer social issues, and physical exhaustion and stress. Sorkkila, Aunola, and Ryba, (2017) studied possible types of adolescent athlete burnout and their symptoms. The research served to indicate that burnout in adolescent athletes is context driven and not specific to any particular sport, type of sport, student level of expectation, or parent level of expectation. The study suggests that further research be conducted in the realm of burnout within and across context by integrating sport and school contextual comparisons.

Fraser-Thomas, Côté, and Deakin (2008) conducted a post dropout study of athletes who experienced burnout in their competitive sports and chose to quit the sport entirely. Results indicated that the dropouts were involved in fewer extra-curricular activities. The athletes also indicated a higher likelihood of dropping out if they had parents who were high-level athletes when they were younger and were the youngest athlete in the training group. The authors suggested further exploration in the matter by examining how these and other physical, psychosocial (e.g., identity, perfectionism), and motivational (i.e., motives for participation and withdrawal) factors may interact to contribute to dropout.

While it is possible to attribute some extrinsic factors that contribute to burnout in adolescent athletics, further investigation must be done with intrinsic contributors to burnout. Potential antecedents for athlete burnout were assessed in 201 Canadian athletes (Lonsdale, Hodge, & Rose, 2009). Self-determination theory (Deci & Ryan, 1985) was a significant factor in assessing the athletes' levels of motivation and burnout. The basic needs of competence and autonomy, plus self-determined motivation, accounted for significant amounts of variance in athlete burnout symptoms. The authors concluded that sport environments that promote needs satisfaction, appear likely to promote more self-determined motivation and prevent athlete burnout. Thus, the self-determination theory must be further explored to identify the relationships between motivation and self-efficacy in the adolescent athlete.

Self-Determination Theory

Adolescent athletes, possibly more so than adults, often find themselves feeling dejected, apathetic, alienated and uninspired. This can be particularly so when tasked to learn and master a new skill in a sport. Social contexts can play a major role in these human phenomenological experiences, driving one to lose motivation and will. Ongoing research strives to combat these elements that undermine human potential. In the forefront of this research is the self-determination theory (Ryan & Deci, 2000) that aims to optimize people's development, performance, and well-being. Self-determination theory is an approach to human motivation and personality that uses traditional empirical methods while employing an organismic metatheory that highlights the importance of humans' evolved inner resources for personality development and behavioral self-regulation (Ryan, Kuhl, & Deci, 1997). Self-determination theory challenges human nature to discover the psychological needs to form the basis of self-motivation. The research compels the field of athletics to incorporate self-determination theory into the psychology of the adolescent athletes and pursue intrinsic methods of motivating athletes toward higher levels of self-efficacy and contentment while participating.

Holmberg (2011) proposed that there is a correlation between self-determination and athlete burnout (Holmberg, 2011; Mouratidis & Michou, 2011; Reinboth, Duda, & Ntoumanis, 2004). Studies have investigated the relationships among the dimensions of athlete burnout and the quality of self-determined motivation. These studies proved a strong correlation between self-determination and athlete burnout. Based on the correlation the data, further study to be conducted on how athlete burnout can be recognized, prevented, treated and, perhaps, rehabilitated. While Calvo et al. (2010) theorized that self-determination theory plays a factor on whether athletes choose to remain in their sports on a year to year basis.

The authors recommended further study be conducted with adolescent athletes by promoting a positive motivational climate, optimizing the satisfaction through the psychological needs with the aim to minimize the lack of motivation, and improve intrinsic motivation.

Competence Motivation Theory – Expectancy-Value Theory

The competence motivation theory suggests that humans will move toward activities they feel a greater competency in and shun subjects that are more challenging (Harter, 1978). Perceived competence and individual pleasure affect the motivation level of individuals to pursue activities in such a manner. In other words, adolescent athletes will choose a sport, and stick with it, as long as their competence motivation remains. If an athlete perceives herself/himself as less competent than her/his peer, or self-perception of competence diminishes, so will their motivation to continue. This is when burnout and dropout occur.

As the aim of the intervention of this study is to boost self-efficacy in adolescent athletes, the competence motivation theory suggests that through developing an athlete's ability to autonomously assess and determine their own abilities we can ultimately predict an increase in motivation. Ryan and Deci (1999) theorized that intrinsic motivation is an important construct and reflects the natural human propensity to learn and assimilate. The authors state that intrinsically motivated people are moved to act for the fun or challenge entailed rather than because of external prods, pressures, or rewards. Thus, if an athlete is only trying to satisfy a coach or parent, his or her intrinsic motivation to succeed could be very diminished and only functioning on extrinsic motivations. Ryan and Deci conclude that social contextual conditions that support one's feelings of competence, autonomy, and relatedness are the basis for one maintaining intrinsic motivation and becoming more self-determined with respect to extrinsic motivation. This study suggests that the self-assessment model falls under Ryan and Deci's concept of supporting an athlete's feelings of competence, autonomy, and relatedness.

Similar to the Competence Motivation Theory, the Expectancy-Value Theory (Wigfield, 1994) addresses the athlete in a psychological aspect. In other words, Competence Motivation Theory indicates that athletes will pursue and excel at sports if they find success, whereas Expectancy-Value Theory indicates that athletes will excel and flourish at sports if they find intrinsic value and pleasure in the sport. Cox and Whaley (2004) studied the Expectancy-Value Theory on 189 adolescent basketball players. Through structural equation modelling, the authors determined that self and task beliefs mediated the relationship between identity and effort and persistence in athletics. The athletes that demonstrated a higher expectancy-value identity were more inclined to show persistence and effort in athletic performance. Notably in this study, the authors determined that gender was not a factor in the results of the study. However, significant differences were noted between African-American athletes and Caucasian athletes. Although the participants in my study will be only female, the results from Cox and Whaley's study indicate the need for noting any discernable results among different races in my study.

Deficiencies in the Evidence

There is a need to explore the issue of intrinsic/internal motivation among adolescent athletes. There seems to be a deficiency in the research as to what can be done to assist athletes in developing their intrinsic motivation and thus keeping their desire and focus to remain in the sport. Amorose and Horn (2000) explored connections to intrinsic motivation in connection to gender, social relationships, and coach behavior. As much as these factors can contribute to motivation, I feel that it falls short of an essential element of motivation achieved through self-assessment.

There is also a deficiency in the evidence among adolescent athletes. An abundance of information exists for college athletes; however, studies on younger athletes are few and far between. Amorose and Anderson-Butcher (2007) addressed the issue of the greater burnout and dropout risk among high school athletes. Yet, his study was similar to his college athlete

study where he only addressed the extrinsic motivation of the athletes as affected by factors such as gender, social relationships, and coach behavior.

Most of the existing studies identify that the self-determination theory (Deci & Ryan, 1985) and the competence motivation theory (Harter, 1978) are key components to the personal motivation of adolescent athletes. Very few studies offer models of how to promote these theories within the context of the sports season to potentially increase motivation and self-efficacy. The existing literature paints a broad approach to promoting the theories by allowing more autonomy among the athletes, but lacking is a physical model that is specifically designed to promote self-efficacy and self-determination. Thus, there is a need for a model to physically explore a method that is designed to promote the self-determination theory, build autonomy in the athletes and reinforce competence motivation. I believe my self-assessment model can accomplish that objective.

Author's Role

I have been coaching adolescent volleyball players in the Central Florida area for the past 20 years. Over these years I have experienced many athletes who have found success and struggles through mental and emotional aspects of the sport. When it is clear that the physical side of the sport can be developed, one has to analyze the mental and emotional side of the sport to determine whether it plays a factor in success. The majority of the participants in this study compete in a travel volleyball club of which I am directly involved. I have been able to observe the majority of the athletes that partook of this study. However, it is important to note that none of the participants in the study were playing for my team during the actual time of the study. Along with collecting data for my research, my goals and intentions of this study were to provide the athletes in this club some insight into the mental aspects of the sport to help them identify anything that could hinder or bolster their success.

Research Design and Methodology

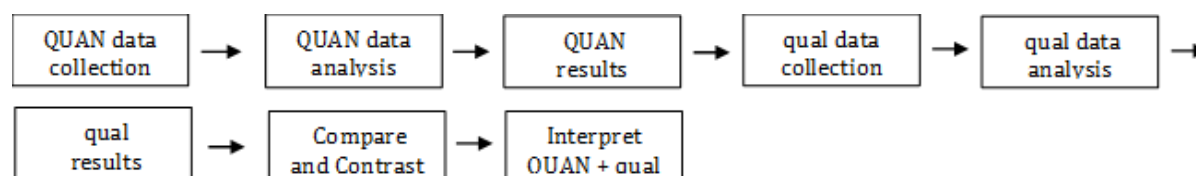
This mixed methods study addressed improving intrinsic motivation in athletes through self-assessment. A sequential mixed methods explanatory design was used in the creation of this study. In this design, the qualitative and quantitative data were collected sequentially, analyzed separately, and then merged. Due to the experimental and phenomenological nature of this study, a mixed method approach appeared to be best suited. This approach was the most effective choice as it allowed the researcher to combine two processes to validate results and collect data types that were both valuable to the analyses. (Creswell & Plano-Clark, 2011). Through a constructed assessment model, self-inputted assessment data were used to test the theory that athletes could improve their intrinsic motivation towards longevity and success in their sport. This study attempted to explain that the constructed athletic assessment model positively influenced the intrinsic motivation and expectancy-value of adolescent athletes during their seasons. The interviews explored the phenomenological approach of the athletes toward their experiences with the self-assessment model and their perceptions of their athletic success. The reason for collecting both quantitative and qualitative data was to corroborate the two forms of data to bring greater insight into the problem than would be obtained by either type of data separately.

To explain the outcome of the grounded theory, a pre-test post-test model was applied. The participants took a pre-test on their current perceived level of motivation and confidence toward athletics, their own level of self-efficacy, and their demeanor to the sport overall. Upon completion of the season, and successful completion of the self-assessment model, the athletes

took the same motivation and confidence level post-test to potentially determine an effect of the self-assessment model.

A sequential mixed methods design (Figure 1) was utilized to answer the stated research questions.

Figure 1



Data Collection Procedure

The collection of the quantitative data was done in a longitudinal process. Over the course of a three-month season, the athletes recorded their quantitative data on a weekly basis. The quantitative data was in the form of 10 value questions that the athletes scored from 0-10 based on their personal self-assessment of their performances, preparation, and self-perceived motivation. The data was recorded and stored through an app that the athletes were able to access on their personal devices. At the end of the season, the data were analyzed by the author of the study.

The collection of the qualitative data was done through an interview and survey process. A random sampling started with volunteer participants. Seven total participants were interviewed; however, during the coding process, saturation occurred after the sixth interview was analyzed, and thus it was not necessary to continue with the coding of the seventh interview. The volunteers filled out surveys and participated in an interview with the researcher to document and elaborate on phenomenological experiences from the athletic season, as well as experiences and reactions regarding the application of the self-assessment model. The information from the qualitative interviews was coded and themed to assist with the interpretation of the quantitative data.

The procedure for collecting the quantitative data was through an emailed survey that the athletes could receive on their personal device. The athletes input their weekly assessment values on the 10 assessment questions. The data was tabulated on the master server for the application and was available for live analysis and final tabulation analysis. Once the 8-week data collection model was completed, the data was finalized and tabulated.

The procedure for collecting the qualitative data was through written surveys and a follow-up interview. Interviews were documented and reviewed by the researcher. Information from the interviews was analyzed and documented by the researcher.

Participants

With prior IRB approval, sixty participants were used for this model. The participants were randomly selected from a pool of 200 female athletes from Winter Park Volleyball Club in Orlando, Florida. Eccles and Harold (1991) determined a difference in male and female athletes in motivation factors underlying individuals' decisions regarding achievement related choices. Gender differences in adolescents' attitudes towards sports were evident. To promote homogeneity in the study, all the participants were females from the Winter Park Volleyball Club. The participants ranged from 10 to 18 years of age (6th to 12th grade). The only criterion for selection was that the participants must be entering some type of athletic training season.

The athletes participated on a team during the recent competitive club volleyball season. In other words, athletes that are participating in club sports and training programs will all be similar in geographic location, gender, socioeconomic background and participating in a team sport.

A convenience strategy was utilized for the recruitment of the participants for the study. An email was sent out to the 250 athletes and their parents in the volleyball club containing IRB approval waivers. All of the athletes invited to participate in the study come from the same volleyball club, Winter Park Volleyball Club, and all reside in Orlando, FL. The first 60 who responded with the signed waivers were asked to complete the motivational confidence pretest. From those 60 volunteers, the first 30 who agreed to participate in the self-assessment intervention model were assigned to the experiment group. The remaining 30 participants made up the control group. The control group's only responsibility was to complete the pretest at the beginning of the season and the posttest at the end of the season. As this was a blind study, it was essential to have a portion of the participants serve as the control group that did not participate in the treatment process of the self-assessment intervention. In doing this, it was possible to rule out that repeated measurement alone caused change in intrinsic motivation confidence scores. To promote validity and accuracy of the blind study, none of the participants were informed of who else was participating in the study, the breakdown of the groups and how many groups were involved, nor the purpose and the objective of the study.

Research Objectives and Questions

There were three objectives behind this study. 1. Compare preliminary and final levels of motivation of adolescent athletes using a predictive model of self-assessment throughout the study. 2. Analyze qualitative data and use coded results to identify patterns in themes among the phenomenological experience of the adolescent athletes throughout the longitudinal study of an athletic season. 3. Measure effects and results that the predictive model of self-assessment has on self-determination and self-efficacy among the participant group of adolescent athletes.

The quantitative research questions asked the following: What is the relationship between self-assessment and intrinsic motivation among adolescent athletes? Does parent athletic history have an impact on intrinsic motivation among adolescent athletes?

The qualitative research questions asked the following: How did the adolescent athletes describe their experiences using the self-assessment predictive model during the season? How did adolescent athletes describe their lived experiences during the volleyball season?

The mixed-methods research question asked: To what extent do the quantitative data and the qualitative data converge?

Description of Variable

In this mixed-methods predictive design for a phenomenological study, the independent variable was used as a predictor for the grounded theory in improving self-determination and self-efficacy in adolescent athletes. The independent variable was a model that allowed the athletes to self-evaluate themselves once a week during their athletic seasons. The model consisted of 10 evaluation questions in which the athletes must score themselves regarding essential components to preparation and performance in athletic competition (Hughes & Bartlett, 2002; Nelson & Groom, 2012; Piedmont, Hill, & Blanco, 1999). Each question received an evaluation score of 0-10. A regression analysis was utilized to determine if any of the questions showed a significant impact on the players' self-determination and self-efficacy.

Assumptions

There was an underlying assumption in this study that understates the continual importance of athletic participation among adolescent athletes. Furthermore, there was an assumption that high schools and middle schools will continue to place a value and an importance in allowing athletic programs to be a part of the school's curriculum. Yet, availability of resources and costs may also contribute to the longevity of adolescent sports programs (Simon, 2011). The study also assumed that each athlete was subject to a similar level and training, participation, stress and expectation that would contribute to an overall necessity to evaluate the impact of self-determination and self-efficacy.

Last, it must be assumed that all participants were telling the truth. In seeking approval, adolescent athletes can potentially feel that they should say what is most appealing to please coaches, parents, and the author of this study. Although the athletes were encouraged to be honest and their responses are confidential, they may have felt there could have been a benefit to giving feedback that would be most pleasing to the adults associated with the athletic program and this study. Conversely, there may have been a personal issue with the team, the coach, or the program of which they are not comfortable speaking. Thus, the athletes may have held back their concerns which could have been potentially the very issue of what this study was trying to address with emotional issues that affect self-efficacy.

Demographics of the Sample

Table 1 – Sample Count by Group

<i>Group</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Treatment Group	30	50.0	50.0	50.0
	Control Group	30	50.0	50.0	100.0
	Total	60	100.0	100.0	

Table 2 – Sample Age Frequency

<i>Age</i>		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10.00	1	1.7	1.7	1.7
	11.00	6	10.0	10.0	11.7
	12.00	7	11.7	11.7	23.3
	13.00	4	6.7	6.7	30.0
	14.00	12	20.0	20.0	50.0
	15.00	16	26.7	26.7	76.7
	16.00	9	15.0	15.0	91.7
	17.00	4	6.7	6.7	98.3
	18.00	1	1.7	1.7	100.0
	Total	60	100.0	100.0	

The 60 athletes ($N = 60$) in the sample were all female volleyball players ranging from age 11 to 18. The treatment group and the control group (Table 1) both consisted of 30 athletes. All the athletes live in Orlando, Florida. Table 2 lists the age frequency of the athletes revealing the largest subgroup to be the 15-year-olds at 26.7%. Table 3 indicates that most of the sample

(81.7%) are White, 11.7% are Black, 3.3% are Hispanic and 3.3% are Asian. The sample was also broken down by the athletic history of their parents (Table 4). Twenty of the athletes (33.3%) come from parents who played collegiate or professional sports. The remaining 40 athletes (66.7%) come from parents with no athletic backgrounds.

Table 3 – Sample Race Breakdown

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White	49	81.7	81.7	81.7
	Black	7	11.7	11.7	93.3
	Hispanic	2	3.3	3.3	96.7
	Asian	2	3.3	3.3	100.0
	Total	60	100.0	100.0	

Table 4 – Sample Parent Athletic History

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Parents played collegiate or pro sports	20	33.3	33.3	33.3
	Parents did not play collegiate or pro sports	40	66.7	66.7	100.0
	Total	60	100.0	100.0	

For further comparison, the demographics were broken down by the two groups. The treatment group ($N = 30$) was comprised of 86.7% White, 10.0% Black, 3.3% Asian, and 0.0% Hispanic. The treatment group consisted of 36.7% who indicated their parents played a collegiate or professional sport. The control group ($N = 30$) was comprised of 76.7% White, 13.3% Black, 3.3% Asian and 6.7% Hispanic. The control group consisted of 26.7% who indicated their parents played a collegiate or professional sport.

Quantitative Findings

Research question 1. What is the relationship between self-assessment and intrinsic motivation among adolescent athletes?

Table 5 – Pretest/Posttest Regression of Control Group & Experiment Group

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	383.834	103.837		3.697	.000
	Group	-69.090	30.383	-.214	-2.274	.027
	Pretest	.763	.102	.706	7.508	.000

a. Dependent Variable: Posttest

Both groups were given the same pretests at the beginning of the athletic season to measure their intrinsic motivation. The treatment group (30 athletes) participated in a once-a-week self-

assessment model aimed at addressing the self-determination theory (Deci & Ryan, 1985) and addressing intrinsic motivation. Upon completion of the 8-week intervention model, both groups were given the same posttest to measure their intrinsic motivation. The null hypothesis is that there is no association between the self-assessment intervention model and athlete scores on the intrinsic motivation assessment. Ho: The self-assessment model has no effect on the intrinsic motivation of adolescent female volleyball players. The alternative hypothesis is that there is an association between the self-assessment intervention model and athlete scores on the intrinsic motivation assessment. H1: The self-assessment model has an effect on the intrinsic motivation of adolescent female volleyball players. To test possible outcomes of results in the study, a regression analysis was conducted to determine if there was an effect. Table 5 indicates the statistical significance of the pretest/posttest sample regression model between the experiment group and the control group. The result of the analysis resulted in a significance of .027. ($p (.027) < 0.05$), which is less than 0.05, and indicates that, overall, the regression model statistically predicted the outcome variable. Thus, there was a significance was found between self-assessment intervention and the experiment group. The statistical results indicate that we must reject the null hypothesis and accept the alternative hypothesis. Based on a statistical significance of .027, the results are consistent with the conclusion that allowing adolescent female volleyball players to use self-assessment throughout an athletic season increases intrinsic motivation in the athletes. To strengthen the validity of these results, the data were analyzed in a simple correlation analysis (Table 6). There was a positive correlation between the two variables, $r = .678$, $p (.000) = < .001$. This indicates a significant ($p (.000) = < .001$) and very strong relationship ($r = .678$) between the increase of the values from the pretest to the posttest. To further strengthen the results, an ANCOVA analysis (Table 7) was conducted. Nearly identical to the regression analysis, the ANCOVA analysis demonstrated a significant effect on the motivation score of the athletes after controlling for the self-assessment intervention, $F (2, 57) = 5.171$, $p (.027) < .05$. Based on these three analyses, all results are consistent with the conclusion that the self-assessment intervention had an effect on the athletes' motivational confidence scores.

Table 6 – Simple Correlation of Pretest/Posttest Results
Correlations

		Posttest	Pretest
Posttest	Pearson Correlation	1	.678**
	Sig. (2-tailed)		.000
	N	60	60
Pretest	Pearson Correlation	.678**	1
	Sig. (2-tailed)	.000	
	N	60	60

** . Correlation is significant at the 0.01 level (2-tailed).

Table 7 – ANCOVA Analysis
Tests of Between-Subjects Effects

Dependent Variable: Posttest

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Squared	Eta
Corrected Model	789946.603 ^a	2	394973.301	29.029	.000	.505	
Intercept	108064.991	1	108064.991	7.942	.007	.122	
Pretest	767092.586	1	767092.586	56.378	.000	.497	
Group	70358.815	1	70358.815	5.171	.027	.083	

Error	775561.581	57	13606.344
Total	63759201.00060		
Corrected Total	1565508.183	59	

a. R Squared = .505 (Adjusted R Squared = .487)

Research question 2. Does parent athletic history have an impact on intrinsic motivation among adolescent athletes?

The null hypothesis is that there is no association between parent athletic history and the intrinsic motivation assessment. Ho: Parent athletic history has no effect on the intrinsic motivation of adolescent female volleyball players. The alternative hypothesis is that athletic history does have an effect on athlete scores on the intrinsic motivation assessment. H1: Parent athletic history has an effect on the intrinsic motivation of adolescent female volleyball players. To test possible outcomes of results in the study, a regression analysis was conducted to determine if there was an effect. Table 8 indicates no statistical significance of the pretest/posttest sample regression model between the participants based on parent athletic history. The result of the analysis resulted in a significance of .603. ($p (.603) > 0.05$), which is greater than 0.05, and indicates that, overall, the regression model statistically predicted the outcome variable. Having a parent that played in a high-level of competitive sports is not an indicator of how well a student athlete will perform in sports. The athletes indicated that they did not believe having a parent who has played sports on a collegiate or professional level motivates them to perform better in their own sports. The data indicate the majority of the athletes involved in the study did not believe that having, or not having parents with athletic backgrounds, made a difference in their motivations to be a more successful athlete. Thus, there was no significance found between parent athletic history and intrinsic motivation. The statistical results indicate that we must accept the null hypothesis and reject the alternative hypothesis. Based on a statistical significance of .603, there is no correlation between parents who participated in collegiate and professional sports and intrinsic motivation in the athletes. While statistically there was no connection to motivation of adolescent athletes and the athletic history of their parents in this study, the results demonstrate a need for larger sample group. More specific focus on parent athletic history and the motivational psychology of their children would be cause for separate study.

Table 8 – Pretest/Posttest Regression of Control Group & Experiment Group Controlling for Parent Athletic History

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	351.252	121.652		2.887	.006
	Pretest	.771	.103	.714	7.455	.000
	Group	-71.702	30.983	-.222	-2.314	.024
	Parent_Athletic_History	17.186	32.849	.050	.523	.603

a. Dependent Variable: Posttest

Qualitative Analysis

Research question 1. How did the adolescent athletes describe their experiences using the self-assessment predictive model during the season?

The purpose of this qualitative data analysis was to discover any possible themes and patterns in the interviews of six adolescent female volleyball players and their phenomenological experiences during the volleyball season. The driving question behind the research was: How did the adolescent athletes describe their experiences using the self-assessment predictive model during the season?

The strategy for analyzing the qualitative data was based on reviewing the recorded interviews and using coding to determine any themes. An iterative coding and categorizing process (Charmaz, 2014; Conastas, 1992) was utilized in the analysis of the qualitative data to determine any consistent themes in the experiences of the athletes. In keeping with Conastas' concept of transparency and public knowledge of the process, I felt it was important to describe the process that led to my ultimate theory that the qualitative data will demonstrate through the description of the athletes' experiences that using the self-assessment predictive model would have a positive effect on the athletes' self-efficacy and motivational confidence.

I started with the actual transcripts and highlighted any spots in the testimonies that bared relevance to my original question regarding their experiences during the season and their experiences with the self-assessment intervention. I was then able to outline those comments in a separate document to focus solely on the relevant concepts. I did this by listing all of my coded notes in order. I then tagged each comment with any of eight coded analyses that were generated through repetition and consistency throughout the interviews. This allowed me to transition to the next phase which was to group the comments by analysis. Charmaz (2014) suggests sorting memos by the title of each category. Thus, I created an outline of each of the eight analyses and listed each comment underneath that was associated with that particular theme. This allowed me to create a graph to make a visual analysis and comparison of each coded theme and the frequency of the occurrences. It also allowed me to value the frequencies and identify emerging themes within.

Athletic Performance Theme

Most relevant to the first research question was a theme that emerged from the qualitative data that the self-assessment intervention made the athletes more aware of their performances and motivated them to improve. In their descriptions, the athletes identified that the self-assessment intervention model encouraged them to strive for greater success by instilling in them the desire to increase their weekly self-assessment scores and striving to improve upon weeks where they scored themselves low on any of the particular elements of their performance or preparation. Through the coding of the interview, many of the participants noted that they felt the self-assessment intervention increased their motivation to improve. As an example of this, participant #16 found that the self-assessment model allowed her to set weekly quantifiable goals in order to maintain and improve athletic success.

The self-assessment model did have an impact on my playing. It helped motivate me to keep playing my very best. If I put a score of 10 then I would try to keep that 10 consistent. If I put a score of 7, then I would keep working harder to work my way up to a 10.

Participant #12 indicated that she associates athletic performance with a positive atmosphere with herself and with the team. She benefitted from the study because it helped her to realize that the greatest contributing factor to improving athletically was her own positive motivation.

Personally, I feel like a compact and positive team is necessary to achieving a great season. With the positive energy flowing around, it just puts everyone's day in a better mood and most definitely helps us perform better.

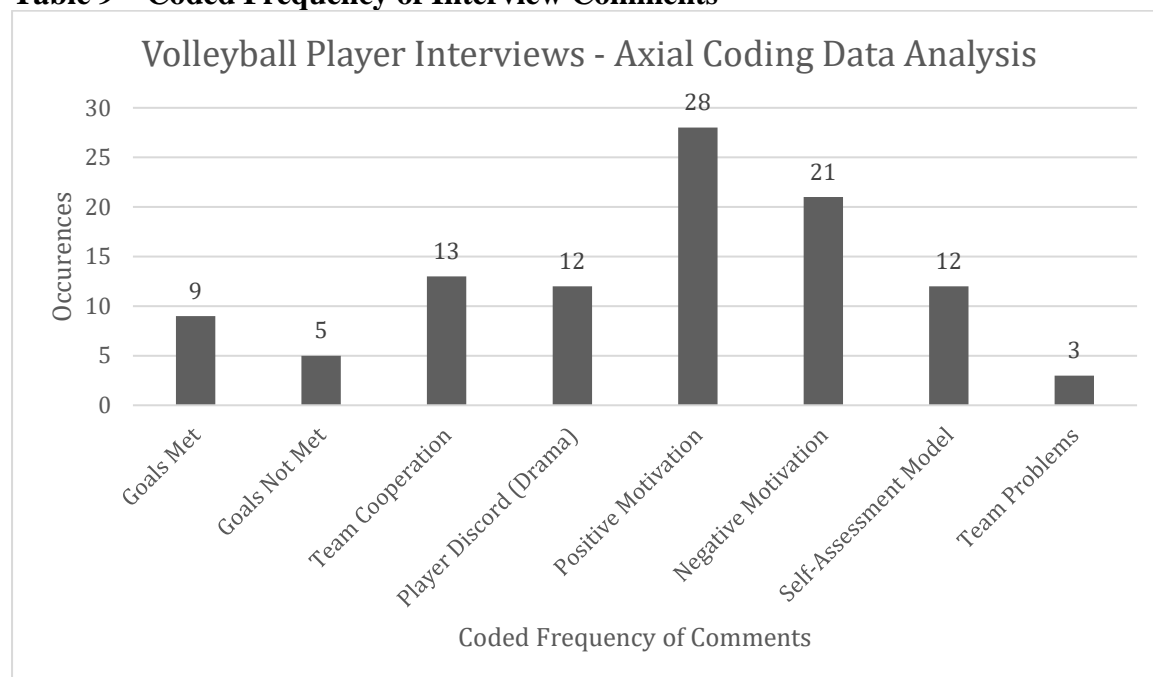
Participant #30 claimed that having a balance between performance and enjoyment are the keys to a positive experience. This statement reinforces the concept that adolescent athletes have a desire to improve but are also highly driven by a need to feel good about the experience and enjoy the process.

I believe the most important element in having a positive experience is balancing your will to improve and playing for the fun of it. I don't believe those are opposites, just factors that affect each other.

The athletes' experiences with the self-assessment intervention are indicative of the Self-Determination Theory (Deci & Ryan, 1985) that emphasizes the importance of athletes tapping their inner resources for personality development and behavioral self-regulation. This is illustrated in this study by the athletes acknowledging the fact that the self-assessment intervention made them more consciously aware of the importance of deriving intrinsic resources to focus on their own personal development. This analysis of the qualitative data is consistent with the theory that using self-assessment in an athletic season has the ability to improve an athlete's motivation, self-efficacy and self-determination towards success in sports.

Research question 2. How did the adolescent athletes describe their phenomenological experiences during the volleyball season?

The second driving question behind the qualitative research was: How did the adolescent athletes describe their phenomenological experiences during the volleyball season? The bar graph diagram (Table 9) analysis allowed me to tabulate the frequency of the codes and themes based on the percentage of occurrence. The table indicates the frequency of similar comments and allowed the researcher to generate themes out of the athletes' testimonies based on the common nature of the coded comments. This table brought organization to the phenomenological experiences of the volleyball season based on the interview data of the athletes. According to Charmaz (2014), qualitative researchers use strategies such as sorting, diagramming and integrating their materials in service to the theoretical development of the analysis. The advantage of diagrams is that they provide a visual representation of categories and their relationships.

Table 9 – Coded Frequency of Interview Comments

Based on the percentage of occurrence of the coded themes in the interviews, it was possible for me to determine that athletes were consistent in the concept that positive and negative external motivation had an impact on their ability to perform at their best level athletically. However, the athletes made several mentions of how they felt the self-assessment intervention helped them focus more on their intrinsic motivation to better themselves in their performances on the court. Thus, it was possible for me to determine that there was a relationship between the effects of extrinsic negative motivation and the counteracting positive effects of positive extrinsic and intrinsic motivation.

Qualitative Findings

The qualitative data from the interviews with the athletes revealed four emerging themes. 1. Negativity and discord (drama) between athletes on the team negatively affected the athletes' ability to perform at their best. 2. The confidence of the athletes increased when they stopped focusing on their mistakes. 3. The goal of progressing to the next level of competition, in this case the Junior Olympics, was a positive motivation for the athletes. 4. The self-assessment intervention made the athletes more aware of their performances and motivated them to improve.

Negativity and Discord Theme

Negativity and discord (drama) between athletes on the team negatively affected the athletes' ability to perform at their best. Based on the information gathered from the interviews of these female volleyball players, it is evident that disagreements, personality conflicts, and discord, both on and off the court, had an effect on the athletes' ability to remain motivated to succeed. Admittedly, the players identified these elements as extrinsic motivation, yet, claimed difficulty in remaining focused on the primary task of athletic performance. Participant #12, who experienced a 30-point drop in her confidence pretest to posttest score, attributed her failure to achieve her personal goals on the player discord and disharmony that she felt

infiltrated the team. The following is an example of how many of the participants felt that team discord had an impact on their motivation and desire to succeed and subsequently impacting the scores and data they would input into the weekly self-assessment intervention.

The negativity on and off the court really affected my development as a volleyball player. A lot of the girls are very rude towards other people.... We are here to play volleyball and have fun. Being rude just brings back that negative energy.

Indicating the negativity and drama impacted her performance, participant #28 felt she was impacted the most negatively by drama between the players.

Things that prevented me from accomplishing goals was drama between the players on the team and misunderstandings.

Participant #17 indicated that her happiness and ability to play well is affected by attitudes and confrontations on the court and among the team.

Negative attitudes and outlooks and small confrontations with teammates has affected my happiness when on the court which affects my playing. When I feel as though everything is in sync (my mental and physical abilities) I feel my playing improves and I love being on the court.

As each of these testimonies suggest, it is reasonable to conclude that these female volleyball players are negatively affected both physically and emotionally by discord and lack of harmony by the team. We can further conclude that the athletes face a negative impact on their performance in their ability to compete while dealing with poor interpersonal conditions between them and their teammates.

Confidence Theme

The confidence of the athletes increased when they stopped focusing on their mistakes. Coaches often attribute physical errors on the playing field to an inability to maintain a mental focus and move past any previous errors (Allison & Ayllon, 1980). The athletes in this study consistently claimed that accepting their own errors and shortcomings was a crucial component to success and motivation to succeed. Many of the athletes noted that accepting their errors and moving past them was an essential component to their intrinsic motivation. Evidenced in Self-determination theory (Deci & Ryan, 1985) the athletes noted increases in their confidence towards success during the study. Participant #30 attributed her 35-point confidence score increase to her ability accept her own faults.

My confidence increased because I stopped taking every mistake as if I wasn't good and focused more on my overall game. I realized that you don't have to be perfect to be a good volleyball player.

As she came to terms with her mistakes, participant #27 (+185 confidence) grew in confidence over the season and throughout the intervention. Allowing herself to move quickly past the hurdles boosted her confidence and increase her performance output.

My confidence increased because I learned to accept the fact that it's okay to make mistakes and the only way to get better is to make mistakes along the way.

The desire to achieve more in the athletic arena was what increased participant #17's confidence (+210 confidence). The intervention allowed her to track her improvement throughout the season.

My confidence score increased because I feel like playing at a higher level than I ever have before, despite not winning very much, makes me feel more accomplished and confident.

As indicated in their testimonies, these athletes attribute the self-assessment intervention as a method to tracking their progress and showing ownership of their achievement goals. The theme suggests that by keeping track of their personal assessments on their abilities and progress, the athletes gain confidence in their ability to improve and achieve.

Goal of Progressing Theme

The goal of progressing to the next level of competition, in this case the Junior Olympics, was a positive motivation for the athletes. Consistent with the Expectancy-Value Theory (Wigfield, 1994), many of the athletes were motivated by a desire to achieve a level of success in the realm of junior volleyball. It is interesting to note, however, that while some of the participants and their teams qualified for the Junior Olympics, none of the interviewees recorded a loss in confidence or motivation when the goal of making it to the Junior Olympics was not met. Several athletes in the study exemplified the Expectancy-Value Theory in setting goals for the season. The most common goal for the season was to make it to the Junior Olympics at the end of the season. As an example of this, participant #28, who experienced a 170-point confidence score increase, yet whose team did not make it to the Junior Olympics, claimed she was motivated towards athletic success throughout the season based on her desire for her team to compete in the Volleyball Junior Olympics.

My positive motivation has always been to play as best as I can, but I was also motivated by the possibility of making it to the Junior Olympics.

A major factor of motivation for participant #7 was the chance of participating on the national level. It was clear that when she was not able to participate in these tournaments it had a major effect on her confidence in achieving her long-term goals.

Not being able to go to Philly (the National Qualifier Tournament) with my team and fight for a bid to nationals was really hard, but other than that, there were no other controversies or boundaries.

Participant #30 was motivated by the goal of playing on the college level. However, it is interesting to note that she was also equally motivated to perform well to help her teammates make it to the college level.

Thinking about college and some teammates being looked at by schools positively motivated me because I want to do my best to make my teammates look good.

The emerging theme in these testimonies is that the athletes, when asked to describe what motivates them to perform athletically at a high level, consistently indicate that playing her sport on a higher level, whether it be nationally, like the Junior Olympics, or on the college level, was a major motivating goal towards success. While the self-evaluation was a tool to that end, the desire to progress to a higher level appears to be one of the biggest positive motivators.

Awareness of the Intervention Theme

The self-assessment intervention made the athletes more aware of their performances and motivated them to improve. In some fashion, all of the interviewed participants noted that the self-assessment intervention made them more aware of their goals in training and performance. Several stated that they found themselves using the weekly self-assessment measurements as a way to keep tabs on their progress. They spoke of being more aware of areas in their training in which they needed to improve. All 30 participants in the intervention group maintained 100 percent participation and compliance with the weekly surveys. However, many of them needed to be prompted and reminded to complete the survey. When asked if the weekly self-assessment intervention was an inconvenience, all the interviewees claimed that it was not, and the only problem was remembering to do them and the guilt of having to be reminded to do it. From the coded interviews, an example of this theme was explained by participant #17 who experienced a 210-point increase in her confidence score and found that the self-assessment model made her more aware of the athletic training process and gave her a sense of value to her progress and development.

The self-assessment model helped me reflect on how I prepared for tournaments and how much I was valuing a week of instruction before competition. When filling out the weekly surveys, I would actually have to recall and reflect on many different aspects of my week in volleyball that I usually wouldn't think about, such as how much outside influences affect me during a tournament or how I trained the week prior to a tournament.

Participant #27 showed a 185-point increase in her confidence score during the intervention. She attributed the success to the application requiring her to put more focus on the things she believed were necessary for her growth without the input from outside sources.

The self-evaluation (model) really helped me because it forced me to think about how I've been playing and made me pay more attention to thing I should change. It also made me realize how much outside factors could affect my performance and motivation.

Participant #7 (+85 confidence) claimed the self-evaluation intervention motivated her to push herself athletically. It seems clear that while she may not have seen an athletic improvement, the goal of the application was achieved because it increased her motivation.

It (the self-evaluation model) really only positively added to my motivation to push myself. As far as experience goes, it was quick and easy. My only thing I would change would be that I wish I could give feedback.

Coinciding with Deci and Ryan's (1985) Self-Determination Theory, the self-evaluation application proved to be effective in turning the athletes' motivation towards success. What is most notable through their testimonies is that they feel more ownership of the progress and

motivation because of its intrinsic nature. When it comes from the athletes own feedback and desires, there is clearly more desire to excel because they are focusing their attention inward and not simply responding to an extrinsic stimulus.

My concluding grounded theory of the qualitative portion of this study is that the female adolescent volleyball players that participated in this study are very susceptible to external distractions and hardships that can impact their motivation and determination towards athletic success. A volleyball season was a phenomenological experience for all of the athletes. Hardships, conflicts, and poor performances are to be expected in the span of a season. While all the participants documented hardships and troubles throughout their seasons, the athletes that attributed the distractions and conflicts to their lack of personal success consistently showed lower confidence scores. Yet, many of the participants acknowledged the difficulties of the season but marked them as motivation and inspiration to overcome the obstacles and improve upon their athletic abilities. Many viewed the obstacles as learning opportunities. For many of the athletes, the self-assessment intervention served as a tool for them to improve and remain focused. It appears evident that there is a link between Self-Determination Theory (Deci & Ryan, 1985) and the athletes' abilities to remain positively motivated towards success throughout the phenomenological experiences of a competitive volleyball season.

Compare and Contrast Results

In regard to the first quantitative question (What is the relationship between self-assessment and intrinsic motivation among adolescent athletes?), the results from the three analyses produced consistent results confirming a connection with the self-assessment intervention and the increase in the confidence posttest scores of the athletes. These results can be compared with the results of the first qualitative question (How did the adolescent athletes describe their experiences using the self-assessment predictive model during the season?). The result from the first qualitative question produced consistent responses from the athletes regarding positive motivating experiences with the self-assessment intervention. Thus, comparing the two sets of data results, there appears to be a consistency in effectiveness of the self-assessment intervention and both the statistical results of the quantitative analyses and the positive testimonies of the athletes.

The second quantitative question (Does parent athletic history have an impact on intrinsic motivation among adolescent athletes?) provides contrast to the qualitative results. The statistical analyses of this data showed no effect and indicated that there was not enough data, nor an accurate sample, to determine an effect. This is also contrasted by the results of the second qualitative question (How did adolescent athletes describe their phenomenological experiences during the volleyball season?) where there was no mention of parent athletic history that impacted their experiences on the season or their results using the self-assessment intervention.

Lastly, it is possible to compare results of the first quantitative question (What is the relationship between self-assessment and intrinsic motivation among adolescent athletes?) to the results of the second qualitative question (How did adolescent athletes describe their phenomenological experiences during the volleyball season?). The positive results of the quantitative analyses are complimented to by the testimonies from the qualitative data. Through the coding and themes generated, the athletes consistently spoke of the importance of positive motivation as a key to their athletic success. The athletes also spoke of goals being a motivational factor and even cited the concept of obtaining higher scores in the self-assessment intervention as a goal that pushed them toward athletic success. Comparing both data sets allowed the researcher to determine a mixed methods summary and ultimate conclusions and findings.

Mixed Methods Summary

Mixed-methods research question; To what extent does the quantitative data and the qualitative data converge?

The quantitative data collection allowed for a scientific and statistical analysis of the raw data input by the athletes. The interviews explored the phenomenological approach of the athletes toward their experiences with the self-assessment model and their perceptions of their athletic success. The reason for collecting both quantitative and qualitative data was to corroborate the two forms of data to bring greater insight into the problem than would be obtained by either type of data separately (Creswell & Plano Clark, 2011).

The two sets of data converged to create a stronger validity in the results. While the quantitative data proved a statistical effect of .027, $p < (0.05)$, allowing the athletes to attach their personal experiences to the results told a stronger story than only the numbers could convey. Upon observing the athletes throughout the season interaction with the intervention model, a concern arose that perhaps the model was an annoyance and an unwelcome addition to the many demands of the season. It became vital to obtain qualitative data and feedback from the athletes to ensure that participation in the intervention was taken seriously and performed with thoughtful consideration. Had the self-assessment intervention served as an annoyance or inconvenience, the statistical result would seem less resounding due to the possibility that the athletes could have been inputting their data without thought or careful self-assessment. Thus, through the mixed-methods approach, adding in the reactions of the athletes' own experiences of using the self-assessment intervention helped increase the overall validity of the study. Converging the two sets of data allowed the research to be humanized. In other words, had the quantitative results produced a statistical effect, but the athletes displayed no cognitive awareness of the effect of the intervention, then I believe only half of the study's overall objective of determining if the self-assessment intervention produced a result is achieved. Even though the quantitative data showed a positive effect, I feel it was important that the athletes were also aware of their self-determination (Deci & Ryan, 1985) so that they identified the growth and positive motivation the model intended to create. I believe that through the merging of the two sets of data, it has been demonstrated that the athletes were aware of the positive impact the self-assessment intervention had on their motivation and self-determination.

Discussion

The purpose and objective of this study was to demonstrate that encouraging athletes to engage in self-assessment would promote greater intrinsic motivation, increased confidence and self-efficacy, and reduce burnout among adolescent athletes. As self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2000) aims to optimize people's development, performance, and well-being, this study capitalized on that concept to encourage the adolescent athletes to look beyond extrinsic motivators, particularly the negative type, and focus solely on what is essential to claim ownership of their own progress and success as an athlete. Expectancy-Value Theory (Wigfield, 1994) and Competence Motivation Theory (Cox & Whaley, 2004) factored into the process as well, theoretically indicating that athletes in the study would pursue and excel at sports if they found success, value, and pleasure in the sport. Evidence of this was not only indicated by the statistically significant increase in confidence and motivation of the athletes, but also by testimonies of many of the athletes who indicated that improvement in their skills and the desire to achieve higher levels of success through winning were positive motivators towards self-efficacy and intrinsic motivation.

Some of the athletes mentioned some of the typical symptoms of burnout (Gould, 1987; Smith, 1986) in their phenomenological experience characterized by physical/emotional

exhaustion, reduced sense of accomplishment, and devaluation. While burnout typically evolves from stress, a few of the athletes identified negative motivators such as player discord (drama) and unhappiness with the goal orientation of fellow teammates as sources that could indicate burnout. Yet, none of the athletes indicated burnout or stress from competition and high-performance taxing their comfort and pleasure levels. Thus, it can be concluded that self-assessment is a positive indicator towards burnout prevention and stress reduction but must also be considered that a much longer study would be needed to accurately determine on overall effect of burnout prevention.

The two quantitative research questions investigated the relationship between self-assessment and intrinsic motivation among adolescent athletes, as well as the impact parent athletic history on the intrinsic motivation of adolescent athletes. The result of the analysis on the effect of the self-assessment intervention on the athletes' confidence and intrinsic motivation resulted in a significance of .027. ($p (.027) < 0.05$), which is less than 0.05, and indicates that, overall, the regression model statistically predicted the outcome variable. Thus, a significance was found between the self-assessment intervention and the experiment group. The result of the analysis on the effect of parent athletic history on the athletes' confidence and intrinsic motivation resulted in a significance of .603. ($p (.603) > 0.05$), which is greater than 0.05, and indicates that, overall, the regression model statistically predicted the outcome variable. Thus, there was no significance found between parent athletic history and intrinsic motivation. Conclusively, it has been determined that there is, in fact, a positive effect between self-assessment and intrinsic motivation. Yet, there is no effect between parent athletic history on intrinsic motivation in adolescent athletes.

The three qualitative research questions investigated the effects of the self-assessment predictive model on both athletic performance and self-determination, as well as a description of the phenomenological experiences of the athletic season. Iterative coding of the qualitative data from the adolescent athletes revealed four major themes regarding the phenomenological experiences of the athletes during their season and using the self-assessment intervention: a) Discord among the athletes on the team has a negative impact on the athletic success of the individuals. b) The athletes' confidence increased when they no longer focused on their errors. c) Athletic success was a positive motivator for performance. d) The self-assessment intervention motivated the athletes to improve upon their skills and success. Thus, it is reasonable to conclude that self-assessment had a positive effect on both intrinsic motivation and athletic performance.

Lastly, the mixed methods question asked to what extent did the results of the quantitative and qualitative data converge. While the numerical data resulted in a positive effect on the intrinsic motivation of the adolescent athletes, it was beneficial to have the qualitative data that supported this theory. The athletes voiced that they had a positive experience with the self-assessment intervention, and it was a motivation towards their own confidence and success.

In summary, the results overall demonstrated that applying a self-assessment component to an athlete during the competitive season produces a tool that positively motivates the athletes toward greater success and confidence. While adolescent athletes are very susceptible to negative motivators, it has been proven through both data sets that self-assessment is only viewed as a positive motivator. Thus, the grounded theory that self-assessment will help adolescent athletes improve self-efficacy and raise intrinsic motivation must be considered true.

Limitations

This study's primary limitation was perception. One must account for the understanding that the data collected was based on the interpretations and understanding of the adolescent athletes and their perceived experiences. However, this addressed the nature and purpose of the qualitative approach due to the need for identifying themes in the collective experiences in the adolescent athletes. It is fair to assume that during the self-assessment process; one athlete's assessment of her performance may be in stark contrast to a similar performance from another.

The role of the control group presents a limitation to the study. As the control group's only function was to not participate in the intervention, they only served as an inactive group. It may have more effectively to make the control group an active group by having them participate in an entirely different intervention.

The study was also limited geographically. We can only assume that adolescent athletes from Orlando, Florida are subject to similar effects of athletic participation to athletes around the world. Additionally, the study assumed a lack of an effect in socioeconomic status among the athletes. It has been assumed that financial affluence, parent level of support, and family background among the participants did not influence the outcome of the study.

Future Research

The instrument utilized in this study indicates further study in the area of athletic performance. Since this study was solely focused on the motivation and self-efficacy of the athletes, it was possible for athletes in this study to record high values on their own assessments of their performance without statistical data to reinforce the assessments. While it has been proven that self-assessment has an impact on athletes' self-efficacy and motivation, the next step would be to determine if self-assessment has an impact on performance. It would be possible to measure statistical performance results and record them as a baseline for each athlete at the beginning of a study. After running the longitudinal intervention over the course of the season, it would be possible to determine if the intervention made an impact based on the resulting statistical performance metrics. The primary follow-up research question to this study would be: What is the relationship between self-assessment and athletic performance among adolescent athletes?

The results of this study on female adolescent athletes suggests that a similar study be conducted on adolescent male athletes. Male and female athletes have been noted to have varying differences in goal perspective (Duda, 1988). Thus, it would be interesting to note if adolescent male athletes have similar reactions to the data results produced by this study. To broaden this concept, similar studies could be conducted on sample groups with broader racial diversity. Results of this study could be compared to results of similar studies of sports and athletic populations with more racial diversity. This could help determine if race has an impact on the motivation of adolescent athletes.

One of the problems that this study set out to address was how to prevent burnout among adolescent athletes. Since burnout is typically characterized by physical/emotional exhaustion, reduced sense of accomplishment, and devaluation (Gould, 1987; Smith, 1986), it must be something that should be considered over a great length of time. The depth of this study covered one athletic season, and the results were positive toward increasing the positive intrinsic motivation of the adolescent athletes. None of the athletes suggested a level of exhaustion that would indicate a burnout effect or a desire to quit the sport. Yet, it would better serve the study of burnout to be in longer longitudinal focus. It would be worthy of further research to see the same athletes over the course of middle and high school sports. How many of the participants in this study stayed with the sport throughout their middle and high school careers? It would

also be interesting to study what sports have higher levels of dropout than others. How does the sport of volleyball compare to the dropout rates of other sports?

To promote homogeneity, the study was only conducted on female adolescent volleyball players. Valuable research could be conducted to see if the self-assessment intervention conducted in this study had any effect on the athletes from other sports. Anshel and Kaissidis (1997) conducted a four-sport study on the coping styles of athletes dealing with stress in sports. Based on Anshel's and Kaissidis' findings, it would be beneficial to study whether the self-assessment model could assist studies of athletes across all sports.

As noted by the athletes in this study, lack of team harmony and discord is a negative motivator to the individual athletes' success. While the self-assessment intervention in this study allowed the athletes to keep their focus on their own individual progress, it would be worthwhile to conduct further research on how effective team discord and lack of harmony is on reducing intrinsic motivation and success. Are there other interventions that could help reduce discord among the athletes on a team? Conflict resolution and team supportiveness among the athletes have been proven to be a priority in adolescent athletes (Harter, 1988; Weiss & Smith, 2002). Thus, it would be beneficial to develop research methods that have the potential to reduce the negative influences of discord and promote cooperation among teammates in sport.

Parents of adolescent athletes have often been viewed as negative motivators towards their child's athletic success (Abrams, 2001; Jellinek & Durant, 2004). Overbearing parents in youth sports have been commonly seen as an issue and concern in promoting longevity in athletics and preventing burnout. Thus, valuable research could be conducted in identifying elements, such as the self-assessment model presented in this study, that would enable the adolescent athletes to disregard the overbearing and critical parents and redirect their attention to improving their own intrinsic motivation. This would also be an opportunity to explore any connections with parent athletic history to the success and determination of their adolescent athletes. Is there a relationship between parents who have played sports on a highly competitive level and the motivation of their children to achieve a similar level of success? Are these parents harder on their children due to their athletic history? Furthermore, are there any interventions that could be conducted on the parents to redirect their involvement in their children's athletics from negative to positive motivation? Are there instruments that can be implemented that educate and inform the parents on the most effective ways to promote intrinsic motivation in adolescent athletes? This could lead to a more effective approach to assisting adolescent athletes towards maximizing self-determination, expectancy-value and competency motivation in sports.

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Author Note

I am an editor of TQR. This is my doctoral dissertation for Nova Southeastern University. I have been an educator and coach for the past 25 years. Correspondence regarding this article can be addressed directly to: aruby139@gmail.com.

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