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Sport Specialization by Youth Athletes

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Abstract

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Sport specialization and sampling are two ways youth athletes can play sports. Athletes playing in college, at the Division III level, sample sports throughout their childhood instead of specializing in one sport. There is not a lot of specific research done for each Division in the NCAA. This study is a cross-sectional survey of students and athletes at SJFC, which is a small Division III school in Western New York. Using surveys, data was found that supports the research question that Division III athletes and students sampled sports throughout their childhoods rather than specializing. This question can help parents determine what kind of athlete they want their children to be in order for them to play at a higher competition level.

Sport Specialization in Youth Athletes

Young athletes have the opportunity to play a wide variety of sports in their childhood. During their childhood, some athletes may decide to play multiple sports, while others may decide to specialize in one sport. The dream of most youth athletes is to become a professional athlete. In order to realize this dream, is it better for athletes to specialize in one sport or to participate in multiple sports as a youth? The paper will look into sport specialization and answer three questions: 1) “Is it more likely that athletes playing in college, at the Division III level, sampled or specialized sports throughout their childhood?”, 2) “Does why youth athletes start a sport affect what levels of sport they play in?”, 3) Does the time spent playing a sport affect what levels of sport they reach?”

This paper will look at the history of sport specialization and clearly define what it means for an athlete to be specialized in a sport and what it means to sample sports as a child. The paper will then show the benefits and drawbacks of specializing in one sport. The paper will then turn to the coaches of sport specialized athletes and talk about the affects they have on their athletes. The literature review section will then end talking about athletes in professional sport. This paper will gain some insight on how athletes participate sport during their childhood.

Literature Review

What is Sport Specialization?

Early sport specialization is defined as “exclusive participation in a single sport on a year-round basis, with a primary focus on training and development in that sport”

(Anderson & Mayo, 2015, p. 231). There are four specific elements of sport specialization.

They are: “(1) an early start age, (2) an early involvement in a single sport as opposed to

play multiple sports, (3) an early involvement in focused, high-intensity training/practice, and (4) an early involvement in competitive sport” (Anderson & Mayo 2015, p. 231).

Despite what has been written about sport specialization, Torres (2015) believes there is no concrete definition of early sport specialization. However, most of the definitions are relatively similar. Her definition of early sport specialization is very close to what Anderson & Mayo found in their research. Torres (2015) said “ that early sport specialization is the intense, specialized, and systematic training year-round in a single sport at a young age, with hope to make the elite ranks at a larger age” (p. 305). She then added that sport specialization also includes competition in the sport the young athlete wants to specialize in. Torres goes a step further in saying that early sport specialization entails “deliberate practice, a highly structured activity that requires effort, generates no immediate rewards, and is motivated by the goal of improving performance” (2015, p. 305). This means that a sport specialized athlete has to be 100% committed to the sport they choose. The athlete must be willing to put the time and effort in so they can become the elite athlete they dream of being.

Cote, Lidor, and Hackfort (2009) have conducted extensive research on sport specialization and are predominate in the field of sport specialization. They believe that sport specialization is the path chosen by young athletes who want to be elite. Those athletes who don't want to become a professional athlete don't specialize in a sport. The athletes who don't specialize in one sport are sport samplers who play many different sports as a youth (Cote et al., 2009).

Difference between Sport Sampling and Sport Specialization

If a youth athlete doesn't specialize in a sport, then the athlete is considered to be sampling. Sport sampling, according to Cote et al. (2009) is (1) the involvement in multiple sports and (2) the participation in deliberate play. As cited in Ford et al. (2009) "Deliberate play is "effortful practice that lacks inherent enjoyment done with the sole purpose of improving current levels of performance" (Baker, 2003, p. 86). It is very important that sport samplers fit the criteria stated previously. For play to be deliberate, you have to make sure that you achieve or get something out of the practice. If a youth athlete doesn't do this, then they will not be able to specialize in a sport.

When a child plays in multiple sports, they get a better experience than only playing one sport their whole life. Playing multiple sports provides "children with the foundational physical, personal, and mental skills required to specialize in one sport during adolescence" (Cote et al., 2009, p. 9). Playing multiple sports allows a child to gain more interactions with other children. Having more interactions with children helps them grow a friend base for the rest of their lives.

A child that participates in sport sampling looks to gain the most enjoyment from the sports compared to a child who specializes in one sport. Cote explains "through sampling various sports and engaging in deliberate play, the sampling years are considered essential building blocks for self-regulated investment in elite sport during adolescence and adulthood" (Cote, 2009, p. 9). This quote suggests that sampling may have a similar effect on youth athletes as does sport specialization. Even if athletes decide to sample sports instead of specializing, they may be able to achieve higher-level play.

Is Sport Specialization Expertise?

What does it mean to be an expert in your sport? According to Anderson & Mayo (2015), an expert's skill is "highly-specialized and domain-specific" (p. 233). Being specialized in a sport the athlete must practice a lot more, which will then help them become an expert. According to Anderson and Mayo, an expert must have a great memory of past events and also be able to recognize patterns in events (2015). This is really important for sports that have strategy to them like football and basketball. If players can pick up on opponent's patterns, then they have a better chance to beat them.

Expert athletes also have "superior anticipation skills, superior decision-making skills, and a vastly richer and more extensive knowledge of their sport" (Anderson & Mayo, 2015, p. 233). When an athlete has all this, it is easy for them to separate themselves from their competition and become an elite athlete. To be an expert athlete, Baker (2003) believes in the 10-year rule (p. 87). The 10-year rule states that there needs to be very high levels of involvement and commitment for a minimum of ten years to be considered an expert (Baker, 2003). This 10-year rule has shown up in many other published works before Baker (2003), such as Ericsson et al. (1993) and their exploration of the 10,000 hour rule.

Ericsson et al. (1993) believes that deliberate practice is necessary for an athlete to be an expert. "In the deliberate practice framework, future experts perform training that develops required skills under continuously evolving conditions where training stress and recovery are optimally balanced so that maximal training adaptations occur and training plateaus are minimized" (Baker, 2003, p. 87). So in order to become an expert, you need to practice deliberately. The same thing applies to athletes that want to specialize in a sport

because if they don't practice and train with a purpose, then they will not be able to improve as an athlete.

Problems with Early Sport Specialization

Goodway & Robinson (2015) also touch on some downsides to early sport specialization. The biggest issue they bring up is injuries in specialized athletes. Early specialized youth athletes have a greater risk for "acute and overuse sport injury" (Goodway & Robinson, 2015, p. 272). Sport injuries not only affect a young athletes body for their whole life, they also put the athlete farther behind when they are trying to become an elite athlete. Acute injuries are when there is one incident, such as falling down. A chronic injury is when there is repetitive damage to your body (Goodway and Robinson, 2015, p. 272). Studies have shown that "children who specialize early in one sport and engage in more hours of intense training are at much greater risk of injury than children who engage in recreational sport" (Goodway & Robinson, 2015, p. 272). Recreational sport refers to young athletes sampling sports to determine which ones peak their interest. The long and hard training for one sport is causing athletes to get hurt more often.

Psychological Problems to Sport Specialization

Early sport specialization has been linked to having psychological issues later in the athlete's life. According to Horn (2015), there are many psychological problems associated with early sport specialization including "increased levels of anxiety and stress, higher rates of burnout, decreased perception of self-worth, and loss of intrinsic motivation for their sport" (Horn, 2015, p. 248). Horn believes that a child, who has a superior talent for a sport, should have the chance to improve or nurture that talent throughout childhood. According to Baker et al. (2007), sport specialization can lead to disappointment and

discouragement when a child fails at their sport. This disappointment and discouragement can stay with the athlete and hurt their potential performance in the future.

An athlete's perception of competence has a major effect on the athlete's performance. The more the athlete believes in his/herself, the better they will perform. A person's perception of competence goes down as their life goes on (Baker, 2007). In early childhood years, there is a high perception of competence and that maintains until late childhood (11-12 years old). As the child matures (13-18), they use "peer comparison, performance outcomes, and evaluate feedback from his/her coach to evaluate their sport competence" (Horn, 2015, p. 251). The feedback given by the coach may be good or bad, but it helps the athlete get better. Criticism fuels athletes that want to be the best, to improve and work hard. This negative criticism may also affect the athlete in the long run if they are only hearing bad things associated with them.

As a result, the athlete may not develop fully as an adult. The athlete may not have the "ability to expand their range of information sources to include things such as self-comparison or achievement of self-set goals" (Horn, 2015, p. 251). If sport specialization causes an athlete to not be able to set good goals, how can they know if they are getting better? Setting goals helps an athlete work harder to reach what they want and seeing progress to achieving those goals helps drive an athlete more.

Wiersma (2000) says there are two major psychological problems associated with specialized athletes. The first is that the athlete may have withdrawal or burnout in their sport. Burnout is defined as "the long-term end result of emotional and/or physical exhaustion" (Wiersma, 2000, p. 17). According to Malina (2010), an athlete can experience

burnout if they stop achieving accomplishments and other rewards associated with their sport.

A main reason is that the athlete feels that the “benefits of participating are outweighed by the competitive emphasis of a program, a pressure to win, and time constraints” (Wiersma, 2000, p. 17). An athlete who samples sports may also feel like this, but specialized athletes feel this more. Specialized athletes want to win and be the best that is why they feel this more than athletes who sample sports.

Philosophical Issues with Sport Specialization

A philosophical issue with sport specialization is that it affects the child’s right to an open future. Dixon (2007) “explored whether parents act within the limits of legitimate parental authority when they enroll their children in organized youth sport, which have all kinds of far-reaching and long- lasting consequences” (as cited in Torres, 2015, p. 307). Parents make decisions for their kids when it comes to the activities they play at a young age. The purpose of Dixon (2007) is to see whether or not a parent or guardian acts within legitimate authority (as cited in Torres, 2015).

Ferguson and Stern (2014) states that early sport specialization “may increase the risk for overuse injury and burnout and should be avoided at younger ages” (p. 380). The research they did shows that sport specialization by youth athletes can affect their whole life. The injuries sustained during specialization of a sport stick around for the rest of their life because the athletes do not let them heal properly. If they waited for their injury to full heal, they would lose ground on others specializing in their sport.

If a parent is forcing their kid to play a sport, then they are violating the right of the child to an open future in sports. Sports can “promote children’s health and, indeed, might

indicate a lifelong habit of exercise” (Dixon, 2007, p. 148). This could be a reason why a parent may encourage their kids to play sports. A parent should not force their children to play a sport. They should however allow the child to pick and choose what sports they want to play. We see parents forcing their kids to play a sport only if they have a competitive advantage at a young age or if they really excel in that sport at a young age. If the child has a natural talent in the sport, then they should pursue that sport and specialize in it. This may affect the child’s right to an open future because the parents are going to be making that decision based his/her performance in a sport.

Benefits of Sport Specialization

According to Goodway & Robinson (2015), there are many benefits to sport specialization, but they concentrate on two. The first is that early sport specialization can show superior sport success at an earlier age. It takes at least 10,000 hours to become specialized in a sport, and starting a child young helps them get to that mark at a younger age. There is a time when an athlete’s achievement reaches a plateau. At that point, it is harder to get better at their sport (Goodway & Robinson, 2015). Starting specialization at a young age helps kids reach a plateau at a younger age.

When they reach the plateau at the young age, they have more time to work on getting passed that plateau point. The next benefit is that early sport specialization is necessary for a sport that requires early peak performance. Goodway and Robinson (2015, p. 271) picked out sports such as, gymnastics and figure skating that require peak performance at a young age. People who participate in gymnastics need to peak early because once you reach adult years; there is less and less participation at a higher level. The youngest gymnasts that participate in the Olympics are 16 years old. The average for

the 2012 Olympics was 19.5 years old (Fowler, 2012). In order to reach a competitive and elite level, these athletes practice and compete at younger ages.

Financial Restrictions and Sport

According to White & McTeer (2012), there is a relationship between the amount of money families have and the amount of sport participation. They used data from the Canadian National Survey to support their hypothesis that money is a very strong factor when people are trying to participate in sport (White & McTeer, 2012). "Previous findings show that living in low SES (socioeconomic status) areas is predictive of low levels of participation in sport and physical activity" (White & McTeer, 2012, p. 187). This information makes sense because if a family doesn't have a lot of money, they aren't going to put money towards playing sports when they have more important things to spend it on.

"According to almost every study, individuals with low SES participate less in sport than individuals high in SES, regardless of whether SES is measured by education, income, and/or occupational status" (White & McTeer, 2012, p. 187-188). The people who have more money can afford better quality facilities, which can then affect how good of an athlete children can be (White & McTeer, 2012). This shows that families with more money can get their children into better facilities to become better at sports. Those families can afford to pay more money to get their children better at sports (White & McTeer, 2012). Families with little money will see their children sample sports and play them for fun compared to a family with more money. Children that have parents with more money are given more opportunities to specialize in a sport because of the resources around them (White & McTeer, 2012).

Coaching Early Sport Specialized Athletes

Hastie looked at sport through a pedagogy perspective. Pedagogy is the “method and practice of teaching” (Pedagogy, n.d.). According to Hastie (2015) coaches of specialized athletes must examine what the athlete’s preferred coaching behaviors are (p. 295). Gearity did a study in 2012 that looked at specialized athletes who reported poor coaching. The findings showed that “athletes in this study perceived that they failed to receive instruction in many cases, and what they received was unhelpful, insubstantial, and was detrimental to successful athletic performance” (Gearity, 2012, p. 80). If a specializing athlete isn’t receiving the coaching they need, then how are they going to be a specialized athlete? The athlete with a bad coach will not be able to compete with other specializing athletes who have better coaches who know how to train and develop their athletes.

A coach has to learn content knowledge from experience they have gained throughout their life in sports. The best coaches are the ones who have experience in the sport they are coaching (Hastie, 2015). A coach specialized in a sport will be a better trainer for the youth athlete than a coach that is one that is just there to teach kids the sport. Parents of athletes that want to sport specialize should seek more specific coaches to teach their child the sport.

Patterns of Specialization Professional Athletes

Ginsburg, Danforth, Ceranoglu, Durant, Robin, Smith, Kamin, Babcock, & Masek (2014) looked at the different ways professional baseball players played sports as children. They took a survey of 708 male professional minor league baseball players and surveyed them. The questionnaire was “designed to collect information on patterns of sport participation and assess whether minor league baseball players were more likely to specialize in baseball at a young age than they were to play multiple sports through their

teen years” (Ginsburg et al., 2012, p. 264-265). There were originally 711 participants, but they took 3 out because those people were older than the maximum age of 39. The demographics section of the survey showed that 96% of the respondents went to some sort of high school. Out of those people, 543 players went to college and 75% of those people played collegiate baseball (Ginsburg et al., 2012, p. 266).

The ages of specialization by the respondents in this study varied by age and race. For white American males, their specialization age was around 16 years old. That is higher than the total sample mean age around 15 years old for all participants. Wall and Cote (2007) found that athletes were still sampling sports at the age of 13. This is consistent to the Ginsburg et al. finding because the age of specialization is older than what was found five years earlier. The youngest specialization age by the respondents of the sample was by the Asian respondents who specialized between the ages of 10-11. African American males were the latest specializers at the age of 17 (Ginsburg et al., 2012, p. 269). The most popular additional sports played along side baseball by these respondents were football, basketball, and soccer (Ginsburg et al., 2012, p. 266). After looking at the results of this study, you can see when these baseball players decided to specialize in baseball.

The specialization age of these athletes is way higher than the average age they started to play baseball, which was 6 years old (Ginsburg et al., 2012, p. 269). The findings from this study were very consistent with the findings from other studies in saying that higher level athletes played multiple sports at a young age and then specialized around the age of 15 (Baker, 2003; Wall & Cote, 2007). The athletes surveyed showed that they played many sports later into their lives. This suggests that sampling early in their life helped get them to the professional level (Ginsburg et al., 2012, p. 271).

The purpose of this study is to figure out how the athletes at St. John Fisher College made it to the collegiate level of athletics; namely did they specialize or sample in sport participation. Additionally, we are able to uncover what caused them to stop playing sports before they got to college. The research will be able to help coaches and parents with star athletes. It will also help parents with star athletes because this research will show how athletes got to play in college. In doing that, those parents can look at this study and see whether specializing or sampling is the better outcome.

Method

Participants

St. John Fisher College is a small Division III school with various men and women's sports programs. The population for this survey is all NCAA athletes and students in the United States. The sample used from this population for this study is students and athletes from St. John Fisher College. The participants are both men and women. These student athletes were chosen from the sport teams. The regular students are also chosen at random also. This study had easy access to the athletes at St. John Fisher College as there are distribution lists already created.

Sampling Procedures and Size Determination

To collect the data, the researcher sent out the survey to all of the undergraduate students at St. John Fisher. The researcher has participants that are on some of the sport teams at the school. Every student and athlete at St. John Fisher College has the same chance of getting chosen to participate in this survey.

The ideal number of people that take the survey would be around two hundred. Of those two hundred participants, fifty to seventy-five of them will hopefully be athletes. This

sample size gives a good generalization about the students and the student-athletes as a whole at St. John Fisher College. There are 216 participants that took place in the study.

Variables

This cross sectional survey is of students and athletes at St. John Fisher College. The dependent variable for this study is specialization and sampling of athletes and there are many independent variables like: cost of sport to play, family, competition, injury, size of hometown, what sport they played, and the time spent playing their sport. With each of these independent variables, the researcher found connections to sport specialization and sport sampling.

There are variables that take some of the variables mentioned above and put them into one question. There are questions for each sport on why they started and why they quit. These questions use the variables: time, cost, family, etc... in order to see if some answers are more likely in certain sports than others. There are also questions for each sport on when they started and why they started. These questions look at similar variables and see if participants started for a specific reason, but also quit for that same reason.

There is a question for each sport that deals with the cost of sport to play, time, injury, family and competition. The survey had participants jump around to the questions that only pertain to the sports they have participated in. The goal is to find out if any of these were the reasoning behind the participant quitting the sport. For size of the hometown independent variable, the participants will choose out of four answers. The answers to this question are going to be intervals.

Some examples to the answers are 20,000 or less people, and 50,000-100,000 people. The goal of this question is to figure out if the size of the hometown is a factor of

more specialization or sampling. Looking at the size of the hometown can show whether or not there are more opportunities to play a variety of sports. The researcher believes that the bigger the hometown, the more sports were offered to the participants. All of the answers received from the survey are nominal data.

Data Collection Instrument

A majority of the questions in this survey deal with the students and student-athletes childhood, which gets to the primary focus of sport specialization or sampling. The survey has general questions pertaining to what sport or sports the participants participated in during their childhood. The survey gained insight on whether or not students and student-athletes specialized at their sport of choice at a young age or if they decided to play multiple sports throughout their upbringing. Since this focus of sport specialization versus sport sampling is one of the few out there, the researcher has made these questions up without looking at any other sources.

There is also a question about listing the sports that the participants played competitively during their childhood. This question is very interactive and allows participants to drag and drop the different sports to the two areas. This can help figure out if the student athletes played other sports in order to stay in shape or used other sports as a means of fitness/training for their main sport.

Another important question to ask is how many seasons in a year the participant participated in their major sport. This can be helpful when determining if the athlete did in fact specialize in that sport. According to Anderson and Mayo (2015) and others, if an athlete plays or trains for a sport for eight or more months of the year, it is considered sport specialization. If a participant says they specialized in a sport but only played for 7

months a year, then according to the definition of sport specialization, they technically did not specialize in the sport.

There is a question about why students stopped playing their sport instead of moving on and playing in college. This question will primarily be focused on the non-athletes. In doing this, the researcher wants to find out if the information they found from previous research is still accurate. If the information from this survey says that athletes got burnout or injured to a point where they couldn't compete, it would show that the research in the paper is still accurate (see Appendix A for complete survey instrument).

The questions near the end are going to be ones that can help the researchers determine the demographics on the participants. A sample question is: what is your gender. The researcher is not going to ask a question about family income. Instead, the research is going to ask if the cost of playing a sport was the cause to start/quit playing. This information can help draw the conclusion that if you have more money, you have more opportunities to specialize in a sport.

Data Collection Procedure

The first thing before survey is sent out is that the researcher got consent from the students and student-athletes and St. John Fisher College. We have reached out to the school and the coaches of the teams involved. Since we got consent, a cover letter email and the survey were sent out to the chosen participants (see Appendix B). The cover letter email gave a description of what the study is for and why their response is very important. The type of data collected is both qualitative and quantitative. The reason the survey will include questions with written responses and numbered responses is so we can get a better feel of what the athletes are telling us.

According to Jones (2015), an internet survey is not the same as a paper survey and there are seven steps you have to make in order to have a successful an internet survey. The researcher has to first design the questionnaire and then pilot it. Piloting the survey is key because it ensures “that the nature and wording of the questions are appropriate, clear and so on” (Jones, 2015, p. 160). The next step the research has to take is to actually make the questionnaire electronically and pilot that version of the questionnaire as well. This stage of piloting is to not only test the wording, but “to test the experience of completing the survey, the clarity of the instructions, ease of navigation and so on” (Jones, 2015, p. 160). The final steps of the internet survey process are to invite the participants, track the progress, and to close the survey and start the process of data analysis (Jones, 2015).

Data Analysis Plan

The data was collected and analyzed by the researcher. The researcher used mean and mode for the descriptive statistics, The researcher found the average time spent playing sport(s) in the participant’s childhood years and also if cost of playing a sport was a factor in the athlete quitting the sport.

The researcher also used mode to see when the participants started playing their major sport. These numbers were compared to what was found in the research of past studies to see if they are still accurate or if a new study needs to come out and change the previous ones. The researcher predicts that the families of sport specialists make more money. This is because it costs more to be a sport specialist than it does to sample sports.

For inferential statistics, the researcher used correlation and tests of difference. The use of correlation showed the relationship to many of the independent variables. The researcher wants to focus on the relationship between cost & specialization and cost &

sampling. This is where the researcher believes that cost will have an impact in specializing and sampling of sports. The researcher expects to see results that say cost of a sport was the reasoning for athletes to stop playing that sport. The use of tests of difference will be too show the relationship in what sport they play and where they grew up. The researcher thinks that the size of the city where participants grew up may have had an affect on what sports they could play in their childhood. The researcher thinks that the bigger the city or town, the more sports were offered.

The researcher wanted to make sure that the experience of completing this internet survey is not boring. To help with this, the researcher made sure that the survey is not too long where the participants will not rush (Jones, 2015, p. 160). The research wants accurate answers for this survey and may do some things in order to increase the response rate. The research may choose to get a sponsor that people may have heard of because there is a link between response rate and a well-known sponsor, according to Jones (2015, p. 170).

Results

There were 216 participants in the sport specialization survey run at St. John Fisher College. Out of the 216 participants, 11% specialized (n=24), 27% sampled then specialized (n=58), 34% sampled sports but quit and kept playing others (n=74), 21% only sampled sports (n=45), and 7% never played any sports (n=15). The number of respondents went down to 207 because some people didn't completely finish the survey. More females (n=88) than males (n=65) responded to this survey, however 54 participants did not answer the question. Out of the 216 participants, there were 586 instances of sport participation, which gives us an average of 2.71 sports per person.

The participants in this survey were mostly from a smaller towns with 45.9% of people come from cities smaller than 20,000 people. Most respondents played at least three sports throughout their childhood, while the most sports played was fourteen. The most common sports played throughout childhood were football (n=106), softball/baseball (n=74), and soccer (n=69).

The data got broken down into specialization and sampling and was then used to see if there were any significant differences between the independent variables. The participants that answers specialization for the first question were grouped together and the participants who answered sampling were also grouped together. There were significant differences between all independent variables and the sport they played.

For when and why start and also when quit, $p = .000$ and for time and why quit $p = .001$. Whether or not the participants specialized or sampled had almost no significance ($p \leq .05$) except for the Why Quit independent variable ($p = .03$). There are significant differences between the time played in the participant's sport and when and why they quit that sport ($p = .000$ for both) (See Appendix C for chi-square statistics).

Discussion

There were 24 participants who were strictly specializers in the survey conducted at St. John Fisher College. Baseball/softball was the most popular sport to specialize in with five participants, followed by soccer and dance with four participants. The participants who specialized in a sport stated they started before elementary (n=9) or in high school (n=8). This data supports the previously done research because the research says that people who specialize either start really early or late in their childhood. Looking into whether or not

the people who said they specialized in a sport fulfilled the requirements of time, we see some interesting results.

For those athletes who specialized before kindergarten and in kindergarten through sixth grade, only four of the twenty-four participants fulfill the eight months a year training to be considered a specialist. When we look at the data for the specialists who participated in their sports during seventh through eighth grade, we start to see more people fulfilling the time component. During that time period of the specialist's lives, half of the participants stated they trained or played their sport for over eight months a year. At the end of high school, only eleven of the specialists were training or playing their sport for more the eight months a year. We can see that one participant stopped specializing their sport during those four years, but we do not know the reason behind it.

Out of all the participants, the most popular means of playing sports in college was sampling sports in early childhood, but quitting some and keep playing others. This supports the belief that sampling is more popular in Division III athletics (Baker, 2003, p. 86). Division III focuses on school *and* sports unlike the other two divisions that focus more on athletics. If this survey was conducted at a high profile Division I school, we would most likely see that the athletes used their childhood to specialize in one sport in order to play at the highest collegiate level. Athletes in Division III are not on scholarship at school to play sports, so that is perhaps why we see less specialization in Division III.

The study shows that student and athletes in Division III schools use sampling to play sports throughout their childhood. In the survey, there were three sampling choices and all of them had more participants than the specialization choice. 55% (n= 119) of the

participants in this survey sampled sports sometime throughout their childhood, while 38% (n=82) were sport specialists during their childhood (See Appendix E for results).

Football and baseball/softball were the most popular sports chosen at St. John Fisher College. Football was picked 106 times throughout the survey followed by 74 times for basketball. Football and baseball are the two most popular sports in the United States (Ranking, *The Richest*). Soccer was the third sport chosen most often and that is not surprising because soccer is the most popular sport in the world (Top 10 List). Soccer is a growing sport in the United States and people are starting to recognize it more because of the success of the Men's and Women's National Teams.

Looking at the data, there is no significance on whether or not specialists or samplers are better for college athletics. Since there is no significance between the two, this means that there is not a preferred way for parents to start their children in sports. A parent can allow their child to play multiple sports throughout their childhood to help grow their skill set or have their child play one sport and just be an expert at that sport.

There is significance between specialization or sampling and why athletes quit their sport. This significance ($p=.03$) shows that both athletes who specialize or sample may quit their sports before reaching higher levels of play. Looking at the individual sports, the biggest reason participants of the survey quit their sport is due to injury (n=192) and burnout (n=91) (See Appendix D Table 1 for results). This relates to the previously found research in that injury and burnout are the major reasons athletes stop playing sports (Goodway & Robinson, 2015, p. 272).

There is a really strong correlation between when and why the participant's quit their sport ($r= .572$; $p= .000$). The participants in this survey stated that a majority of

them quit their sports during ninth through twelfth grade in high school (n=316). There is a correlation between athletes quitting due to injury during ninth through twelfth grade (n=106). This shows that most of the athletes that quit during this time period were due to injury (See Appendix D Table 2 for results).

The research conducted compliments the literature done before this research. There was no previous research done at small Division III schools that deals with figuring out whether specialization or sampling leads to student-athletes playing at the college level or higher. The research conducted with this study shows that students and athletes at St. John Fisher College were sport samplers throughout their childhood leading up to college. The researcher predicted that people who go to a small Division III school would sample more than specialize because Division III schools focus more on education than athletics. The researcher also predicted that the biggest reason for quitting athletics was because of injury and burnout.

Limitations & Future Research

The researcher left out a question for the sport specialists in the survey. The question was about whether or not the sport specialist is still playing their sport. The researcher asked the sport samplers whether or not they still played, but not the sport specialists. This made the research have to look at different things for the sport specialists. This study was done at a small, private Division III school and this could have skewed the results. The results of a Division III school are going to be drastically different than a Division I school because of the competition level of the athletes. Division III focuses more on academics than athletics because there are no athletic scholarships.

Future researchers can take the analysis done at St. John Fisher College and use it at a Division I school. The researcher suggests that research should be done at a Division I program in order to get more accurate results that Division I schools can use when recruiting players. Once this research is done, recruiters for college teams will know exactly what to look for when recruiting players for their teams. The research done here is accurate for a small Division III school, but not a Division I school. In the future research, the researcher should look into if sport specializers are still playing at the Division I school. A researcher may benefit from interviewing or surveying Division I coaches as well because they can get a different view of what coaches look for when they are recruiting players.

Conclusion

The purpose of this study done at St. John Fisher College was to determine whether sport specialization or sport sampling was the best way to participate in sports during childhood. The results showed that sport sampling was the most popular way to play sports throughout the participant's childhood. Even though a majority of the participants sampled sports, they narrowed down and specialized in one sport when the participants got to the college level. The research conducted at St. John Fisher College can be used in other studies because it compliments the research done before and fills in some gaps in the research.

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Appendix A



I am examining how the students and athletes at St. John Fisher College played sports throughout their childhood. Please answer these questions honestly and the best to your ability. This survey will take approximately 5-10 minutes. The results of the survey will remain anonymous and your answers will only be reported in generalities. By clicking the arrow, you hereby give consent to participate in this survey. Thank you for your participation in this survey.

>>

Which of the following statements best reflects your involvement in sport prior to entering college?

- I specialized in one sport throughout my childhood
- I sampled many sports when I was younger, then specialized in a single sport
- I sampled many sports growing up, but gradually quit playing some and kept playing others
- I sampled many sports growing up and through high school
- I have never participated in any sports

Please use the list of sports to the left and the categories to the right to describe your interests and actions prior to entering college.

Items	I played the following sports
Football	<div style="border: 1px solid #ccc; height: 100%;"></div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"> <p>I wanted to play this sport, but it wasn't available to me.</p> </div>
Basketball	
Softball/Baseball	
Golf	
Ice Hockey	
Field Hockey	
Cross Country	
Lacrosse	
Rowing	
Tennis	
Soccer	
Track and Field	
Cheerleading	
Volleyball	
Wrestling	
Swimming	
Rugby	

When did you begin playing football?

- Before Kindergarten
- In grades K-6
- In grades 7-8
- In grades 9-12

What was the primary reason that you began playing football?

- Because my friends were
- To be competitive
- Because my family could afford it
- For fun
- Because my family encouraged me to
- Because my family made me play
- Other

During your most active participation, how many months per year did you spend training and competing for football?

- 0-3 months
- 4-6 months
- 7-10 months
- 11-12 months

When did you quit playing football?

- In grades K-6
- In grades 7-8
- In grades 9-12
- I still play in college

What was your primary reason for quitting football?

- Competition level
- Cost to participate
- Family
- Time
- Injury
- Wanted to focus on another sport
- Other

What was the size of your hometown?

- Less than 20,000 people
- 20,000-49,999 people
- 50,000-99,999 people
- 100,000 or more people

What is your gender?

The same questions were asked for every sport, even though football is the only questions shown.

Appendix B

Dear Participant,

My name is Ian Campbell and I am a junior Sport Management major at St. John Fisher College. For my class project, I am examining how the students and athletes at St. John Fisher College played sports throughout their childhood. Because you are an undergrad at St. John Fisher College, I am inviting you to participate in this research study by completing the linked survey.

The following questionnaire will require approximately five to ten minutes to complete. There is no compensation for responding nor is there any known risk. In order to ensure that all the information will remain anonymous, please do not include your name.

If you choose to participate in this project, please answer all questions as honestly as possible. Participation is strictly voluntary and you may refuse to participate at any time.

Thank you for taking the time to assist me in my educational endeavors. The data collected will provide useful information regarding undergraduate students and athletes at SJFC. If you require additional information or have questions, please use the contact information provided at the end of this email.

Please click on this link below to start the survey:

Sincerely,

Ian Campbell

imc05963@sjfc.edu

Dr. Emily Dane-Staples

edane-staples@sjfc.edu

Appendix C

	Specialization or Sampling	Sport	When Start	Why Start	Time	When Quit	Why Quit
Specialization or Sampling	N/A	13.512	2.640	3.954	5.238	6.368	14.010 *
Sport		N/A	286.589 **	206.120 **	86.374 **	164.634 **	142.478 **
When Start			N/A	103.572 **	29.410 **	668.820 **	19.883
Why Start				N/A	51.692 **	35.339	45.200
Time					N/A	183.740 **	65.724 **
When Quit						N/A	45.520 **
Why Quit							N/A

Key

*= P-value is between .05-.01

**= P-value is less than .01

No stars= No Significance

Appendix D

Summary of reasons for starting & stopping sport.

Table #1

Why Start Playing	n
Because of Friends	145
Competitive	70
Family Affordability	2
Fun	214
Family Encouragement	120
Family Mandate	20
Other	15

Table #2

Why Quit Playing	n
Competition level	62
Cost to participate	4
Family	2
Time	74
Injury	192
Focus on another Sport	36
Other	91

Note. Table values indicate total responses for each category across all sports.

Appendix E

Summary of start and end times of sport participation,

	When Began	When Quit
Before Kindergarten	272	--
Grades K-6	144	64
Grades 7-8	73	99
Grades 9-12	96	316
Still Play	--	105

Note. Table values indicate total responses for each category across all sports.

Appendix F

Time and Participation patterns in each sport

	0-3 months	4-6 months	7-10 months	11-12 months
Football	13	10	9	6
Basketball	41	43	11	8
Baseball/Softball	34	40	18	8
Golf	25	9	9	4
Ice Hockey	3	3	6	0
Field Hockey	3	8	0	4
Cross Country	8	10	3	7
Lacrosse	8	7	5	5
Rowing	2	1	1	0
Tennis	22	10	3	1
Soccer	35	29	13	25
Track and Field	21	20	7	7
Cheerleading	2	6	7	8
Volleyball	9	16	5	2
Wrestling	3	5	0	3
Swimming	7	14	5	3
Rugby	1	1	0	0