

**Risk of Eating Disorders and the Pressures to
be Thin: Female College Athletes vs. Non-
Athletes**

The Honors Program
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ABSTRACT

The objective of this study is to determine the relative level of risk female college athletes and non-athletes have in developing an eating disorder. In addition, the study identifies the pressures faced by each group and how these contribute to the risk of eating disorders. The study was conducted using two surveys: an EAT-26 test and a pressures questionnaire. The EAT-26 test is a standardized self-measure of symptoms and concerns characteristic of disordered eating (EAT-26 Self-Test). This was used to determine the amount of risk faced by each participant. The pressures questionnaire was used to determine what pressures each group faced in relation to their risk scores. The results indicate that female athletes face a higher risk and different types of pressure. Although few results showed statistical significance, the preponderance of evidence shows clearly that athletes DO face additional pressures, defying the stereotype of the “always healthy athlete”

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INTRODUCTION

Eating disorders refers to the clinically diagnosable syndromes of anorexia nervosa and bulimia nervosa. “Disordered eating” can be defined as levels not severe enough to meet the criteria of an eating disorder. Anorexia Nervosa is associated with self-starvation. Individuals with this disorder have an extreme fear of gaining weight. To avoid this, they severely limit the amount of food they eat. Bulimia Nervosa is characterized by frequent episodes of binge eating and purging. For instance, someone with bulimia may force vomiting or do excessive exercise in an effort to get rid of the extra calories. Both disorders are characterized by clinically significant disturbances in body image.

Studies have shown that 90% of those affected by these disorders are women. Women face enormous pressure to be thin and have an aesthetically pleasing body shape. Since the 1950s, the ideal body image has become **increasingly lean and physically fit**. Self-control, mastery, and acceptance are all factors valued by our society, and having the perfect body symbolizes these (Striegel-Moore, Ruth, and Linda Smolak 2001).

Both female athletes and non-athletes are affected by societal pressures; however, athletes may face additional sports related pressures. The general forces that might lead to disordered eating include sociocultural factors, media messages, family and peer pressures, and inevitable body comparisons. Both groups face these pressures which can lead to risk of eating disorders. Sociocultural pressures, such as valuing fitness, put increased pressure on the females to remain thin to be able to obtain acceptance. One can value fitness and not value thinness, however, in the United States valuing thin is often confused for being fit. The media also amplifies the idealization of thinness which in turn becomes promoted by family and peers. Having positive reinforcements with weight loss also encourages an individual to

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continue to lose more weight in order to continue receiving positive feedback. Once reinforced for a behavior, an individual will continue to act it out. Many females also tend to compare themselves to other females which can lead to negative attitudes and increased body dissatisfaction.

The sports environment involves more stresses faced by these athletes including the drive for perfection, a belief that gaining weight negatively affects performance, uniforms, athlete body stereotypes, focus on appearance, and pressure from parents or coaches to retain a certain weight or performance level. Many people believe that gaining weight can have a detrimental effect on an athlete's performance. In some cases, it may, however many coaches and parents alike put increasing amounts of pressure on these athletes to maintain a certain body weight so they can reach their ideal level of performance. Many females believe that being thin will maximize athletic performance. However, whether lower weight and percentage of body fat actually leads to improved performance has not been scientifically proven. This belief leads athletes to begin dieting as they aim to improve their performance and reach their level of "perfection". The attire females are required to wear in their sport also increases the risk of disordered eating. It is generally tight and revealing, such as a gymnastics or distance running uniforms. Athletes may strive to be as thin as possible so they feel acceptable in the uniforms they are forced to wear (Thompson, Ron A., and Roberta Trattner Sherman, 2010/Giordano, Simona 2010/Brownell et al., 1992).

These factors lead to a sports focus on appearance and the athlete body stereotype. Athletes are generalized as being thin and healthy. Athletes are aware of this stereotype, putting pressure on themselves to succumb to these expectations. Excessive dieting and exercise may not be seen as a problem to outsiders, because it is looked at as desired behavior

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and commitment to the sport. In reality, this behavior could be a red flag and indicate the beginning of disordered eating. These factors taken together, lead to the conclusion that athletes are in fact at a higher risk of developing disordered eating. Athletes, having driven, perfectionist attitudes, competitiveness, and intense concern with performance, feel the extra burden of these pressures.

Athletes

Recent studies of disordered eating have shown that prevalence of disordered eating increases with level of competition: 18.2% of high school athletes, 26.1% collegiate athletes, 46.2% elite athletes (Thompson, Ron A., and Roberta Trattner Sherman, 2010). This is because the amount of pressure and expectations increases as the level of competition increases. Those participating at the high school level are not going to be faced with as many pressures as those at the college level or elite level of competition.

One study conducted, by Camesellee et al (2011), surveyed seventeen female athletes eighteen and older who had been previously diagnosed with eating disorders and were currently or previously an NCAA athlete. Using both online and face to face interviews, the study found that there were both external and internal factors causing the disorders in these athletes. Internal factors included negative mood states, low self-esteem, drive for achievement and perfection, and desire for control. External factors included negative influences on self-esteem, hurtful relationships, hurtful role models, and sport participation (Camesellee et al., 2011).

Another study noted that, “Clinical eating disorders continue to be significant problems for more than 46% of elite females in lean sports and almost 20% in non-lean

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sports” (Torstveit, Rosenvinge, & Sundgot-Borgen, 2008, 108-118). In this study, lean sports are defined as any sport that emphasizes thin body, size, shape, or low weight (distance running, swimming, diving, gymnastics, and dance).

Looking further into the lean sports, one study dealt with specifically elite women distance runners. This study took a sample of 176 elite runners, both distance and middle distance, and used two questionnaires to determine if runners were at a high risk of eating disorders. Of the 176 participants, 35 had a present or past eating disorder. However, all participants did have a BMI significantly lower than what would be expected according to height. Those with the eating disorders showed low self-esteem, significantly low BMI, and poor mental health. The demand to be lean in their sport seems to be the main cause of the disordered eating (Hulley, Angela J., Andrew J. Hill, 2001).

An EAT-40 strategy was used in another study. This is a standardized, self-report questionnaire designed to assess pathological eating behaviors, attitudes, and thoughts. This study states that the “prevalence of disordered eating in some college and elite athletes was found to be equal or higher than the general population” (Otis et al., 1997 p.146). It also went on to say high anxiety levels of athletes could possibly be a condition which instigates the development of disordered eating behaviors.

Athletes and Non-Athletes

Multiple studies have been conducted which look at the correlation of eating disorders in both athlete and non-athletes. One study compared eating behaviors between 149 female varsity athletes and 209 non-athletes. They used an anonymous self-report instrument survey to interview all their subjects. Their results showed that 18% of athletes and 26% of non-athletes

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reported past eating disorders and non-athletes typically ate fewer meals and reported more past and current weight loss methods. They therefore concluded that self-reported eating behaviors exist in both athletes and non-athletes, but not at different rates (Gutgesell, Margaret E., Kerrie L. Moreau, and Dixie L. Thompson, 2003).

Another study tested 84 undergraduate collegiate female athletes and 62 undergraduate female non-athletes. They separated the athletes into lean-sport athletes and non-lean sport athletes. Lean sport is defined as a sport that puts significant pressure on players to be lean (distance running, swimming, diving, and dance). They found that their data did not support the hypothesis that female athletes are at a higher risk for eating disorders than non-athletes. However, those in lean sports were at a higher risk and reported higher body dissatisfaction as well as a lower desired body weight. Overall, the non-athletes actually reported a lower desired body weight than the athletes themselves. The results found that 7.1% of non-athletes and 12.9% of athletes were at risk for disordered eating, while 25% of those athletes at risk were lean sport and 2.9% were non lean sport (Reinking, Mark F. and Alexander, Lauren E. 2005).

A third study looked at 103 females, about 53% of them having played a sport. Using the EAT-26 test, which measures body dissatisfaction and the EDI test to measure perfectionism in the participants, they compared the two groups. The study found that athletes did not exhibit eating disorder symptoms at a greater rate than non-athletes. However, those athletes in lean sports dieted more and athletes showed more perfectionism than non-athletes (Schwarz et al., 2005).

The fourth study was a meta-analysis using 34 studies done using data to examine the overall relationship between athletic participation and eating problems. The results showed

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that athletes seemed to be more at risk than non-athletes, and those in sports that emphasized thinness seemed to be even more at risk. Another observation was that collegiate and elite athletes were at more of a risk than high school athletes (Smolak, Linda and Murnen, Sarah K. 2000).

Females

Many studies focus on the female population in general. One study conducted by Hesse-Biber et al., 1999, interviewed 144 women during their sophomore and senior years of college. Once out of college 21 of these women were interviewed again to see if their disordered eating behaviors had changed. Of the 21 women, 10 had “gotten better” while 11 were still at risk. The explanation is to be found to be in the relational realm of their lives. Those at risk did not have closer relations and felt isolated both in college and after college. Those who had “gotten better” had good relations with friends and family (Hesse-Biber, S. M. Marino, and D. Watts-Roy, 1999).

Overall, previous studies have shown mixed results. Of those that found no difference in eating disorder risk between athletes and non-athletes, they found a difference in those athletes within the lean sports and non-lean sports. Those in lean sports were at more of a risk and had higher body dissatisfaction. The additional pressures specific to the sport are what send these athletes into the perfectionism attitude and need to be “thin”. When a female, regardless of whether they are an athlete, forms this “thin” mentality, it is difficult to get rid of and could follow them for years. In those studies that did find a correlation between being an athlete and eating disorders, it was noticed that as the level of competition increases, more pressure is placed upon them and the level of risk increases.

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DATA & METHODS

To identify if female athletes were more at risk for developing an eating disorder than non-athletes and the types of pressures the two groups faced, this study used two surveys. One was the EAT-26 (Eating Attitudes Test). This test is a standardized self-report measure of symptoms and concerns characteristic of eating disorders. It is not used for diagnosing an eating disorder, but rather looking at eating disorder risk. It is a refinement of the EAT-40, which was first published in 1979 and used in the studies mentioned above, by Otis et al., 1997 and Schwarz et al., 2005. It has since been translated into many different languages and used in multiple studies looking at eating disorders (EAT-26 Self Test). In this study, it was used to determine if participants were at risk for developing and eating disorder and their level of body dissatisfaction. This test involves 26 questions based on a Likert scale from “Always” to “Never”. Each answer received a score which was totaled up at the end. If participants scored 20 or above they were considered to be at risk. The second survey was a pressures questionnaire. This was used to determine what pressures each group faced in relation to their risk scores. The questionnaire included topics relative to the general population as well as those specifically targeted towards athletes. All participants were females, ages 18-24 who currently attend Division I colleges along the East Coast. To be considered an athlete, they must have participated in a Division I sport for at least one year.

There are 162 participants: 102 athletes and 60 non-athletes. The athletes were then broken down two different ways. The first breakdown was into two groups: lean sport and non-lean sport. Lean-sport athletes were defined as any sport that put an emphasis on a lean body (thin body, size, and shape). Those lean-sports were cross country, track and field, swimming, and diving. The remaining non-lean sports were lacrosse, soccer, volleyball, ice

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hockey, field hockey, tennis, softball, and basketball. There were a total of 32 lean sport participants and 46 non-lean participants. The second breakdown was dividing those athletes into current athletes and previous athletes. A previous athlete was defined as anyone who participated in a Division I sport for one to two years, but did not currently. The current athlete was participating in the sport during the time they completed the two surveys. There were a total of 21 previous athletes and 81 current athletes.

FINDINGS & DISCUSSION

The following findings will be presented for the two categories: Athletes vs. Non-athletes and Lean Sport vs. Non-Lean Sport. After examining the data further it was found that the previous athletes had similar results and were equally at risk for developing an eating disorder as current athletes. For this reason, the two groups were brought back into one larger athlete category. However, this finding leads to the belief that the pressures to be thin continue into individual's non-athlete lives and do not only affect those currently participating in sports.

Who is at Risk?

Out of the 102 athletes, 16.5% of them were said to be at risk, while 10% of the 60 non-athletes were at risk. As noted by Smolak, Linda and Murnen, Sarah K. 2000, athletes surprisingly are often at high risk. However, although there is clearly a difference here, after running a t-test, the analysis shows no statistical significance. Although it is not significant, it is still a very important finding. Of all those at risk, 74% of them were athletes while only 26% of them were non-athletes. The overall result is not statistically significant; however this is clearly a group that has a substantially high risk of developing an eating disorder.

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When looking at the breakdown of non-lean sports and lean sports, it was found that 19% of lean sport athletes were at risk for developing an eating disorder, while 13% of non-lean athletes were at risk. Once again, the results were not statistically significant. Therefore, the claim could not be made that the lean sport athletes were at more of a risk. However, it can be taken away that athletes are at a high risk for developing an eating disorder.

Behavioral Factors

The EAT-26 test looked at five behavioral factors which can be linked to the risk scores the participants received. Of the questions, two of them showed a difference in behavior between the athletes and non-athletes. When asked, “In the past 6 months, have you ever used laxatives, diet pills, or diuretics (water pills) to control your weight or shape?” 11% of athletes said they have at least once a month or less to once a day or more, while 5% of non-athletes said they did. The following question asked “In the past 6 months have you made yourself sick (vomited) to control your weight or shape?” 6% of athletes said they have once a day or more to once a month or less, while only 2% of non-athletes said they have. These coincide with the pressures and expectations placed upon the athletes and the levels they are willing to take to reach these expectations.

When the data was examined in terms of lean sport and non-lean sport athletes, it was found that both groups were relatively similar when answering the two questions mentioned above. Both 9% of the lean and non-lean sport athletes said they have used diet pills, laxatives, or diuretics once a month or less to once a day or more. Relatively similar once again, 3% of lean sport athletes have made themselves sick to control their weight and 2% of

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non-lean sport athletes have done so once a month or less to once a day or more. This displays that the overall pressures felt are similar for both lean and non-lean athletes in this regard.

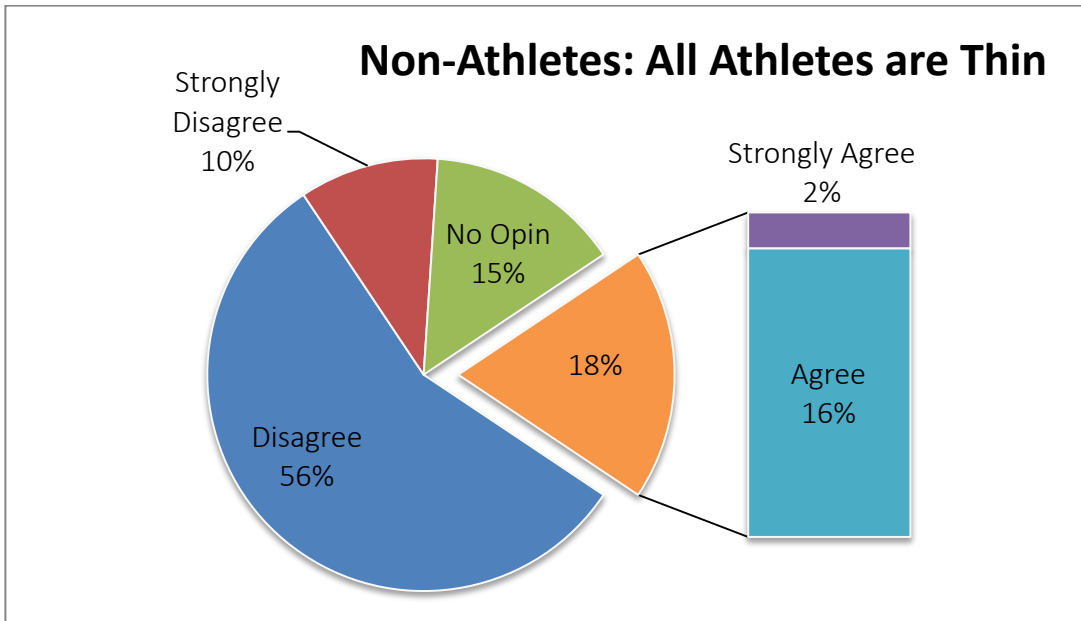
This is contrary to the results found by Mark F. Reinking, and Lauren E. Alexander, 2005 in a study above, who found that lean athletes have a higher amount of body dissatisfaction than non-lean, with which the assumption could be made that this is cause by additional pressures.

In sum, athletes are attempting to lose weight and control their appearance through unhealthy manners. These methods are used by both non-lean and lean sport athletes, at a similar rate.

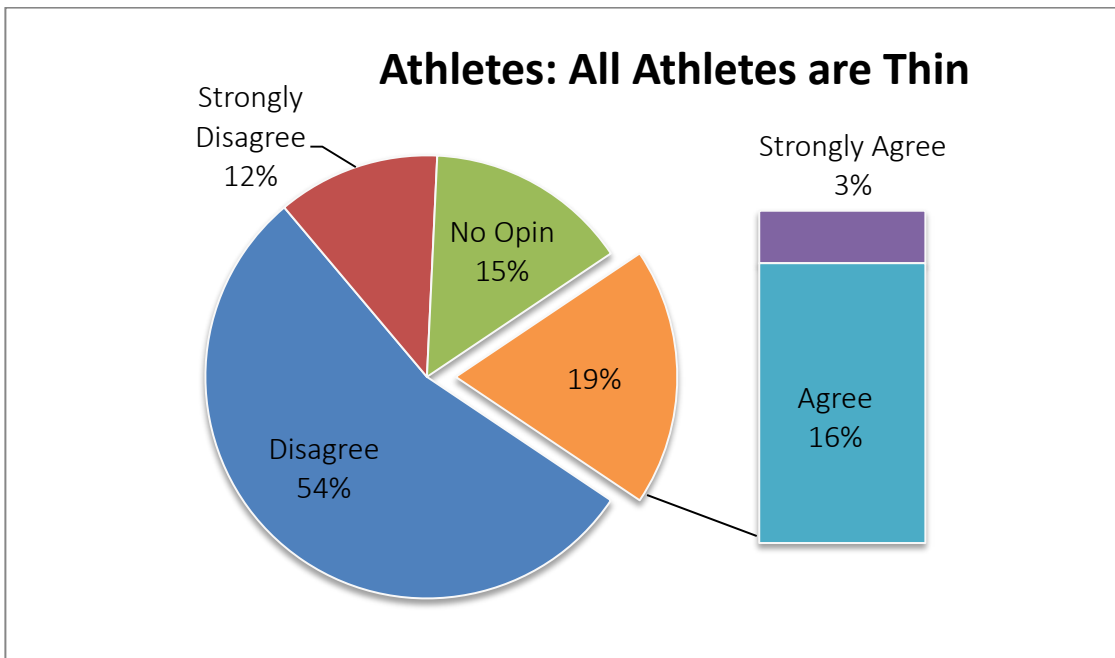
Stereotypes

The next set of questions addresses two common stereotypes people generally have about athletes: All athletes are healthy and all athletes are thin. Individuals assume that just because someone is an athlete they are automatically healthy and thin. Athletes are aware of these stereotypes, which puts additional pressures on them as they try to adhere to them. The responses are displayed in the tables below.

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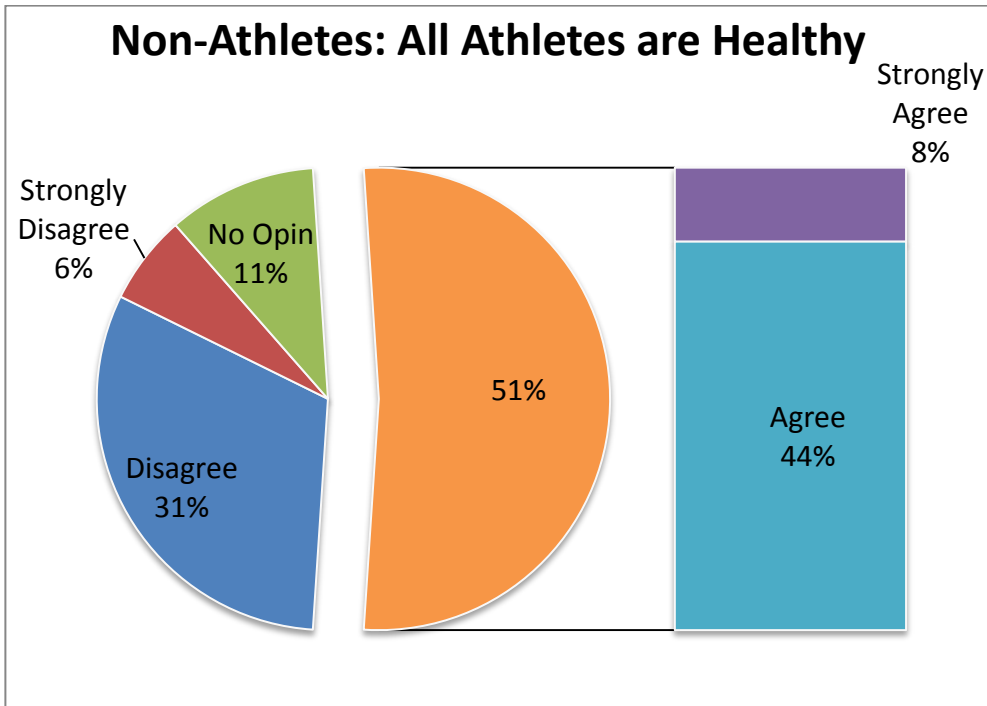


In the above table, it can be seen that 18% of non-athlete respondents strongly agree/agree that all athletes are thin.

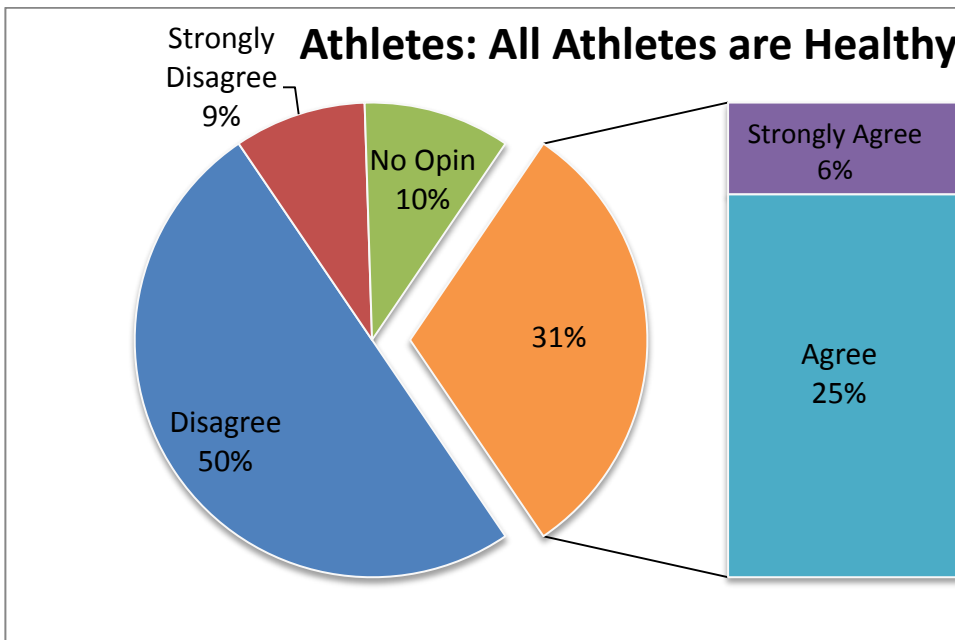


In the table above it can be seen that 19% of athletes believe that all athletes are thin.

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In the table above it can be seen that 51% of non-athletes agree that all athletes are healthy.



In the table above it can be seen that 31% of athletes agree all athletes are healthy.

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While the numbers for two groups for “All athletes are thin” are similar, the data varies by 20% for the “All Athletes are Healthy” group. This confirms the stereotypes that are faced by athletes; however it should be noted the relatively high percentages of athletes who are also agreeing with these stereotypes. It leads to the belief that these stereotypes are now by the athletes themselves.

When looked at from the lean sport and non-lean sport perspectives, the data is as follows: 17% of non-lean athletes believe that all athletes are thin, versus 16% of lean sport athletes. However, 16% of lean athletes believe that all athletes are healthy, while 28% of non-lean athletes agree to that statement. This may be due to the fact that those in lean sports are more likely to feel the pressures from sport and are aware of the measures that are taken to achieve the thin body type desired, while the non-lean athletes do not feel these pressures to the same extent and therefore make the assumption that all athletes are healthy.

In sum, the stereotypes are strongly believed not only by non-athletes, but by athletes as well. The non-lean athletes have a stronger belief that all athletes are healthy than the lean sport athletes.

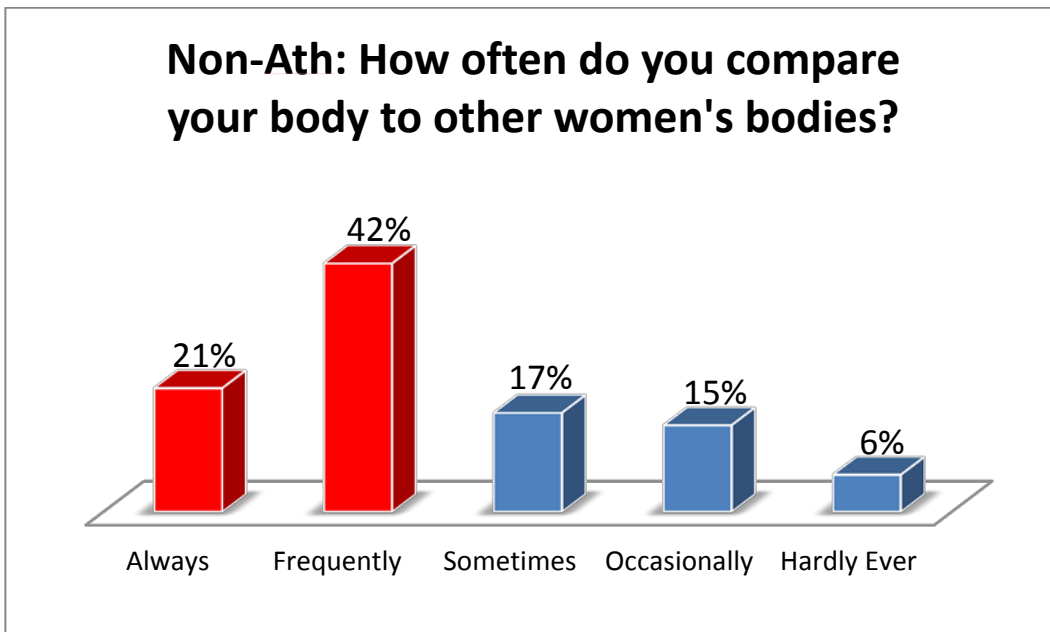
Pressures

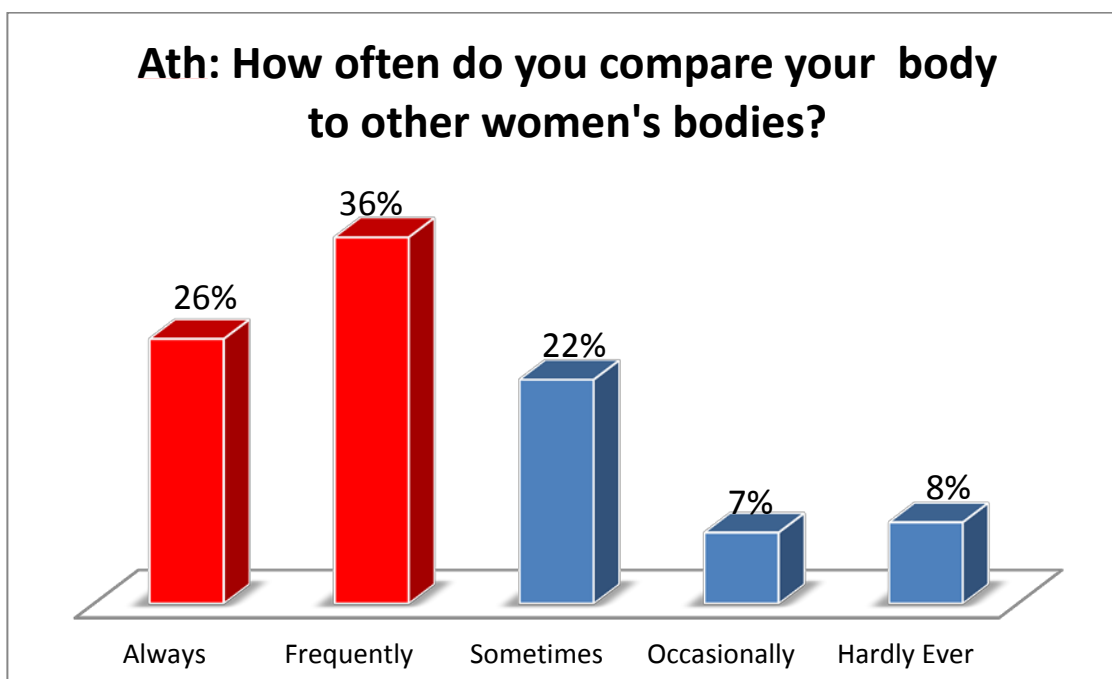
The following set of questions looks at the pressures faced by participants. Questions in this category range from pressures from family, peers, coaches, pressures to perform, body comparisons, etc. All questions were answered using a Likert scale. Just looking at the numbers, one would conclude that athletes feel more stress from these pressures. However,

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when tested, there was found to be no statistical significance among the answers. Analysis of these questions is as follows:

One commonality among females is body comparisons. To measure if the frequency of body comparisons was higher for female athletes or for non-athletes the following question was asked: “How often do you compare your body to other women’s bodies?” The responses are displayed in the tables below.





It can be seen that about 60% of both athletes and non-athletes said they compare their bodies to other women's bodies always/frequently. As mentioned above, when the data was further examined, there was no statistical significance shown. However, there was an interesting case found. Of those that said they always compare their body, 76% were athletes. In addition, of those who said they hardly ever compare their body, 73% were athletes. This is displaying two different pulls. On one hand there is the athlete who has a higher self-confidence and stronger sense of self because they are an athlete, but on the other hand there are those athletes with low self-confidence because they are athletes and they are participating in sport in which the body is at the central emphasis of the phenomenon.

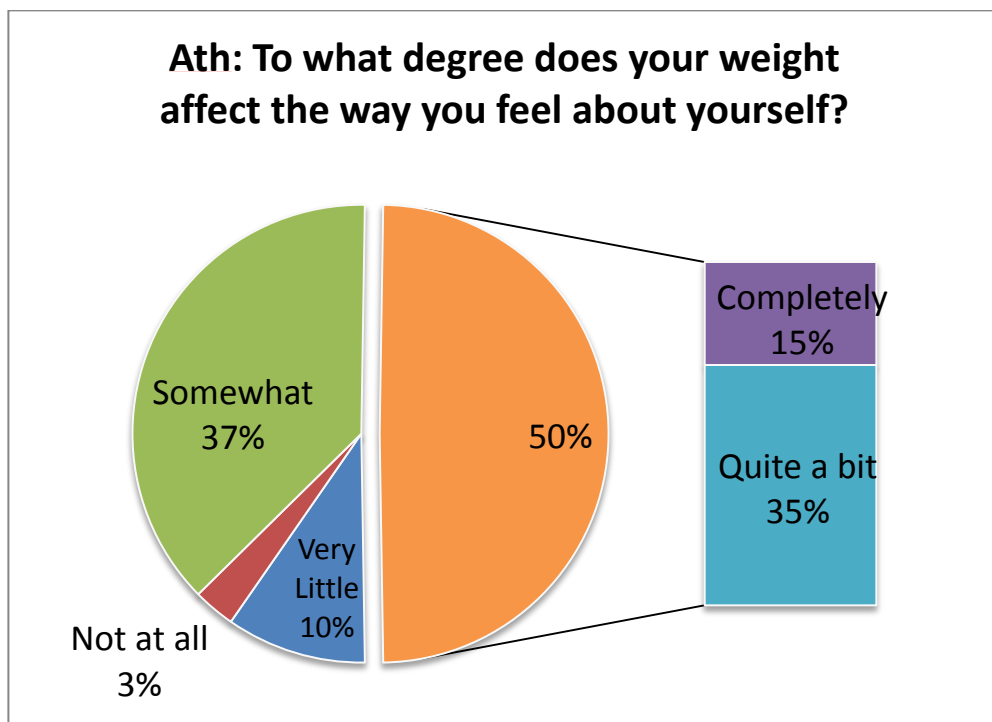
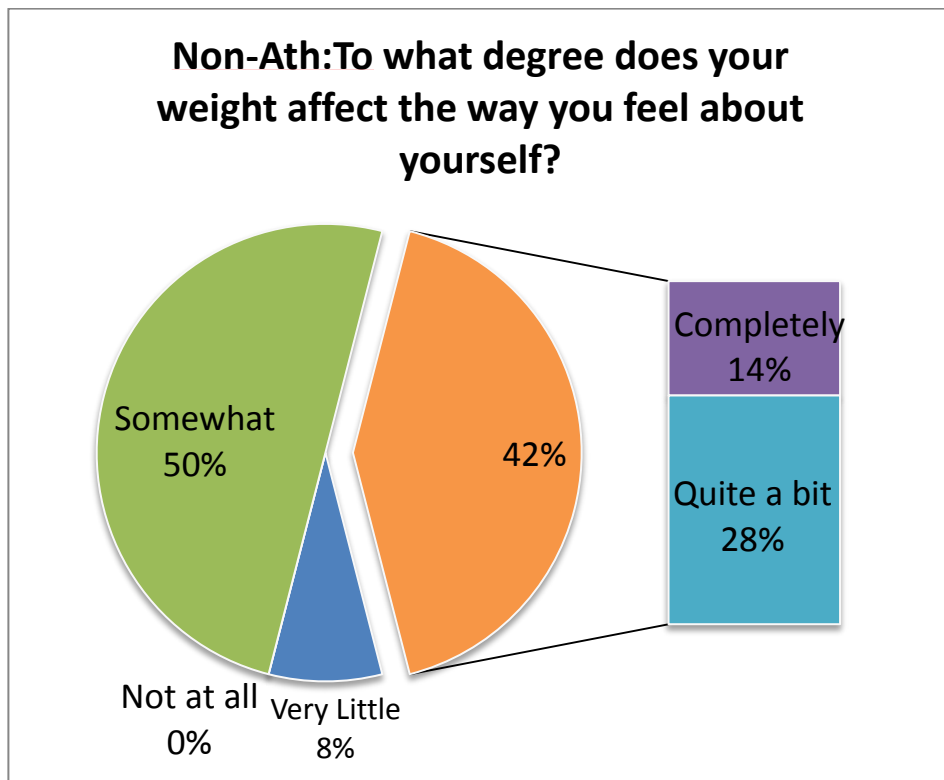
When this same question was split into the lean and non-lean categories, it was found that of both categories, 63% said they always/frequently compare their body to their women's bodies. It can be inferred here that the lean and non-lean variable is of no importance to this question and both groups compare themselves to others at an equal rate.

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The next question looked at was “Do you feel pressure to be thin or lean in your social group?” It was found that 30% of athletes felt a higher pressure within their social group, while 17% of non-athletes felt high pressure. Once again, no statistical significance was found. However, of those who felt a high level of pressure, 82% of them were athletes. Given this data, it can be insinuated that there is still a large issue going on with athletes and pressures within their social group.

When examined in the lean and non-lean categories, it was found that 13% of non-lean athletes felt a high amount of pressure in their social group, while 27% of lean athletes felt a high amount of pressure. This may be caused by the fact that the social groups of the athletes are likely to be other team members. Therefore, they are comparing themselves and feeling pressure to be thin based off of how their team members carry themselves.

For many females, weight is the determinant of how they view themselves. The next question, “To what degree does your weight affect the way you feel about yourself” is analyzed below to determine if this holds true for both groups.



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Fifty percent of athletes said their weight completely/quite a bit affects the way they feel about themselves, while 44% of non-athletes make this claim. Although there is no statistical significance, it should be noted that of those participants who said “completely”, 82% were athletes. Due to this, the claim cannot be made that this affects athletes at a higher rate than it does non-athletes, but it can be seen that athletes are affected greatly.

When the data was broken down into the lean and non-lean category, it was found that 50% of lean athletes felt that their weight completely/quite a bit affects the way they feel about themselves, while 47% of the non-lean athletes feel the same. Once again, the numbers are fairly similar. This displays the similarity between the lean and non-lean athletes in their mentality of the body based on sport.

When taking the surveys, participants were asked their current weight, ideal weight, height, and age. For both groups, about 80% of participants were unhappy with their current weight. Desired weight loss ranged from 1 pound to 53 pounds. Only 22% of non-athletes and 16% of athletes were content with their current weight. To look into this further one question was asked looking at weight, “I feel better when I’m five pounds lighter”. Of the participants, 61% of non-athletes agreed with this statement, while 70% of athletes agreed. This suggests the majority of females are unhappy with their current weight and the thinner they can become, the better they feel about themselves. An additional question to look further into the concerns of weight for these participants asked, “Do you worry about your body weight/composition?” 32% of non-athletes and 37% of athletes said they always/frequently worry about their weight. From the data, it can be inferred that weight is a frequent concern of these females, both athlete and non-athlete, seemingly one of the focal points of their lives.

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When looking at the data from the lean and non-lean categories, about 90% of the non-lean athletes were unhappy with their weight, and 80% of the lean athletes were unhappy. Nineteen percent of lean athletes were content versus only 9% of the non-lean athletes. When this was further analyzed, it was found that 52% of non-lean athletes feel better when they are 5 pounds lighter, versus 59% of the lean athletes. For both variables, weight loss is a common goal. Lastly, when asked if they worry about their body weight/composition, it was found that 38% of non-lean worry about their weight always/frequently, while 35% of lean worry the same amount. Overall, non-lean and lean athletes are fairly similar within the above pressures. Tables of the remaining questions can be seen in the appendices below.

In sum, athletes do feel high amounts of stress to fit their ideal body image. Those in lean sports and non-lean sports feel relatively similar amounts of stress. These pressures affect athletes as a whole rather than specific categories.

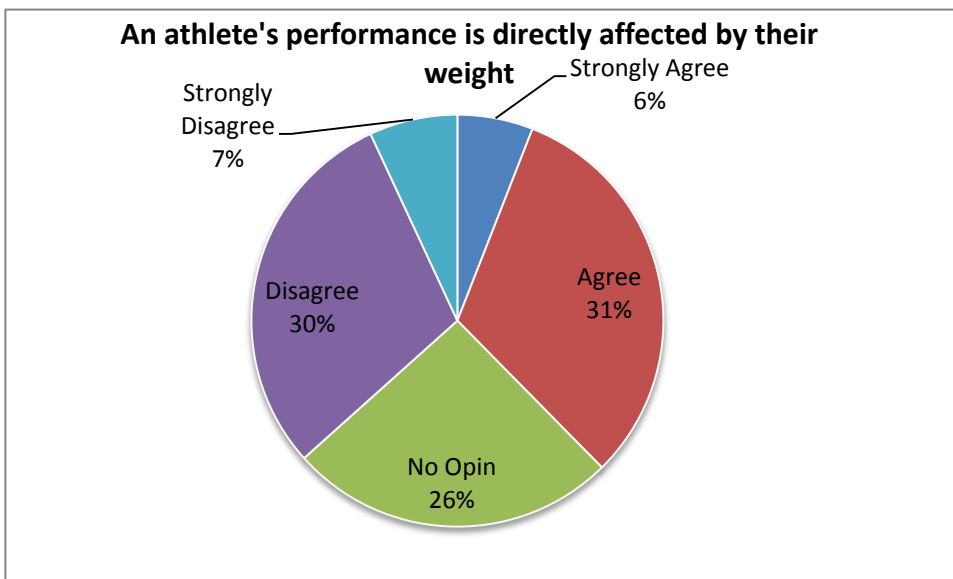
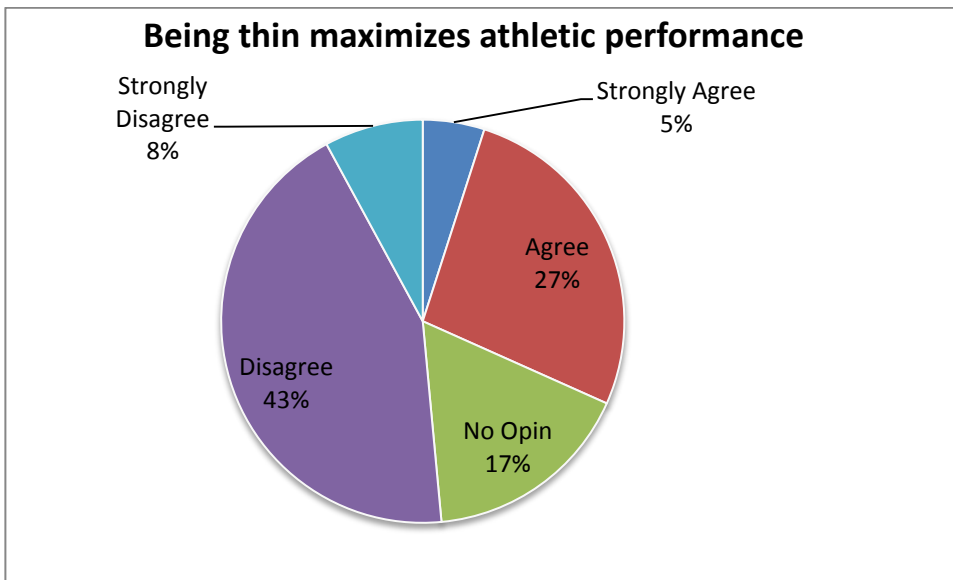
Athlete Pressures

The last set of questions was asked specifically of those who are Division I athletes only. This section focused on pressure to perform and pressure from coaches. The demand to be lean, which is mentioned in multiple studies above, is in part stemmed from demand placed upon the athletes by their coaches. One study done by Thompson, Ron A., and Roberta Trattner Sherman, 2010, specifically demonstrates this by explaining the level of pressure and expectations that increase with the level of performance.

There has been a belief among athletes that weight is directly linked with performance. Generally speaking, it is believed that the skinnier one is, the faster/better she will perform. To test if this was a belief among the participants, the following opinions were

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asked: “Being thin maximizes athletic performance” and “An athlete’s performance is directly affected by their weight”.



It can be noted that 32% of athletes believe that being thin maximizes athletic performance and 37% believe an athlete’s performance is directly affected by weight.

Looked at from the lean and non-lean categories, it was found that 33% of non-lean and 34% of lean athletes believe being thin maximizes athletic performance. Along with this,

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38% of lean and 39% of non-lean athletes believe that an athlete's performance is directly affected by their weight. The two groups have similar views and both connect weight and performance equally.

Another question asked was, "Do you feel pressure to be thin or lean in your sport?". 30% of athletes said they always/frequently feel this pressure. This confirms the additional pressures sport puts on these athletes, which are pressures not faced by those non-athletes.

An important statistical significance was noted with this question among the lean and non-lean athlete variables. Of those participating in non-lean sports, 21% said they feel pressure to be thin or lean in their sport, while 41% of those lean athletes said they feel this pressure. The emphasis on body in the lean sports is stronger and more of a focal point in the lean sports than it is in non-lean sports. The body itself is the sport. This could lead to the high percentages in difference for this question. While this is a problem for athletes overall, the majority of those athletes experiencing this pressure are those from the lean sport category.

When examining the pressure placed upon these athletes by coaches, the athletes were asked to check off which of the following their coach participates in: Nutrition talks, Weekly weigh-ins, Reprimanding the team regarding weight, and Reprimanding individually regarding weight. Of the athletes who answered, 63% of coaches participate in at least one of the above options. The breakdown is as follows: 45% nutrition talks, 9% weekly weigh-ins, 4% reprimanding team regarding weight, and 15% reprimanding individually regarding weight. Nutrition talks could both be positive or negative, depending on how the coach goes about the discussion and what recommendations are being made. By participating in the coaches are places "fat-phobic" and fat-shaming attitudes into these athletes' minds. It is pressuring the athletes to lose weight and it could be causing them to ignore symptoms of

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health problems in their athletes. This damages the athletes psychologically and these coaches could be causing the problem themselves.

It was also found that about 50% of coaches in the non-lean and lean athlete categories participate in one of the following mentioned above. The coaches place pressure on their athletes regardless of sport.

In sum, athletes have the mentality that weight and performance is directly related. Along with that, those who feel the most pressure to be thin in their sport are the lean athletes, where body image is a focal point.

The remaining results and tables for the athlete portion can be found below in the appendices.

CONCLUSION AND FUTURE RESEARCH

Despite lack of statistical significance, all of the data does imply that athletes feel a high level of pressure, bordering on high risk in some cases, and that the assumption of the always healthy female athlete should not hold. In sport, the body is the central aspect of the phenomenon and appearance has always been important for women. The findings of this study are consistent with the findings of Gutgesell, et al., 2003, Schwarz et al., 2005, and Mark F. Reinking, and Lauren E. Alexander, 2005. All of which found that their athletes were not statistically at a higher risk for developing an eating disorder, however, those in lean sports were more at risk than those in non-lean sports.

The results indicate that said athletes face a higher risk; however, there was no statistical significance to back up this claim. Therefore, it can be said that despite no statistical significance, the results suggest that athletes do face additional pressures. There is no argument that athletes are under less pressure, statistically they are on the same level. Although measures of statistical significance would suggest otherwise, research on this topic shows that there have been mixed findings.

It can be concluded, however, that those in the lean-sport and non-lean sport feel different amounts of pressure. Two of the responses for these variables were found to be at or near statistical significance. The pressure to be thin in the lean sports was 20% higher than in the non-lean sports. This statistical significance suggests that there is something substantially different between the two groups. While the level of risk was not quite significant (.1), it was still very close to statistical significance, implying once again that these lean-sport athletes are at more of a risk for developing an eating disorder and feel the stress of pressures related to their specific sports. This is consistent with the study done by Mark F. Reinking, and Lauren

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E. Alexander, 2005, who found that of their athletes at risk for developing an eating disorder, only 2.9% were non-lean, while 25% were lean sport athletes.

Possibilities for Future Research

As the sample sizes for athletes and non-athletes were not close in comparison (102 athletes/60 non-athletes) it would be recommended to obtain a larger number of non-athletes, which could lead to statistical significance in the mentioned questions. A change might also be made to the identification of non-athletes as those who have never participated in sport throughout their entire lives, and not just Division I sports. Due to the possibility of the non-athletes being athletes previously, the mentality may be different than those who were never athletes.

It is also recommended that the study take into consideration the aspect of bulking versus becoming lean in female athletes. Many female athletes worry about bulking and worry about keeping a feminine physique while still remaining an athlete. This could be studied further due to different types of pressures affecting those athletes.

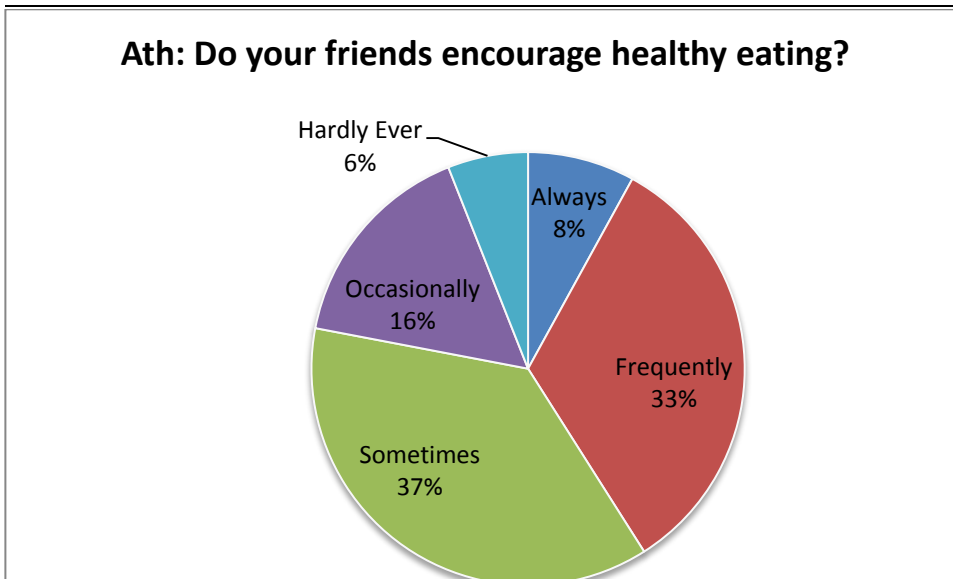
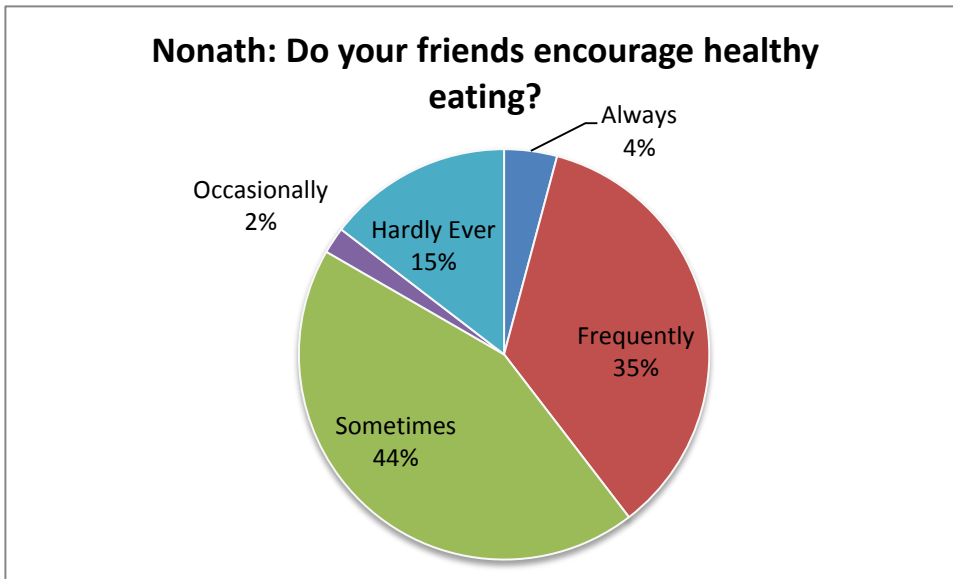
To conclude, the data did not show statistical significance to support the hypothesis that female athletes are more at risk of developing an eating disorder than non-athletes. However, it is made evident that athletes do feel a high amount of pressure, bordering on high risk in some cases. Both female athletes and non-athletes are affected by societal pressures and for all females in general, the ideal body image has become increasingly lean and physically fit. However, athletes are faced with additional sports related pressures. Athletes are aware of the “healthy and thin athlete” stereotype, putting pressure on themselves to succumb to these expectations.

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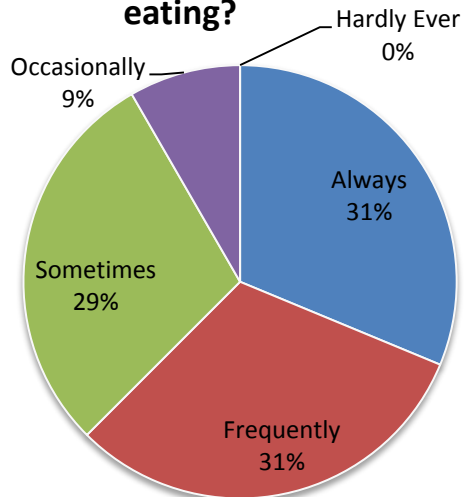
While the claim cannot be statistically made for athletes versus non-athletes, when splitting the athlete variable into two categories, it was found that the lean athletes felt more pressure in their sport than non-lean athletes. In the case of the lean sport athlete, the body is the central aspect of the sport, with a large emphasis place on body image.

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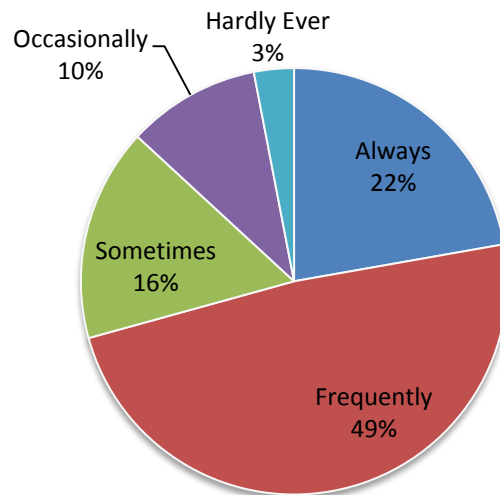
Appendix A – Pressures



Nonath: Does your family encourage healthy eating?

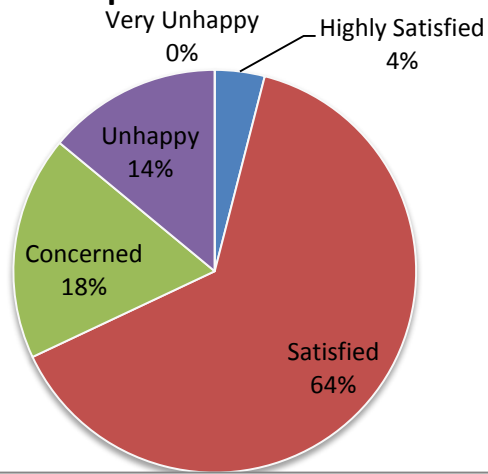


Ath: Does your family encourage healthy eating?

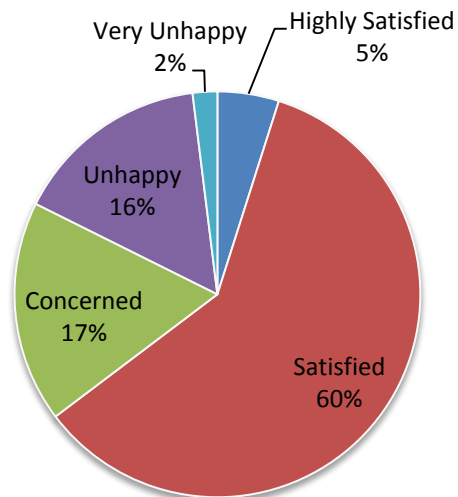


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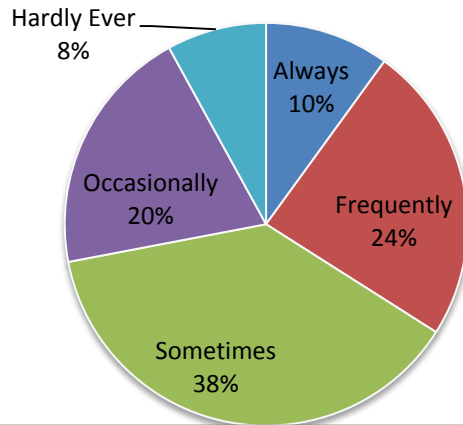
Nonath: Are you satisfied with your eating pattern?



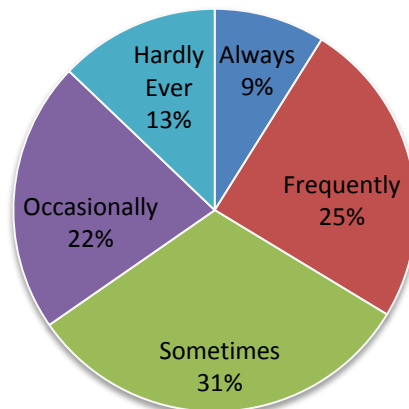
Ath: Are you satisfied with your eating pattern?



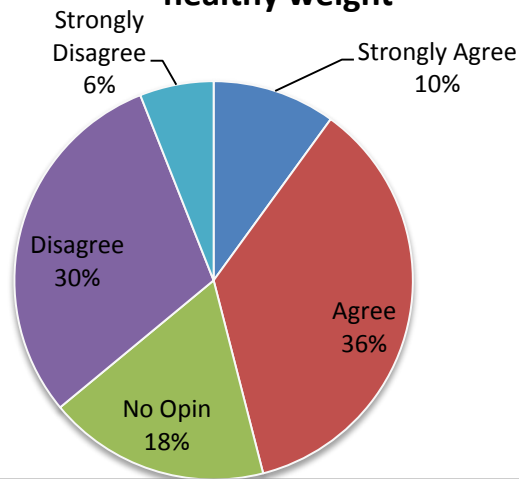
Nonath: How often do you worry about your weight?



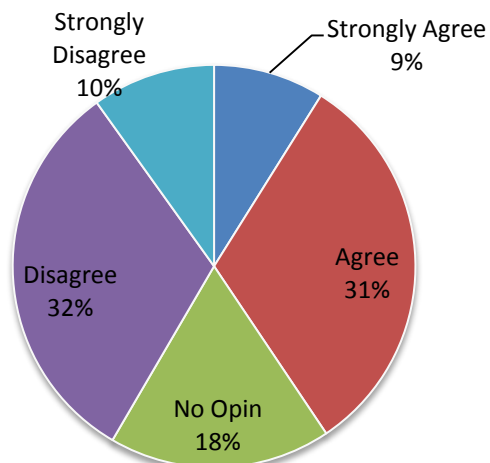
Ath: How often do you worry about your weight?



Nonath: I feel pressured by family to keep a healthy weight

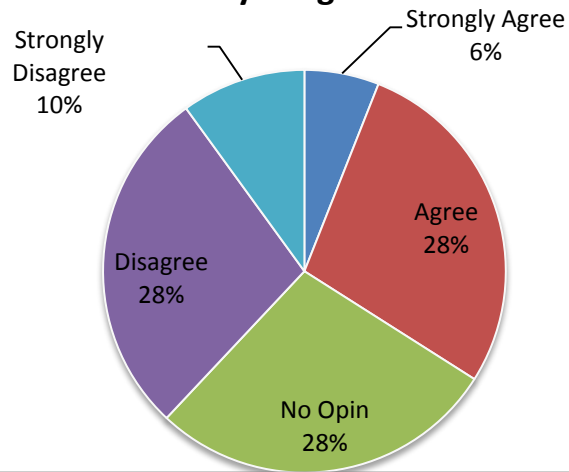


Ath: I feel pressured by family to keep a healthy weight

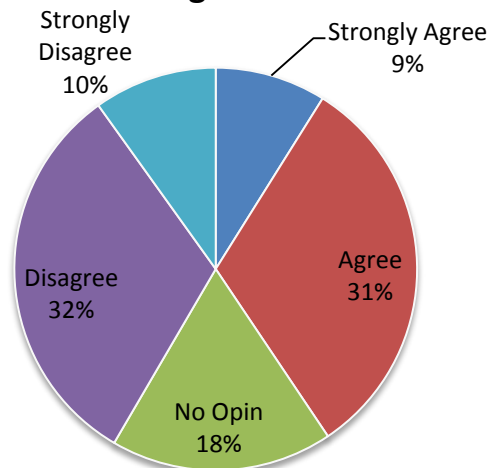


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Nonath: I feel pressured by friends to keep a healthy weight

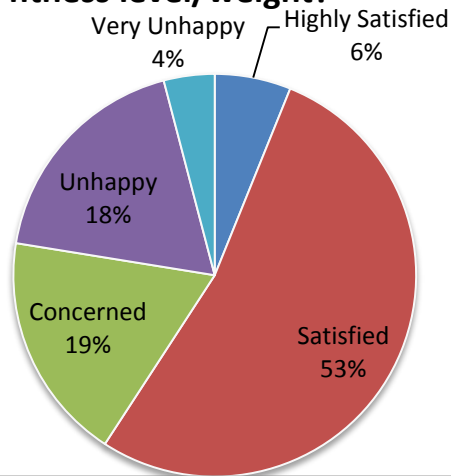


Ath: I feel pressured by friends to keep a healthy weight

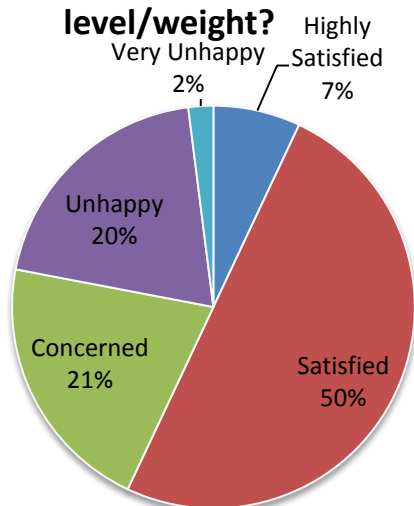


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Nonath: How do you feel about your current fitness level/weight?

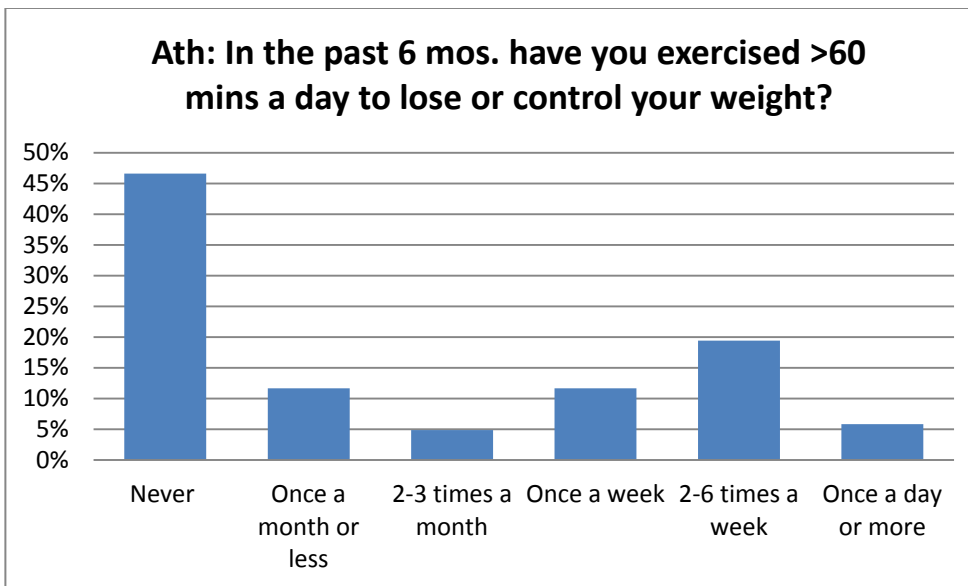
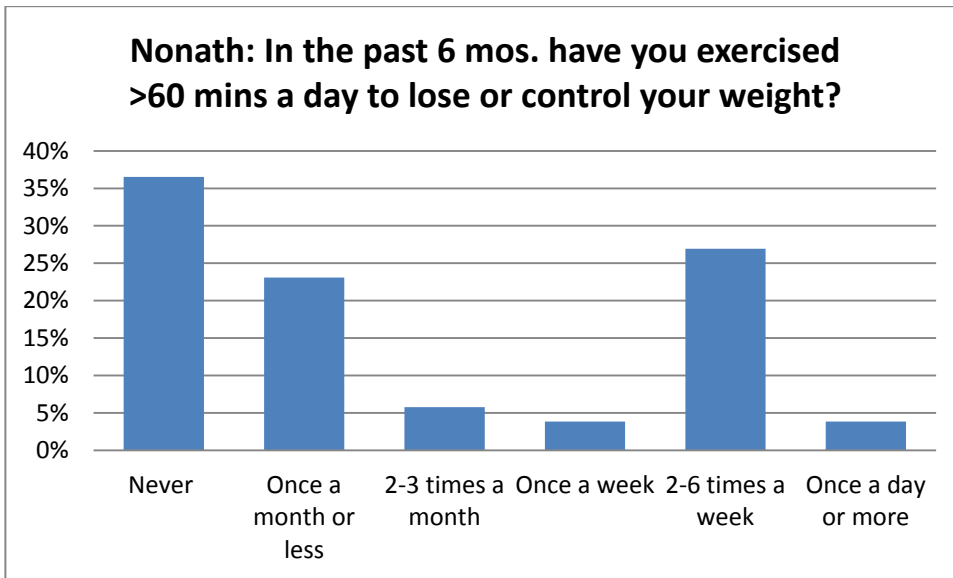


Ath: How do you feel about your current fitness level/weight?

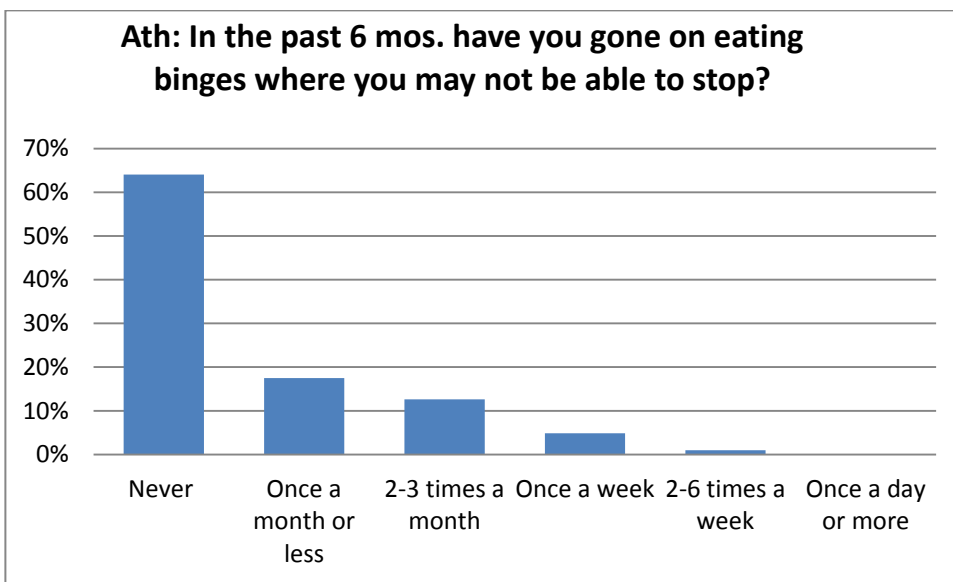
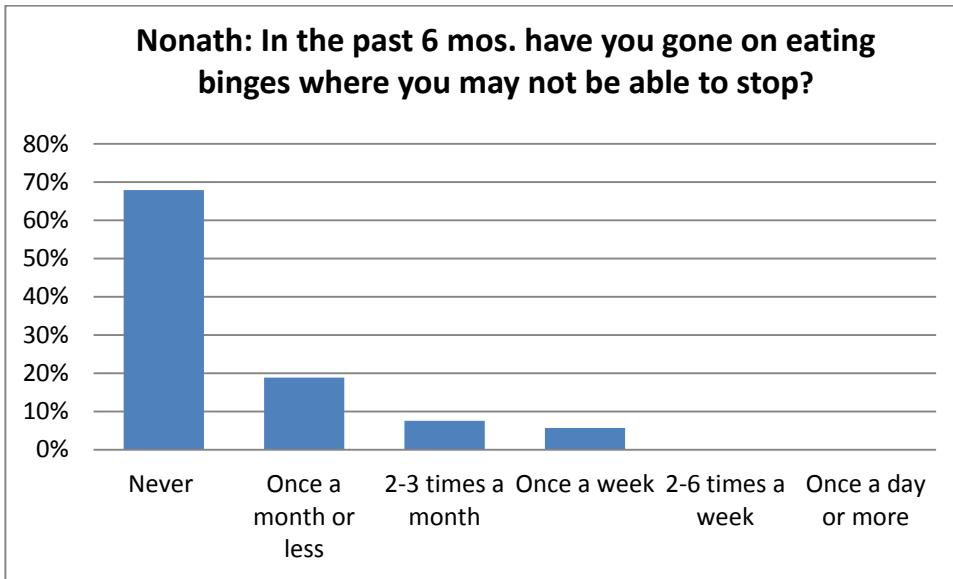


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Appendix B – Behavioral Questions

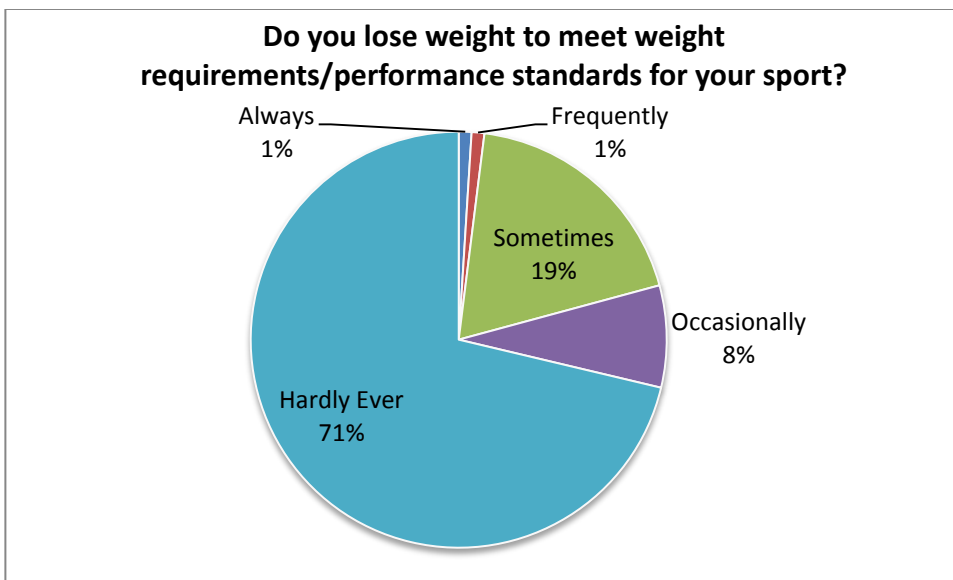
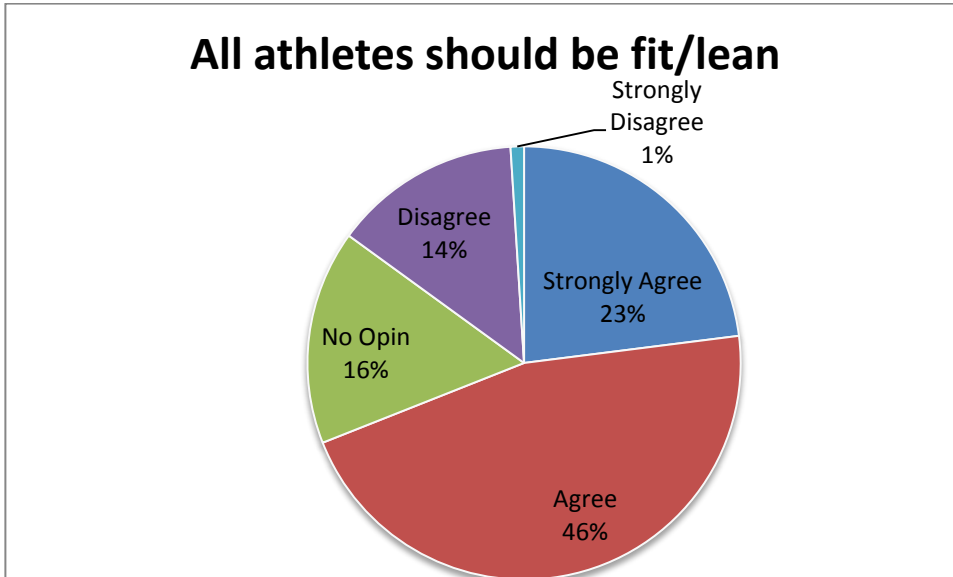


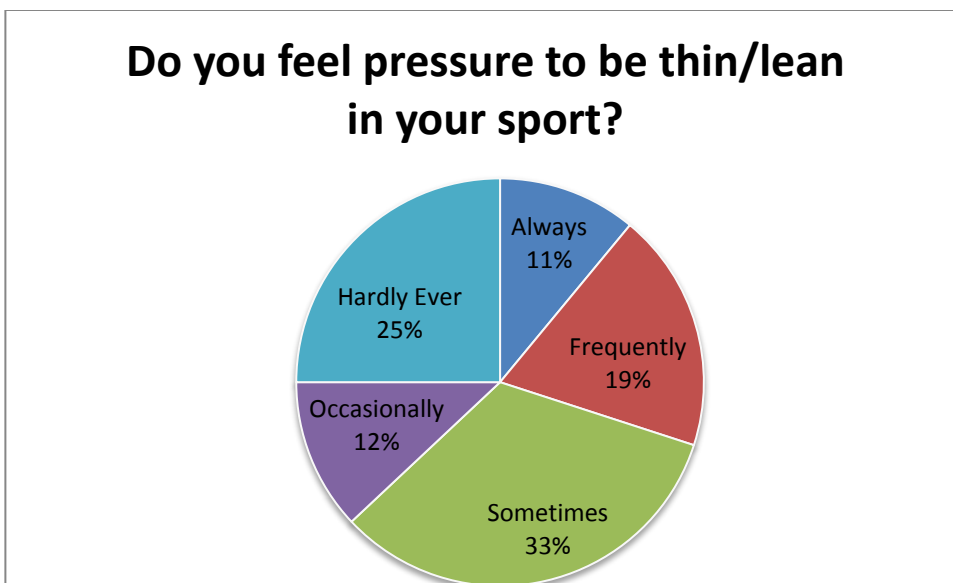
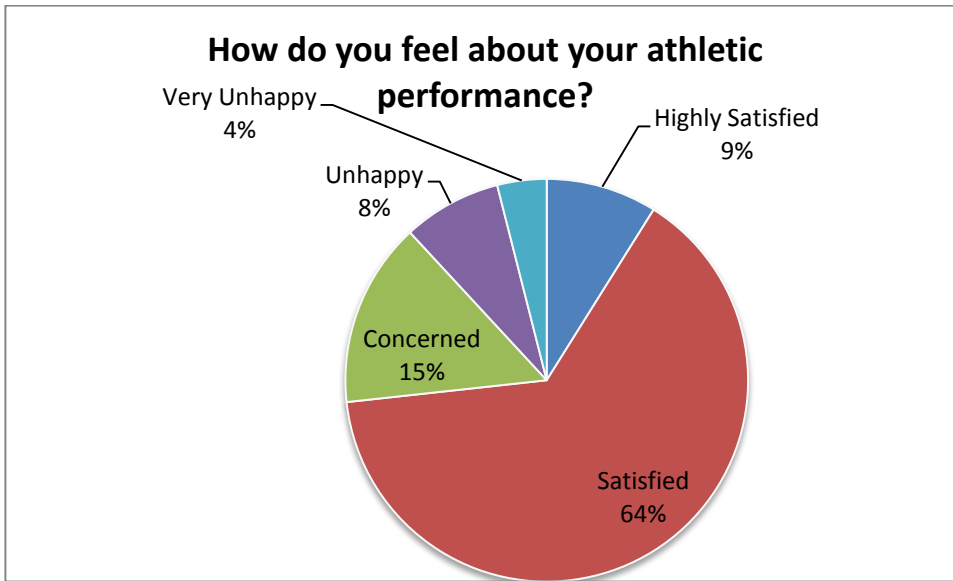
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Appendix C – Athlete Pressures





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