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# Aggression and Empathy in Athletes

Thomas Hawkins College of Saint Benedict/Saint John's University, thawkins001@csbju.edu

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Hawkins, Thomas, "Aggression and Empathy in Athletes" (2021). *Celebrating Scholarship and Creativity Day.* 145.

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The Prevalence of Aggression and Empathy in Athletes

Thomas R. Hawkins

College of Saint Benedict and Saint John's University

### Author Note

Thomas R. Hawkins, Psychology Department, College of Saint Benedict and Saint John's University.

Correspondence concerning this article should be addressed to:

PO Box 0704 C/O St. John's University Mail Center 2746 Sexton Drive, Collegeville, MN 56321;

Email: thawkins001@csbsju.edu.

#### Abstract

This study investigated the relationship between aggression and empathy in those who play contact sports, non-contact sports, and those who are not athletes using previously developed measures. Three hypotheses were proposed: First, that there will be an inverse correlation between empathy and aggression regardless of sport. Second, that those who play contact sports will have lower scores on empathy and higher on aggression than those in non-contact or no sports. And third, that male participants will score higher on aggression and lower on empathy than female participants, regardless of sport involvement. After data analysis, it was found that hypothesis 1 was strongly supported; aggression and empathy measures had a strong negative correlation with an effect size of -0.353. Hypothesis 3 was also supported by moderately significant data showing a difference in aggression between males (mean = 2.712) and females (mean = 2.439) with an effect size of d = 0.456. Empathy levels were found to be very significantly different between males (mean = 42.0) and females (mean = 48.273) with an effect size of d = 1.012. Hypothesis 2 regarding different types of athletes and their aggression and empathy levels received low levels of support and more research and specificity is required to fully determine differences in this area of comparison.

Key words: aggression, empathy, athletes, sports, contact, gender

#### The Prevalence of Aggression and Empathy in Athletes

Sports, professional, collegiate, and casual, are a universal and ancient activity. People around the world engage in physical competition for entertainment and to make a living and have done so for centuries. However, it is important to have a grasp on how athletics may have an effect on the individuals that engage in them. Athletes, especially serious ones, are subject to stressors beyond that of average daily life, such as increased risk of injury and having to balance their exercise or training with schoolwork and other life duties. Without proper self-awareness and coping mechanisms, this can take a significant toll on one's mental and physical health (Huysmans & Clement, 2017). That potential lack of self-awareness can manifest itself in other areas of one's life, such as the topics explored here: aggression and empathy.

Empathic responses in general are shaped by one's life experiences (Hoffman, 2000), and sports can play no small part in an individual's upbringing and formative years. The type of sport engaged in, then, can be formative simply by the way it is played and taught. For example, it was found that coaches working with single athletes or very small groups had higher empathic accuracy and focus toward shared goals than coaches of larger groups (Lorimer & Jowett, 2009). This increased connection between an individual and their coach, they inferred, leads to greater enjoyment of and effectiveness in the game they play. Increased empathy in an individual has also been found to inhibit aggressive behaviors. In terms of both self-report and physiological responses, aggressive responses have been found to decrease as an individual's level of empathy increases (Stanger, Kavussanu, McIntyre, & Ring, 2016).

A large-scale theory-unification attempt by Preston and de Waal on empathy in particular postulates a "Perception-Action Model" (PAM) that builds on the idea that "perception and action share a common code of representation in the brain" (2002). In their report, they attempt to bring together behavioral, emotional, and cognitive perspectives of empathy, and bring up some important points and distinctions along the way. Most importantly, they found that all humans, and even many other mammals, are wired for some form of empathy; it's an evolutionary advantage to want to ease the suffering of those around you. However, they also make it clear throughout that all empathy is a form of projection, and that empathy is always expressed through the lens of our own experience and context (Preston & de Waal, 2002).

This offers further complexity to the current investigation, as Preston and de Waal give much evidence that all empathic responses are mapped to previous experiences. Additionally, they maintain that "a correlation should exist between the scope of the subject's life experience and the scope of situations in which the subject responds appropriately" (Preston & de Waal, 2002). In the context of sports and their effect on said life experience, the downplaying of empathetic responses in competitions where the goal is to physically and aggressively engage an opponent likely has an effect on future empathetic responses regardless of the context.

Another important aspect of these effects is that of an athlete's interactions with others off the field of play. Contact sports such as football, hockey, and rugby, are one of the few places in our present society where physical aggression is not only allowed, but taught and encouraged (Spaaij & Schailée, 2019) . An exhaustive longitudinal study found a significant correlation, in fact, between sport involvement and aggression in general (Cristello, Trucco, & Zucker, 2020). Several factors interact in this case, such as physical size having a positive correlation with aggression (Webster, DeWall, Xu, Orozco, Crosier, Nezlek, Bryan, & Bator, 2020) and empathy and aggression being negatively correlated (Stanger, Kavusannu, & Ring, 2012). Both overt and subtle behaviors can also lead to an overall culture of aggression within a sport, especially in males, that perpetuates toxic traits.

Differences between males and females are a common thread among all studies, with males scoring overall higher on aggression measures. A study examining the relationship between athletes and coaches found that females were more likely than males to correctly identify abusive actions and rated the seriousness of emotional aggression higher than males did (Duquin & Schroeder-Braun, 1996). In examining self-control as a method to mediate one's own aggression, it was also found that, despite experiencing similar levels of anger, females exhibited more self-control than males (Sofia & Cruz, 2015). In the same study, males were found to engage in significantly more antisocial and aggressive

behaviors than females. To further solidify this relationship, empathy has been found to correlate negatively with antisocial behavior (Kavussanu, Stanger, & Boardley, 2013). Because of the wealth of context surrounding male and female differences in aggression and empathy, this was an easily accomplished extra layer of examination for the current study.

While there is a wealth of research and experimentation present in the field of sports psychology pertaining to aggression and empathy, a shortcoming that I discovered while researching was a lack of direct comparison between types of sport and those who play no organized sport at all. College is an especially prudent time in one's life to be examining these measures, as those who are involved in athletics at this point must be serious about their commitment. As such, the point of examination for the current study was a direct comparison of aggression and empathy between those who play contact sports, those who play non-contact sports, and those who play no sports at all.

This research employed several methods to quantify and categorize both behaviors and types of athletics. The first of these is the Toronto Empathy Questionnaire (TEQ), which was developed by several Canadian doctors in 2009 as a way to quantify an individual's empathy in a quick and simple self-report measure. The questionnaire was tested with two small studies and found to have high reliability and validity (Spreng, McKinnon, Mar, & Levine, 2009). The second measure is the Brief Aggression Questionnaire (BAQ), which was used to quantify aggression in the previously mentioned study by Webster et al. that correlated physical size with aggression. It is also a simple self-report measure used to quantify an individual's level of aggression (Webster et al., 2014). The BAQ is adapted from Buss & Perry's 1992 Aggression Questionnaire to be more succinct while still being valid (Webster et al., 2014). Lastly, a system of contact rating developed by a group of doctors was employed to categorize each activity as contact or non-contact (Mitchell, Haskell, Snell, & Van Camp, 2005).

As a result of the outcomes of all this previous research, three different hypotheses were formulated:

Hypothesis 1: The measures of empathy and aggression will inversely correlate in all cases.

**Hypothesis 2:** Those in contact sports will have overall higher measures of aggression and lower measures of empathy than those in non-contact sports, and those in no sports will have the highest measures of empathy and lowest aggression.

**Hypothesis 3:** Male participants will have higher aggression and lower empathy than female participants, regardless of the type of athletics in which they engage.

# Method

#### Design

This study included measures of aggression and empathy from two surveys as the independent variables. Groups were created to distinguish athletes who play contact sports (i.e. hockey, football, rugby), individual or non-contact sports (i.e. swimming, track and field), and students who do not play sports. The dependent variables, then, were each participant's aggression and empathy scores.

# **Participants**

Participants included 89 individuals recruited from social media and from the College of Saint Benedict and Saint John's University. A total of 22 males, 66 females, and one participant who selected "other" took the survey. The age range consisted of 2 first years, 3 sophomores, 20 juniors, 39 seniors/5<sup>th</sup> years, and 25 who indicated they were out of school.

#### Materials

The procedure included the administration of two different research-backed survey measures through Forms Manager: The Brief Aggression Questionnaire (BAQ) and the Toronto Empathy Questionnaire (TEQ). Questions were also asked about basic demographics of each student: sex being the most important. In addition, students were asked about what sports they currently play, what sports they played in high school, and how much is/was played regularly. Each sport was given one of two classifications: contact or non-contact (C and NC) based upon the previously mentioned research of Mitchell et al. For the purpose of simplicity, only organized, college sanctioned sports were quantified, including club sports but excluding more informal activities like intramurals. See Appendix A for a sample of the survey.

#### Results

It was found that BAQ and TEQ scores did significantly negatively correlate with a medium effect size of r = -0.353 (p = .001).

The mean BAQ scores of those who play/played contact sports (n = 39, mean = 2.474, SD = 0.614) was not found to be significantly different (p = 0.603) from the BAQ scores of those who did not play contact sports (n = 41, mean = 2.543, SD = 0.595) and had a minimal effect size (d = 0.114). The 95% Confidence Interval in this case ranged from -0.325 (LL) to 0.187 (UL). The TEQ scores for contact sport athletes (mean = 46.359, SD = 6.255) were also not found to be significantly different (p = .603) from the TEQ scores of those who did not play contact sports (mean = 47.1, SD = 6.932) and also had a minimal effect size (d = 0.112). The range for the 95% CI included -3.563 (LL) to 2.081 (UL).

In comparing those who played no sports at any point, BAQ scores for non-athletes (n = 9, mean = 2.389, SD = 0.680) were not found to be significantly different (p = 0.516) from the scores of those who were athletes (n = 80, mean = 2.527, SD = 0.594) and had a minimal effect size (d = 0.216). The 95% CI in this case ranged from -0.559 (LL) to 0.283 (UL). Differences between TEQ scores of non-athletes (mean = 48.889, SD = 4.96) were also not found to be statistically significant (p = 0.315) from those of athletes (mean = 46.538, SD = 6.762), though the effect size in this case was closer to a moderate relationship (d = 0.400). The 95% CI ranged from -2.272 (LL) to 6.975 (UL).

Lastly, it was found that there was a marginally statistically significant difference in BAQ score (p = .065) between males (n = 22, mean = 2.712, SD = 0.608) and females (n = 66, mean = 2.439, SD = 0.589) with a moderate effect size (d = 0.456). The 95% CI ranged from -0.017 (LL) to 0.563 (UL). TEQ score between genders was also found to be significantly different (p = 0.000) between males (mean = 42.0, SD = 1.374) and females (mean = 48.273, SD = 5.940) with a very large effect size (d = 1.012). The 95% CI in this case was from -9.24 (LL) to -3.30 (UL).

#### Discussion

The data gathered show varying levels of support for each hypothesis. As far as hypothesis 1, which was that aggression and empathy scores would overall have an inverse correlation, support was found in the data. The discovered negative correlation of -0.353 was very significant, which is in line with previous research. This implies that, generally, those who display more aggressive tendencies also are less empathetic. This is one of the strongest statistics generated by the survey and so, because of its broad nature and strong literature support, lends some validity to the other figures that were discovered.

Hypothesis 2 received mixed and inconclusive support. Aggression and empathy scores both were not found to be significantly different between those who played contact sports and those who played non-contact sports. While this is slightly surprising, especially considering the very small effect size, it may be worth noting that many of the same people who participated in contact sports also participated in non-contact sports and vice versa. This made it difficult to analyze the groups, as many categories were not mutually exclusive. As such, this is most likely one of the more negligible results and could, in hindsight, been phrased and evaluated better. This is evidenced by the slightly better significance when comparing aggression and empathy scores in athletes versus non-athletes, though sample size was the problem in this case. The effect sizes for this comparison were closer to moderate, which indicates that there may well be a difference if more than 9 participants were found who had not played any organized sport. Additionally, error in all cases was moderately spread and fairly consistent, with standard deviations being around 0.6 for BAQ scores and around 6 for TEQ scores.

The data for gender is another point of support for the validity of the survey, as hypothesis 3 was supported. Strong previous literature evidence exists for a significant difference in both aggression and empathy salience in males and females. This has been corroborated by the significant differences in aggression and empathy scores in this case. Males were found to have higher scores on the BAQ and lower scores on the TEQ than females did, regardless of what sports they engaged in. With the gender groups being two of the larger groups being compared, statistics supporting the validity of these results were strong.

In contrast, it is interesting that contact and non-contact athletes (the two largest groups to be compared) did *not* have significantly different BAQ and TEQ scores, even though this is contrary to some of the literature. This could be due to sample size, though the gender results show that a significant enough difference will show through, but it is also more than possible that there simply is no significant difference between these groups. Previous literature has made little or no distinction between contact and non-contact results, so this certainly is a new avenue of investigation. It would have been beneficial to have more participants than 9 who had never been athletes, because those results did end up with larger effect sizes than those tested for between contact and non-contact athletes.

Construct validity of this study, because of the well-established survey measures employed, was relatively high. Extensive research on the BAQ found 16 values for Cronbach's alpha, all of which were acceptable at values greater than 0.50 (Webster et al., 2014). The TEQ is also very structurally sound, with a Cronbach's  $\alpha$  value of 0.85 (Spreng et al., 2009). As far as structure, phrasing, and content of those questions, there should be no negative effect on validity. External validity, unfortunately, is not as high. Not only were there not quite enough participants in general, but the majority of them came from young college students who are not necessarily representative of the entire population. Because of this, no general claims can confidently be made based on the gathered data.

In the future, more participants would absolutely be beneficial for more concrete results. A wide net would need to be cast for the right demographics, as a relatively even mix of contact, non-contact, and non-athlete individuals would need to be surveyed. A point of difficulty here is that many athletes have or do play *both* contact and non-contact sports, so it would be hard in general to differentiate results from one or the other. Because of this, comparison to non-athletes is essential. Perhaps a *specific* examination of one particular sport – like hockey or football that are time-intensive and contact-focused – would be beneficial in determining whether there is an aggression or empathy difference between those athletes and non-athletes.

Overall, hypothesis 1 and 3 received support, while hypothesis 2 did not. Aggression and empathy measures did inversely correlate overall, and there were significant differences in both these categories between genders. However, no significant differences were found between contact and noncontact athletes, or between athletes and non-athletes. Literature context and effect sizes in this study indicate that there may well be a difference, missed in this case because of a lack of participants who had not played a sport and a significant overlap between contact and non-contact athletes. Moving forward, a larger, more in-depth study could work to confirm these relationships.

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# Appendix A

### Transcription of survey

1. What is your gender?

\_\_\_\_\_Male \_\_\_\_\_Female \_\_\_\_\_Other/prefer not to say

2. What year in school are you?

\_\_\_\_\_First Year \_\_\_\_\_Sophomore \_\_\_\_\_Junior \_\_\_\_\_Senior

- 3. Did you play sports in high school?
- \_\_\_\_Yes \_\_\_\_No
- 4. Please indicate which sports you played in high school for one season or more. Select all that

apply.

- a. Baseball/Softball
- b. Basketball
- c. Crew/Rowing
- d. Cross Country
- e. Dance
- f. Figure Skating
- g. Football
- h. Golf
- i. Gymnastics
- j. Hockey
- k. Lacrosse
- 1. Nordic Skiing
- m. Rugby
- n. Soccer
- o. Swimming/Diving

- p. Tennis
- q. Track & Field
- r. Ultimate Frisbee
- s. Volleyball
- t. Wrestling
- u. Other (please indicate)
- 5. Do you play sports in college?
- \_\_\_\_Yes \_\_\_\_No
- 6. Please indicate which sports you play(ed) in college for one season or more. Select all that apply.
  - a. Baseball/Softball
  - b. Basketball
  - c. Crew/Rowing
  - d. Cross Country
  - e. Dance
  - f. Figure Skating
  - g. Football
  - h. Golf
  - i. Gymnastics
  - j. Hockey
  - k. Lacrosse
  - 1. Nordic Skiing
  - m. Rugby
  - n. Soccer
  - o. Swimming/Diving
  - p. Tennis
  - q. Track & Field

- r. Ultimate Frisbee
- s. Volleyball
- t. Wrestling
- u. Other (please indicate)

 Below is a list of statements about your feelings and relation to others. Please indicate after each statement how often that statement applies to you.

Never = 0; Rarely = 1; Sometimes = 2; Often =3; Always = 4.

1. When someone else is feeling excited, I tend to get excited too

----- Never ----- Rarely ----- Sometimes ----- Often ----- Always -----

2. Other people's misfortunes do not disturb me a great deal

----- Never ----- Rarely ----- Sometimes ----- Often ----- Always -----

3. It upsets me to see someone being treated disrespectfully

----- Never ----- Rarely ----- Sometimes ----- Often ----- Always -----

4. I remain unaffected when someone close to me is happy

----- Never ----- Rarely ----- Sometimes ----- Often ----- Always -----

5. I enjoy making other people feel better

----- Never ----- Rarely ----- Sometimes ----- Often ----- Always -----

6. I have tender, concerned feelings for people less fortunate than me

----- Never ----- Rarely ----- Sometimes ----- Often ----- Always -----

7. When a friend starts to talk about his\her problems, I try to steer the conversation towards something else

----- Never ----- Rarely ----- Sometimes ----- Often ----- Always -----

8. I can tell when others are sad even when they do not say anything

----- Never ----- Rarely ----- Sometimes ----- Often ----- Always -----

9. I find that I am "in tune" with other people's moods

----- Never ----- Rarely ----- Sometimes ----- Often ----- Always -----

10. I do not feel sympathy for people who cause their own serious illnesses

----- Never ----- Rarely ----- Sometimes ----- Often ----- Always -----

11. I become irritated when someone cries

----- Never ----- Rarely ----- Sometimes ----- Often ----- Always -----

12. I am not really interested in how other people feel

----- Never ----- Rarely ----- Sometimes ----- Often ----- Always -----

13. I get a strong urge to help when I see someone who is upset

----- Never ----- Rarely ----- Sometimes ----- Often ----- Always -----

14. When I see someone being treated unfairly, I do not feel very much pity for them

----- Never ----- Rarely ----- Sometimes ----- Often ----- Always -----

15. I find it silly for people to cry out of happiness

----- Never ----- Rarely ----- Sometimes ----- Often ----- Always -----

16. When I see someone being taken advantage of, I feel kind of protective towards him \her

----- Never ----- Rarely ----- Sometimes ----- Often ----- Always -----

8. Using the 5 point scale shown below, indicate how uncharacteristic or characteristic each of the following statements is in describing you.

1 = extremely uncharacteristic of me

- 2 = somewhat uncharacteristic of me
- 3 = neither uncharacteristic nor characteristic of me
- 4 = somewhat characteristic of me
- 5 = extremely characteristic of me

1. If I have to resort to violence to protect my rights, I will.

----- 1 ----- 2 ----- 3 ----- 4 ----- 5 -----

2. When people are especially nice to me, I wonder what they want.

----- 1 ----- 2 ----- 3 ----- 4 ----- 5 -----

3. I tell my friends openly when I disagree with them.

----- 1 ----- 2 ----- 3 ----- 4 ----- 5 -----

4. I am an even-tempered person.

----- 1 ----- 2 ----- 3 ----- 4 ----- 5 -----

5. Given enough provocation, I may hit another person.

----- 1 ----- 2 ----- 3 ----- 4 ----- 5 -----

6. When people annoy me, I may tell them what I think of them.

----- 1 ----- 2 ----- 3 ----- 4 ----- 5 -----

7. I have trouble controlling my temper.

----- 1 ----- 2 ----- 3 ----- 4 ----- 5 -----

8. I sometimes feel that people are laughing at me behind my back.

----- 1 ----- 2 ----- 3 ----- 4 ----- 5 -----

9. Other people always seem to get the breaks.

----- 1 ----- 2 ----- 3 ----- 4 ----- 5 -----

10. There are people who pushed me so far that we came to blows.

----- 1 ----- 2 ----- 3 ----- 4 ----- 5 -----

11. My friends say that I'm somewhat argumentative.

----- 1 ----- 2 ----- 3 ----- 4 ----- 5 -----

12. Sometimes I fly off the handle for no good reason.

----- 1 ----- 2 ----- 3 ----- 4 ----- 5 -----