An examination of aggression levels among female rugby and non-rugby players

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Abstract

The prevalence of women's rugby has grown rapidly in the past decade. Previous research indicates that increased levels of aggression are associated with high contact sports and high standards of competition within sport. The aims of this study were to compare aggression levels between female rugby players and non-rugby players, forwards and backs in rugby and higher and lower divisions in women's competitive rugby within Ireland. The sample was two hundred and twenty-four women, rugby players (*n*= 101) and non-rugby players (*n*=123). The sample completed a survey containing the Aggression questionnaire (Buss & Perry, 1992) to measure anger and hostility and the Aggressive urges and Behaviour scale (Scott et.al, 2017) to measure physical and non-physical aggression. The results found no difference in aggression levels were found between any groups. The lack of difference in aggression levels between groups suggest rugby can be used as an outlet for women's aggression. The implications of these findings consider rugby and sport in general as a healthy outlet for emotions. Further research should be conducted into examining the influence of sport on women's emotions in Ireland.

Contents

Literature Review

Sport and physical activity have grown in popularity in both males and females in recent years. The latest Irish Sports Monitors report in 2017, revealed that 45.3% of men and 40.8% of women in the population take part in sport and exercise (O'Riordan, 2018). There has been much research done on physical activity that has found evidence that increased levels of exercise can bring a vast range of health benefits (Warburton, 2006; Piercy & Troiano, 2018; & Voss, 2018). Frequent exercise is associated with reducing the risk of developing cardiovascular disease as well as lowering a person's blood pressure. (Nystoriak & Bhatnagar, 2018). These benefits not only include better physical health, but also include improvements to mental health (Mikkelsen et al, 2017) and personal development. Previous evidence shows that physical exercise is a strong gene modulator that induces structural and functional changes in the brain, determining enormous benefit on both cognitive functioning and wellbeing (Mandolesi et al., 2018). Physical activity has been seen to have a positive influence in jobs. A recent study (Fang, Huang & Hsu, 2018) found that physical activity contributed positively on work control, interpersonal relationships at work and job satisfaction.

Participation in sport and exercise are an important part in increasing rates of physical activity (Priest, Armstrong, Doyle & Waters, 2008). Previous research finds endless benefits to sport and physical activities, participation in Sport, can be used as a vehicle for the transmission of knowledge, values and norms. (Wankel & Berger 1990). In addition to the many researches done on the benefits of sport both physically and mentally, the emotions within sport are also investigated (Campo, Mackie & Sanchez, 2019). No other part of our mental life is more important to the meaning of our existence than the emotions (Scarantino & de Sousa, 2018). Emotions play an important role in sport performance (Jones, 2003). Research suggests that emotional states are predictive of sports performance (Beedie et al.,

2000; Hanin, 2010). Sport has the potential to bring out a vast range of emotions within athletes. Aggression is an example of an emotion that is present in sport (Oproiu, 2013). Aggression is defined by Social psychologists as behaviour that is intended to harm another individual who does not wish to be harmed (Baron & Richardson, 1994). Aggression can be caused within two categories: Internal and External causes. Internal causes of aggression are anything a person brings to a situation that increases the likelihood of aggression. Age, gender, personality traits related to aggression (e.g. Machiavellian), are all examples of internal causes of aggression. External causes of aggression are anything in the environment that increases the likelihood of aggression. Weapons, violent media and alcohol are all examples of external causes of aggression (Bushman, 2019). Previous studies indicate that there are gender differences in aggression. Girls use more indirect aggression while boys use more physical aggression. Both genders use direct verbal aggression equally as much (Björkqvist, 2018). Factors like traditional social roles and males taking more risks contribute to gender differences in aggression (Copping, 2017).

Aggression has the potential to cause harm to other people (Tarabay & Warburton, 2017). People can have problems with anger ranging from annoyance, to problems with rage and violence (Stevens, 2019). People use different methods in coping with aggression. An example of coping with aggression is Anger management classes. Anger management classes assist people in learning new and more productive responses to anger (Cohen, 2019). A study (Ireland, 2004) implemented anger management classes among male offenders. Two weeks prior to the anger management classes, participants completed a self-report anger questionnaire. Eight weeks after the classes were implemented, the prisoners completed the self-reported anger questionnaire again. The results showed a significant improvement in anger among the prisoners who completed the anger management classes. Similarly, like anger management classes, sport has also been used as a method of coping with aggression.

A sample of over six hundred children were placed into continuous sports programmes over a period of weeks, which helped improve self-control and discipline and lowered feelings of aggression in the children overall (Nauert, 2018). This study displays how sport can be used to decrease aggression.

Athletic events are often allied with aggressive behaviour (Wann, 2005). Aggression occurs in sport where an athlete's expectancies for reinforcement for aggressive behaviour are high (Aggression in Sport - 2017). The more intent and passionate an athlete is about succeeding within a sport, may lead to alternative behaviour such as aggression (Donahue, Rip & Vallerand, 2009). Assertiveness is an aggressive behaviour that is desirable in sport, it is the ability of an athlete to make their presence shown through either a physical or verbal approach (Hallam, 2019). In sports, aggression is viewed as the ideal perfect component to a great play (Thing, 2001). Sport can also have negative effects on aggression. Sport psychologists recognise instrumental and hostile aggression as negative behaviours that can arise from sport (Stankovich, 2014). Instrumental aggression involves hurting another person but is directly related to the play itself. Hostile aggression, where the player has intended to injure the opponent and it is not directly related to the play itself (Warden et al., 2009).

Previous studies show that aggression and aggressive behaviours seem to increase when the sport is a high contact sport. This point is validated by (Guilbert, 2006), this study shows in its results the similarities between hard violence as represented and exerted in contact sports compared to soft violence as represented and exerted in individual sports with a sample of males. Although this study supports the point that aggression and aggressive behaviours seem to increase when the sport is a high contact sport, the study used a sample of males only. This is problematic as there is no comparison between differences in genders within the results. When taken in relation to the current study which uses a sample of females, a mixed gender sample would have been more beneficial. Regarding results, (Sofia

& Fernando A Cruz, 2017) similarly found that athletes from high contact sports had higher levels of antisocial behaviours and aggressive behaviours towards teammates than athletes from a low/moderate contact sport. While this study doesn't include rugby specifically in the contact sport group, it still validates the point that aggression and aggressive behaviours seem to increase when the sport is a high contact sport by including ice hockey in its contact sport group. In relation to ice hockey as a high contact sport, intimidation or injury caused by aggression early in a contest or a season has been an effective strategy for success in ice hockey (Widmeyer, W., & Birch, J,1984). Furthermore, (Besharat & Ghiabi, 2012) found that among both male and female Iranian professional athletes, statistical analysis indicated that within the contact sport group, four measures of anger predicted indices of aggression within sport competition compared to only two measures of anger within the non-contact sport group. The findings within (Besharat & Ghiabi, 2012) were conclusive to the results of the previous literature, to support the point that aggression and aggressive behaviours seem to increase when the sport is a high contact and collision sport.

Rugby is a highly intensive contact sport making it, by its nature, aggressive. In rugby, aggressiveness and violence are permitted by regulation (Octavian & Sergiu, 2014). A high proportion of professional rugby union players sustain multiple injuries over consecutive seasons (Rafferty J, Ranson C, Oatley G, et al, 2019). It seems that aggression is a constant factor in rugby. A study to validate this is (Maxwell & Visek, 2009) which focuses on rugby union players in Hong Kong. The study identified a positive relationship between professionalization and past aggression which suggests that players are more likely to use unsanctioned acts of aggression to accomplish their goals of winning.

When dealing with sport in higher divisions and or in semi-professional or even a professional environment, the standard of play and intensity of the game is higher than those in lower divisions. It is natural to assume that with the standard of play increasing, a rise in

aggression levels can occur. A study to validate this statement is (Visek & Watson, 2005) which focuses on male ice hockey players. The study's results revealed as players increased in age and competitive level, there was a corresponding increase in their aggressive ice hockey behaviour. The results suggest that the longer a male athlete continues to play ice hockey, the more accepting he becomes of aggressive behaviour. Although this study focuses on ice hockey, its results are significant as they stem from a high collision sport much like rugby. A study to further support the statement, that with the standard of play increasing, a rise in aggression levels can occur which focuses on rugby is (Maxwell, Visek & Moores, 2009). This study found that higher levels of aggression were associated with higher levels of play for rugby within Honk Kong male athletes. In other sports (basketball, soccer) the results found that advanced level players tended to score lower on all measures than intermediate players. Interestingly rugby was the exception to this pattern, it showed that more advanced competitive status was associated with an increase in anger and aggression.

In rugby there are two categories of positions: The forwards and the backs. Forwards include numbers 1-8; backs include numbers 9-15. Backs are the running positions, while the forwards are considered as more physically demanding positions, this is in relation to them being involved in the scrums and line outs. There are significant differences between backs and forwards, often forwards will be physically bigger and stronger than backs, while backs will be smaller but faster. There are different physical demands for different positions (Bloomfield, Polman, O'Donoghue, 2007). The different positions in rugby are determined by a players physical and physiological characteristic (Nakamura et al,. 2016). An interesting study (Schoeman, Coetzee & Schall, 2015), found that there were significant differences in tackle rates among positions in rugby union, with forwards making more tackles than backs. Another study (Cunningham et al., 2016) found in a sample of elite U20 rugby players, that while backs cover greater distance in a game, forwards had greater contact loads. From the

findings in both studies, forwards are portrayed as the more physically dominant position in rugby. Taking these differences into consideration, this study will investigate if there is a difference in aggression levels between backs and forwards.

Rugby has traditionally been a male sport, beginning in the late 1800's (Nauright, 2017). This can be seen through the previous studies on rugby, (Rafferty J, Ranson C, Oatley G, et al, 2019) and (Maxwell & Visek, 2009) using a sample of males only. Women's rugby was only established in the late 1900's. In the last decade, Women's rugby has significantly expanded worldwide. World Rugby claim women's rugby is one of sport's great success stories, experiencing unprecedented growth competitively around the world. Participation levels are at an all-time high with 2.7 million players globally – making up more than a quarter of the global rugby playing population – and a 28 per cent increase in registered players since 2017 (Cameron, 2019).

With aggression being present in collision sport, both male and female, it is still unclear whether it's present in Women's rugby. An insightful study (Kerr, 2018) interviewed female elite rugby union players who were interviewed about their experience and opinion about the game. It was found that rugby provided these players with pleasurable experiences through acts of physicality and sanctioned play aggression. Physical contact and the aggressive nature of the play were major reasons for their participation in the game. This study is relevant as it focuses on a sample of female rugby players. These female rugby players confirm that aggression is a part of women's rugby, and that the sanctioned aggression provided in rugby is the most motivating and enjoyable part of playing women's rugby. Another study that supports these findings that aggression is present in Women's rugby is (Petru, 2016). Interestingly this study used a sample of male and female rugby players from Rathdurm, Wicklow, Ireland. The results from this study found that female

rugby players had a similar profile to the male athletes, which includes assertive, dominant, intelligent and aggression.

Overall, there is a lack of research done on female athletes concerning the area of aggression within sport in general. Due to the recent growth and relatively new popularity of Women's rugby worldwide, there is a gap in the literature on the research done about Women's rugby focusing on aggression specifically. There is an extremely limited amount of literature on aggression levels and female rugby athletes exclusively, there has only been one study (Kerr, 2018) exploring female rugby players to date.

From the studies that associate higher aggression and aggressive behaviours with collision sports (Guilbert, 2006), (Sofia & Fernando A Cruz, 2017) and (Besharat & Ghiabi, 2012) to studies that make a direct link from aggression to rugby (Maxwell & Visek, 2009) and (Kerr, 2018), there is a clear relationship between aggression and rugby. While these studies compare aggression levels within different divisions and types of sport there is little research on comparing aggression levels between athletes and people who do not play sport. Taking this gap in the literature into account, this study will compare aggression levels among female rugby players and non-rugby players.

This study will aim to first discover the difference (if any) in aggression levels between rugby players and non-rugby players within Ireland. The second aim of this study is to compare aggression levels between the different positions of rugby, forwards and backs. The final aim of this study is to examine if there is a difference in aggression levels between higher and lower divisions of female rugby within Ireland.

The first hypothesis, states that female rugby players will have higher levels of aggression than non-rugby players. The second hypothesis states that forwards will have higher levels of aggression than backs. Finally, the third hypothesis states that higher divisions in rugby will have higher levels of aggression than lower divisions.

This study aims to acknowledge the lack of research in this area and contribute to research done in the area of women's rugby worldwide. If the first hypothesis is true and female rugby players do have higher levels of aggression than non-rugby players, further study needs to be done in female rugby players using rugby as an outlet for their aggression. This could open further research into how this relationship can be managed or changed regarding rugby. When the study is completed, it will hopefully encourage other researchers to do more research in this area and give them the motivation to continue with study's focusing on women in rugby, women in sport, or female athletes in general within Ireland.

Method

Participants

This study's sample included (N-224). The sample was all female. The age range of the sample was (18- 57). From the sample 83% were from Leinster, 14% from Munster, 2% from Ulster and 1% from Connaught. The sample of participants is broken into two groups: female rugby players (N- 101) and non-rugby players (N- 123). See table 1 for frequencies. After receiving the appropriate ethics from the NCI ethics board, recruitment began through snowball sampling. Female rugby players were recruited through e-mailing women's rugby teams around the country asking if they would like to take part in the survey. Non- rugby players were recruited by advertising the study on social media including Facebook and Instagram. For both rugby players and non-rugby players, the study was completely voluntary and there was no gratification provided to any participant.

Design

This study is a quantitative study. The study is going to use a cross sectional design, which allows the survey to be completed from different groups of people female rugby players and non-rugby players at one specific time. The study's independent variable is whether the participant plays rugby or not and the dependent variable of the study is the level of aggression. The study design is going to use a between groups design. This study will use T-tests to compare the aggression levels between female rugby players and non-rugby players, forwards and backs and higher and lower divisions in rugby. Two one-way Anova's are used in this study to further compare physical aggression and non-physical, and hostility and anger between the higher divisions and lower divisions in Women's competitive rugby in Ireland.

Measures

This study uses demographic questionnaire, which includes participants to state their age, province, and if they play rugby. See appendix B. This study is going to measure aggression using two scales. The first Scale is the Aggressive urges and Behaviour Scale (Scott et.al 2017). See appendix D. This survey contains 7 questions on physical aggression and nonphysical aggression. This is a 14-item scale, all the questions in this scale use normal scoring. Participants are asked to answer each answer on a scale ranging from 1 (extremely uncharacteristic of me) to 5 (extremely characteristic of me). The study also uses the aggression questionnaire (Buss & Perry, 1992), see appendix E, another survey with questions on hostility, anger, verbal aggression and physical aggression. This study is a 29-item scale. Question four in Anger and question seven in physical aggression use reverse scoring. The remaining 27 questions on the scale use normal scoring. Participants are to answer on a Likert scale ranging from 1 (Not at all) to 5 (extremely). Both surveys are being used in order to measure participants aggression levels. A participant is not informed of her score on completion of survey. The survey can be taken on a computer or a phone, the survey is admitted through a link to google forms.

Procedure

On receiving a pass on the ethics of the study from the National College of Ireland, recruitment began immediately. Recruitment of all participants was done through snowball sampling. The study survey was a google document form. Through having connections with coaches and clubs as a rugby player myself, this allowed me to get in contact with coaches and past teammates. If the participant was a rugby player, the study was administered by their coaches by either sending it through e-mail or the study being put into the team's group-chat. Social media platforms such as Facebook and Instagram were used to display the study to recruit non-rugby players. Participation for rugby players and non-rugby players was

completely voluntary. Once the link is opened, it begins with a brief description of the study. The description (See appendix A) will state that the study is a short survey, that the study's aim is to establish if there is a difference between aggression levels in female rugby players and non-rugby players in Ireland, that it is the first study to do work in this area and a small insight into myself as the researcher doing this study for my thesis in my final year as a psychology student. The link then goes on to describe the terms and conditions of the study. Having read the description and the terms and conditions of the study this should take an average of 10 minutes. Participants then make the decision to be a part of the study or not. They give their consent to be in the study by clicking 'yes' or 'no'. Once participants accept the study starts immediately, the surveys take at least 10 minutes to complete however there is no time limit on how long participants can take to complete the survey. The participant will first be faced with a demographic questionnaire. This questionnaire includes questions on the participants age, province they live in, if they play rugby, if the participant plays rugby they then go on to answer further questions on their position in rugby and what division they play rugby in. The study then goes on the first scale and a questionnaire, the aggressive urges and behaviour scale. On completion of this questionnaire the participant then moves on to the second questionnaire, The Aggression questionnaire (see appendix). Once the participant has completed both these tasks the survey will end, and the participant will be presented with a small debriefing section prior to completion of survey. The participant will be informed that once they submit their surveys, they are unable retract their surveys and cannot pull out of the study once they have submitted their survey. This is in line with the NCI ethics and the PSI ethics due to participants and their results being completely anonymous. The debriefing section will include my student e-mail if participants have any further questions in relation to the study as well as several helplines that the participant can contact if they feel distress after completing the survey.

Results

Descriptive statistics

Frequencies for the current sample of Female rugby players and Non-Rugby players (N = 224)

Table 1

Variable	Frequency	Valid Percentage
Do you play rugby		
Yes	101	45.1
No	123	54.9
Forward/Back		
Forward	62	59.0
Back	43	41.0
Rugby Division		
All Ireland League (AIL)	12	12.9
Higher Division	48	51.6
Lower Division	33	35.5

Descriptive statistics for all continuous variables

Table 2

Variable	Minimum	Maximum	Mean	SD
Physical Aggression	3.00	15.00	5.10	2.66
Non-Physical Aggression	3.00	15.00	5.14	2.45
Anger	7.00	35.00	17.23	5.10
Hostility	8.00	40.00	19.11	7.53

Independent sample T-Tests

An independent samples t-test was conducted to compare levels of physical aggression, and non- physical between female rugby player and non-rugby players and forwards compared to backs. In relation to Non- physical aggression (See table 2), Female rugby players scored lower than non-rugby players, t (222) = -1.01, p =.31, two-tailed. The magnitude of the differences in the means (mean difference = -.33, 95% CI: -.98 to .31) was small (Cohen's d = .14). Forwards scored lower than backs on Non-Physical Aggression, t (103) = -.582, p =.56, two-tailed. The magnitude of the differences in the means (mean difference = -.12, 95% CI: -1.13 to 0.88) was small (Cohen's d = .04). In relation Physical aggression (See table 1), in-significant results were found with Female rugby players scoring lower than non-rugby players, t (222) = .27, p =.79, two-tailed. The magnitude of the differences in the means (mean difference = -.10, 95% CI: -.80 to .61) was small (Cohen's d = .04). Insignificant results were found with Forwards scoring higher than backs in Physical

aggression, t (103) = .13, p =.90, two-tailed. The magnitude of the differences in the means (mean difference = -.06, 95% CI: -.91to 1.05) was small (Cohen's d = .03).

Another independent samples t-test was conducted to compare levels of Anger and Hostility between female rugby players and non- rugby players, and forwards compared to backs. In relation to Anger (See table 3), Forwards scored lower than backs, t (103) = -.58, p =.56, two-tailed. The magnitude of the differences in the means (mean difference = -.61, 95% CI: -2.71 to 1.48) was small (Cohen's d = .12). Female rugby players scored higher than non-rugby players in Anger, t (222) = .13, p =.90, two-tailed. The magnitude of the differences in the means (mean difference = -.09, 95% CI: 1.26 to 1.44) was small (Cohen's d = .02). Regarding Hostility (See table 4), Forwards scored higher than backs, t (103) = 1.59, p =.12, two-tailed. The magnitude of the differences in the means (mean difference = -2.56, 95% CI: -.64 to 5.76) was small (Cohen's d = .31). Female rugby players scored higher than non-rugby players in Hostility, t (222) = 0.06, p =.96, two-tailed. The magnitude of the differences in the means (mean difference = .06, 95% CI: -1.94 to 2.05) was small (Cohen's d = .01)

Table 3

Physical Aggression

	Mean	SD	T	P
Rugby Players	5.05	2.21	.27	.79
Non-Rugby Players	5.15	2.99	.27	.79
Forwards	5.23	2.41	.13	.90
Backs	5.16	2.55	.13	.90

Table 4

Non- Physical Aggression

	Mean	SD	T	P
Rugby Players	4.96	2.34	-1.01	.31
Non-Rugby Players	5.29	2.54	-1.01	.31
Forwards	5.02	2.51	-.582	.56
Backs	5.14	2.6	-.582	.56

Table 5

Anger

	Mean	SD	T	P
Rugby Players	17.28	4.98	.13	.9
Non-Rugby Players	17.19	5.22	.13	.9
Forwards	17.3	5.03	.58	.56
Backs	17.95	5.73	.58	.56

Table 6

Hostility

	Mean	SD	T	P
Rugby Players	19.14	8.02	0.06	.96
Non-Rugby Players	19.08	7.12	0.06	.96
Forward	20.3	7.97	1.59	.12
Back	17.7	8.36	1.59	.12

Anova

A one-way between groups ANOVA was conducted to determine if there were differences in levels of Physical and Non- Physical aggression in different divisions of rugby. Participants were divided into three groups according to the division they played at (All Ireland league = Highest division of play; Higher divisions = Division 1 and 2; and lower divisions = divisions 3 and 4).

There was no statistically significant difference in levels Physical aggression and Non-Physical aggression for three groups (See table 7).

Table 7

	Mean	F	Sig.
Physical Aggression	2.93	.47	.63
Non-Physical Aggression	4.39	.66	.52

A one-way between groups ANOVA was conducted to determine if there were differences in levels of Anger and Hostility in different divisions of rugby. Participants were divided into three groups according to the division they played at (All Ireland league = Highest division of play; Higher divisions = Division 1 and 2; and lower divisions = divisions 3 and 4).

There was no statistically significant difference in levels Anger and Hostility for three groups (See table 8).

Table 8

	Mean	F	Sig.
Anger	29.94	1.00	.37
Hostility	57.68	.84	.44

Discussion

This study's focus was on Aggression levels between participants, the aggression levels included measuring Anger, Hostility, Physical and Non-physical aggression. This study had three aims. The first, to compare aggression levels between female rugby players and non-rugby players in Ireland. The second, to discover if there was a difference in levels of aggression between the two positions in rugby: forwards and backs. The final aim of this study was to examine if playing in different divisions of rugby (All Ireland League, Higher divisions and lower divisions) had an impact on aggression levels.

The results did not support the three hypotheses in this study. The first hypothesis states that female rugby players will have higher levels of aggression than non-female rugby players. The results found that there was no difference in aggression levels, between female rugby players and non-rugby players. The second hypothesis states that forwards will have higher levels of aggression then backs. The results found that there were no differences in

aggression levels between forwards and backs. The third hypothesis states that players who play in the higher divisions of rugby in Ireland (All Ireland League, division 1 and division 2) would have higher levels of aggression than athletes who play in lower divisions (division 3 and division 4). The results found no difference in aggression levels between the three different divisions of Women's rugby in Ireland.

In relation to the first hypothesis, the results show that female rugby players do not have higher levels of aggression than non-rugby players. These findings do not support previous research (Kerr, 2018; Guilbert, 2006; Sofia & Fernando A Cruz, 2017; and Besharat & Ghiabi, 2012). These studies found a greater increase in aggression and aggressive behaviour in high contact sports compared with a non-contact sport, (Kerr, 2018) found a direct link to sanctioned aggression being the most enjoyable factor in women's rugby. While this current study did not compare aggression levels among different sports, due to women's rugby being a collision sport it was hypothesised that female rugby players would have higher levels of aggression than non-rugby players. An explanation to the lack of differences in aggression levels among female rugby players and non-rugby players could be that female athletes use sport as an outlet for aggression which then decreases their aggression levels. Sports are a good place to release stress and anger that is built up (Hyde, 2014). Sport can become an outlet for the externalisation of emotions that would otherwise lay dormant (Tuncel, 2018). A recent study (Park, Chiu & Won, 2017), found that extracurricular sports activities had a significant influence in the decrease of adolescent's aggressive behaviours. Another study (Shachar, Ronen-Rosenbaum, Rosenbaum, Orkibi & Hamama, 2016), found that after a year of experiencing after school sports, there was a large reduction in children's physical aggression, hostile thoughts and anger than the control group. While both these studies focus on samples of adolescents and children, their results show how exercise and sport can decrease levels of aggression.

In relation to the second hypothesis, the results show that there is no difference in aggression levels between the two positions forwards and backs. These findings do not support the previous research (Cunningham et al., 2016; Schoeman, Coetzee & Schall, 2015), which suggest there is a difference between forwards and backs in rugby. The reason this current study found no difference in aggression levels between forwards and backs could be explained by the sample being female and focusing on women's rugby compared to the previous research using a sample of male rugby players. Another explanation could be that both positions regardless of types of movements and tackle rates on the pitch, require the same level of aggression.

In relation to the third hypothesis, the results showed that there was no difference in aggression levels in All Ireland league, The higher divisions (Division 1 and 2) and the lower divisions (division 3 and 4). These findings do not support previous research (Visek & Watson, 2005; Maxwell, Visek & Moores, 2009) which found that levels of aggression increased with a higher standard of competition and play. The findings in this current study could again be explained by the sample being female rugby players unlike previous research which used a sample of male rugby players. Another explanation could be that the sample size of each competitive level of women's rugby used in this study varied in size. The highest competitive level was the smallest sample size which made the comparison between groups problematic.

There are limitations in the present study should be considered. First, the number of participants differed in every division from the highest division (All Ireland League), upper divisions (Division 1 and 2) and lower divisions (Division 3 and 4) within the sample of female rugby players. All Ireland League had the smallest number of participants. The lack of similar numbers of participants in each group did not allow a fair comparison of aggression levels between each different division of female rugby within Ireland. It created a bias to the

upper divisions group (division 1&2) who had most participants. It also meant that the sample of rugby players in this study was not an accurate representative of female rugby players within Ireland. If conducting a similar study again, I would recruit a specific number of rugby players from each different division to ensure a similar sample size among all different divisions. Second, recruiting the female rugby players included e-mailing various coaches which made the response rate quite slow. If conducting a similar study in the future, I would start recruitment involving e-mailing first, as early as possible and this would give me a longer time frame for recruitment.

There were strengths with this study. The overall sample of female participants was a large sample involving 224 participants. The sample of female rugby players and non-female rugby players were relatively similar in size with only 23 participants in the difference. This provided a fair comparison in aggression levels between female rugby players and non-rugby players. The study filled a gap in the literature comparing aggression levels between rugby players and non-rugby players. This study was the first study to examine aggression levels between female rugby players and non-rugby players specifically within Ireland. This study contributes to limited research done on female rugby athletes worldwide.

There are implications for this current study. The lack of differences in aggression levels between female rugby players and non-rugby players could be explained by female rugby players using rugby as an outlet for their aggression and thus decreasing their aggression. Sport in general benefits the body (Peck, 2018). Women with higher aggression levels should use rugby as an outlet for their aggression. Rugby being a contact sport provides an environment where sanctioned aggression is allowed which is a productive way of releasing aggression. Due to this study finding no differences in aggression levels among groups, further research should be considered into measuring other emotions (stress, sadness, happiness) that female athletes within high contact sports experience and if they too use their

sport as an outlet for all emotions. Further study should be considered in measuring aggression levels with participants who have never played rugby before and after playing rugby. Participants aggression levels should be measured before and after a four-week camp for beginners in rugby, and then measuring their aggression levels prior to completion of the camp. This would provide a comparison score with the baseline aggression score. Overall, there needs to be more research considering the influence of sport on women's emotions within Ireland. If the research indicates sports have a positive effect and provide a healthy outlet for women's emotions, more extracurricular sport activities and encouragement of women's participation in sport could be campaigned in schools, colleges and workplaces.

The aims of this study were to compare aggression levels between: Female rugby players and non-rugby players, forwards and backs in rugby, and higher divisions and lower divisions in women's competitive rugby in Ireland. It was found that there was no difference in aggression levels between any of the groups. This could mean that female rugby players use rugby as an outlet for their aggression, that both positions forwards and backs require the same level of aggression and that the unequal numbers of participants in each division in rugby did not provide a fair comparison of aggression levels. The implications of these findings are that rugby and sport in general should be considered as an outlet for emotions including aggression for women. Further research should consider examining the effects of rugby on aggression levels before and after playing rugby on participants that have never played rugby before. Further research into the influence of sport on women's emotions in Ireland should be examined. If sport has positive effects on women's emotions and acts as a healthy outlet for emotions, sport participation should be encouraged and campaigned in schools, colleges and workplaces around the country.

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Appendix A

INFORMATION AND CONSENT FORM

Dear Potential participant,

This study is being conducted as a final year project of a bachelor's degree in psychology. The aim of this study is to see if there is a difference in aggression levels in female rugby players and non-rugby players in Ireland. This study involves the completion of a demographics sheet and 2 short surveys focusing on aggression.

The only criteria you must meet to be part of the study is to be a female, to be over 18, and to be in Ireland. Please remember that your participation in this study is completely your own decision and should not be decided by anyone else.

Terms and Conditions of study:

• If participants find the subject of aggression in anyway emotionally distressing or triggering, they should not take part in the study. The first questionnaire in this study: The aggressive urges and behavior scale asks detailed questions regarding physical violence towards another person, if the participant may find these detailed questions upsetting in anyway, they should not take part in this study.

• Once the participant submits the completed questionnaires they cannot withdraw their survey.

• Participants have complete anonymity when taking part in this study, they are unidentifiable.

• The data collected from the surveys are to be used in a final year project and are to be stored in compliance with NCI ethical guidelines for up to 5 years post study and then will be destroyed.

•The overall findings of the study will be made available on completion of the thesis if the participant wishes.

•Participants will only be part of the study on signature of the consent form.

If you have concerns about the study or have any more questions, please feel free to email me at 17315013@student.ncirl.ie.

Thank you for reading this, and your participation in the study if you so choose.

Consent form: I have read through the terms and conditions of this study and give my consent to be a participant of the study:

Yes No

Appendix B

Demographic Questions

1. Do you play rugby?
2. What province do you live in?
3. If you play rugby are you a forward and back?
4. If you play rugby what division do you play in rugby?

Appendix C

Debrief form

Thank you for your involvement in the study.

The data from the surveys is being used for a final year project in an honour's psychology degree. If the participant wishes, once the thesis is complete the study can be made available to them at this email address 17315013@student.ncirl.ie, on completion.

If the participant finds the results or completion of the survey in any way stressful or upsetting, please use the following helplines/ websites as an outlet to talk or seek help: Samaritans (01) 6710071, Shine www.shine.ie, Turn2Me.org,1890 474 474 and Pieta House (01) 623 5606.

Thank you again for your participation in the study, if you have any further questions or queries please feel free to contact me at 17315013@student.ncirl.ie.

Appendix D

Aggressive urges and behaviour scale (Scott et al., 2017):

A. Non-Physical (Verbal/Relational) Aggression

Since the last prompt have you….

1. Had an URGE or WANTED to get back at someone or hurt someone emotionally or socially (for example,

yell at someone, spread rumors about someone, insult someone, intentionally make them jealous,

etc.)?

(1 = not at all, 2 = a little, 3 = moderately, 4 = quite a bit, 5 = extremely)

2. THREATENED to hurt someone emotionally or socially (for example, yell at someone, threatened to

spread rumors about someone, to share something private about them with others, etc.)?

(1 = not at all, 2 = a little, 3 = moderately, 4 = quite a bit, 5 = extremely)

3. Since the last prompt, did you DO anything to get back at someone or to hurt them emotionally or

socially (such as yell at someone, insult someone, spread rumors about someone, or try to embarrass

them)?

(1 = not at all , 2 = a little , 3 = moderately , 4 = quite a bit , 5 = extremely)

(IF RESPONSE IS > 1 to items A1, A2, or A3):

4. Since the last prompt, did you DO any of the following on purpose to anyone just to hurt them or get

back at them? (check all that apply)

□ Insult or call someone names

□ Damage someone’s property on purpose

□ Shout, scream, or yell at someone

□ Purposely exclude someone, act "cold" toward them, or try to make them jealous

□ Try to embarrass someone or ruin someone's reputation, such as spreading rumors or revealing

private information about them

□ Did you do anything else to hurt someone emotionally or get back at them? (if yes, enter text

description)

(IF YES to any of the above in item A4): WHO did you do this to? [ask for each endorsed item]

□ romantic partner/spouse

□ ex-romantic partner or ex-spouse

□ parent or stepparent

□ other family member

□ friend/acquaintance

□ boss/teacher

□ coworker

□ roommate

B. Physical Aggression

Since the last prompt have you….

1. Felt an URGE or WANTED to hurt someone else physically (for example, throw something at someone;

shove, hit, or slap someone, etc.)?

(1 = not at all, 2 = a little, 3 = moderately, 4 = quite a bit, 5 = extremely)

2. THREATENED to hurt someone else physically (for example, threaten to throw something at someone;

threaten to hit someone, etc.)

(1 = not at all, 2 = a little, 3 = moderately, 4 = quite a bit, 5 = extremely)

3. Did you DO anything on purpose to hurt anyone physically? (for example, hit or push someone, throw

something at someone that could hurt, etc.)

(1 = not at all , 2 = a little , 3 = moderately , 4 = quite a bit , 5 = extremely)

(IF RESPONSE IS > 1 to items B1, B2, or B3):

4. Since the last prompt, did you DO any of the following on purpose to hurt anyone physically?

□ Throw something at someone, or hit someone with something that could hurt

□ Pull or twist someone's arm or hair

□ Grab, push, shove, or slam someone against something (like a wall)

□ Punch, slap, hit, kick, or beat someone up

□ Burn or scald someone (such as throwing hot liquid on them)

□ Use a knife or a gun on someone, or physically threaten them with a weapon

□ Choke someone

□ Did you do anything else on purpose to hurt anyone physically? (if yes, enter text)

(IF YES to any of the above in item B4): WHO did you do this to? [ask for each endorsed item]

□ romantic partner/spouse

□ ex-romantic partner or ex-spouse

□ parent or stepparent

□ other family member

□ friend/acquaintance

□ boss/teacher

□ coworker

□ roommate

□ other

Appendix E

Aggression questionnaire (Buss & Perry, 1992):

Test Format:

Items are rated on a Likert scale ranging from 1 (extremely uncharacteristic of me) to 5 (extremely characteristic of me).

Physical Aggression

1.Once in a while I can't control the urge to strike another person.

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

3. If somebody hits me, I hit back.

4. I get into fights a little more than the average person.

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

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

7. I can think of no good reason for ever hitting a person.

8. I have threatened people I know.

9. I have become so mad that I have broken things.

Verbal Aggression

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

2. I often find myself disagreeing with people.

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

4. I can't help getting into arguments when people disagree with me.

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

Anger

1. I flare up quickly but get over it quickly.

2. When frustrated, I let my irritation show.

3. I sometimes feel like a powder keg ready to explode.

4. I am an even-tempered person.*

5. Some of my friends think I'm a hothead.

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

7. I have trouble controlling my temper.

Hostility

1. I am sometimes eaten up with jealousy.

2. At times I feel I have gotten a raw deal out of life.

3. Other people always seem to get the breaks.

4. I wonder why sometimes I feel so bitter about things.

5. I know that "friends" talk about me behind my back.

6. I am suspicious of overly friendly strangers.

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

8. When people are especially nice, I wonder what they want.