Library of Congress Cataloging-in-Publication Data
ISBN: 08031-3473-8

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Gordon A. Bloom and Julie L. Vanier

Coaches' Perceptions of Aggression in Elite Women's Ice Hockey


Abstract: In the past three decades, there has been a substantial amount of research and public debate regarding aggression and violence in sport, particularly in men's ice hockey. Up to this point, there exists a paucity of research on aggression and violence in women's ice hockey, despite the rapid increase of participants in this sport. The purpose of this study was to address this gap in the literature by summarizing the perceptions of expert coaches of women's ice hockey. A qualitative research methodology was employed in the current study. Four elite ice hockey coaches participated in an in-depth open-ended interview. The results of the study revealed that aggressive techniques were being used in elite women's ice hockey. This paper discusses the causes and ramifications of aggression on women's ice hockey, as well as the impact that the increase of size and strength of the modern female hockey player has had on the sport.

Keywords: aggression, ice hockey, women's sport

Ice hockey is a part of North American culture and involves people of all ages and socio-economic backgrounds. It is played at high speeds in a confined area, which makes it susceptible to physical play on the part of its participants. A certain amount of aggression sometimes accompanies the physical play. This has led researchers to examine the causes [1, 2, 3, 4], explanations [5, 6, 7, 8] and potential ramifications [9] of aggression and violence in this sport, primarily in men's hockey. Aggression has generally been defined as an attempt to physically or psychologically harm an opponent, while violence is viewed as behavior intended to injure another person physically [4, 5, 7, 8].

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Knowledge and understanding of aggression and violence in female contact sports is scarce, despite the fact that women’s sports have become more competitive, have included more emphasis on power and performance, and the stakes related to winning have increased greatly [10]. LeUnes and Nation [11] noted that increased opportunity, the ramifications produced by the women’s movement, the fitness boom, and the presence of female role models have all contributed to increased sport involvement by women. Along with the widespread increase in sport participation, women have shown a growing interest in aggressive sports. In Canada, women’s ice hockey is one of the fastest developing sports [12, 13, 14, 15]. Between 1983 and 1996, the number of registered female ice hockey players increased from approximately 5400 to 24000 [12].

Although there has been a rapid increase of players in women’s ice hockey and an increasing amount of media coverage, there has been little research in the area of women’s ice hockey and even less on aggression in women’s ice hockey. To date, research on women in hockey has examined perceptions of learning opportunities in youth hockey [12], physicality and the production of gender [15], and instructional content provided to players [14].

Boyd and colleagues [12] examined learning opportunities in youth women’s hockey, using focus group sessions with youth ice hockey players, their coaches and parents. The players, aged 12-14 years, were encouraged to talk about their perceptions of motives for participating in the sport and how they perceived the learning opportunities during games and practices. Similarly, coaches and parents were encouraged to discuss what they thought motivated young women to play hockey and how they thought the players perceived the learning opportunities during practices and games. The results revealed that the participants emphasized several factors that contributed to female athletes’ ice hockey enjoyment. These included social aspects of ice hockey, the physical contact of the sport, and issues relating to team cohesion.

In a related study, Kerr and Kelly [10] examined the relationship between playing ability and the level of aggression exhibited by female field hockey players. The participants were members of three field hockey teams (n=33) who were competing in three different levels of competition in Northern Ireland. The results found that athletes playing at the highest level of competition exhibited higher levels of aggression than those at the lower levels. Coakley [10] found similar results when summarizing the literature on women’s aggression in sport by stating that when women competed at higher levels, they became similar to men in the way they embraced the sport ethic and used it to frame their self-definitions as athletes.

The goal of the present study was to expand research on women’s ice hockey, with a particular emphasis on aggression in this sport. Although women’s ice hockey has been around for more than one hundred years, only now is it beginning to flourish. Currently, there are 51105 female hockey registrants playing on 3014 teams in Canada [17]. Using a qualitative methodology, four elite coaches of women’s ice hockey provided information on this topic in order to give us a better understanding of aggression in elite women’s ice hockey.
Methodology

Participants

Four elite women’s ice hockey coaches from the province of Quebec participated in a separate interview. Coaches were selected and asked to participate based on their reputations, their number of years of coaching experience (coaching women’s hockey between 6 and 30 years, with an average of 19 years), and their deep involvement in women’s ice hockey. They coached in the following three leagues: 1) Professional: National Women’s Hockey League (NWHL), 2) University: Canadian Interuniversity Sport (CIS), and 3) Junior College: Collèges d’enseignement général et professionnel (CEGEP). With the exception of the Olympic level, these three represent the top levels of women’s ice hockey. They also represent a range of playing ability and ages. Eight teams compete in the NWHL, with the players ranging in age from 17 to 35. Some of these players also compete in the Olympics for their respective countries. One level beneath this league is the Canadian and United States college/university systems. In Canada, there are 17 teams in the CIS league, with the players averaging 21 years of age. Many of these top Canadian teams compare in talent to the top Division I college teams in the United States. Below the university system is the Quebec CEGEP league, which consists mostly of students averaging 18 years of age.

Data Collection Techniques

Martens [18] was one of the first sport psychology researchers to advocate the use of qualitative research methods. Although it took time to develop, qualitative research in sport psychology has become an accepted and often used form of inquiry [19]. The current investigation used an interview technique to gather data. This method of qualitative research allowed the researchers to gather rich and descriptive information from the women’s ice hockey coaches. In particular, a cultural interview was conducted, which focused on the norms, values, understandings, and taken-for-granted rules of behavior of a group [20]. An interview guide was used to facilitate discussion with the coaches. Due to the exploratory nature of the study, the interview followed a semi-structured approach. As well, Rubin and Rubin’s [20] suggestions for interviewing were followed, including how to build rapport, listen attentively, ask probe and follow-up questions, and use conversational repairs.

The objective of the interview analysis was to create an organized system of categories that emerged from the unstructured data of the coaches’ interviews. The qualitative analysis was based on the guidelines of Côté, Salmela, and Russell [21]. The process was inductive in that the information emerged out of the data rather than being pre-determined prior to data collection and analysis. The inductive analysis began by dividing the text into meaningful pieces of information called meaning units [22].
Meaning units are sections of raw data that concern one topic; 242 meaning units emerged from this analysis. Meaning units were then given a tag. A tag is a descriptive name for the meaning unit; 46 tags emerged from the 242 meaning units contained in the current analysis. The next step consisted of comprising tags and regrouping them into distinct higher-order categories called properties; 11 properties emerged from the current analysis. Finally, the properties were organized into a higher level of interpretation, called categories. This step was similar to the previous one, except it was carried out at a higher, more abstract level of analysis [21]. The data were analyzed until theoretical saturation was reached. A total of three categories emerged from this analysis.

A number of methods were used in the current study to ensure that the quality of the conclusions made by the researchers were trustworthy [19, 21, 23, 24]. Some examples included persistent observation, member checks, peer review, prolonged engagement, triangulation, and the use of the NUD*IST software system.

Lincoln and Guba [23] discussed persistent observation as an important method of establishing trustworthiness. The purpose was to identify those characteristics and elements in the environment that were most relevant to the topic being pursued and being able to focus on them in detail. This was accomplished in a number of ways. The second author regularly attended elite women’s ice hockey games throughout the entire season that the data were collected; books and research articles concerning women’s ice hockey were read; and the rules and regulations of each of the three levels of women’s ice hockey were learned.

Member checks were also used to enhance trustworthiness, specifically credibility. A member check provided an opportunity for the subjects to verify the researchers’ understanding of the information. A full verbatim transcript of each interview was sent to each coach so that he/she could clarify or change ambiguous information or alter statements [23]. This procedure also allowed the participant to volunteer any additional information. The coaches offered no major alterations; this assured the research team that the transcripts were accurate and correct.

The QSR NUD*IST Vivo (NVivo) 4.0 was also used in this study. The software package was specifically created for qualitative research and helped in the coding of the data. It allowed the research team to produce a computerized index system through which all meaning units were easily coded and retrieved.

Results

The results of this study revealed three higher-order categories that helped explain elite women’s ice hockey. The categories were called coach and athlete characteristics, state of women’s ice hockey, and aggressive techniques. The focus of this paper is on the data contained within the category called aggressive techniques. A total of 242 meaning units emerged from the entire analysis, of which 85 meaning units (or 35%) came from the category called aggressive techniques. The three properties classified in this category were labeled as athletes’ physical attributes, causes of aggression, and issues surrounding
aggression. Aggressive techniques included factors that led to or influenced aggression, including particular instances where aggression may have been more likely to occur. As well, it alluded to the impact that the increased size and strength of the modern female athlete had on the sport of hockey. A breakdown of the subcomponents within this category can be seen in Table 1.

Table 1 – Number of Tags and Meaning Units by Coach by Each Property of Aggressive Techniques

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>C1</th>
<th>C2</th>
<th>C3</th>
<th>C4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Athletes' Physical Attributes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Off-ice physical training</td>
<td>33</td>
<td>9</td>
<td>10</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Physical/skill differences</td>
<td>7</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Size/strength of athletes</td>
<td>11</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Skill level of player</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>Causes of Aggression</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coach teaching aggressive acts</td>
<td>11</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Goalie protection</td>
<td>7</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Reasons for acting aggressively</td>
<td>15</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Team rivalry</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Issues Surrounding Aggression</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concussions</td>
<td>37</td>
<td>5</td>
<td>4</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>Physical aggression</td>
<td>18</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Problem with the term aggression</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Spectator aggression</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Verbal aggression</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Violent acts</td>
<td>8</td>
<td>1</td>
<td>0</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>85</td>
<td>19</td>
<td>15</td>
<td>28</td>
<td>23</td>
</tr>
</tbody>
</table>

Although the categories and properties emerged from all four coaches, the total number of meaning units varied in frequency, ranging from 48 to 91 overall, and 15 to 28 in the aggressive techniques category. The difference in the number of meaning units per coach can be attributed to the open-ended nature of the interviews and does not reflect the knowledge level of the participants in the current study.

An explanation of the category called aggressive techniques will now take place by discussing each of its three properties. Each description will also include supporting citations, which are categorized as [C1], [C2], [C3], or [C4] in order to designate each of
the four coaches. It can be assumed that the information is representative of all three levels of ice hockey unless otherwise specified.

**Athletes' Physical Attributes**

This property encompassed the physical characteristics or development of the athlete. It included the skill level of the athlete, the size and strength of the athlete, the physical or skill differences amongst athletes and off-ice physical training. One coach noted that because there is no body checking permitted in the sport, the athletes must be able to move an opponent off the puck without getting a penalty.

I think it allows the game to be played the way it is supposed to be played. It takes more skill to angle, steer and remove somebody from the puck using good technique, than to just physically knock them off it. There is no body checking, but there is tons of body contact. [C1]

Differences in skill and physical attributes were discussed by all of the coaches. One coach described how there was a difference in the level of aggression exhibited by her players.

It is easier to get some of my players to play an aggressive style because you know they will go hard and they will go at the puck. Some of them are more tentative and hesitant, but I'm sure that you find that on any team, not just a women's team. [C1]

One coach at the university level described how differences in size could make a significant difference when competing.

I think the bigger player in the women's game, who's in shape and has size and strength, has a big advantage because you just don't see a lot of big strong physical players in the game - they can really separate themselves from the puck and the person who's trying to take the puck from them. Their puck protection is usually much stronger; they have a stronger reach, so it's a little more difficult to reach the puck. Any battles along the boards or in the corners against someone who might not be as strong or big as them, they are going to win most of those battles. So it's not only strength, but it's reach, you know overall body mass. [C2]

All four of the coaches discussed off-ice physical training and the importance of it for improving the performance of their athletes. For a couple of the coaches it was difficult to motivate their athletes to go to the gym and work on their physical training, especially at the lower levels of competition. It was also difficult to monitor their diligence with the programs due to the minimal contact time the coaches had with their team each week. Despite this, the coaches agreed that today's female ice hockey players are more
committed to off-ice physical training, and as such, are much bigger and stronger than their predecessors.

*Causes of Aggression*

This property included reasons for acting aggressively in women’s ice hockey, either individually or team related. Protecting the goalie, the coach teaching aggressive acts, team rivalry, and other reasons for acting aggressively were included in this section.

When asked about causes of aggression, one coach mentioned protection of the goalie as a sensitive subject for female ice hockey players.

> It’s usually in front of the net, someone’s hit the goalie and then they’ll say “you can’t touch our goalie!” The goalies are pretty well protected. If you’re going in for a rebound and there’s a rebound there, then you just take a shot. I don’t think that deserves someone coming in and cross-checking you from behind - which happens all the time and sometimes the refs will let it go. And they say, well you touched their goalie...you know. [C3]

The coaches also discussed ways in which they taught and demonstrated aggressive techniques in order for their athletes to gain an advantage in competition.

> So a little bit of instigation, taunt them a little verbally, a little hook with the stick. And you always want your small wingers to go wide on your defence because they will probably squash them into the boards. Of course then they will get a penalty and it’s the smaller ones that usually are faster anyways so they can accelerate fast. It’s hard to get kids to do it at first. They’re looking at this person and you’re telling them to go between her and the boards. But I would always tell the smaller ones to accelerate when you get near them and squeeze through them. I actually taught them how to tuck lower so that the big person who is not that agile will push them this way, and of course if you scoot through her, all they do is hit the boards and you’re gone. If they get a piece of you or they make a noise on the boards, then they will get a penalty. So you teach them that kind of stuff - the little ones need to be a little more of the instigators. [C3]

The bigger ones have to be gentle when they pin someone on the boards; they’ve got to ease off them gently. The minute you make noise, that’s it, you get a penalty. Yeah, it’s harder with the bigger girls and they tend to cross check...Hooking, holding, slowing down....You teach them how to do that stuff. [C3]

Most of the coaches agreed that when two teams were rivals, there were increased levels of intensity and/or aggression seen. This was due to an increase in the interaction between the players and the fact that many of the players knew each other. One university coach explained:
Yes, I think those games [rivalries] are certainly more intense. The physical part comes with the intensity of the game. So the intensity level is certainly increased, therefore the physical part of the game is increased. [C2]

**Issues Surrounding Aggression**

This property included a discussion of athlete aggression/violence in women's ice hockey, including its potential ramifications to the athletes and the sport. Topics covered in this section also included concussions, verbal and physical forms of aggression and violent acts. One coach, in particular, discussed the causes, prevalence, and severity of concussions in women's ice hockey.

There is hitting from behind and they'll just give them a boarding penalty. There are a lot of concussions in girls' hockey now, yes! You look at Canada's Olympic team – one player was out for three months, and two girls were out with concussions on that team. You get one or two concussions and your hockey career is finished. It's all from an illegal hit and your head either hits the boards or the ice; there's a lot of that stuff. These concussions should not be happening. Usually it's from a check or something really illegal that they are doing. [C3]

Verbal aggression was an interesting topic as it was discovered that the coaches were divided with regards to its occurrence. Verbal (and physical) aggression differs from assertiveness in that there is intent to harm and the goal is to win [25]. The CEGEP level coach and one University coach agreed that verbal aggression happened in their leagues. Conversely, the other University coach (playing in the same league), and the National level coach said verbal aggression happened rarely, if at all. The CEGEP coach explained it this way:

You know the old saying, talking about your mother. It happens ALL the time and in a close league they get to know each other. They know [they say] things about the players, and they use the French/English taunting. It's funny because [team name] is an English CEGEP but 75% of the girls are French and suddenly they're playing against [team name], and they're calling them names. So it's always funny with the English/French thing. [C3]

One coach offered the following comment about the prevalence of verbal aggression in their league, "Oh yeah, but I discourage our players from any sort of trash talk. They tell me that other teams will often say things". [C4]

The coaches offered differing ideas on the topic of physical aggression. Some coaches discussed how physical aggression related to their team or things that occurred in their league. Others discussed what being physically aggressive meant to them and how the athletes used it as an advantage during competition.
No, you rarely see that [fighting]. You see stuff around the net after the whistle and it's usually pushing and shoving; sometimes their sticks get up, but it's not really that violent... no I haven't seen anything like that at our level. Pushing and shoving gloves in the face, yeah that's about the extent of it. Talking, yapping it's all about yapping, and it's usually right around the goalies - after the whistle goes. [C1]

One coach agreed that physical aggression was a part of the women's game, yet it was different than in the men's game.

Of course a lot of people like the hitting. But I mean girl's hockey is very physical - people don't realize that it is physical, but it is nothing like the men's game. And I don't think they have to allow hitting, people have said girls should be able to... but you can pin and rub and all that stuff and it becomes a physical game. We have to keep it clean but just play better hockey. [C3]

One of the University level coaches felt that aggression was a part of the women's game and was important for success.

Exactly what I just said, you have to be aggressive. If you're only going to play the women's game and stay in your own space you're not going to be successful. You have to aggressively go after the puck and aggressively steal the other players' space, but you have to do it within the guidelines that are set by the rules. Sure, they make mistakes - sometimes the girls don't play by the rules. [C4]

When asked if cheap shots occurred in the women's game, the same coach answered:

Yes, it's part of the women's game. There are times where a player will jab another player with her stick or will play on the guidelines that the rules permit. That does happen. Spearing or body checking, those are the two that really come to mind. You know there's often some type of sucker in front of the net or one player will haul down another player. [C4]

A more drastic form of aggression is violence [26]. Two coaches, in particular, discussed this topic. One coach described an incident that occurred during her senior league women's ice hockey game, in which she still competes.

I won't use names because I respect them. I still play on an alumni team and it's a combination of university graduates who play in a senior B league. For me it's a release, because it's very competitive and our team is really good. We like to win, but when we don't win, we don't really care. Last Sunday night we were playing and one of their players (who is also a very respected official) cross checked one of our players in front of the net and sent her flying. That's the worst I've seen in a long time. She thought she'd taken an extra whack at her
goalie. And to have it come from an official who knows better - she should have been thrown out of the game for hitting from behind - it should've been a five-minute penalty. That would have meant she would be suspended from all of her activities for a game and you have to sit out a game. If she was scheduled to ref, she couldn't until she'd sit her game suspension. That's about the most violent I've seen in awhile. On average, you see pushing and shoving after the whistle. That is about the extent of what we see on a regular basis, there's really not much more than that. [C1]

One coach elaborated in great detail about violent behaviors in women's ice hockey, including their CEGEP league.

[Violence] in women's hockey? Wow, lots. I mean violent stuff. You know hitting from behind, taking four or five strides. I remember at [team name] one time, this girl was going into the corner and she was one of our better players. And this other girl came in and took four or five strides and took her into the boards with her head up like this, and she got a three game suspension. [C3]

When asked about fistfights in girl's hockey she responded by saying:

"Oh yeah! We have a player on my team... she gets mad and oh my goodness. Oh yeah, I've seen fistfights in girl's hockey... And there are some girls who shouldn't play sports." [C3]

Discussion

The results of this study clearly demonstrated that aggression is an accepted part of elite women's ice hockey. The data explained the types and causes of aggression, as well as the role that the athletes' physical makeup had for enhancing aggression in the sport. Prior to this study, there was no empirical evidence specifically focusing on the topic of aggression in elite women's ice hockey. Our results indicate that elite female ice hockey players use both verbal and physical forms of aggression in their sport, whether it is taunting an opponent or checking a player into the boards. The reasons for acting aggressively are similar to those found with male hockey players, such as rivalries, emotions, poor officiating or a general acceptance as part of the game [4, 28]. A unique finding that has not been found in the literature was the effect that the physical makeup of the modern day female ice hockey player has on the levels of aggression in the sport. The sport is now attracting larger hockey players who train with more intensity than their predecessors. As such, the level of aggression was bound to increase.

Sport researchers [10, 11] have offered nonempirical observations about the current state of elite women's sport that directly relate to the results of our study. For example, they noted that women's sport is growing rapidly and that women are now entering traditionally ignored contact sports, such as ice hockey. The question then becomes - will
women’s ice hockey become more like men’s hockey? According to some researchers [4, 26], young male hockey players are socialized into a hockey culture that demands the use and acceptance of aggression and violence in order to progress through the minor league hockey system. Our participants implied that the culture of elite women’s ice hockey is changing to one that rewards a stronger, more aggressive player. This differs from Beaulieu’s [13] work in which it was stated that women’s ice hockey was more focused on skill and finesse.

Our results are in agreement with a section of Boyd et al.’s [12] research on female competitive ice hockey players aged 12 to 15 years. One of their findings was that the athletes enjoyed the physical aspects of ice hockey, even though body checking was prohibited. Although the coaches in our study did not work with athletes under the age of 17, the attitudes of their players appear to be the same as the 12 to 15 years olds. It can be concluded that the acceptance and use of aggressive techniques in women’s ice hockey goes back to their youth hockey experiences. In other words, it was not specific to elite women’s ice hockey. However, one can hypothesize that as female ice hockey players progress to higher levels of competition, they will exhibit a greater willingness to engage in aggressive acts. Similar results have already been found in research on elite female field hockey players [16], as well as research on male hockey players [28, 29].

Some interesting information from our analysis emerged regarding the role of the coach in perpetuating violence and aggression in women’s ice hockey. Interestingly, none of our coaches vehemently opposed aggression in women’s ice hockey. While they did not advocate its use in all instances, they appear to have accepted it as a part of their sport, and they now incorporate elements of it into their game strategies. For example, they teach their players ways of drawing penalties on their opponents or methods of using their sticks and body to avoid being penalized. It will be interesting to follow this trend to determine if women’s ice hockey coaches will have the same impact on the use of violence and aggression in their sport as coaches have had in men’s hockey. For example, both Smith [29] and Vaz [4] found that minor hockey coaches approved of and regularly emphasized playing rough and being aggressive. In fact, Smith [26] found support for the relationship between coaches’ approval of fighting and the amount of fighting by teenage male hockey players. The coaches’ approval of fighting and violence because they felt it symbolized strength and character and because they felt it helped their team win games.

Fighting in ice hockey is considered an act of violence rather than aggression, meaning it is often behavior intended to injure another person [26]. The results of our study indicated the coaches’ felt that there were severe acts of violence in occurring in women’s ice hockey, such as checking from behind or using the stick illegally. However, they felt the occurrence was less than in men’s hockey. One can speculate that if the sport continues to grow and receive increased media coverage, then the athletes may begin to emulate the violence that occurs in men’s hockey. A recent incident involving a 15-year-old female high school ice hockey player in Toronto may be a sign of things to come. In this incident, a hockey player was charged with assault after she repeatedly punched an opponent in the head, causing her to suffer whiplash and bruises to her neck [27]. While the executive director of the women’s hockey association was quoted as saying, “We don’t believe that (the words) violence and hockey even belong in
the same breath,” this incident does demonstrate the behavioral changes in competitive women’s ice hockey [27].

Conclusions

The results of this exploratory study on aggression in elite women’s ice hockey highlight the need for more research. Data should be acquired from the athletes, as well as from parents and administrators in this sport, to supplement the information given by the coaches in our study. Along the same line, it would be interesting to determine whether female ice hockey players want to play by the same rules as men, in particular, those relating to full body contact.

Our findings also have severe implications on the safety of women’s ice hockey, including the amount of injuries sustained by its participants. In fact, one of coaches indicated that the increased size and strength of female ice hockey players is having an impact on the amount of concussions suffered by elite female ice hockey players. If the athletes keep getting bigger and stronger and more contact is added to the sport, will it discourage smaller females from participating in this sport for fear of injury and will it deter the skill development of its participants?

In conclusion, we can surmise that aggressive techniques are becoming an accepted part of the game of elite women’s ice hockey. Coaches are designing strategies to maximize the rules to help their teams win games and the players are enacting these tactics in their games. As women’s ice hockey continues to grow worldwide, it will be interesting to see if the amount of aggression and violence also continue to accelerate, and what impact it will have on the growth and popularity of the sport.

References


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Acknowledgements

Appreciation is expressed to Matthew J. Davies and Tracy Heller for their assistance in the preparation of this manuscript.