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## Should Girls Play Hockey With Boys? Perspectives From The USA Women's Olympic Hockey Team

Jocelyne Nicole Lamoureux

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SHOULD GIRLS PLAY HOCKEY WITH BOYS? PERSPECTIVES FROM THE USA  
WOMEN'S OLYMPIC HOCKEY TEAM

by

Jocelyne Nicole Lamoureux  
Bachelor of Science, University of North Dakota 2012

A Thesis

Submitted to the Graduate Faculty

of the

University of North Dakota

In partial fulfillment of requirements

For the degree of

Master of Science

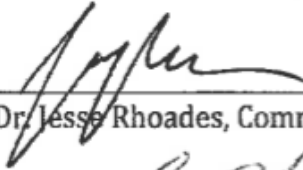
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December  
2013

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Dr. Sandra Short, Chairperson

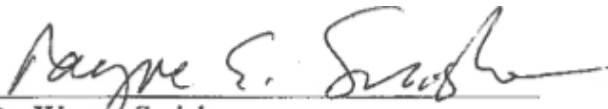


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Date

Title           Should Girls Play Hockey with Boys? Perspectives from the USA  
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To Mom and Dad

## Abstract

An exploratory descriptive analysis on USA Women's Olympic hockey team player's perspectives on playing with boys during their developmental years was conducted. Fifteen elite women American hockey players completed a questionnaire about their experiences playing on boys' teams, making the transition to girls' hockey, and how they thought playing with boys effected their physical and psychological development. Data analysis included both qualitative and quantitative data. Results showed that all participants had played with both boys and girls. They all started playing on boys' teams and transitioned to girls' teams mainly for safety reasons. Participants reported positive effects from playing with boys on skating, shooting, stickhandling, passing, positional play, as well as confidence, competitiveness, leadership, and enjoyment. All participants had positive and negative experiences while participating with boys their overall recommendation was that girls should play boys during their youth development years.

CHAPTER I  
INTRODUCTION AND LITERATURE REVIEW

“If I see a ponytail out there playing with boys I stop. That’s how much it’s changed my life. Now I’m really, really, excited to know who she is, where she comes from, and why is she playing boy's hockey.” This quote from Kenny McCudden, USA National team and National Hockey League (NHL) Chicago Blackhawks organization skill development coach, offers a perspective that can be taken into youth hockey rinks around North America. Since the first International Ice Hockey Federation world championship in 1990, and its inauguration in the 1998 Nagano Olympics, USA women’s hockey has seen growth in the number of participants.

Because of the growing interest in women’s hockey, more all-girl’s teams are available for girls to play on. Interestingly, however, girls are still consistently making the choice to play on boy’s teams. The purpose of this study was to do an exploratory descriptive analysis on athletes’ perspectives on playing with boys. The population in this study included elite women American hockey players.

Due to the lack of research in the area of girls playing with boys in any sport, different areas of research were looked into for this literature review. What we know about girls and boys playing and competing in sports together comes from research in coeducational (coed) physical education classes, physical and environmental differences,

and suggestions from different organizations (e.g., USA Hockey). These areas are presented below.

With the implementation of Title IX in 1972, many physical education classes became coed with both boys and girls participating in the same class. Prior to that time, most physical education classes were same-sex (Lirgg, 1993). Coed classes were designed so that girls would have equal opportunity relative to their boy counterparts by offering the same lesson plans and spending the same amount of time on skills and in competition. When coed classes became a part of physical education programs in schools, there was a significant amount of research done in this area. Typical research designs compared girls (and/or boys) from same-sex and coed physical education classes on their participation time, activity level and activity preferences. Compared to boys in boys' only classes, girls in girls' only classes spent less participation time and a smaller proportion of class lessons in moderate to vigorous activity; an outcome consistent with the justification of Title IX (Lirgg, 1993; McKenzie, Prochaska, Sallis, & LaMaster, 2004). Girls in girls' only classes also spent less time in moderate to vigorous activity when compared to girls in coed classes. Boys, however, were similarly active in participation time in coed and boys-only classes. In another study, perceptions of activity preferences were compared between girls participating in coed classes and girls participating in same-sex classes and it was concluded that it may be beneficial for physical education specialists and administrators to offer female students the option of choosing between coed or single-sex classes (Derry & Phillips, 2004). This recommendation was based on the inconclusive data of what class type (same-sex vs. coed) and what sports girls preferred. Similar results were found when both boys and girls were asked what activities

and class-type they preferred (Osborne, Bauer, & Sutliff, 2002). Ultimately there was not one class type or activity that boys or girls solely preferred over the other.

The research on physical differences in motor performance between genders between the ages of 3-18 years was summarized in a meta-analysis (Thomas & French, 1985). Included in the meta-analysis were 64 studies yielding 702 effect sizes based on 31,444 participants. Twenty different tasks were examined: agility, anticipation timing, arm hang, balance, catching, dash, fine eye-hand, flexibility, grip strength, long jump, pursuit rotor, reaction time, shuttle run, sit-ups, tapping, throw accuracy, throw distance, throw velocity, vertical jump, and wall volley. Performance scores on these 20 tasks were compared by gender through childhood and adolescence and the authors attributed the gender differences to biology and/or environment causes. In 15 of the 20 tasks (i.e., agility, anticipation timing, arm hang, balance, dash, grip strength, fine eye-motor coordination, flexibility, long jump, pursuit rotor tracking, reaction time, shuttle run, sit-ups, tapping, and vertical jump), where gender differences were found prior to puberty, the causes were thought to be due to environmental differences based on observations that treatment, expectations, and practice opportunities differ by gender. Throwing velocity, throwing distance, throwing accuracy, and catching differences prior to puberty were thought to be biologically influenced, but gender differences were further increased due to environmental differences (i.e., boys practicing more than girls). Six of the 15 tasks (i.e., dash, grip strength, long jump, shuttle run, sit-ups, vertical jump) showed rapid increases for boys during puberty, which was related to an increase in size and strength due to drastic hormone changes. In their conclusion, Thomas and French stated that if equal expectations, encouragement, and practice opportunities were provided by parents,

teachers, and coaches, then these pre-puberty gender differences could most likely be eliminated.

More support for the lack of physical differences in prepubescent children was found in a line of research where specific training was investigated. Results from three different studies (Bencke, Damsgaard, Saekmose, P. Jørgensen, K. Jørgensen, & Klausen, 2002; Faigenbaum, Milliken, & Westcott, 2003; Kojima, Jamison, & Stager, 2012) showed that prior to puberty there were little to no differences between genders on strength, endurance, speed, and power tests. More specifically, in a study looking at the effects of specificity of training on muscle strength and anaerobic power between female and male athletes in handball, gymnastics, swimming, and tennis, Bencke et al. found no gender differences in any sport. Similarly, no gender differences were found in prepubescent swimmers when looking at USA Swimming's "multi-age" and unisex classification in competition using the top 100 times from boys and girls. After examining seven different events in different age groups over three years, Kojima et al. (2012) concluded that there was no justification for swimmers under the age of eight to compete by gender because of the similarities in times between boys and girls. Similarly, it was found that there were no gender differences for upper-body and lower-body strength tests using a 1 RM in children ranging from approximately 6 to 12 years old (Faigenbaum et al., 2003).

Physically, in prepubescent children, differences between genders are often due to environmental experiences and it is likely that nearly all gender differences prior to puberty are due to the different treatments and expectations our society has for girls and women (Thomas & Thomas, 2012). For example, in American society boys receive a

glove and baseball for a gift while girls get dolls or playhouses, and as a consequence boys will get more practice in throwing and catching and be more active than the girls who were given dolls. Girls and boys may not differ in initial ability, but over time, unequal practice time in physical activities will create differences between girls and boys (Thomas & Thomas, 2012). This unequal practice time can be influenced by parents and culture (Dreber, Essen, & Ranehill, 2011). These social differences in treatment between girls and boys lead to a potential source of environmental influence on gender differences in motor performance despite the research that prepubescent boys and girls are more similar than they differ in body type, body composition, strength, and limb length (Malina, 1984). If given equal expectations, encouragement, opportunities and practice time by parents, teachers, and coaches, girls can develop these skills at the same rate as boys and the skill differences could most likely be eliminated.

There are other environmental influences that can effect girls and boys participation in sport. The phrase “sex type” of the task refers to the “stereotyping” of certain sports and activities as more masculine, more feminine, or gender neutral (Feltz, Short, & Sullivan, 2008). Society views masculine-type tasks as those requiring strength, power, and competitiveness and consequently, many team sports, like ice hockey, receive a masculine label. Researchers have also supported the concept of stereotype threat, which is how the activation of a negative stereotype can negatively affect performance of the negatively stereotyped group (Steele & Aronson, 1995). For example, if girls are told that hockey is for boys, you can expect that their performance will be worse than girls who are not told about the negative stereotype.



In a study related to sex-typing and hockey, Solmon and colleagues (2003) showed that males expressed more confidence in their ability to learn ice hockey skills than females, but that females who perceived the activity to more gender neutral were more confident in their ability to learn ice hockey than the females who believed hockey was predominately for males. What is interesting about this study was it showed that traditional gender-related boundaries for participation in sports viewed as masculine were being challenged and expanded upon (Feltz et al., 2008). Several females in the study conveyed messages that gender should be irrelevant for sports participation. Although more women stood firm that the sport of ice hockey was masculine, they also tended to ease up when individual skills were considered (i.e., a wrist shot). That is, individual skills were more likely to be viewed as appropriate for both sexes compared to the entire sport. Other researchers have also shown that the stereotype that boys are more athletic and stronger than girls has lost support (e.g., Bencke et al., 2002; Faigenbaum et al., 2003; Thomas & French, 1985, 2012).

In summary, the research so far shows that girls' participation time increases in coed classes, that activity levels for girls are higher in coed classes, that there were no differences found between girls and boys in class-type preferences, and that physical differences in motor performance tasks can be eliminated in boys and girls if environments are equal (i.e., expectations, encouragement, opportunities, and practice time by parents, teachers, and coaches). Based on the review of this research related to (coed) physical education classes and physical and environmental differences, there appears to be no justification in separating boys and girls (prior to puberty). However, competitive sport has not been studied, so there is a need for research in this area.

The number of girls participating in competitive sports is continuing to grow. According to the Women's Sports Foundation, 69% of girls participate in organized sport, but there are 1.3 million less opportunities for girls compared to boys to participate in organized sport. This statistic shows that playing on a girls' team or participating with only girls is not always possible. Playing with boys is sometimes a girl's only choice, and in some cases, is considered more desirable. With respect to hockey, there has been considerable debate on girls' skill and psychosocial development relative to boys. When comparing boys and girls of the same age, girls are often inferior and this inferiority has been linked to their participation on all girls' teams.

In the *Edmonton Journal*, Jason Gregor interviewed three-time Olympic gold medalist coach, Mel Davidson, and specifically asked what her feelings were on girls playing with boys (2013):

Eventually there is a social aspect that comes into it (playing with boys). You can pick out the girls that have played with the boys in a heartbeat, as soon as they walk in the dressing room. Unless they are involved in team sports in school or very active in other areas, they do not know how to socialize or be a part of the female culture or environment. Around 80 per cent of girls who played in that setting (with boys) never advance very far in the girl's game, because they can't get comfortable within a female dressing room,

Girls have to learn how to compete, and how to battle. The one advantage for girls who play with the boys at a young age is they learn how to compete, and they learn it isn't personal.

Davidson's suggestions may lean toward girls not participating with boys because of the social "inability" for girls to acclimate to a female environment after playing with boys

(i.e., psychosocial reasons). These recommendations do not support the other suggestions from different sports organizations promoting girls in sport.

Reputable sport organizations have advocated for girls and boys to participate and compete together. For example, the Women's Sports Foundations (2013) has the following standards and guidelines in this area:

1. Prior to puberty, females and males should compete with and against each other on coed teams.
2. Voluntary, single-sex teams for girls is the only permissible instance of sex segregation in athletics.
3. If the skill, size and strength of any participant, female or male, compared to others playing on the team creates the potential of a hazardous environment, participation may be limited on the basis of these factors, rather than the sex of the participant.
4. Allowing girls the right to compete on the boys' teams does not have an adverse impact on girls' teams.

USA Hockey takes a similar position in the new American Development Model, (ADM) which was put into place in 2012 to restructure their rules and development of participants. Prior to the new ADM, girls' participation with boy's teams was left up to the community organization and girls could be denied the right to try out and play with boys. Under the new ADM, USA Hockey supports coed participation. Their guidelines are the following:

Prior to puberty, females and males should compete with and against each other on coeducational teams. Prior to puberty, there is no gender- based physiological reason to separate females and males in sports competition. In fact, research demonstrates that girls who participate with boys in youth sports are more

resilient. Competition groupings should be organized around skill and experience. Girls and boys possessing similar skills should be playing with each other and against teams consisting of boys and girls who are similarly skilled.

In the sport of ice hockey, girls and boys compete under the same rules with the cutoff date of the participation year being July 1<sup>st</sup> in the United States the age groups are as follows: Pre Mites (ages 7 years and under), Mites (ages 8 and 9 years), Squirts (ages 10 and 11 years), and Peewees (ages 12 and 13 years), until they reach Bantams (ages 14 and 15 years), and Midgets (ages 16 and 17 years). Checking is not allowed until Bantams. In the past, checking started at the peewee level, but under the new ADM, which was implemented in the 2012-2013 season, USA Hockey changed the emphasis to skill development and further learning the game before adding the element of checking. Adding checking later allows players to focus more on other skills like skating, stickhandling, shooting, passing, and positional play without having to worry about open ice body checks and getting hit by a significantly bigger player. In some ways checking can add an element of fear, which takes away from focusing on skill development for bigger and smaller players. When body checking is allowed, faster maturing/physically bigger players have a significant advantage and may not focus as much on developing other skills and only focus on checking, while smaller players may focus on trying to avoid hits. In both cases, checking becomes the focus for many players instead of skating, stickhandling, shooting, passing, and positional play.

For girls, checking could be a deciding factor on how long they play with boys. Because puberty starts around the Peewee and Bantam ages, a girl could quickly become one of the smaller players on the ice and if checking is allowed, she might decide to

participate with girls at the Peewee age. But if it isn't allowed until Bantams she may continue to play because she will be able to continue focusing on other skill development without having to worry about getting hit hard by a boy who is significantly bigger and possibly stronger.

Despite the support from different reputable sports organizations and foundations, there is a lack of research from organized sports participants regarding the pros and cons of girls' participating on coed or boys' teams. The purpose of this study was to do an exploratory descriptive analysis on athletes' perspectives on playing with boys. The population in this study included elite women American hockey players and they were asked how they thought participation on boys' teams affected their development.

With the research in coed physical education classes and physical and environmental differences between boys and girls providing the base, more specific research in the area of coed organized sports is needed. This type of research will be beneficial to organizations like the Women's Sport's Foundation and USA Hockey for their participation suggestions. This study will also help female athletes and their parents make an educated decision on what is best for their girl.

## CHAPTER II

### METHOD

#### Participants

Participants included 15 members of the USA Olympic women's hockey team. The Olympic team is composed of elite level athletes who were selected from a 40 player tryout pool. The age range of these athletes was 19 to 32 years in age, with the average age being 23.5 years ( $SD = 3.29$ ). Athletes were from various geographical regions in the USA (e.g., AZ, ND, NJ, MN, CA, NH, MA, CT, OH, IL, WI). The sample was one of convenience because of the researcher's access to it.

#### Measures

There have been no previous studies with questionnaires looking at elite female athletes perspective's on how playing with boys may or may not have affected their development in any sport, therefore the creation of a new questionnaire was necessary to carry out this study (see Appendix A). The questionnaire was created using Microsoft Word for Macs using the forms toolbar. The first set of questions determined if the sample participated on boy's hockey teams for mites, squirts, peewees, bantams, and/or high school, and for how long (i.e., one, two, or three seasons of participation). For each level, participants were also asked to indicate if there was a girls' team available and if they were the only girls on the team. If the participant played on a boys' team they were asked to explain why. If the participant indicated that they never played on a boys' team,

then they were not required to complete the rest of the questionnaire, but all 15 participants participated on boy's teams.

The next set of questions asked about National development girl's camp participation and at what age(s) participation occurred. National development camps consist of approximately the top 100 youth players for a specific age group chosen through a tryout process where they practice and compete in a week long camp. All 15 participants had participated in these camps for at least one year. If an individual has participated in these development camps at any age but only participated on boy's teams during the regular season, we surmised that it would allow them to make a relative comparison between themselves and other female players at the same age level (albeit at that "top" level). Being able to comment on what it was like to play with both boys (e.g., regular season) and girls (e.g., in camps) is useful when later asked in the questionnaire about how playing with boys may or may not have affected development.

The next section of the questionnaire considered the transition to girl's hockey. Eventually all participants in this study transitioned to girl's hockey full time – when and why this transition occurred is an important factor that was investigated. The participant was asked to identify when and why they transitioned to girl's hockey full time. Participants were then asked if checking was the primary reason for their transition, and if this rule change would have affected when they made the transition (i.e., would they have played on boy's teams longer if checking wasn't allowed?). It is likely that these players made the switch to playing with girls when checking was introduced because of the physicality and size differences that start to occur during that age (12-13 years old) of

development (i.e., from squirts to peewees). They were then asked to list as many differences as they could think of between playing on a boys' team versus playing on a girls' team.

The skill section of the questionnaire focused on the perceived effects that playing with boys had on development in different areas of the game. Skating, stickhandling, shooting, passing, and positional play are the main key physical and technical skills in hockey, so those are the skills the participants were asked to explain how they may or may not have been affected by playing with boys. The stem of the question was "Relative to your peers who participated on all girls' teams, did participating on a boy's team positively or negatively effect your development?" Participants were asked to select one response (i.e., 1=*Positively Effect*, 0=*No effect*, -1=*Negatively Effect*), and then specifically describe how. The "how" part of the question was open ended and the participant was asked to describe in their own words how playing with boys affected each skill. After the physical skills, key psychological skills (i.e., confidence, competitiveness, leadership, and enjoyment) were listed using the same format. For example, confidence could be positively affected playing with boys because the participant believed that being able to compete and play with boys is something that the average girl cannot do, or the participant's confidence could be negatively affected due to a possible lack of skill compared to their male peers.

The last section of the questionnaire asked participants for their opinion on if girls should participate on boys' teams (for what levels) and at what age should they transition to girl's only teams. They were also asked to comment on three positive and three



negative experiences they had while playing on a boy's team. The final question asks the participants if they would like to share anything else pertaining to girls participating on boy's teams specifically on physical, social, and psychological aspects.

### Procedure

This study was approved by the Institutional Review Board (see Appendix B) as well as the USA women's hockey organization (see Appendix C). Data collection consisted of a face-to-face information meeting followed by the distribution of the questionnaire via email. Participation was voluntary, and if the individual filled out the questionnaire, then it was assumed that consent had been given (there was no separate consent form for participants to sign). The participant then emailed the questionnaire back to the researcher, where the document was saved with a number from 1-15.

### Data Analysis

The primary purpose of the first set of questions was to establish a background of the player's participation in hockey (see Table 1). Out of the 15 players, all of them were playing organized hockey at the mite level (ages 7 years old). They all played with boys' teams through mites and squirts and then some transitions to girls-only hockey started to occur. Fourteen out of 15 players were the only girl on the boys' team they participated on, while one player had one other girl on her team. One participant transitioned after two years of squirts, one transitioned after one year of peewee, five after two years of peewee, four after one year of bantams, and three after two years of bantams, and one after one year of high school. The average number of seasons the girls played on boys' teams was 6.3 (Range: 4-8 seasons,  $SD = 1.4$ ). Only three players had the option to participate on a

girls' team at all levels of play. The other 12 players eventually had the option to play on a girls' team, but the timing of the option varied from squirts to high school. Other descriptive data showed that each player had participated in the National girl's development camp. The mean time of participation was 3.5 years out of four possible years (Range 1-4 years,  $SD = .92$ ). Interestingly, 7 of the participants played on both a boys and girls team at the same time.

Table 1. Participation Background.

ID	Level												Total Number of seasons with boy's team	Years in Dv/pt. Camp
	Mites		Squirts		Peewees		Bantams		High School					
	# seasons played with boy's teams	Girls team available	# seasons played with boy's teams	Girls team available	# seasons played with boy's teams	Girls team available	# seasons played with boy's teams	Girls team available	# seasons played with boy's teams	Girls team available	# seasons played with boy's teams	Girls team available		
1	1	No	2	No	2	No	0	Yes	0	Yes	0	Yes	5	2
2	2	No	2	Yes	2	Yes	0	Yes	0	Yes	0	Yes	6	4
3	1	Yes	2	Yes	2	Yes	2	Yes	2	Yes	1	Yes	7	4
4	2	No	2	No	0	Yes	0	Yes	0	Yes	0	Yes	4	3
5	1	No	2	Yes	1	Yes	0	Yes	0	Yes	0	Yes	4	4
6	2	No	2	No	2	No	1	Yes	0	Yes	0	Yes	7	4
7	2	No	2	Yes	2	Yes	1	Yes	1	Yes	0	Yes	7	4
8	2	No	2	No	2	No	2	No	2	No	0	Yes	8	3
9	2	No	2	No	2	Yes	2	Yes	2	Yes	0	Yes	8	4
10	2	No	2	No	2	Yes	0	Yes	0	Yes	0	Yes	6	4
11	2	No	2	No	2	Yes	1	Yes	0	Yes	0	Yes	7	4
12	2	Yes	2	Yes	2	Yes	0	Yes	0	Yes	0	Yes	6	4
13	2	No	2	Yes	2	Yes	2	Yes	0	Yes	0	Yes	8	1
14	2	Yes	2	Yes	2	Yes	0	Yes	0	Yes	0	Yes	6	4
15	2	No	2	No	2	Yes	1	Yes	1	Yes	0	No	7	3

After establishing that all of the players had played with boys for a significant amount of time during their development and that they all had participated in the girls' only national development camps, it was deemed that the participants could make a comparison between themselves and other girls.

The rest of the questions used a combination of quantitative and qualitative data analysis. For the qualitative data, a separate table was created for each question with the players' comments in rows and the columns containing the original meaning units and subsequent coding progression (Miles & Hubberman, 1994). Each participant was asked why they participated on a boys' team (see Table 2). Responses given for reasons for participation on a boys' team were divided into 34 meaning units (a single athlete could provide multiple reasons) and sorted into six categories. Reasons included: because it provided a better environment for improving ( $n = 16$ : e.g., "boys had higher skill level," "competition was higher," "more ice time"), because the only option was to play on a boys' team ( $n = 8$ ), because they enjoyed it more ( $n = 3$ : e.g., "more fun playing with boys"), because they were influenced by their brothers ( $n = 3$ ) and because of convenience ( $n = 2$ : e.g., "closest rink to home"). Two responses were categorized as miscellaneous (e.g., "played with boys in other sports," and "girls not promoted well").

Table 2. Meaning units and coding progression for "Why did you participate on a boys' team?"

Player	Meaning units	Coding	Coding	Coding	Final Coding
1	Improve and get better	Improve with boys	Increase development	Develop more with boys	Better environment for improving
2	Competitive Level	Better competition	Increase development	Develop more with boys	Better environment for improving
2	Develop more playing with the boys, physically and mentally	Develop more physically and mentally	Increase development	Develop more with boys	Better environment for improving

Table 2 Cont.

Player	Meaning units	Coding	Coding	Coding	Final Coding
3	Competitiveness	Better competition with boys	Increase development	Develop more with boys	Better environment for improving
3	Boys higher skill level	Boys better competition	Better competition	Improve through competition	Better environment for improving
6	Girls team was a lower skill level than current boys team	Boys had higher skill level	Better competition	Improve through competition	Better environment for improving
7	The competition was higher	Better competition with boys	Better competition	Improve through competition	Better environment for improving
9	Girls team wasn't as good as current boys team	Boys' team was better	Better competition	Improve through competition	Better environment for improving
10	Boys provided much better competition	Playing with boys was better competition	Playing with boys was better competition	Improve through competition	Better environment for improving
10	Playing with boys increased my development	Increase in development with boys	Increase development	Develop more with boys	Better environment for improving
11	Good enough to play with boys	Boys better competition	Better competition	Improve through competition	Better environment for improving
14	More competitive	Better competition	Better competition	Improve through competition	Better environment for improving
15	Chose boys because it was more competitive	Better competition	Better competition	Improve through competition	Better environment for improving
15	Helped me become better	Become better	Increase development	Develop more with boys	Better environment for improving
13	Played on both girl's and boy's teams to get more ice	More ice time	Improve through more practice	Develop more with boys	Better environment for improving
14	More teams/games	More ice time	Improve through more practice	Develop more with boys	Better environment for improving
13	It was my town team	Team was in town	More convenient to play with boys	Convenient	Convenience
13	Rink was close to home	Rink close	More convenient to play with boys	Convenient	Convenience
7	The boys were more fun to play with	Boys were more fun	More fun	Enjoyment	Enjoyment
7	More fun than playing with girls	More fun	More fun	Enjoyment	Enjoyment
9	I missed hitting when transitioning to girl's a team	Missed checking when moved to girls	Enjoyed checking	Enjoyment	Enjoyment
11	Had 4 brothers that played	Influenced		Influenced by brothers	Influenced by brothers
2	Brothers played	Influenced		Influenced by brothers	Influenced by brothers

Table 2 Cont.

Player	Meaning units	Coding	Coding	Coding	Final Coding
7	Grew up with 3 brothers	Influenced		Influenced by brothers	Influenced by brothers
4	No girls team available	Girls team unavailable	No girls team	No option	Only opportunity to play was with boys
5	No girls team	Girls team unavailable	No girls team	No option	Only opportunity to play hockey was with boys
5	Only option was to play with the boys	Girls team unavailable	No girls team	No option	Only opportunity to play was with boys
6	No girls teams to play for	Girls team unavailable	No girls team	No option	Only opportunity to play was with boys
8	No girls team available	Girls team unavailable	No girls team	No option	Only opportunity to play was with boys
9	Boys was initially my only option	Girls team unavailable	No girls team	No option	Only opportunity to play was with boys
11	Girls team wasn't available	Girls team unavailable	No girls team	No option	Only opportunity to play was with boys
15	Initially it was my only option	Girls team unavailable	No girls team	No option	Only opportunity to play was with boys
2	Girls not promoted well	Girls team not promoted	Misc.	Misc.	Misc.
15	Played with boys in other sports	Played with boys in other sports	Misc.	Misc.	Misc.

The next questions asked participants why they transitioned to a girls' team.

Responses ( $n = 28$ ) from the open-ended question about reasons for the transition (see Table 3) were coded into five categories: for safety purposes ( $n = 12$ : e.g., “the size of boys was too much to handle,” “boys were getting bigger, faster, stronger,” “parents were afraid I would get hurt”), because a competitive girls' team was available ( $n = 9$ : e.g., “went to prep school to play on competitive girls team”), because they wanted exposure

for women’s college/national team ( $n = 3$ ), because the transition was unavoidable ( $n = 3$ ; e.g., “I knew I couldn’t play boys hockey forever”), and because of a time restriction ( $n = 1$ : e.g., “too hard to balance playing on both girls and boys team”). Recall that USA Hockey recently changed the classification level where checking is introduced in the game to bantams from peewees. When asked specifically if they would have continued playing with boys if checking was added later during their youth participation, eight out of the 15 players answered yes.

Table 3. Meaning units and coding progression for “Reasons for transitioning to a girls’ team from a boys’ team.”

Player	Meaning Units	Coding	Coding	Final Coding
1	I went to prep school	Prep School	Competitive girls team	Competitive girls’ team available at that age
4	Found out there was a girls program	Found a girls team	Competitive girls team	Competitive girls’ team available at that age
5	Able to play for a talented girls’ team	Found a talented girls’ team	Competitive girls team	Competitive girls’ team available at that age
7	Boys team was no longer available at the AAA level	No competitive boys team	Competitive girls team	Competitive girls’ team available at that age
8	I went to a private school	Prep School	Competitive girls team	Competitive girls’ team available at that age
8	Girls team was good	Competitive girls team	Competitive girls team	Competitive girls’ team available at that age
11	Went to a private school	Prep School	Competitive girls team	Competitive girls’ team available at that age
12	Went to a private school with a girls team	Prep School	Competitive girls team	Competitive girls’ team available at that age
13	Went to prep school to play on competitive girls team	Prep school	Competitive girls team	Competitive girls’ team available at that age
2	The boys had gotten much bigger	Boys bigger	Size differential	Safety
2	I was at risk when checking was involved	Risk with checking	Checking	Safety
3	Size difference between myself and the guys	Boys bigger	Size differential	Safety
5	The size of boys was too much to handle	Boys too big	Size differential	Safety
7	I was too short to play high school boys hockey	Too short to play with boys	Size differential	Safety
10	Increased physicality in bantams	Increased physicality	Increased checking	Safety

Table 3 Cont.

Player	Meaning Units	Coding	Coding	Final Coding
12	Boys were getting bigger	Boys bigger	Size differential	Safety
12	Parents were afraid I would get hurt	Parental concern for safety	Safety at question	Safety
14	My mom wasn't big on playing into bantams	Parental concern for safety	Safety in question	Safety
14	Boys were bigger, faster, stronger	Boys bigger, faster, stronger	Size/strength differential	Safety
15	Boys were quickly outgrowing me	Boys getting bigger	Size differential	Safety
15	We thought it was safest to switch	Safe	Safety in question	Safety
5	Too hard to balance playing on both girls and boys team.	Not enough time for girls and boys team	Not enough time	Time Restriction
8	I would have to get used to playing with girls to play at college/national team level	Transition to the women's game	College/National team exposure	Wanting Exposure
9	College exposure	College exposure	College exposure	Wanting Exposure
9	Recruiting purposes	Recruiting (for college)	College exposure	Wanting Exposure
6	Couldn't practice with boys in college	Had to play with girls	Transition	Transition was unavoidable
11	I knew I would have to make the transition at some point	Transition to women's game	Transition	Transition was unavoidable
15	I knew I couldn't play boys hockey forever	Transition to women's game	Transition	Transition was unavoidable

After transition age and why the transition occurred was established players were asked about the differences between playing with girls compared to boy's teams (see Table 4). Out of the 15 players, quantitative responses ( $n = 56$ ) were sorted into two primary categories: physical differences ( $n = 36$ ) and psychological differences ( $n = 20$ ). For physical differences, participants felt that girls were less physical ( $n = 12$ : e.g., "adjusting to no checking," "angling"), girls were slower ( $n = 10$ : e.g., "speed is slower," "boys were a step quicker," "plays happen slower with girls"), there were strength differences ( $n = 4$ : e.g., "girls weren't as strong," "girls fell over easier," "boys were



bigger”), playing with girls was less challenging ( $n = 3$ : e.g., “less conditioning off -ice with girls”), girls played at a lower skill level ( $n = 2$ ), and boys had better hockey sense ( $n = 2$ ), girls were less aggressive ( $n = 2$ ).

For psychological differences, participants felt that girls were less competitive ( $n = 5$ : e.g., “boys higher compete level than girls”), it was a less serious environment with girls ( $n = 4$ : e.g., “road trips were not taken as serious by girls,” “coaches didn’t yell as much”), there were social differences ( $n = 5$ : e.g., “more drama (with girls)” “much more of a social thing with girls” “team dynamics”), girls’ team not as intense ( $n = 2$ ), and there was more emphasis on winning with boys ( $n = 1$ ). Three responses were categorized as miscellaneous (e.g., “worse ice times,” “size wasn’t as influential in player success,” and “at an older age girl’s practices became more productive than boys”).

Table 4. Meaning units and coding progression for “Differences between playing with boys and girls teams.”

Player	Meaning units	Coding	Coding	Coding	Final Coding
11	Size	Physical differences	Size	Boys were bigger	Boys bigger
10	Boys had more hockey sense	Physical differences	Hockey sense boys more	Better hockey sense	Boys had better hockey sense
11	Hockey IQ	Physical differences	Hockey sense boys more	Boys better hockey IQ	Boys had better hockey sense
15	Less aggressive than boys	Physical differences	Aggressive (less girls)	Girls less aggressive	Girls less aggressive
11	Aggressiveness	Physical differences	Aggressive (less girls)	Difference in aggressiveness	Girls less aggressive
4	Girl’s game was less physical	Physical differences	Physical (less girls)	Not as physical	Girls less physical
11	Angling	Physical differences	Angling	Decreased physicality with angling	Girls less physical

Table 4 Cont.

Player	Meaning Units	Coding	Coding	Coding	Final Coding
1	Learning how to play 1v1 and 2v1 without checking	Physical differences	Checking (not allowed in girls)	Learning to play with no checking	Girls less physical
14	Adjusting to no checking	Physical differences	Checking (not allowed in girls)	No checking with girls	Girls less physical
14	No checking allowed	Physical differences	Checking (not allowed in girls)	No checking	Girls less physical
2	Not as much contact	Physical differences	Contact (less girls)	Less contact	Girls less physical
7	Physicality	Physical differences	Physical	Difference in physicality	Girls less physical
8	Physicality	Physical differences	Physical	Difference in physicality	Girls less physical
9	Physicality	Physical differences	Physical	Difference in physicality	Girls less physical
11	Physical play	Physical differences	Physical	Difference in physical play	Girls less physical
13	Physicality	Physical differences	Physical	No checking with girls	Girls less physical
4	More of a skill game (girls)	Physical differences	Skill game (girls more)	More skill involved	Girls less physical
3	Skill level was lower in girls	Physical differences	Skill (girls lower)	Lower skill level	Girls lower skill level
10	Girls were less talented	Physical differences	Talent (less girls)	Girls less skilled	Girls lower skill level
3	Pace of game was slower in girls	Physical differences	Pace of game (slower girls)	Girls slower pace	Girls slower
2	Speed	Physical differences	Speed	Speed differences	Girls slower
8	Speed	Physical differences	Speed	Speed differences	Girls slower
11	Speed	Physical differences	Speed	Speed differences	Girls slower
1	Boys were a step quicker	Physical differences	Speed (boys faster)	Boys faster	Girls slower

Table 4 Cont.

Player	Meaning Units	Coding	Coding	Coding	Final Coding
7	Speed is slower	Physical differences	Speed (girls slower)	Slower speed	Girls slower
10	Girls was slower game	Physical differences	Speed (girls slower)	Slower speed	Girls slower
15	Game was slower	Physical differences	Speed (less girls)	Slower speed	Girls slower
2	Overall wasn't as challenging	Physical differences	Challenging (less girls)	Not as challenging	Playing with girls was less challenging
5	Less conditioning off ice with girls	Physical differences	Conditioning (less girls)	Not as much conditioning	Playing with girls was less challenging
15	Less off ice conditioning	Physical differences	Conditioning (less girls)	Not as much conditioning	Playing with girls was less challenging
12	More time to hold onto the puck with girls	Physical differences	Game (slower in girls)	More time to make plays	Plays happen slower in girls
15	Move puck quickly with boys	Physical differences	Speed (more boys)	Less time to make plays with boys	Plays happen slower in girls
2	Girls not as strong	Physical differences	Strength (boys more)	Girls less strength	Strength differences
13	Girls fell over much easier	Physical differences	Strength (less girls)	Girls not as strong	Strength differences
13	Girls weren't as strong	Physical differences	Strength (less girls)	Girls not as strong	Strength differences
9	Strength	Physical differences	Strength (boys stronger)	Strength difference	Strength differences
1	Boys higher compete level than girls	Psychological differences	Competition (more boys)	Boys more competitive	Girls less competitive
15	Competitiveness was greater in boys than girls	Psychological differences	Competition (more boys)	Boys more competitive	Girls less competitive
11	Boys team way more competitive	Psychological differences	Competition (more boys)	Boys more competitive	Girls less competitive

Table 4 Cont.

Player	Meaning Units	Coding	Coding	Coding	Final Coding
3	Boys practice was much more competitive	Psychological differences	Competition (more boys)	Boys more competitive	Girls less competitive
5	Competitive play (boys competed harder than girls)	Psychological differences	Competition (more boys)	Difference in competitive play	Girls less competitive
5	Not as intense as boys	Psychological differences	Intense (girls less)	Girls less intense	Girls team not as intense
6	Boys had higher intensity	Psychological differences	Intensity (boys more)	Girls less intense	Girls team not as intense
12	Coaches didn't yell as much	Psychological differences	Coaches (less yelling in girls)	Coaches yelled less	Less serious environment
4	Coaches more lenient	Psychological differences	Coaches (more lenient girls)	Coaches not as strict	Less serious environment
5	Road trips were not taken as serious by girls	Psychological differences	Seriousness (less girls)	Girls less serious	Less serious environment
2	Not as serious	Psychological differences	Seriousness (less girls)	Girls less serious	Less serious environment
10	Boys all about winning	Psychological differences	Winning (more boys)	More emphasis on winning for boys	More emphasis on winning for boys
2	Better camaraderie w/ girls	Psychological differences	Camaraderie (more girls)	Better camaraderie	Social differences
15	More drama	Psychological differences	Drama (more girls)	Drama	Social differences
15	Drama on and off ice	Psychological differences	Drama (more girls)	Drama	Social differences
5	Team dynamics	Psychological differences	Drama (more girls)	Team dynamics differed	Social differences
2	Much more of a social thing with girls	Psychological differences	Social (more girls)	More socializing with girls	Social differences
6	Worse ice times	Misc.	Ice times (girls got worst)	Worse ice times with girls	Misc.
11	Size wasn't as influential in player success	Misc.	Size (less important in girls)	Size wasn't as important	Misc.

Table 4 Cont.

Player	Meaning Units	Coding	Coding	Coding	Final Coding
12	At an older age girls practices became more productive than boys	Misc.	Productivity (more girls)	Younger ages boys were more productive	Misc.

Having played with both boys (during the regular season) and girls (after transition and in camps) allowed participants to comment on how they thought their individual physical and mental skills were affected by playing on a boys’ team. Each skill from the questionnaire was given a separate table with the degree of effect in a column and extra columns for coding on how the individual skill was or was not affected (see Tables 5-13).

For each of the specific hockey skills, most players reported that playing with boys had a positive effect on their development. For skating, 14 out of 15 players believed playing with boys had a positive effect, while one believed it to have no effect (no reason for no effect) (see Table 5). Quantitative responses ( $n = 13$ ) for the “how” part of the question from those players who indicated a positive effect were sorted into three categories. The participants indicated that they had to skate faster to compete with boys ( $n = 9$ : “forced to be a good skater to keep up,” “forced to be faster”), that they had to be more agile ( $n = 2$ ), and that they had to be stronger on their feet because of the contact with boys ( $n = 2$ ).

Table 5. Meaning units and coding progression for “How did playing with boys affect skating ability?”

Player	Meaning Units	Coding	Coding	Final Coding
1	Faster speed	Had to skate faster because boys were faster	Skate fast to keep up	Skating improved because I had to skate faster to compete
3	Quicker pace	Had to skate faster because boys were faster	Skate fast to keep up	Skating improved because I had to skate faster to compete
3	Made me skate better	Had to skate faster because boys were faster	Skate fast to keep up	Skating improved because I had to skate faster to compete
8	Forced to be a good skater to keep up	Had to skate faster because boys were faster	Skate fast to keep up	Skating improved because I had to skate faster to compete
10	Boys game was faster so I had to increase my speed	Had to skate faster because boys were faster	Skate fast to keep up	Skating improved because I had to skate faster to compete
11	Had to skate hard to keep up at all times	Had to skate faster because boys were faster	Skate fast to keep up	Skating improved because I had to skate faster to compete
14	Forced to be faster	Had to skate faster because boys were faster	Skate fast to keep up	Skating improved because I had to skate faster to compete
15	Speed	Had to skate faster because boys were faster	Skate fast to keep up	Skating improved because I had to skate faster to compete
15	Quickness	More quick	Be quicker	Skating improved because I had to skate faster to compete
14	More agility	Improved agility	More agile	More agile
15	Agility	More agile	More agile	More agile
9	Learned to stay on my feet when getting checked	Stronger on my feet	Stayed on my feet better	Stronger on my feet because of the contact
12	Learn to be strong on my skates in order to absorb checks	Stronger on my feet	Stayed on my feet better	Stronger on my feet because of the contact

For stickhandling, 11 out of 15 players felt playing with boys had a positive effect while the other four felt it had no effect (see Table 6). Quantitative responses ( $n = 9$ ) collected for how playing with boys affected stickhandling were sorted into six categories. Participants indicated that it resulted in better puck protection ( $n = 3$ : e.g., “more skilled players could take the puck away easier”), improved stickhandling ( $n = 2$ ), better finesse ( $n = 1$ ), faster stickhandling ( $n = 1$ ), shiftier stickhandling ( $n = 1$ ), and

coach emphasized better stickhandling skills ( $n = 1$ ). There were no written responses for participants who chose no effect.

Table 6. Meaning units and coding progression for, “How did playing with boys affect stickhandling ability?”

Player	Meaning Units	Coding	Coding	Final Coding
15	Finesse	Added finesse	Better finesse	Better finesse
5	Forced to play faster	Faster game required faster stickhandling	Faster stickhandling	Faster stickhandling
3	Improved stickhandling	Better stickhandling	Environment facilitated better stickhandling	Improved stickhandling
8	Massively positive impact	Positive impact	Environment facilitated better stickhandling	Improved stickhandling
9	Coach specialized in stickhandling	Better coaching	Environment facilitated better stickhandling	Coach emphasized better stickhandling skills
3	More skilled players could take the puck away easier	Protect the puck from skilled players	Protect the puck	Better puck protection
14	Puck protection	Protect the puck		Better puck protection
6	Protect the puck well	Protect the puck		Better puck protection
15	Shiftiness	Improved shiftiness	More shifty stickhandling	Shiftier stickhandling

For shooting, 11 out of 15 participants believed playing with boys had a positive effect, three believed it had no effect, and one believed it had a negative effect (see Table 7). With respect to how participating on a boy’s teams effected their shooting, participant responses ( $n = 13$ ) were that they had to shoot better to score on better boy goalies ( $n = 3$ ), they had to practice more to improve their shot to keep up with boys ( $n = 2$ : e.g., “pushed me to work on my shot to shoot like boys”), they had to shoot harder to compete with boys ( $n = 2$ ), they had to have a quicker release to compete with boys ( $n = 2$ ), they had to develop better technique ( $n = 1$ ), and negative effect due to lack of playing time and repetition ( $n = 2$ : e.g., “didn’t shoot much”). One response was categorized as “positive effect on shot” ( $n = 1$ ).

Table 7. Meaning units and coding progression for “How did playing with boys affect shooting ability?”

Player	Meaning Units	Coding	Coding	Final Coding
15	Better technique	Better technique	Improved technique	Developed better technique
3	Bigger goalies	Better accuracy	Harder to score on goalies	Had to shoot better to score on better goalies
3	Quicker goalies	Better goalies	Harder to score on goalies	Had to shoot better to score on better goalies
6	Better goalies	Better goalies	Harder to score on goalies	Had to shoot better to score on better goalies
10	Boys had hard shots so pushed me to always shoot	Worked hard to shoot like "the boys"	Shoot hard like boys	Had to shoot harder compete with boys
10	Developed hard shot	Shoot harder	Harder shot	Had to shoot harder compete with boys
11	Worked on shot all the time	Worked hard to shoot like "the boys"	Practiced more	Practice more to improve shot to keep up with boys
12	Pushed me to work on my shot to shoot like boys	Worked hard to shoot like "the boys"	Practiced more	Practice more to improve shot to keep up with boys
8	Massively positive effect	Positive effect	Improved shot	Positive effect on shot
10	Developed quick shot	Quicker shot	Improved release	Developed quicker release to compete with boys
14	Quicker release	Quicker shot	Improved release	Developed quicker release to compete with boys
5	Didn't shoot much	Lack of repetition	Negative	Negative effect, lack of repetition
5	More repetition would have been good	Lack of repetition	Negative	Negative effect, lack of repetition

For passing, all of the players believed playing with boys had a positive effect (see Table 8). For the question of how did participating on a boys' team effect passing skills, quantitative responses ( $n = 12$ ) showed that participants felt that playing with boys resulted in becoming harder ( $n = 5$ : “learn to catch harder passes,” “boys pass the puck harder”), better ( $n = 4$ : “boys pick off bad passes more easily,” “give/goes required be to be a spot on passer”), more accurate ( $n = 1$ ), smarter ( $n = 1$ ), and quicker ( $n = 1$ ) passers.

Table 8. Meaning units and coding progression for, “How did playing with boys affect passing ability?”

Player	Meaning Units	Coding	Coding	Final Coding
10	Give/goes required be to be a spot on passer	Give/goes	Accuracy for quick passes	Accurate passing



Table 8 Cont.

Player	Meaning Units	Coding	Coding	Final Coding
8	Massively positive effect	Positive effect	Improved passing	Better passing
9	Boys were better at passing than girls	Boys pass better	Improved passing	Better passing
11	Boys pass it better than girls	Boys pass better	Improved passing	Better passing
3	Boys pick off bad passes more easily	Had to make good passes	Improved passing	Better passing
6	Boys pass the puck harder	Boys pass harder	Harder passing	Harder passing
12	Boys pass harder	Boys pass harder	Harder passing	Harder passing
12	I had to pass harder	Pass harder	Pass harder	Harder passing
14	Learn to catch harder passes	Boys pass harder	Harder passing	Harder passing
15	Harder passes	Pass harder	Pass harder	Harder passing
3	Have to make smart passes	Smarter passing	Smarter passing	Smarter passing
1	Forced to be quick	Fast game, pass quicker	Quick passes	Quicker passing

Lastly for the physical skills, playing with boys also was deemed positive for positional play for 14 of the 15 participants (the other one indicated “no effect”) (see Table 9). For how playing with boys affected positional play, participants responded ( $n = 12$ ) that they were taught positional play earlier on in development ( $n = 4$ : e.g., “taught early on general concepts like forecheck and defensive zone coverage,” “drilled systems into our heads from a young age”), that the faster boy’s game required better position to not get beat ( $n = 4$ : e.g., “pace of game required better positional play because it was too difficult to recover”), and that playing with boys required a greater focus on position ( $n = 4$ : e.g., “boys understood the game better,” “ice awareness,” “boys understood the game better”).

Table 9. Meaning units and coding progression for “How did playing with boys affect your positional play?”

Player	Meaning Units	Coding	Coding	Final Coding
5	Taught early on general concepts (forecheck and Dzone)	Coached concepts earlier than girls	Coaching	Coaches focused more on position earlier on in development
6	Drilled systems into our heads from a young age	Coached concepts earlier	Coaching	Coaches focused more on position earlier on in development
11	Coaches teach more in boys hockey	Coached concepts earlier	Coaching	Coaches focused more on position earlier on in development
9	Boys coaches understood the game really well	Coaches were better	Coaching	Coaches focused more on position earlier on in development
10	Pace of game required better positional play because it was too difficult to recover	Boys game too fast to be out of position	Had to improve positionally to compete with boys	Faster game with boys required better position to not get beat
12	Learned to take the body because boys were able to make moves girl couldn't make at a younger age	Better position because boys were better	Learned to take the body to not get beat	Faster game with boys required better position to not get beat
14	If out of position in boys you will not be able to recover in time	Boys game too fast to be out of position	Had to improve positionally to compete with boys	Faster game with boys required better position to not get beat
14	Girls play making develops slower	Girls game is slower	Had to improve positionally to compete with boys	Faster game with boys required better position to not get beat
3	Boys understood the game better	More positionally focused	Had to improve positionally to compete with boys	Playing with boys required a greater focus on position
15	Ice awareness	Improved on ice awareness	Had to improve positionally to compete with boys	Playing with boys required a greater focus on position
8	Massively positive effect	Improved positional play	Had to improve positionally to compete with boys	Playing with boys required a greater focus on position
5	Helped me play a better team game	Improved positional play	Had to improve positionally to compete with boys	Playing with boys required a greater focus on position

For the psychological skills, most participants also believed that playing with boys had a positive effect. For confidence, 12 out of 15 players believed playing with boys had positive effect, while 3 believed it had no effect (see Table 10). Quantitative responses ( $n = 10$ ) showed that participants felt playing with boys aided in confidence

from physically playing and being able to keep up with boys ( $n = 7$ : “I could play/keep up with boys,” “boys game was faster”), from experiencing success after transitioning to girls (attribute success to playing with boys) ( $n = 1$ : “successful during transition because of playing with boys”), from being more prepared for different situations ( $n = 1$ ), and from feeling tougher due to playing with boys ( $n = 1$ ).

Table 10. Meaning units and coding progression for “How did playing with boys affect your confidence?”

Player	Meaning Units	Coding	Coding	Final Coding
6	Boys game was faster	Could keep up with boys	Confidence when transitioning	Aided in confidence from physically playing and being able to keep up with boys
1	Transition	Transition from boy's to girl's teams	Confidence when transitioning	Aided in confidence from physically playing and being able to keep up with boys
3	I could play/keep up with boys	Could keep up with boys	Confidence when transitioning	Aided in confidence from physically playing and being able to keep up with boys
15	More confident	Could keep up with boys	Confidence when transitioning	Aided in confidence from physically playing and being able to keep up with boys
9	Voted captain for 3 years on my boys team	Seen as a leader on a boys team	Valued on a boys' team	Aided in confidence from physically playing and being able to keep up with boys
8	Ability to be more confident	More confident from playing with boys	Confidence from playing with boys	Aided in confidence from physically playing and being able to keep up with boys
8	Massively positive effect	Could keep up with boys	Confidence when transitioning	Aided in confidence from physically playing and being able to keep up with boys
11	Successful during transition because of playing with boys	Could keep up with boys	Confidence when transitioning	Confident because of experiencing success when transitioning to girls (attribute success to playing with boys)
5	I could play in different situations against dif. opponents	Prepared for different situations by playing with boys	Being prepared made me more confident	More confident from playing with boys because it prepared me for different situations against different opponents
9	Thick skin	Could handle playing with boys	Tougher	Felt tougher from playing with boys

For competitiveness 15 out of 15 players believed playing with boys had a positive effect (see Table 11). For how playing with boys affected competitiveness, quantitative responses ( $n = 16$ ) showed that participating with boys had a positive impact

on competitiveness because they had to compete more to keep up with boy's competitiveness ( $n = 8$ : e.g., “boys were competitive so I became like them,” “boys were more competitive during practice” “had to be competitive in order to keep up”), they were motivated to be better than the boys ( $n = 4$ : e.g., “prove myself worthy of playing with boys”), they were more competitive because of the physical play of boys ( $n = 2$ : e.g., “didn't shy away from contact”), the intense style of coaching increased competitiveness ( $n = 1$ ), and they wanted to win because boys were always eager to win ( $n = 1$ ).

Table 11. Meaning units and coding progression for, “How did playing with boys affect your competitiveness?”

Player	Meaning Units	Coding	Coding	Coding
1	Coaches yelled	Coaches were more intense	Intensity of coaches increased competitiveness	Intense style of coaching increased competitiveness
1	Intensity	Boys were more intense	Intensity increased competitiveness	Competed more to keep up with boy's competitiveness
3	Boys were competitive so I became like them	Competitive because boys were competitive	More competitive environment	Competed more to keep up with boy's competitiveness
5	Boys always competed so I learned to compete	Competitive because boys were competitive	More competitive environment	Competed more to keep up with boy's competitiveness
12	Boys were more competitive during practice	Competitive because boys were competitive	More competitive environment	Competed more to keep up with boy's competitiveness
14	Boys more competitive in practice and games	Competitive because boys were competitive	More competitive environment	Competed more to keep up with boy's competitiveness
6	Had to be competitive in order to keep up	More competitive to keep up	More competitive environment	Competed more to keep up with boy's competitiveness
8	Ability to be competitive	Became competitive	More competitive environment	Competed more to keep up with boy's competitiveness
8	Massively positive effect	More competitive	More competitive environment	Competed more to keep up with boy's competitiveness
5	Didn't shy away from contact	Embraced physicality	Checking increased competitiveness	Became more competitive because of physical play of boys
14	Boys in general are more rough, up-in-your-face	Boys were more aggressive	More competitive environment	Became more competitive because of physical play of boys
11	Prove myself worthy of playing with boys	Prove that I could play with boys	Motivation	Motivated to be better than boys

Table 11 Cont.

Player	Meaning Units	Coding	Coding	Coding
1	Didn't care I was a girl	Treated me like player (not a girl)	Motivation	Motivated to be better than boys
9	Took pride in trying to be better than the boys	Wanted to be better than boys	Motivation	Motivated to be better than boys
10	Love beating the boys	Enjoyed beating boys	Motivation	Motivated to be better than boys
15	Hungry to win	Hungrier to win because boys competed	More competitive environment	Wanted to win because boys always were eager to win

For leadership, only eight felt it had a positive effect, while seven felt it had no effect (see Table 12). Participant responses ( $n = 6$ ) showed that they learned to be a leader through leading by example ( $n = 2$ : e.g., “Made me want to guide my teammates”), learned through observation ( $n = 1$ ), having the courage to speak up despite being the only girl ( $n = 1$ : e.g., “learning to speak up despite being the only girl”), and being recognized as a leader on a boys’ team ( $n = 1$ : “Voted captain 3 years in a row”). One response was coded as positive impact on leadership ( $n = 1$ ).

Table 12. Meaning units and coding progression for, “How did playing with boys affect your leadership skills?”

Player	Meaning Units	Coding	Coding	Final Coding
11	Learned good and bad leadership aspects by how teammates treated each other	Learned from teammates	Observation	Learned through observation
8	Massively positive effect	Positive impact	Positive Impact	Positive impact on leadership
15	Made me want to guide my teammates	Wanted to guide teammates	Wanted to lead	Developed leadership through leading by example
15	Set a good example	Lead by example	Lead through example	Developed leadership through leading by example
3	Learning to speak up despite being the only girl	Learned to speak up despite being the minority	Spoke up	Had the courage to speak up despite being the only girl
9	Voted captain 3 years in a row	Recognized as a leader on a boy’s team	Leader as a minority	Recognized as a leader on a boy’s team

Lastly, 13 players out of 15 believed playing with boys had a positive effect on enjoyment and two felt there was no effect (see Table 13). With respect to how participating on a boy's teams effected their enjoyment, participant responses ( $n = 11$ ) indicated that they enjoyed competing with boys ( $n = 3$ : "loved playing with boys because they loved to play, not just be together"), enjoyed being accepted by boys ( $n = 2$ : "treated like a hockey player and was accepted"), just enjoyed playing ( $n = 2$ : "love of the game"), enjoyed competitiveness of boys ( $n = 1$ ), had more fun playing with boys ( $n = 1$ ), enjoyed seeing more improvements from playing with boys ( $n = 1$ : "saw quicker improvements with boys"), and enjoyed learning more from playing with boys ( $n = 1$ ).

Table 13. Meaning units and coding progression for "How did playing with boys affect your enjoyment?"

Player	Meaning Units	Coding	Coding	Final Coding
5	Treated like a hockey player and was accepted	Treated like a player, not a girl	Accepted for being a girl	Being accepted by boys
9	Boys were closest friends	Enjoyed friendships developed	Being a part of a team	Being accepted by boys
3	Competitiveness	Competitiveness increased enjoyment	Competitive atmosphere	Competitiveness of boys
14	Enjoyable to keep up with boys	Enjoyed competing with boys	Competitive atmosphere	Competing with boys
12	Loved playing with boys because they loved to play (not just be together)	Boys were all about playing	Competitive atmosphere	Competing with boys
8	Massively positive effect	Enjoyed playing with boys	Competitive atmosphere	Competing with boys
15	More fun with boys	Enjoyed playing with boys	More enjoyment with boys	More fun playing with boys
14	Saw quicker improvements with boys	Enjoyed the improvement	Enjoyed getting better	Improved more with boys
1	Love of the game	Loved to play	Always enjoyed playing	Enjoyed playing
6	Always loved it	Always enjoyed playing	Always enjoyed playing	Enjoyed playing
3	Learning experiences I gained from boys	Learning experiences	Learning	Learned more from playing with boys

After specific skills were analyzed the participants were then asked to make a recommendation if they think girls should participate with boys now despite there being

more opportunities to play on all girl’s teams. If their answer was yes then they were asked to explain why (see Table 14). Out of 15 players, 15 of them recommended that girl’s play with boys, but one player said yes and no depending on what the goals were of the individual playing. Quantitative responses ( $n = 43$ ) for recommendations to play with boys were sorted into nine categories. Responses indicated that girls should play with boys to improve/develop basic skills more than you would playing with girls ( $n = 18$ : e.g., “shot, “better stick skills,” “better skater,” “better ice awareness,” “have better anticipation,” “may be challenged to develop skills quicker”), become more competitive because of environment ( $n = 8$ : e.g., “competitiveness because boys wanted to win in everything,” “more competitive leagues/games/tryouts”), increase work ethic through adapting to a more challenging environment ( $n = 4$ : e.g., “dedication is a lot better,” “forced to keep up and adapt”), become a smarter player ( $n = 4$ : e.g., “quicker decisions,” “knowledge”), increase aggressiveness ( $n = 3$ ), develop mental toughness through dealing with adversity ( $n = 3$ : e.g., “learn to deal with adversity”), become tougher due to physicality ( $n = 1$ ), to reach full potential by being in a more challenging environment ( $n = 1$ ) and have more fun ( $n = 1$ ).

Table 14. Meaning units and coding progression for “Should girls play with boys?”

Player	Y or N	Meaning Units	Coding	Coding	Final Coding
12	Y	Competitiveness because boys wanted to win in everything	Increase competitiveness	More competitive environment	Become more competitive because of environment
5	Y	Learn to compete hard early on	Learn to compete	Compete to keep up	Become more competitive because of environment
14	Y	More competitive	Learn to compete	Compete to keep up	Become more competitive because of environment

Table 14 Cont.

Player	Y or N	Meaning Units	Coding	Coding	Final Coding
11	Y	Competitiveness	Increase competitiveness	Compete more with boys	Become more competitive because of environment
10	Y	Competitiveness	Increase competitiveness	Compete more with boys	Become more competitive because of environment
12	Y	Challenged me to compete every second	Compete consistently	Compete to keep up	Become more competitive because of environment
13	Y	More competitive leagues/games/tryouts	Consistent competition	More competitive environment	Become more competitive because of environment
7	Y	Competition is better	Better competition	Compete against better competition	Become more competitive because of environment
11	Y	Positional play	Learn positional play	Improve positional play	Improve/develop basic skills more than you would playing with girls
15	Y	Have better anticipation	Better anticipation	Improve anticipation	Improve/develop basic skills more than you would playing with girls
15	Y	Better control of your body	Body awareness	Improve body awareness	Improve/develop basic skills more than you would playing with girls
15	Y	Better ice awareness	Better on ice awareness	Better on ice awareness	Improve/develop basic skills more than you would playing with girls
11	Y	Shot	Improve shot	Improve shot	Improve/develop basic skills more than you would playing with girls
15	Y	Faster	Become faster	Improve skating	Improve/develop basic skills more than you would playing with girls
9	Y	Better skater by playing checking	Increase skating ability	Improve skating	Improve/develop basic skills more than you would playing with girls



Table 14 Cont.

Player	Y or N	Meaning Units	Coding	Coding	Final Coding
15	Y	Better stick skills	Develop stick skills	Improve skill	Improve/develop basic skills more than you would playing with girls
10	Y	Skill development	Skill development	Improve skill	Improve/develop basic skills more than you would playing with girls
11	Y	Skill	Skill development	Improve skill	Improve/develop basic skills more than you would playing with girls
14	Y	Skill development	Skill development	Improve skill	Improve/develop basic skills more than you would playing with girls
2	Y	Increase skill level	Skill improvement	Improve Skill	Improve/develop basic skills more than you would playing with girls
3	Y	Skill level is higher	Play against better skilled players	Play against better competition	Improve/develop basic skills more than you would playing with girls
5	Y	May be challenged to develop skills quicker	Skill development	Improve skill	Improve/develop basic skills more than you would playing with girls
8	Y	Forced to develop their skills at a higher level	Skill development	Improve skill	Improve/develop basic skills more than you would playing with girls
8	Y	Learn skills faster	Skill development	Improve skill	Improve/develop basic skills more than you would playing with girls
13	Y	More opportunity to grow/develop because they are more challenging to play against	More opportunity to develop due to better competition	More opportunity to develop because of competition	Improve/develop basic skills more than you would playing with girls
4	Y	Get used to a faster game	Improve through speed of boys game	Increased development	Improve/develop basic skills more than you would playing with girls

Table 14 Cont

Player	Y or N	Meaning Units	Coding	Coding	Final Coding
12	Y	It was fun	More fun	Enjoyment	Have more fun
7	Y	Dedication is a lot better	Play with more dedicated players	Better environment for improving	Increase work ethic through adapting to a more challenging environment
11	Y	Work ethic	Improve work ethic	Have to work hard	Increase work ethic through adapting to a more challenging environment
14	Y	Forced to keep up and adapt	Work hard to keep up	Work hard to keep up	Increase work ethic through adapting to a more challenging environment
15	Y	Work Harder	Work hard to keep up	Work hard to keep up	Increase work ethic through adapting to a more challenging environment
1	Y	If you want your child to end up at the highest level	Best environment to be the best	Better environment for improving	Reach full potential by being in a more challenging environment
4	Y	Get more aggressive	More aggressive	More aggressive	Increase aggressiveness
11	Y	Aggressiveness	More aggressive	More aggressive	Increase aggressiveness
15	Y	More aggressive	More aggressive	More aggressive	Increase aggressiveness
5	Y	Learn to deal with adversity	Adversity	Handle adversity	Develop mental toughness through dealing with adversity
9	Y	Learn how to be mentally tough	Mentally tougher	Mental toughness	Develop mental toughness through dealing with adversity
8	Y	Mentally grow faster	Mental growth	Mental toughness	Develop mental toughness through dealing with adversity
10	Y	Knowledge	Learn the game better	Smarter plays	Smarter player
4	Y	Quicker decisions	Better decision making	Smarter plays	Smarter player

Table 14 Cont.

Player	Y or N	Meaning Units	Coding	Coding	Final Coding
10	Y	Faster decision making	Better decision making	Smarter plays	Smarter player
15	Y	Smarter	Become smarter	Smarter player	Smarter player
14	Y	Tougher due to physicality	Toughness	Increased toughness	Tougher due to physicality

Lastly the participants were asked to share three positive experiences (see Table 15) and three negative experiences (see Table 16) while playing on a boys' team. Quantitative responses given for positive experiences ( $n = 42$ ) were sorted into seven categories. Positive experiences included feeling included despite being a girl ( $n = 12$ : e.g., "being treated as an equal," "teammates sticking up for me when the other team targeted me for being a girl," "playing mini hockey during tournaments"), proving girls could play with boys ( $n = 9$ : e.g., "showing that I could play with any guy," "being able to hold my own against boys," "making the top AAA team"), playing in tournaments ( $n = 6$ : e.g., "winning the Ottawa Bell CA Cup," "peewee Quebec tourney"), relationships that were developed ( $n = 5$ : e.g., "got to hangout/play with my brothers"), developing competitiveness because of the competitive environment ( $n = 4$ : e.g., "competitiveness I gained from the boys being competitive"), learning and getting better because of the players around me ( $n = 4$ : e.g., "watching the Jr. team play, learn from my favorite players" ), and enjoyed aggression/physicality of the games ( $n = 2$ ).

Table 15. Meaning units and coding progression for “Positive experiences from playing with boys.”

Player	Meaning Units	Coding	Coding	Final Coding
1	Competitiveness I gained from the boys being competitive	Competing against boys	More competitive with boys	Developing competitiveness because of the competitive environment
1	Competitiveness	Competing	More competitive with boys	Developing competitiveness because of the competitive environment
2	Playing awesome hockey	Competing against good players	Playing good/competitive hockey	Developing competitiveness because of the competitive environment
2	Competing against great competition	Competing against good players	Competing with boys	Developing competitiveness because of the competitive environment
1	Aggressiveness of every game we played	Aggressiveness of games	Enjoyed the aggressiveness	Enjoyed aggression/physicality
9	Checking		Physicality	Enjoyed aggression/physicality
2	Teammates sticking up for me when the other team targeted me for being a girl	Sticking up for me	Feeling apart of the team	Feeling included despite being a girl
3	Being accepted by my teammates	Being accepted	Feeling apart of the team	Feeling included despite being a girl
3	Treated like a sister	Being accepted	Feeling apart of the team	Feeling included despite being a girl
3	Stick up for me	Boys sticking up for me	Feeling apart of the team	Feeling included despite being a girl
4	Guys sticking up for me	Teammates sticking up for me	Feeling apart of the team	Feeling included despite being a girl
5	Being treated as an equal	Being accepted	Feeling included	Feeling included despite being a girl
5	Getting along with the boys on away tourneys	Being accepted during tournaments	feeling included	Feeling included despite being a girl
6	Being in the same locker room and feeling included	Feeling accepted	Feeling included	Feeling included despite being a girl
6	Being a part of a family like atmosphere	Feeling accepted	Feeling included	Feeling included despite being a girl
7	Knee hockey tournaments	Knee hockey	Knee hockey with teammates	Feeling included despite being a girl
8	Hotel shinny Tournaments	Knee hockey	Knee hockey with teammates	Feeling included despite being a girl
8	Playing mini hockey during tournaments	Knee hockey	Knee hockey with teammates	Feeling included despite being a girl
7	Skills and smarts I developed	Developing skills	Improving	Learning and getting better because of the players around me

Table 15 Cont.

Player	Meaning Units	Coding	Coding	Final Coding
7	Learning a lot	Developing	Getting better	Learning and getting better because of the players around me
9	Watching the Jr. team play (learn from my favorite players)	Looking up to older Jr. players	Having older role models	Learning and getting better because of the players around me
9	Watching the older boys play (looking up to them)	Looking up to older Jr. players	Having older role models	Learning and getting better because of the players around me
10	Winning the Ottawa Bell CA Cup	Winning a tournament	Tournament participation	Playing in tournaments
10	Peewee Quebec tourney	Peewee tournament	Tournament participation	Playing in tournaments
10	Winning state championship	Winning a championship	Tournament participation	Playing in tournaments
11	Traveling to CO and Fargo for Tourneys	Tournaments	Tournament participation	Playing in tournaments
11	State championship in Peewees	Winning championship	Tournament participation	Playing in tournaments
11	Going to tournaments	Tournaments	Tournament participation	Playing in tournaments
2	Making the top AAA team	Making the boys top team	Accomplishment	Proving girls could play with boys
9	Beating the boys	Being better than the boys	Motivating	Proving girls could play with boys
12	Being able to hold my own against boys	Being good enough to play with boys	Proving I could play with boys	Proving girls could play with boys
12	Being better than the boys	Beating the boys	Being better than the boys	Proving girls could play with boys
13	Holding my own	Being good enough to play with boys	Proving I could play with boys	Proving girls could play with boys
13	Earning the respect of my teammates	Earning respect	Proving I could play	Proving girls could play with boys
13	Hearing coaches yell "get the girl"	Opposing coaches yelling	Proving people wrong	Proving girls could play with boys
14	Showing that I could play with any guy	Proving people wrong	Proving I could play with boys	Proving girls could play with boys
14	Prove that girls could keep up	Being good enough to play with boys	Proving people wrong	Proving girls could play with boys
14	Spending quality time with my mom	Time with mom	Developing relationships	Relationships that were developed
14	Developing relationships with boys	Relationships with boys	Developing relationships	Relationships that were developed
15	Got to hangout/play with my brothers	Time with brothers	Developing relationships	Relationships that were developed
15	Developing friendships	Relationships	Developing relationships	Relationships that were developed
15	Relationships with boys	Relationships	Developing relationships	Relationships that were developed

For negative experiences (see Table 16), quantitative responses ( $n = 32$ ) were sorted into five categories. Negative experiences included being bullied for being a girl ( $n$

= 18: e.g., “boy’s making fun or trying to hurt me in practice,” “being targeted for being a girl,” “parents yelling”), not feeling a part of the team ( $n = 9$ : e.g., “not being able to enjoy the locker room experience,” “being segregated from the team by dressing in bathrooms,” “not being wanted on the team by boys and parents”), people expressing I wasn’t good enough to play with boys ( $n = 3$ : e.g., “a father said ‘You have a girl on your team, good luck’ ”), not strong enough to play with the boys ( $n = 1$ ), and miscellaneous ( $n = 1$ : e.g., “maturity level of boys at that age”).

Table 16. Meaning units and coding progression for “Negative experiences from playing with boys.”

Player	Meaning Units	Coding	Coding	Final Coding
1	Boy’s making fun or trying to hurt me in practice	Targeted by other teams	Bullied	Bullied for being a girl
2	Bigger boys checking me	Targeted by bigger boys	Bullied	Bullied for being a girl
2	Other teams that would go after me	Targeted by other teams	Bullied	Bullied for being a girl
3	Being targeted for being a girl	Targeted for being a girl	Bullied	Bullied for being a girl
4	HS guys tried to hurt me	Targeted for being a girl	Bullied	Bullied for being a girl
5	Being targeted by bigger boys	Targeted by bigger boys	Bullied	Bullied for being a girl
7	Other guys would try to hurt me	Targeted by bigger boys	Bullied	Bullied for being a girl
8	Being targeted because of a pony tail	Targeted for being a girl	Bullied	Bullied for being a girl
9	Having guys cheap shot me because I was a girl	Targeted for being a girl	Bullied	Bullied for being a girl
10	How I was treated by opponents	Targeted by other teams	Bullied	Bullied for being a girl
11	Parents yelling	Bullied by parents	Bullied	Bullied for being a girl
12	Getting hit really hard just about every game	Targeted for being a girl	Bullied	Bullied for being a girl
13	Feeling I wasn’t being treated fairly by the coach	Feeling mistreated	Bullied	Bullied for being a girl
13	Some guys being jerks	Bullied by boys	Bullied	Bullied for being a girl
14	Opponents making comments specifically about being a girl	Bullied by other teams	Bullied	Bullied for being a girl
15	Being made fun of by other teams	Getting made fun of	Bullied	Bullied for being a girl

Table 16 Cont.

Player	Meaning Units	Coding	Coding	Final Coding
15	Being made fun of by guys on my team and getting picked on for being a girl	Getting made fun of	Bullied	Bullied for being a girl
2	If I made a mistake, I got blamed for being a girl	Wrongdoings blamed on my being a girl	Bullied	Bullied for being a girl
1	Not being wanted on the team by boys and parents	Not feeling wanted	Seclusion	Not feeling a part of the team
1	Switching dressing rooms	Secluded by not being in the locker room	Seclusion	Not feeling a part of the team
6	Locker room situation became uncomfortable in bantams	Feeling uncomfortable in the locker room	Seclusion	Not feeling a part of the team
9	Locker room- a rink tried to take me out cause I was girl	Kicked out of the locker room	Seclusion	Not feeling a part of the team
10	Not being able to enjoy the locker room experience	Secluded by not being in the locker room	Seclusion	Not feeling a part of the team
11	Teammates not liking me cause I was a girl	Feeling disliked by teammates	Seclusion	Not feeling a part of the team
11	Being segregated from the team by dressing in bathrooms	Secluded by not being in the locker room	Seclusion	Not feeling a part of the team
12	Being singled out for being a girl	Singled out	Seclusion	Not feeling a part of the team
15	Felt left out of the conversations (puberty age)	Feeling left out in conversations	Feeling secluded	Not feeling a part of the team
3	When other teams were bigger and I would get outmuscled	Outmuscled by bigger players	Not being strong enough	Not strong enough to play with boys
5	A father said "You have a girl on your team, good luck"	Parents doubting me because I was a girl	Doubters	People expressing I wasn't good enough
8	Parents getting involved saying I shouldn't play with their sons	Parents doubting me because I was a girl	Doubters	People expressing I wasn't good enough
9	Having coaches not believe in me	Coaches doubting me because I was a girl	Doubters	People expressing I wasn't good enough
10	Maturity level of boys at that age	Boys were immature	Misc.	Misc.

There was also an opportunity for the participants to add any additional thoughts or concerns on girls playing with boys, specifically focusing on physical, social, and psychological aspects (See Table 17). Quantitative responses ( $n = 41$ ) were sorted into

two primary categories physical benefits and concerns ( $n = 16$ ) and social/psychological thoughts ( $n = 22$ ) along with three responses coded as miscellaneous.

For physical benefits and concerns, responses indicated that they reached their full potential from playing with boys ( $n = 7$ : e.g., “learned how to play at the highest level and be a competitor,” “playing on a boys team until 13 was the best thing for me,” “helped get me where I am today”), boys helped them develop their physical skills ( $n = 8$ : e.g., “made me physically stronger,” “stronger shot,” “stronger skater”), and felt it was physically negative after peewees to play with boys ( $n = 1$ ).

For social/psychological thoughts and concerns, responses indicated that the girl has to decide what the best environment (boys or girls team) is for them ( $n = 5$ : e.g., “a girl needs to decide what environment is best to grow her skills, have fun and feel important to the team”), they were mentally tougher from playing with boys ( $n = 4$ : e.g., “make you mentally tough”), girls can be secluded from the team ( $n = 3$ : e.g., “girls that played boys can miss out on the team/social aspect because they are in a separate locker room”), playing with boys wasn’t the best environment socially or psychologically after peewees ( $n = 3$ : e.g., “at 14 a boys team wasn’t the best place for me socially”), they learned to deal with adversity from playing with boys ( $n = 3$ : e.g., “tough being the only girl”), more aggressive from playing with boys ( $n = 1$ ), more competitive from playing with boys ( $n = 1$ ), more confident from playing with boys ( $n = 1$ ), and playing with boys took me out of my comfort zone ( $n = 1$ ). Miscellaneous responses ( $n = 3$ ) included “mentally challenged with fluctuating ice time,” “more girls who have the ability to play with boys, but they might get turned away,” and “learned a lot about myself.”



Table 17. Meaning units and coding progression for “Additional thoughts and concerns on girls playing with boys.”

Player	Meaning Units	Coding	Coding	Coding	Final Coding
1	Made me stronger	Physical benefits and concerns	Stronger	Physically positive	Boys helped them develop their physical skills
2	Stronger physically	Physical benefits and concerns	Stronger	Physically positive	Boys helped them develop their physical skills
13	Made me stronger physically	Physical benefits and concerns	Stronger	Physically positive	Boys helped them develop their physical skills
11	Girls have better hockey sense	Physical benefits and concerns	Hockey IQ	Better hockey Sense	Boys helped them develop their physical skills
2	Stronger shot	Physical benefits and concerns	Better shot	Better shot	Boys helped them develop their physical skills
2	Stronger skating	Physical benefits and concerns	Improved skating	Better skating	Boys helped them develop their physical skills
2	Helps you become more physical throughout your career	Physical benefits and concerns	Increased physicality	Physically positive	Boys helped them develop their physical skills
9	Make you physically tough	Physical benefits and concerns	Physically tough	Physically positive	Boys helped them develop their physical skills
2	Girls develop significantly from playing with boys	Physical benefits and concerns	Girls develop more from playing with boys	Physically positive	Play with boys to reach full potential
9	If you want to be a serious hockey player it's the best thing you can do.	Physical benefits and concerns	Play with boys if you are serious	To improve play with boys	Play with boys to reach full potential
13	Boys were better (than girls) pushed me to become better each year	Physical benefits and concerns	Made me a better player playing against boys	Physically positive	Play with boys to reach full potential
15	Playing on a boys team until 13 was the best thing for me	Physical benefits and concerns	Play with boys until 13	Physically positive	Play with boys to reach full potential
13	Learned how to play at the highest level and be a competitor	Physical benefits and concerns	Compete at the highest level	Learned to compete	Play with boys to reach full potential
1	Helped get me where I am today	Physical benefits and concerns	Long term success	Physically positive	Play with boys to reach full potential

Table 17 Cont.

Player	Meaning Units	Coding	Coding	Coding	Final Coding
3	Every girl should play with boys, just depends how long due to size and strength.	Physical benefits and concerns	Every girl should play with boys	Girls should play with boys, just depends how long	Play with boys to reach full potential
15	At 14 a boys team wasn't the best place for me physically	Physical benefits and concerns	At 14 boys wasn't the best place for me	Physically negative	Not the best environment after peevees
11	Girls that played boys can miss out on the team/social aspect because they are in a separate locker room	Social/psychological thoughts	Separate locker room	Seclusion	Can be secluded from the team
14	Locker room issue	Social/psychological thoughts	Separate locker room	Seclusion	Can be secluded from the team
15	Boys no longer saw me as one of them, saw me as pretty, ugly, manly etc	Social/psychological thoughts	At 14 boys didn't accept me as a teammate	Not accepted	Can be secluded from the team
5	Each girl has to decide what is best for them	Social/psychological thoughts	Play where it is best for them	Choose proper environment for	Girl has to decide what the best environment is for them
5	A girl needs to decide what environment is best to grow her skills, have fun and feel important to the team	Social/psychological thoughts	Play where it is best for them	Choose proper environment for	Girl has to decide what the best environment is for them
7	Each girl has to decide what is best for them	Social/psychological thoughts	Play where it is best for them	Choose proper environment for	Girl has to decide what the best environment is for them
7	A girl needs to decide what environment is best to grow her skills, have fun and feel important to the team	Social/psychological thoughts	Play where it is best for them	Choose proper environment for	Girl has to decide what the best environment is for them

Table 17 Cont.

Player	Meaning Units	Coding	Coding	Coding	Final Coding
8	As long as the girl feels comfortable, can keep up, isn't a distraction, she should be able to play with the boys	Social/ psychological thoughts	As long as girl feels comfortable	The girl has to feel comfortable	Girl has to decide what the best environment is for them
3	Some girls can socially handle being around boys socially and psychologically some can't	Social/ psychological thoughts	Social and psychological aspects of playing with boys	Have to be able to handle being the only girl	Learned to deal with adversity
15	Tough being the only girl	Social/ psychological thoughts	Only girl	Socially tough	Learned to deal with adversity
13	Learned how to overcome adversity	Social/ psychological thoughts	Overcome adversity	Mentally positive	Learned to deal with adversity
2	Mental toughness	Social/ psychological thoughts	Mentally tough	Develop mental toughness	Mentally tougher from playing with boys
13	Stronger mentally	Social/ psychological thoughts	Stronger mentally	Mentally positive	Mentally tougher from playing with boys
2	Stronger mentally	Social/ psychological thoughts	Mentally tough	Mentally positive	Mentally tougher from playing with boys
9	Make you mentally tough	Social/ psychological thoughts	Mental toughness	Mentally positive	Mentally tougher from playing with boys
11	Girls that played boys are more aggressive	Social/ psychological thoughts	Makes you more aggressive	More aggressive	More aggressive
11	Girls are more competitive that played with boys	Social/ psychological thoughts	More competitive for playing with boys	Learned to compete	More competitive from playing with boys
13	Learned how to keep confidence in my ability	Social/ psychological thoughts	Develop confidence	Increased confidence	More confident from playing with boys
15	At 14 a boys team wasn't the best place for me socially	Social/ psychological thoughts	Wasn't the best environment socially	Socially tough	Not the best environment socially or psych. after peewees
15	Wasn't being treated with respect	Social/ psychological thoughts	Lack of respect	Socially tough	Not the best environment socially or psych. after peewees
15	At 14 a boys team wasn't the best place for me psych.	Social/ psychological thoughts	Wasn't the best environment psych.	Psychologically negative	Not the best environment socially or psych. after peewees

Table 17 Cont.

Player	Meaning Units	Coding	Coding	Coding	Final Coding
1	Took me out of my comfort zone	Social/psychological thoughts	Helped me get out of my comfort zone		Playing with boys took me out of my comfort zone
13	Mentally challenged with fluctuating ice time	Misc.	Misc.	Misc.	Misc.
14	More girls who have the ability to play with boys, but they might get turned away	Misc.	More girls have the ability now	Misc.	Misc.
1	Learned a lot about myself	Misc.	Misc.	Misc.	Misc.

### Investigator Bias

It is necessary to acknowledge the investigator bias in qualitative research (Patton, 2002). This bias is a natural part of all investigations and acknowledgment of this bias allows the conclusions of this study to be processed. The primary investigator for this study is a Kinesiology graduate student at the University of North Dakota who is part of the US Women’s Olympic team and played boy’s hockey in her developmental years. This presents a bias in that the investigator may see that participation on boys’ and/or coed teams in organized sport is an environment that can positively impact skills and development of the girl participating. Additionally, it must be noted that the investigator chose this population to study and it was a population of convenience due to the investigator’s access to it. This presents a bias in that the researcher determined that this population is worth studying.

## CHAPTER III

### DISCUSSION

As presented in the literature review, what we know about girls playing with boys comes from research in coeducational (coed) physical education classes, physical and environmental differences, and suggestions from different organizations (e.g., USA Hockey and Women's Sports Foundations). The results of this study, conducted in sport – which is studied less – show consistencies and differences. The research from physical education classes showed that girls in girls' only classes spent less participation time and smaller proportion of class lessons in moderate to vigorous activity compared to girls in coed classes (Lirgg, 1993; McKenzie, Prochaska, Sallis, & LaMaster, 2004). In this study, it was found that participants felt boys, in general, competed harder than girls on all girls' teams when asked why they would recommend girls play with boys and what they found different from playing on a boys' team compared to playing on a girls' team. If boys competed harder and boys' were better than girls, they would therefore spend more time at a vigorous activity level competing and trying to keep up. By playing in an environment that pushed competitiveness and ability, participants felt it helped them develop their skills and reach their full potential.

The environment girls participate in (coed or same-sex), should ultimately be decided by the individual based on the goals of the individual and what they are comfortable with. Activity preferences during physical education classes between boys

and girls concluded that female students should have the option of participating in coed or same-sex class due to the unexpected inconclusive data of what class type (same-sex vs. coed) and what sports girls preferred (Derry & Phillips, 2004; Osborne, Bauer, & Sutliff, 2002). Results, when asked to add additional thoughts and concerns, supported that the individual needs to decide what the best environment is for them physically and socially when deciding to play with boys or girls. Some participants felt it was physically and socially negative to play with boys after peewees, which is the age when kids start going through puberty. Reasons for it being socially negative included possible seclusion from teammates from being the only girl and dressing in a separate locker room and being bullied by other teams. More harsh social concerns were reported by Mel Davidson (three-time Olympic gold medalist coach) that girls who play with boys do not know how to socialize or be a part of the female culture or environment. Although social differences can be of concern, not being able to adapt to a female culture is an extreme generalization and was not found to be true in this study. It would be interesting to know why such an extreme generalization was made. Positive experiences, on the other hand while playing on a boy's team was that more participants enjoyed being treated as an equal, feeling a part of the team, and enjoyed the relationships they developed.

Differences between boys' and girls' teams were highlighted by participants both physically and environmentally. Physical differences were also apparent in the literature, but pre-puberty gender differences could be eliminated between girls and boys if equal expectations, encouragement, and practice opportunities were provided by parents, teachers, and coaches (Thomas & French, 1985; Thomas & Thomas, 2012). Analysis of how participants felt playing with boys and girls was different and how the specific skills

were affected by playing with boys supports that given an equal environment, physical differences can be eliminated pre-puberty. Participants highlighted that they felt that playing on a girl's team was different compared to boys. It was a less serious environment on a girl's team, there was more drama, girls weren't as intense, and were less concerned about winning than boys, creating a much different environment by coaches, parents, and players. If equal environments can be created for both girls and boys, physical differences can be eliminated.

Playing with boys however, in a more competitive and serious environment, allowed for physical development. More support for the lack of physical differences in prepubescent children was found when specific training was investigated (Bencke, Damsgaard, Saekmose, P. Jørgensen, K. Jørgensen, & Klausen, 2002; Faigenbaum, Milliken, & Westcott, 2003; Kojima, Jamison, & Stager, 2012). The majority of participants felt that each specific skill (skating, stickhandling, shooting, passing, positional play, confidence, competitiveness, leadership, and enjoyment) was positively affected by playing with boys because boys overall were better in all these areas. Competing with and against better players helped them develop more than they would have on an all girls' team. Proving girls could play with boys was also a positive experience for many participants. Given equal environments, players were able to eliminate pre-puberty gender differences and competed equally with their boy counterparts.

Although gender stereotyping was not directly looked at in this study, it may be the reason for the lack of competition on an all girls team along with the lack of girls'

team availability. Only three of the fifteen participants had the opportunity to play on a girl's team at all levels of play, while the other 12 participants availability to a girls' team varied from squirts to high school. Environmental differences were also mentioned to effect girls and boys participation in sport depending on the "stereotyping" of the sport being more masculine, more feminine, or gender neutral (Feltz, Short, & Sullivan, 2008).

Additional thoughts were that participants felt they reached their full potential from playing with boys because of the competitiveness, which helped them develop their physical skills. This result is consistent with organization recommendations, the WSF is right on that although more girls are participating in organized sport there are still 1.3 million less opportunities for girls compared to boys, meaning there are not always girl's teams available to the athlete. Even when a girl's team is available it is not always the best environment to improve because girls teams typically tend to be inferior to their boy counterpart teams.

When deciding if a girl should play with boys or girls, safety and development should be some of the main factors to consider. The number one reason why players transitioned full time to a girl's team was due to safety purposes (i.e., size and strength differences). Both WSF and USA hockey support that prepubescent girls and boys should compete together until the skill, size, and strength of any participant compared to others playing on the team creates the potential of a hazardous environment. Other reasons participants transitioned to girls' teams full time were that they found a competitive girls team, they wanted exposure for college/national teams, and because the transition was unavoidable.



In conclusion, playing on a boy's team during developmental/pre-pubescent years appears to be the best environment for girls to reach their full potential as a hockey player. It helps develop their skills and knowledge of the game more than playing on a girl's team. Transition age recommendations varied from peewees to bantams, but the biggest point was that the girl has to feel comfortable physically and socially on a boy's team. This study can lead to further research in different sports, specifically looking at the gender stereotype of the sport and how that may affect coed or same-sex participation. Social issues in coed sport are another area that has not been researched much and would be important information when making recommendations if girls should compete with boys in organized sport. Ultimately, girls playing with boys creates a more competitive environment for the girl, in turn helping them gain confidence and skills that should match their male counterparts.

## APPENDICES

## Appendix A Questionnaire

### Perspectives from the US Olympic team Questionnaire

Age  years

1a. Did you play with boys on organized hockey teams? Yes  No

1b. If yes, at what level, how many seasons, and were there girls teams available to participate on?

Level	Number of Seasons	Girls team available
Mites	1 <input type="checkbox"/> 2 <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Squirts	1 <input type="checkbox"/> 2 <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
PeeWees	1 <input type="checkbox"/> 2 <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Bantams	1 <input type="checkbox"/> 2 <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
High School	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>

1c. If yes, why did you participate on a boys team?

2. If you participated on a boys' team, were you the only girl on the team?

3a. Did you participate in USA hockey development camps? Yes  No

3b. If yes, what ages did you participate? Select all that apply 14  15  16  17

4. At what age level did you transition to girls hockey full time and why?

5. USA hockey has recently changed the implementation of checking from peewees to bantams. If this rule were implemented during your youth participation, would you have continued your participation with a boy's team? Yes  No

6. After your transition, what did you find different between playing on a girl's team and playing on a boy's team? (List as many things as you want)

## Appendix A Questionnaire

**6. Relative to your peers who participated on all girl's teams, did participating on a boy's team positively or negatively effect your development in the specific areas listed below? Check the degree of effect that is most applicable to you and use specific examples of how you know it positively, negatively, or did not change your development in these specific areas.**

Area of development	Degree of effect	How?
Skating	Positive Effect <input type="checkbox"/> No effect <input type="checkbox"/> Negative Effect <input type="checkbox"/>	
Stickhandling	Positive Effect <input type="checkbox"/> No effect <input type="checkbox"/> Negative Effect <input type="checkbox"/>	
Shooting	Positive Effect <input type="checkbox"/> No effect <input type="checkbox"/> Negative Effect <input type="checkbox"/>	
Passing	Positive Effect <input type="checkbox"/> No effect <input type="checkbox"/> Negative Effect <input type="checkbox"/>	
Positional Play	Positive Effect <input type="checkbox"/> No effect <input type="checkbox"/> Negative Effect <input type="checkbox"/>	
Confidence	Positive Effect <input type="checkbox"/> No effect <input type="checkbox"/> Negative Effect <input type="checkbox"/>	
Competitiveness	Positive Effect <input type="checkbox"/> No effect <input type="checkbox"/> Negative Effect <input type="checkbox"/>	
Leadership	Positive Effect <input type="checkbox"/> No effect <input type="checkbox"/> Negative Effect <input type="checkbox"/>	
Enjoyment	Positive Effect <input type="checkbox"/> No effect <input type="checkbox"/> Negative Effect <input type="checkbox"/>	

**7a. Would you recommend young girls to play on boy's teams? Yes  No**

**6b. Why or why not? (List as many reasons as you can think of)** \_\_\_\_\_

**6c. If yes, at what level do you recommend they stop at?** \_\_\_\_\_

**8. What were your best experiences while playing on a boy's team? (If possible list three)**

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

**9. What were your worst experiences while playing on a boy's team? (If possible list three)**

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

**10. Are there any other thoughts you would like to add in the area of girls participating on boy's teams?**

\_\_\_\_\_

## Appendix B IRB Approval

U N I V E R S I T Y   O F      N O R T H   D A K O T A

INSTITUTIONAL REVIEW BOARD  
c/o RESEARCH DEVELOPMENT AND COMPLIANCE  
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July 30, 2013

Jocelyne Lamoureux  
1322 Count Circle  
Grand Forks, ND 58201

Dear Ms. Lamoureux:

We are pleased to inform you that your project titled, "Should Girls Play Hockey With Boys: Perspectives From The US National Team" (IRB-201307-023) has been reviewed and approved by the University of North Dakota Institutional Review Board (IRB). The expiration date of this approval is August 1, 2014.

As principal investigator for a study involving human participants, you assume certain responsibilities to the University of North Dakota and the UND IRB. Specifically, any adverse events or departures from the protocol that occur must be reported to the IRB immediately. It is your obligation to inform the IRB in writing if you would like to change aspects of your approved project, prior to implementing such changes.

When your research, including data analysis, is completed, you must submit a Research Project Termination form to the IRB office so your file can be closed. A Termination Form has been enclosed and is also available on the IRB website.

If you have any questions or concerns, please feel free to call me at (701) 777-4279 or e-mail michelle.bowles@research.und.edu.

Sincerely,



Michelle L. Bowles, M.P.A., CIP  
IRB Coordinator

MLB/jje

Enclosures

Appendix C  
Organization Approval



**Reagan Carey**  
Director, Women's Hockey

1775 Bob Johnson Drive | Colorado Springs, CO 80905-4000  
phone 719.576.8724, Ext. 154 | fax 719.538.1160 | email reagan@usahockey.org

April 10<sup>th</sup>, 2013

Institutional Review Board,

I, Reagan Carey, Director of USA Women's Hockey understand the involvement the players within our USA Women's National Hockey Team will have in this study (that is being conducted by Jocelyne Lamoureux) to look at elite female hockey players perception's on participating with boys teams. It is also my understanding that this information will be used for the purposes of this class only and the contents are not being published in any public platforms. If any other use of this data is desired you will need expressed consent from USA Hockey.

With this understanding, I agree to have the members of our US Women's National Team player pool participate in this study and request that I be cc'd on any related communication to the team as it pertains to this study.

Reagan Carey

Reagan Carey

USA HOCKEY

Director, Women's Hockey



USA Hockey, the national governing body for the sport of ice hockey, is a member of the International Ice Hockey Federation and the United States Olympic Committee



usahockey.com

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