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

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

by

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This thesis, submitted by Jocelyne Lamoureux in partial fulfillment of the requirements for the Degree of Master of Science from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

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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 1st 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 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mites | | Squirts | | Peewees | | Bantams | | High School | | Total Number of seasons with boy's team | Years in Dvlpt. Camp |
| | # 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 | 5 | 2 |
| 2 | 2 | No | 2 | Yes | 2 | Yes | 0 | Yes | 0 | Yes | 6 | 4 |
| 3 | 1 | Yes | 2 | Yes | 2 | Yes | 2 | Yes | 1 | Yes | 7 | 4 |
| 4 | 2 | No | 2 | No | 0 | Yes | 0 | Yes | 0 | Yes | 4 | 3 |
| 5 | 1 | No | 2 | Yes | 1 | Yes | 0 | Yes | 0 | Yes | 4 | 4 |
| 6 | 2 | No | 2 | No | 2 | No | 1 | Yes | 0 | Yes | 7 | 4 |
| 7 | 2 | No | 2 | Yes | 2 | Yes | 1 | Yes | 0 | Yes | 7 | 4 |
| 8 | 2 | No | 2 | No | 2 | No | 2 | No | 0 | Yes | 8 | 3 |
| 9 | 2 | No | 2 | No | 2 | Yes | 2 | Yes | 0 | Yes | 8 | 4 |
| 10 | 2 | No | 2 | No | 2 | Yes | 0 | Yes | 0 | Yes | 6 | 4 |
| 11 | 2 | No | 2 | No | 2 | Yes | 1 | Yes | 0 | Yes | 7 | 4 |
| 12 | 2 | Yes | 2 | Yes | 2 | Yes | 0 | Yes | 0 | Yes | 6 | 4 |
| 13 | 2 | No | 2 | Yes | 2 | Yes | 2 | Yes | 0 | Yes | 8 | 1 |
| 14 | 2 | Yes | 2 | Yes | 2 | Yes | 0 | Yes | 0 | Yes | 6 | 4 |
| 15 | 2 | No | 2 | No | 2 | 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 then 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 then 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 then you would playing with girls |
| 15 | Y | Have better anticipation | Better anticipation | Improve anticipation | Improve/develop basic skills more then 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 peewees |
| 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 ☐ 2 ☐ | Yes ☐ No ☐ |
| Squirts | 1 ☐ 2 ☐ | Yes ☐ No ☐ |
| PeeWees | 1 ☐ 2 ☐ | Yes ☐ No ☐ |
| Bantams | 1 ☐ 2 ☐ | Yes ☐ No ☐ |
| High School | 1 ☐ 2 ☐ 3 ☐ | Yes ☐ No ☐ |

**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 ☐ No effect ☐ Negative Effect ☐ | |
| Stickhandling | Positive Effect ☐ No effect ☐ Negative Effect ☐ | |
| Shooting | Positive Effect ☐ No effect ☐ Negative Effect ☐ | |
| Passing | Positive Effect ☐ No effect ☐ Negative Effect ☐ | |
| Positional Play | Positive Effect ☐ No effect ☐ Negative Effect ☐ | |
| Confidence | Positive Effect ☐ No effect ☐ Negative Effect ☐ | |
| Competitiveness | Positive Effect ☐ No effect ☐ Negative Effect ☐ | |
| Leadership | Positive Effect ☐ No effect ☐ Negative Effect ☐ | |
| Enjoyment | Positive Effect ☐ No effect ☐ Negative Effect ☐ | |

**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

UNIVERSITY OF UND NORTH DAKOTA

INSTITUTIONAL REVIEW BOARD
c/o RESEARCH DEVELOPMENT AND COMPLIANCE
DIVISION OF RESEARCH
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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/jle

Enclosures

Appendix C
Organization Approval

**Reagan Carey**
*Director, Women's Hockey*
1775 Bob Johnson Drive | Colorado Springs, CO 80906-4090
phone 719.576.8724, Ext. 154 | fax 719.538.1160 | email reaganc@usahockey.org

*April 10th, 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

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