

Running head: PARENT PERCEPTIONS OF SAFE HOCKEY

Parent Perceptions of Safe Hockey and their Child's Participation in Physical Activity

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### Abstract

**Background:** Ice hockey, a very popular sport in Canada, is enjoyed by the young and old alike. However, like any other sport, participating in hockey exposes players to the possibility of injury. The majority of injuries in hockey are caused by "body contact", which include legal and illegal body checks. Injury prevention programs have been formed to teach youth about proper body checking technique and how to stay safe during the high speed game of hockey. The purpose of this study was to assess parent perceptions of safe hockey and physical activity, and to determine if parents would support a safe hockey course delivered to coaches online to help prevent further injuries in this age group.

**Methods:** A cross-sectional study was conducted with minor hockey parents residing in Waterloo Region, Niagara Region, and Toronto. A self-administered paper-based survey was administered to parents in Toronto and an electronic survey was advertised to those residing in the regions of Waterloo and Niagara. Survey respondents were asked to provide basic demographic information, their attitudes towards safe hockey and towards their child's coach, as well as reasons for enrollment in hockey and other physical activities.

**Results:** Almost all parents (92.2%) were in favour of their child's coach participating in a safe hockey course online. The vast majority of respondents (97.0%) felt that practicing safe hockey was a "very important" objective of ice hockey and many (84.0%) believed their child's coach was adequately prepared to teach safe hockey skills. The majority of respondents also agreed that hockey promotes positive child growth and development. Respondents indicated that their child is active 2.7(1.3) hours per day and the majority of parents indicated that they themselves are highly or moderately active. Almost all parents (91.0%) reported that their child is enrolled in additional activities outside of hockey and that their child participates in these additional

activities while at school. Parents enrolled their child in an additional activity mainly because their child wanted to and because the activity promoted a healthy lifestyle and physical fitness.

**Interpretation:** Parents feel that practicing safe hockey is a "very important" objective of hockey. Parents would also support the delivery of a safe hockey course online to their child's coach. From a public health perspective, safe hockey instruction should be implemented in minor hockey.

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## **Chapter 1**

### ***Introduction***

Ice hockey, a very popular sport in Canada, is enjoyed by the young and old alike. Of concern however, is the incidence of head and spinal cord injuries associated with this sport. Over the years, safe hockey programs have been developed that show immediate change in aggressive playing behaviours but do not remain effective in preventing injuries long-term (Cook et al., 2003). Recently, a web-based program targeted at coaches of minor hockey players has been developed to help control the incidence of head injuries among youth hockey players. The potential for this program to work depends solely on cooperation from coaches who undertake the program, and parents who foster the development of young team players (Brunelle et al., 2005). Youth in our society emulate the attitudes and behaviours of their coaches, and are also greatly influenced by the opinions of their parents (Hoyle & Leff, 1997). In order for this program to be successful, full support from both parents and coaches is essential (Brunelle et al., 2005). The proposed study investigates parent perceptions of hockey, beliefs about their child's coach, and support for a safe hockey program in minor hockey. This research is of great importance as the literature provides very little evidence of parental perceptions and minor hockey.

Participation in physical activity is also a growing concern in Canada. Approximately three out of five children are not active enough for optimal growth and development (CFLRI, 2003). This study also explores child participation in physical activity and how their involvement in additional activities outside of hockey affects their overall growth and development.

### *Statement of the Problem*

The purpose of this study is to determine parent perceptions of safe hockey and their child's participation in physical activity. It is also of interest to determine parent support a safe hockey program delivered to their child's coach. Currently there is limited information available that indicates how parents feel about their child's enrolment in ice hockey and safe hockey programs delivered to their children. There is however, sufficient information outlining parent attitudes towards their child's participation in physical activity.

A closer look shows that injury prevention programs are of value; and support from both coaches and parents is needed in order to maximize the benefit of the program (Brunelle et al., 2005). What is known about injury prevention programs is that they need to be carried out long-term in order to effectively teach young players the skills required to prevent head and spinal cord injuries while playing hockey (Brunelle et al., 2005). What is not known is how parents perceive such programs and the support that can be offered to coaches and players regarding the delivery of safe hockey programs.

This study analyzes parent perceptions of the delivery of safe hockey so that support for coach and player preparation programs in Canada can be designed to prevent head and spinal cord injuries among youth hockey players. It is clear that injury prevention programs are needed especially for the younger age groups as they approach the years in which body checking will be an integral skill in their game.

The need to have a fully supported hockey injury prevention program in Ontario is evident. The number of young children hurt each year while playing this exciting and popular sport can be prevented with appropriate training and skill development. If we can understand

parent perceptions of safe hockey and produce a program with their support, there is a higher chance of reaching players introduced to the program.

### *Hypotheses*

There is limited research outlining parent perceptions around safe hockey practice. Previous studies which evaluate the “ThinkFirst Canada” video and the “Fair Play Program” provide a wealth of information about the tool, but little information about the attitudes towards such training tools from coaches, parents, and hockey administrators. The study that evaluated the “ThinkFirst Canada” video noted that over half of all coaches approached to show the video to their teams chose not to, in fear that their players would be less aggressive on the ice. One would speculate that from a parent’s perspective, the concern would rest with the safety of their child rather than the level of aggressiveness their child exhibits on the ice. The study which evaluated the “Fair Play Program” noted that regardless of who implements the program, support from league administrators, players, coaches, officials and parents is necessary. This indicates that a parent’s perspective is an important component in developing a successful program, hence lending support to the current research as an imperative element for the development and delivery of hockey injury prevention programs.

In 1995, the Canadian Fitness and Lifestyle Research Institute (CFLRI) asked parents to note the benefits and consequences of their child’s participation in physical activity. This study found that overall parents were positive about their child’s enrolment in physical activities. It is of interest to the current study to ascertain whether this finding would be replicated in 2007.

In terms of participation in physical activity, the CFLRI also conducted a study in 2003, which investigated why parents enrol their children in organized activities. Questions pertaining

to this topic area have been included in the current research and it is hypothesized that the results will be comparable to the study conducted in 2003 by the CFLRI.

## Chapter 2

### *Literature Review*

Involvement in organized activities is a great thing for Canadian youth. Organized activities have many benefits physically, emotionally, mentally and socially. However, three out of five Canadian children and youth (aged 5-17) are not active enough for optimal growth and development (CFLRI, 2003). This exposes youth with a wide array of health risks, as they grow older. Youth who are active, experience different kinds of health risks. Head traumas and fractures are increasingly common among youth who play competitive hockey. A popular topic in public health is the incorporation of youth into organized physical activities and the assurance to parents that their child will be safe. Thus, creating programs to teach children and their coaches how to play smarter and increasing access to those who are currently not involved in organized sports and extracurricular pursuits is of great interest to public health professionals at this time.

### **Provincial Body checking Policy and Ice Hockey Injury Rates**

Hockey is Canada's most recognized sport with over half a million youth registered each year (Hockey Canada, 2006). Hockey is also a large contributor to head and spinal cord injuries among Canadian youth. Because of this, much research has been conducted to identify which players are at greatest risk of injury.

Body checking, which is defined as an individual defensive tactic designed to legally separate the puck carrier from the puck (Hockey Canada, 2007), is the most common cause of trauma in hockey (Committee on Sports Medicine and Fitness, American Academy of Pediatrics, 2000). Body checking accounts for 86% of all injuries among players aged 9 to 15 years (Brust, Leonard, Pheley, & Roberts., 1992). Of these injuries include concussions, which are most

commonly caused by body contact, both legal and illegal, followed by players falling onto the ice and striking the goal post or the boards (McFaull, 2001). Body contact is defined as an individual defensive tactic designed to legally block or impede the progress of a puck carrier (Hockey Canada, 2007). Goodman et al. (2001) suggest that the rate of concussion in ice hockey is too high and that concussion may be especially debilitating for young hockey players. Body contact, violence, and lack of respect among hockey players are associated with injury (Goodman et al., 2001). Education and minimization of anger and violence in hockey are required to prevent injuries.

In 2002, a policy change by Hockey Canada moved 11-year-old players from the Atom level (body checking not permitted) to the peewee level (body checking permitted) (Hagel, Marko, Dryden, Couperthwaite, Sommerfeldt, & Rowe, 2006). Hagel et al. (2006) conducted a study in Alberta following this policy change to determine the rate of injury prior to and after the implementation of this policy. The Ambulatory Care Classification System (ACCS) database was used to obtain injury rates among youth 10 to 12 years of age. Discharge data was pulled from the 2000-2001 through 2003-2004 hockey seasons. A chart review was conducted for 11-year-old players, which extracted detailed information about the nature of their injuries.

Hagel et al. (2006) found that injury rates increased substantially when the policy change was implemented and the rate of severe injuries nearly doubled. The researchers of this study concluded that the age at which body checking is introduced in minor hockey should be raised.

Unlike Ontario, Quebec does not support body checking among atom level hockey players (players aged 11 years). Youth less than 14 years of age are not allowed to body check in Quebec, as it is believed to lead to more penalties and more aggressive play (Macpherson, Rothman, & Howard, 2006). Macpherson et al. (2006) compared body checking injuries,

fractures, and concussions in boys' minor hockey between Ontario and Quebec. This study focused on youth aged 10 to 13 years of age. Data reporting the number of hockey related injuries between September 1995 and August 2002 was obtained from the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP).

In total, there were 4,736 hockey injuries obtained from the CHIRPP database. Ontario comprised 63% (3,006) of these injuries and Quebec the remainder (37%, 1,730). More than half of all injuries occurred in Ontario where body checking was allowed, and the odds of suffering a concussion or fracture significantly increased in Ontario. This study concluded with a statement supporting policies that disallow body checking to reduce ice hockey injuries in children.

The United States has seen similar injury rates among youth hockey players. In 2004, Hostetler, Xiang, and Smith, extracted emergency department data from the National Electronic Injury Surveillance System (NEISS) to determine the age distribution of total injuries, injury types, and body regions injured. An ice hockey-related injury was defined as any injury that occurred to an individual while playing ice hockey (Hostetler et al., 2004). Body region was divided into five categories: upper extremity, lower extremity, head, face, and trunk and each contained their own description of what each category consisted of. Injury diagnoses codes were provided in the NEISS database, and one category entitled "traumatic brain injury" was created to classify concussions and internal organ injuries.

During the hockey season of 2001-2002, approximately 32,750 individuals with ice hockey related injuries were treated in US emergency departments, including more than 18,000 youth less than 18 years of age. The data extraction found that the number of injuries rose during adolescence and males experienced 90% of all injuries. By age, the 12 to 17 year age group had the highest percentage of upper extremity injuries (which included upper arm, shoulder, elbow,

lower arm, wrist, hand, and finger) compared with all other age groups. It was also found that the percentage of head injuries decreased as age increased.

The findings of this study concluded that the majority of ice hockey related injuries are predictable and preventable. Previous studies and this study conclude that the rate of injury increases as the size and the speed of players increase, as well as when body checking is allowed. Future programming should focus on youth as they are the high-risk age group for hockey-related injuries (Hostetler et al., 2004).

In 2005, Willer, Kroetsch, Darling, Hutson, and Leddy examined ice hockey injury rates by competition level. Injuries of House League, Select and Representative youth ice hockey teams were explored in a prospective injury analysis. From 2002-2004 a volunteer trainer recorded each injury that caused a player loss of playing time. The trainer completed an injury form, which included the age group, the type of injury, the length of time the player missed action, location of the injury, and circumstances that led to the injury. Participants included 2,632 boys aged 4-18 who played in the 2002-2003 hockey season and 2,639 boys who played in the 2003-2004 season. Over the two years, only 23 girls registered and were excluded from the study in order to keep the study homogenous for gender.

The results of this study found that injuries were four times more likely to occur in games than practices. Boys who played at the representative level were 6.1 times more likely to be injured than boys playing in house leagues. Injury rates increased with age of the player, spiked the first year body checking was introduced, and when the boys hit adolescence (age 13). These findings suggest that the introduction of body checking at age nine among competitive hockey players causes an immediate but short-term spike in injury rates (Willer et al., 2005). The



researchers suggest that an adjustment period with the introduction of body checking should be considered. These findings are contradictory to studies reported earlier in this paper.

### **Past Hockey Injury Interventions**

In 2003, Cook, Cusimano, Tator, and Chipman conducted a study to evaluate the ThinkFirst Canada, Smart Hockey, brain and spinal cord injury prevention video targeted at those players ten years of age and older. The purpose of this study was to evaluate the knowledge transfer and effect on penalties achieved through a single viewing of the video. The video included medical information, training lessons, and personal accounts provided by well-known professional players, team physicians, coaches, referees, and trainers.

The study took place in Toronto, Ontario where 34 Atom "A" competitive level teams were of interest. The players were 11-12 years of age, and were beginning their first season of body contact hockey. Players were randomly divided into experimental and control groups where the experimental group was shown the ThinkFirst educational video mid-season. Concussion knowledge was assessed before, during and after the viewing of the video. Similarly, the incidence of aggressive penalties was also measured prior to viewing the video and directly after. Coaches who declined participation in the study were asked for an interview to describe their reasons for refusal of the video, attitudes towards educational materials in hockey, and general feedback about the video. Control team coaches were also asked for an interview and a general evaluation of the video.

There were three basic outcome measures for this study. First, players from both the control and experimental group were asked two questions: How does a player get a concussion? And how does a player feel when he has a concussion? The experimental groups were asked both of these questions before and after viewing the video. Responses were recorded and assessed in

terms of the number of correct answers. Secondly, the mean number of penalties per 1000 player hours was compared in control and experimental groups. Lastly, coach interviews from both those that participated in the study and those that did not were transcribed and key themes such as experience with injury prevention education materials; their goals for teams and players in the current hockey season, and experience with concussed players were explored.

The results of this study included two control teams (30 boys in total) and three experimental teams (45 boys in total). More than half of the coaches (22 out of 34) did not participate in the study and subsequently chose not to complete an interview assessing their reasons for refusal. Both groups showed equivalent knowledge when asked baseline questions about concussion injuries. The experimental group however showed significant improvements in knowledge after watching the video. These improvements were maintained at three months. The control group however did not show significant change in their knowledge. Experimental group cross checking and checking from behind type penalties significantly dropped whereas control group holding penalties significantly increased. Coaches in both the control group and experimental group noted the head coach as having the most influential impact on player behaviour and agreed that changing coaches' behaviour would in turn change player behaviour (Cook et al., 2003).

The findings of this study open the door to future research in this field. Coaches who choose not to show their teams important and possible life-saving education videos on how to prevent head and spinal cord injuries are placing their players at great risk. Coaches who agreed to show their players the video identified a personal history of concussion or knowledge of a player who had one. Suggestions for future research were identified as coach selection criteria,

referee selection and training, parent education, and reorientation of attitudes in the game of hockey.

Another program aimed at preventing ice hockey injuries is the “Fair-Play Program (FPP)”. This program was created by Hockey Quebec in 1988 and has been seen to be quite successful thus far. The purpose of the program is to reduce the number of penalties called by referees, reduce the occurrence of violent acts, and minimize the incidence of injuries (Brunelle, Goulet, & Arguin, 2005).

The program works by rewarding teams extra points for sportsmanship. Traditionally, in a regular season game, the winning team is granted two points, a tie earns each team one point, and a loss means no points for the losing team. With the FPP, each team can earn points for good conduct based on the number of penalty minutes called by referees (Brunelle et al., 2005). If a team does not exceed their maximum number of penalty minutes in a game, they receive two extra points. For the losing team, this can enable them to walk away with some points instead of none at all. The dynamic of the game is changed; “no longer does the game’s value depend solely on who wins or loses, but also on how the game is played” (Brunelle et al., 2005, p. 295).

To measure the effectiveness of this program, researchers used the number and type of penalties accrued per game. The FPP was exposed to 52 elite Bantam level (14-15 year olds) teams where body checking was allowed. In total, 49 games were observed and took place during the 2001-2002 hockey season. The teams were divided into two cohorts, 13 of them had the FPP applied to their game, and 36 where it was not.

The findings of this study concluded that the FPP was an effective tool in decreasing the number of penalty minutes within the experimental group (those who had the FPP applied to their game). Players in leagues without the FPP shoved and hit more than players in leagues with

the FPP. The number of penalties was also significantly lower in games played with the FPP than in games played without it. Researchers of this study reported that success of an injury prevention program relies on complete support from all persons involved in the sport of interest; and in hockey, these parties include league administrators, players, coaches, officials, and parents.

### **Parental Perceptions of Physical Activity and Sport**

In 1995, the Canadian Fitness and Lifestyle Research Institute (CFLRI) Physical Activity Monitor asked over 600 parents about their beliefs concerning their children's physical activity. The parents were asked to what extent they agreed with several statements that outlined the benefits and negative outcomes of participation in physical activity. The results of this study showed that parents hold positive beliefs about their child's participation in physical activity. The majority of parents agreed that physical activity helps in growth and development; builds self-esteem and self-image; builds concentration and helps learning; favours sharing and cooperation; develops social skills; encourages positive friendships; builds character; provides quality time with family; helps intellectual development; and keeps their child from mixing with the wrong crowd (CFLRI, 1995). The results of this study also showed that parents think physical activity does not encourage a bad attitude, nor does it lead to too many injuries or take too much time away from school work and studies. However, one in ten parents did agree that child participation in physical activity encourages an overly competitive attitude and aggressive behaviour. Parents also noted that physical activity does not cost too much and does not cause transportation problems. These beliefs varied by parental level of education. Parents who held a university degree were more likely than other parents with lower levels of education to believe that participation in organized sports helps with growth and development, builds self-esteem and

self-image, builds concentration, and helps learning. Parents with higher education were also more likely to disagree that participation in physical activity encourages a bad attitude, costs too much, encourages aggressive behaviours or fosters an overly competitive attitude. The above was also true for parents who were highly active.

The CFLRI Capacity Study in 2003 addressed a variety of issues surrounding children and organized sports. They found that only 46% of parents were aware of Canada's physical activity guidelines for children in their home. This study also found some common themes among demographic groups that may help program planners to engage more parents to enrol their children in organized sports or activities. This study found that three-quarters of parents believed that participating in an organized sport was a very good way for children to get fit and maintain a healthy weight. On the contrary, this study also found that only 23% of children in Canada are actually enrolled. This finding stimulated a chain of further research in this field. Health professionals wanted to know what was preventing parents from enrolling their child in an activity that could have so many benefits both in the short term and later in life.

As part of the aforementioned study, parents were asked about barriers to participation in physical activities. Lack of convenient facilities was seen as a major barrier in this study. More than half of all parent respondents reported that there are simply not enough facilities in their neighbourhood for their children to participate in organized sports. Parents who possessed lower levels of education noted this limitation most frequently.

A second barrier to participation in physical activities and organized sports was prohibitive cost. Approximately 1 in 5 Canadian parents reported that the cost of enrolment was not feasible for their budget. Parents, who worked part-time, possessed lower levels of education, and lower household incomes, were significantly more likely to strongly agree with this barrier.

The CFLRI recommended that schools and municipal facilities should consider providing subsidized programming or cost structures for children and youth who come from low-income families.

Safety concerns were also found to be a barrier in organized sport enrolment. It was found that one in four parents either moderately or strongly agreed that safety concerns prevent children from being more physically active. Fathers aged 45-64 and parents with lower household incomes and lower levels of education, presented this concern more often than other parents with dissimilar demographics. The major concern with safety was traffic on the streets and commuting to and from the organized sport/activity. Recommendations to eradicate this concern were not present; however future research in this field was justified.

Lack of skill and ability was not seen as a significant barrier for participation in physical activities. The majority of parent respondents reported that lack of skill and ability was not an inhibitor. The same was true for those parents who believed the time demands of homework were preventing their children from participating in organized sports. Mothers more so than fathers believed that homework encompassed too much "after school time" for their children to have the ability to do anything else. Close to 60% of parents also stated that their children do not prefer sedentary activities such as watching television and playing on the computer to physical ones. Parents that believed their children would rather be sedentary were older fathers with sons in the age range of 10 to 14 years. It was also found that only one out of three parents believed that lack of programs or opportunities were barriers towards physical activity. Those parents who did believe that programming in their communities was inadequate were predominantly mothers between the ages of 25 and 44.

These barriers coupled with the effects of inactivity on the Canadian health care system and our communities create a need for more research in this field. Young people today are not as involved in organized sports as they should be and reasons for enrolment are of great interest at this time. Determining the reasons why parents today are choosing to enrol their children in organized events can help health professionals plan better programs. In summary, promoting extracurricular activities such as organized sports will continue to be a focus for public health staff. Creating programs that are feasible and accessible should be a priority.

In 1997, Hoyle and Leff examined the association of parental involvement, both parental support and parental pressure, with enjoyment, performance, self-esteem, and other characteristics of young tournament tennis players. The sample consisted of 24 tennis players between the ages of nine and 17 years who were attending a regional tennis academy. The participants provided information about the role their parents play in their tennis game, their own personal views of the game, their self-esteem, and general information regarding place of residence and national ranking.

This study found that parental support was significantly associated with enjoyment and the importance players placed on their game. Players, who reported a high level of parental support, showed greater enjoyment of tennis, achieved lower state rankings, and were more likely to view tennis as an important part of their lives (Hoyle & Leff, 1997). This study supports the current research in that it provides an understanding of parent influences on youth athletes. This includes support or there lack of for safe behaviours in hockey.

This review has outlined the potential for ice hockey related injuries among youth and parent perceptions of physical activity and sport. Jurisdictions that allow body checking have significantly higher injury rates than jurisdictions that do not or introduce body checking later in

adolescence. Of these injuries, the majority of concussions are seen in youth aged nine to 15 years and the introduction of body checking is a vast contributor to increasing injury rates. The size and speed of players also varies in younger ages, thus creating more opportunity for injuries. The study conducted by Cook et al. in 2003, evaluated coaches and their inclusion of the ThinkFirst Canada injury prevention video suggested some ill explored research in this field. Children often emulate their parent's behaviour, attitudes and beliefs and it would be interesting to know how parents feel about such programs as the ThinkFirst Canada injury prevention video. The Fair-Play Program showed positive results in the Quebec hockey leagues and is encouraging for program development in Ontario. Currently in Toronto, a new safe hockey program called "Play it Cool" is being introduced to coaches; and through coaches, to atom level minor hockey players. Play it Cool is an innovative new program from the Canadian Spinal Research Organization (CSRO) which is intended to help generate awareness and prevention of spinal cord injuries in hockey. The vision of the CSRO is to equip minor hockey players who play recreational or organized hockey in Canada with the knowledge and skills that may prevent a hockey-related spinal cord injury. The program has seven key learning components which include the avoidance of hitting players from behind, being aware of the checking perimeter, being ready to take a hit, keeping your arms up when going into the boards, always approaching the boards at an angle, keeping your head up while handling the puck, and being the best skater you can be (Montelpare, 2006).

The purpose of the following research study was to survey parents of minor atom hockey players on how they feel about safe hockey and the development of safe hockey programs for their children and their child's coach. Attitudes regarding general involvement in organized sports were explored and may contribute to our understanding from previously published



questions of parents (i.e. CFLRI Capacity Study and Physical Activity Monitor outlined earlier in this review).

### **Chapter 3**

#### ***Methodology***

##### ***Participants***

Two groups of parents participated in this study. All parent respondents had a child enrolled in minor hockey, playing at the atom, peewee, or bantam level. The first group of parents resided in the Greater Toronto Area (GTA) (Group A). This group was identified as a convenient sample by the Ontario Hockey Federation (OHF) and the Lakehead University research team, led by Dr. William Montelpare. Group A coaches were involved in a pilot project for a safe hockey program entitled 'Play it Cool', being conducted by the OHF and Lakehead University, and agreed to recruit parents for this study. The second group of parents resided in Waterloo Region and in the Niagara Region (Group B). This group was recruited by the researchers due to connections with hockey coaches in these geographical locations.

One or both parents in each household of the two groups were given the opportunity to participate in this study. Group A comprised 270 potential parent respondents and Group B consisted of approximately 500 potential parent respondents. To obtain a representative sample of Group A, it was determined that at least 129 parents had to complete the questionnaire (Expected Proportion = .80,  $Z_{\alpha} = 1.96$ , 5% margin of error). It was not possible to calculate a representative sample size for Group B. The online survey was promoted through as many channels as possible to maximize the sample participating and therefore the total number of potential participants could not be tracked.

##### ***Apparatus***

A paper-based self-administered questionnaire for Group A and an electronic questionnaire for Group B were used in this study. The paper-based questionnaires were

provided to coaches for distribution to parents in Group A. Upon receipt, parents were asked to complete the 12 to 15 minute questionnaire which contained 51 questions divided into five sections. These sections included: demographics, attitudes towards safe hockey and the coach, child involvement in hockey, child involvement in physical activity, and general beliefs about the implications of hockey on their child's development. The survey questions were transcribed into Survey Monkey, electronic survey software, and were distributed to Group B parents.

There was an incentive to participate in this study. Participants who completed the questionnaire were entered into five draws for a \$50.00 gift certificate towards skate sharpening at the recipient's home arena. Group A was instructed to complete a blue paper ballot attached to their questionnaire and Group B was asked to provide their contact information in the text box provided on the last page of the electronic questionnaire.

#### *Procedure*

Group A was sampled in January of 2007. There were nineteen hockey coaches involved in the recruitment process and all of them were participating in the 'Play it Cool' safe hockey pilot project. Coaches were contacted via email and asked to recruit parents to participate in the study. Upon acceptance, coaches were sent questionnaires for distribution to parents at team games or practices. Coaches were provided with pens, envelopes for completed questionnaires, an envelope for the completed ballots, and a self-addressed stamped envelope in which to return the questionnaires. An information letter and consent form was provided with the questionnaire. Parents were informed of the incentive to participate verbally through the coaches and through the information letter they received.

Obtaining consent from parents to participate in this study was the first task in the data collection procedure. Consenting parent respondents were instructed to complete all sections of

the questionnaire that they felt comfortable answering. Participants were asked to place the completed questionnaire and consent form in the accompanying envelope, seal the envelope and pass it to the team coach, manager, or trainer directly.

Data collection for Group A took place over six weeks (February 2007 – March 2007) via paper-based surveys. Surveys were returned to the researcher through priority mail and entered into a secure database upon receipt.

The second group (Group B) was not recruited until March 2007. A greater sample was required as the initial sample (Group A) generated a low response rate. Waterloo Region parents were recruited through minor hockey coaches affiliated with the Kitchener Minor Hockey Association (KMHA) and parents of the Niagara Region were recruited by coaches and convenors affiliated with Niagara Falls Minor Hockey (NFMH). Group B received an online questionnaire for two reasons: first, the online questionnaire was created and posted online within one day, second, creating an online survey was the fastest method to recruit parents of Group B. Parents were directed to the online questionnaire through a team email sent by their child's coach.

The online questionnaire followed the same procedure as the paper-based questionnaire in that consent was required before proceeding to the questionnaire. Consenting participants, were directed to the questionnaire and like Group A, asked to complete all sections that they felt comfortable answering. The last page of the online questionnaire gave participants the option to provide their contact information if they wished to be eligible for the incentive.

### *Design*

The design used in the current research was descriptive, cross-sectional, non-probability, convenience sampling. A cross-sectional design was appropriate as all measurements needed for

this study could be taken at one point in time, with no-follow up required. The information collected allowed researchers to determine parent perceptions of safe hockey and the prevalence of youth participating in more than one organized sport at the time of data collection. Although probability sampling may have been preferred, obtaining a random sample in this study was less important than obtaining a general idea of how parents felt about safe hockey. The enrolment of the Waterloo Region and Niagara Region hockey parents met the inclusion criteria for this study, and thus, the researchers felt it was important to include them in order to get a larger sample size. Convenience sampling was used as there was poor availability of participants within Group A.

### *Data Analysis*

The final data set consisted of 111 parents. Mothers and fathers were compared for significant differences in attitudes towards safe hockey, awareness and attitudes towards safe hockey programs, beliefs about their child's coach, and enrolment in physical activities using a 95% confidence interval ( $\alpha = 0.05$ ). The final data set was first analysed to produce descriptive statistics of demographic variables of the individuals in our sample (i.e., gender, age, annual household income, education, employment, and marital status). Physical activity level was also asked as a study sample characteristic but not used to describe demography of the sample.

The chi-square goodness of fit test, the two sample chi-square test, and the analysis of variance (ANOVA) were used to analyze study data and provide comparative results. The chi-square goodness of fit test was used to determine if the overall responses across five-point agreement scales were evenly distributed.

The two sample chi-square test was then used to compare gender with a number of variables. The first stage of analyses was done by cross-tabulating gender with the positive and

negative attributes of hockey. These attributes were derived from the 1995 Canadian Fitness and Lifestyle Research Institute (CFLRI) Physical Activity Monitor and are listed in Table 3.1.

Table 3.1

*Positive and Negative Statements about Hockey Derived from the 1995 CFLRI Physical Activity Monitor*

Positive	Negative
▪ Helps in growth and development	▪ Encourages a bad attitude
▪ Builds self-esteem and self-image	▪ Leads to too many injuries
▪ Builds concentration and helps learning	▪ Takes too much time away from school
▪ Favours sharing and cooperation	▪ Creates problems with transportation
▪ Develops social skills	▪ Costs too much
▪ Encourages positive friendships	▪ Encourages aggressive behaviours
▪ Builds character	▪ Fosters an overly competitive attitude
▪ Provides quality time with family	
▪ Helps intellectual development	
▪ Keeps their child from mixing with the wrong crowd	

The two sample chi-square test was also performed on specific game objectives of hockey. Objectives included: to win games, to ensure players have equal playing time, to have fun, to improve the skills of each player, and to practice safe hockey. Of the sample of 111 parent respondents, a participant's response was excluded from the chi-square analyses if more than one option had been indicated on the agreement scale. The two sample chi-square test was

then used to compare ordinal level variables related to safe hockey to demographic variables such as education, income, age, gender, and marital status.

The ANOVA was used to compare parent's self reported level of physical activity and the number of hours per day their child was physically active. These variables were independent of one another and were coded as interval level data within the dataset.

Data collected from the online questionnaire were extracted from the assisted self-interviewing software and merged with the paper-based data. In the dataset, respondents in Groups A and B were given a unique identifier if analysis between the two geographical locations was warranted. In the end, Group A and Group B were analyzed together due to the low sample size. This also inhibited analysis between the two groups to verify the accuracy of the two questionnaires and the ability to determine statistical significance among methods.

#### *Units of Measurement*

The age item was categorical and consisted of four groupings; Less than 35 years, 35 to 44 years, 45 to 54 years, and 55 years or older. Income categories were: less than \$30,000, \$30,000 to \$49,999, \$50,000 to \$69,999, \$70,000 to \$89,999, and \$90,000 or more. Income was later recoded to less than \$69,000, \$70,000 to \$89,000, and \$90,000 or more, to reflect the reported income of the sample. Highest level of education achieved was captured through five categorical response options; elementary or some high school, high school diploma, trade or college certificate/diploma, university degree, and post-graduate education or more. Parents were also asked to indicate current employment status using the following categories: full-time worker, part-time worker, unemployed, homemaker, student, retired, and other.

Level of physical activity was divided into six groupings: high, moderate to high, moderate, low to moderate, low, and lowest. These categories were employed in the CFLRI 2003

Capacity Study and defined as: high - participate in vigorous activity at least 4 days of the week; moderate to high - participate in vigorous activity 3 to 4 days of the week; moderate - participate in moderate activity at least 3 days of the week; low to moderate - participate in moderate activity at least 2 days of the week; low - participate in light physical activity such as biking or walking for less than 2 hours per week; lowest - almost no physical activity. The aforementioned categories were recoded into four groups; high, moderate, low to moderate, and low to reflect the responses given by the two cohorts of parents. The number of children in the household was recorded as a continuous variable within in the dataset.

For a number of questions within the dataset (i.e., questions 22, 23, and 30 through 51), an agreement scale was used to measure parent perceptions of their child's participation in hockey. This five-point agreement scale was ranked from strongly agree to strongly disagree. The responses were coded from 1 through 5, where 1 represented Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree, and 5 = Strongly Disagree. The data were recoded into three categories due to the low sample size accrued for this study, Agreed, Neutral, and Disagreed. The "Agreed" category encompassed parents who Strongly Agreed or Agreed with the list of statements, and the "Disagreed" category encompassed those parents who Disagreed or Strongly Disagreed with the list of statements. The "Neutral" category remained the same.

The remaining questions were nominal in nature. Questions pertaining to feelings towards their child's coach were coded as "yes", "somewhat/maybe" and "no" response options. Parents were given a mutually exclusive list of reasons for enrolling their child in hockey and were asked to select all options that applied to them. This question, among others, also contained an "Other" response option which gave parents the ability to report other reasons not present within the response set. A nominal scale was applied for items which recorded the frequency per



week that their child participated in hockey related activities on and off the ice. The number of years their child had played hockey was recorded as a continuous variable as was the total number of hours per week their child participated in hockey related activities and the number of hours per day their child was physically active.

## Chapter 4

### *Results & Discussion*

Inferential statistics including the chi-square goodness of fit, the two-sample chi-square, and the Analysis of Variance (ANOVA), were used to analyze survey data and provide comparative results between mothers and fathers. Preliminary analyses showed that mothers and fathers agreed that their child's coach was implementing safe hockey skills into games and practices. However, differences were illustrated between mothers and fathers regarding specific game objectives of hockey. That is, fathers more so than mothers indicated that winning games was an important game objective of hockey and mothers were more likely than fathers to believe equal playing time among players to be of value. Level of physical activity among parents was also analysed and showed that as the parent's level of physical activity increased, so did the average number of hours per day their child was physically active.

## Demographics

The final sample consisted of 111 respondents. Demographic information collected included gender, age, annual household income, educational attainment, employment, activity level, marital status, and the number of children in each household (See Table 4.1). There were similar percentages of fathers (55.2%) and mothers (44.8%) participating in this study. The majority of parents were over the age of 34 years (93.3%), and about 90.0% of parents were in a married or common-law relationship. Two-thirds (68.5%) of parents reported that their annual household income was \$90,000 or more, while a quarter (24.7%) of parents fell within the \$70,000 to \$89,999 income bracket. Approximately fifteen percent (14.6%) of study participants held a high school diploma or less, while 29.1% held a trade or college certificate, 30.1% held a university degree, and 26.2% possessed post-graduate education or more. In regards to employment status, 4 out of 5 parents (79.8%) were classified as working full-time, 4.8% worked part-time, 4.8% were homemakers, and the remaining 10.6% identified their employment status as either student, unemployed, retired, or "other". The average number of children respondents had in their households ranged from one to six children. The mean number of children per household was 2.4(.95) children.

Parents were asked to indicate their level of physical activity. In this cohort, 24.3% of parents ranked their physical activity level as high, 29.1% as moderate, 28.2% as low to moderate, and the remaining 18.4% as low. These findings were consistent with the CFLRI 2004 Physical Activity Monitor & Sport report. In that study, adults aged 20 years and older reported that they were highly active or moderately active, 24% and 25% respectively (CFLRI, 2004). The CFLRI study also found that men were more likely than women to be at least moderately active whereas women were more likely than men to be inactive (CFLRI, 2004). The current

research found that men and women were equally active,  $\chi^2(3, N = 102) = 2.70, p = .441^{ns}$ . The CFLRI also found that the age of the respondent determined activity level; older age groups were less likely to be active. Education was also found to be a determining factor in whether or not the adult was active, as was employment status, and marital status (CFLRI, 2004). The sample size generated for this safe hockey study was insufficient to analyze physical activity levels of the respondents with education level, employment, and marital status to compare to those found in the CFLRI study.

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Table 4.1

*Demographics of Study Sample (N = 111)*

Demographics	Percent
<b>Gender</b>	
Male	55.2
Female	44.8
<b>Age</b>	
Less than 34 years	6.7
35 to 44	42.3
45 years and older	51.0
<b>Marital Status</b>	
Single or Never Married	4.7
Married or Common-Law	90.6
Divorced, Separated, or Widowed	4.7
<b>Income</b>	
Less than \$69,999	6.7
\$70,000 to \$89,999	24.7
\$90,000 or More	68.5
<b>Education</b>	
High School Diploma or Less	14.6
Trade or College Certificate/Diploma	29.1
University Degree	30.1
Post-Graduate Education or More	26.2
<b>Employment Status</b>	
Full-time Worker	79.8
Part-time Worker	4.8
Homemaker	10.6
Other	4.8

### Parent beliefs about their child's coach and safe hockey

Respondents were asked if their child's coach explicitly taught safe hockey behaviours. The majority of parents (83.3%) indicated that these behaviours were taught while 16.7% of respondents stated that their child's coach only 'somewhat' practiced this behaviour. When parents were asked if they felt their child's coach was adequately prepared to teach safe hockey behaviours, 84.0% selected stated that they were and 16.0% indicated only 'somewhat' or 'no'.

The majority of respondents believed that their child's coach was teaching safe hockey skills on the ice. Only a small proportion of all respondents noted that the coach was not teaching safe hockey skills on the ice, which suggests that respondents are confident in their coach's teaching ability with respect to safe hockey. These results are validating particularly for Group A coaches. Group A coaches are currently participating in the pilot of 'Play it Cool' safe hockey program, where coaches are instructed how to teach and incorporate safe hockey skills into their games and practices. Respondents also believed that their child's coach thought practicing safe hockey was important. Research suggests that players will emulate their coaches and that coaches have the most impact on the player, more so than parents and team-mates combined (Cook et al., 2003). This research may bode well for the future well-being of the players in question.

Parents were also asked to provide their opinion as to which statements best describe the objectives of their child's coach. The most common response selected was 'to improve the skills of each player' (70.3%); followed by 'to have fun' (44.1%), 'to ensure each player has equal playing time' (21.6%), and lastly 'to win at all costs' (9.9%). When parents were asked to provide their opinion as to how important the following objectives were in hockey, all parents agreed that improving the skills of each player was important, followed by having fun (98.0%),

practicing safe hockey (97.0%), ensuring players have equal playing time (62.0%), and winning games (48.0%).

Four out of ten respondents (36.0%) did not think equal playing time was important in hockey. These parents could be the caregivers of the players who excel in terms of skill and ability and believe their child should have more playing time than weaker players. Other attributes, such as winning games, have been shown to be a predictor as to whether or not parents place value in equal playing time. Approximately 24% of father respondents, who agreed that winning games was an important objective of hockey, were neutral or disagreed that players should have equal playing time. This indicates that a quarter of fathers hold more value in winning games than they do equal playing time. A greater proportion of mothers strongly agreed with equal playing time,  $\chi^2(1, N = 97) = 3.73, p = .054^{ns}$  as compared to fathers. However, like fathers, mothers who agreed that winning games were an important game objective of hockey (41.7%), were also neutral or disagreed that players should have equal playing time. Moreover, fathers were significantly more likely than mothers to agree that winning games was an important game objective of ice hockey,  $\chi^2(1, N = 63) = 11.2, p < .01$ . No other parent differences were found on these measures.

To date, there is minimal literature describing parent perceptions of safe hockey. All respondents in this cohort felt that practicing safe hockey was an important game objective of ice hockey. It may have been more enlightening to ask parents the most important game objective of hockey, or to have respondents' rank game objectives in order of importance. This would have provided a better idea of what is really of value to parents in terms of their child's participation in minor hockey. The terms were not mutually exclusive allowing parents to indicate more than one factor as being an important objective of hockey. Some respondents felt more obliged to

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<sup>2</sup> <sup>ns</sup> = Not significant

strongly agree than agree and that pattern is significant. This could be due to social expectation bias. Men were more likely to answer Agree whereas women more likely to answer Strongly Agree.

When parents were asked if they were aware of any safe hockey programs, about half (47.6%) indicated that they were aware of one, but only 24.3% could identify the name of an existing program. The most commonly reported safe hockey program was Safety Towards Other Players (STOP), which was developed for Windsor Minor Hockey in 1996 and was later sponsored by McDonalds Canada. In this program, amateur hockey players are encouraged to wear a STOP patch on the back of their sweaters. The purpose of this sign is to remind players not to hit other players from behind. The STOP program has clearly connected with parents in both groups studied in this research. Future research should focus on how to introduce the 'Play it Cool' program to parents in Ontario in a way that would show recognition.

Other safe hockey programs were not recognized in this study. While the 'Play it Cool' project is not yet a universal program, the pilot of the program was being conducted in Southern Ontario with teams from the Ontario Hockey Federation during the same period that data were collected for the current study using a cohort of coaches. These coaches instruct the children of the respondents that were surveyed in this study (Group A). Very few parents of Group A were able to identify the name of a safe hockey program. Interestingly, only 7% of respondents in Group A mentioned 'Play it Cool', despite the fact that all of their children and their child's coach are currently undertaking the program. This indicates a need for improved understanding of the program to parents with children participating in the program.

In terms of safety in sport programs, 34.3% of parents were aware of an existing program, however only 12.6% of parents could identify the name of one. Awareness of both safe



hockey programs and safety in sport programs was similar across gender, income, age, activity level, and education.

Approximately seventy-two percent (71.6%) of the sample reported that their child's coach was trying to implement safe hockey behaviours into games and practices. Only 23.5% of parents believed this behaviour was somewhat obvious, and 4.9% did not believe this behaviour was obvious at all. More than half (53.4%) of respondents reported strong agreement, that they would select a coach for their child based on criteria that included whether or not the coach had prior training in methods to deliver a safe hockey program. Forty percent (39.8%) only agreed with this statement somewhat and 6.8% reported that they would not use this criteria at all in selecting a coach for their child. There was, however, overwhelming support (92.2%) for their child's coach to undertake a safe hockey course online to learn about safe hockey skills and drills. Again, responses were similar across gender, income, age, activity level, and education.

It appears that a safe hockey program such as 'Play it Cool' would have overwhelming support when introduced to minor hockey parents. Improving awareness of this program within the league should be a priority as knowledge and support of the program will ensure success and buy-in from all parties involved (Brunelle et al., 2005). Less than half of respondents (40.0%) agreed somewhat in that they would select a coach based on previous safe hockey training and 6.8% said they would not use this criterion at all. Future research should address this issue in regards to which values and principals parents feel their child's coach should possess.

#### Parent beliefs regarding the benefits and consequences of their child's participation in hockey

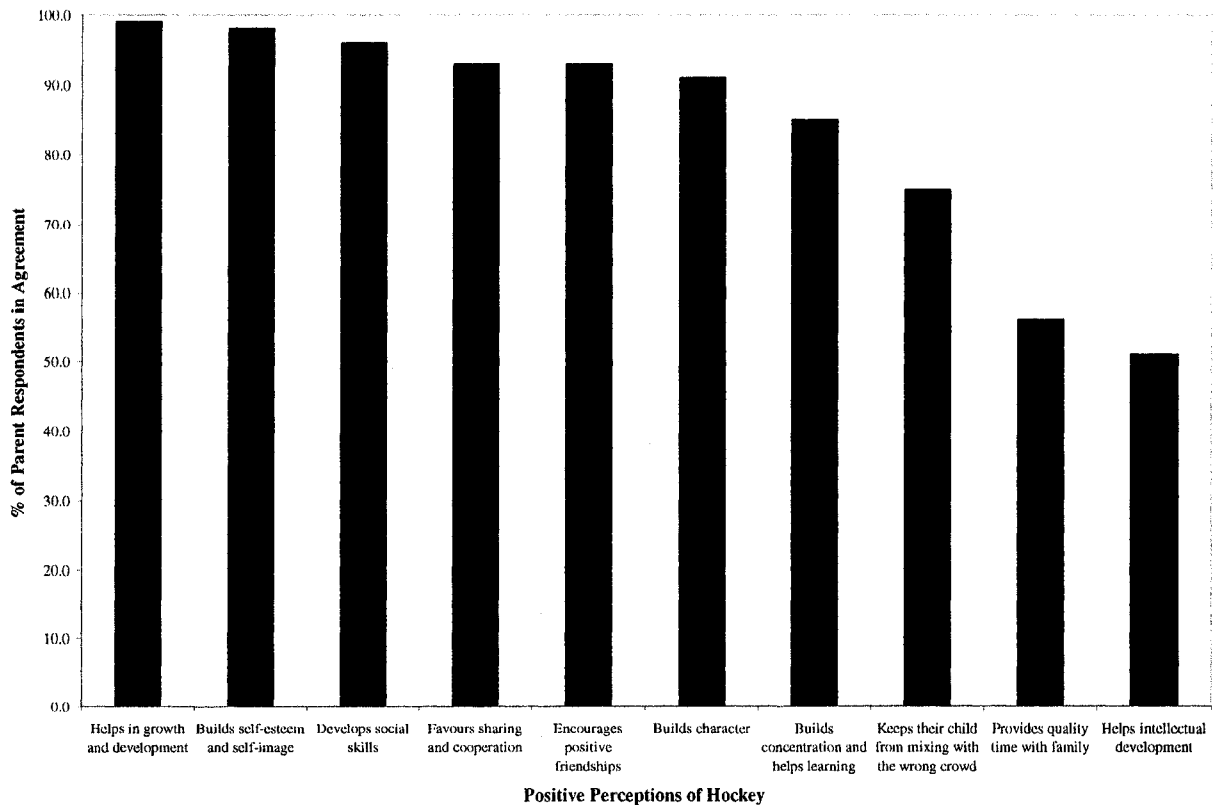
In 1995, the CFLRI interviewed approximately 600 parents to determine how parents viewed their child's participation in physical activity. Specifically, they were asked to what extent they agreed or disagreed with statements pertaining to their children's participation in

physical activity. These statements were repeated in this study. However, parents were asked how they felt about their child's participation in hockey as opposed to their child's participation in physical activity.

In the list of benefits to participation in ice hockey, 98.0% of parents agreed that hockey helps in growth and development, 97.0% agreed hockey helps to build self-esteem and self-image, 95.0% agreed hockey helps develop social skills, 93.0% agreed hockey favours sharing and cooperation, 92.1% agreed hockey encourages positive friendships, 90.1% agreed hockey builds character, 85.9% agreed that hockey builds concentration and helps learning, and 74.3% agreed that hockey "keeps their child from mixing with the wrong crowd" (See Figure 4.1). Although not significant, a lesser proportion of mothers agreed that hockey "keeps their child from mixing with the wrong crowd" compared to fathers. Lower levels of agreement were found in hockey providing quality time with family (56.0%) and hockey helping their child's intellectual development (51.0%). Both mothers and fathers agreed equally with the remaining values of hockey participation.

Figure 4.1

Percentage of Parents who were in Agreement with the Positive Perceptions of Hockey



These findings are fairly consistent with those found in the 1995 CFLRI Physical Activity Monitor (See Table 4.2), which justifies the hypotheses stated earlier in this paper. The difference between the safe hockey cohort and the CFLRI cohort was that parents in the safe hockey cohort were far more likely to agree with the positive perceptions of hockey than the parents in the CFLRI cohort were and their agreement with the positive perceptions of physical activity. This could be an indication of how much the parent likes the sport themselves. If a parent within the safe hockey cohort grew up playing hockey, they would have very personal feelings towards the sport. In comparison, the CFLRI cohort was questioned about physical activity in general. Parent answers may have been quite different had the group been asked to

comment on a sport their child was playing, that they played as a young child as well. Three statements that were deemed to be positive characteristics of participation in hockey and physical activity did not get much support from both parent cohorts. These statements included: provides quality time with family, helps intellectual development, and keeps their child from mixing with the wrong crowd. However, parents in this cohort did not believe that safe hockey was associated with these beliefs. The CFLRI cohort had very little support for the latter (keeps their child from mixing with the wrong crowd), which suggests that parents may respond quite differently depending on the sport in question. Respondents of the safe hockey cohort felt that their child was interacting with a good crowd, which held true to the level of agreement for all the positive perceptions of hockey.

Table 4.2

*Percentage of Parents who Agreed with the Positive Perceptions of Hockey and Physical Activity; Current Research Versus 1995 CFLRI Physical Activity Monitor*

Positive Perceptions of Hockey	Percentage of Respondents in Agreement		
	Current Research (Safe Hockey)	1995 CFLRI Study (Physical Activity)	% Difference
Helps in growth and development	98.0	82.0	16.0
Builds self-esteem and self-image	97.0	74.0	23.0
Builds concentration and helps learning	85.9	73.0	12.9
Favours sharing and cooperation	93.0	71.0	22.0
Develops social skills	95.0	68.0	24.0
Encourages positive friendships	92.1	62.0	30.1
Builds character	90.1	61.0	29.1
Provides quality time with family	56.0	52.0	4.0
Helps intellectual development	51.0	51.0	0.0
Keeps their child from mixing with the wrong crowd	74.3	35.0	39.3

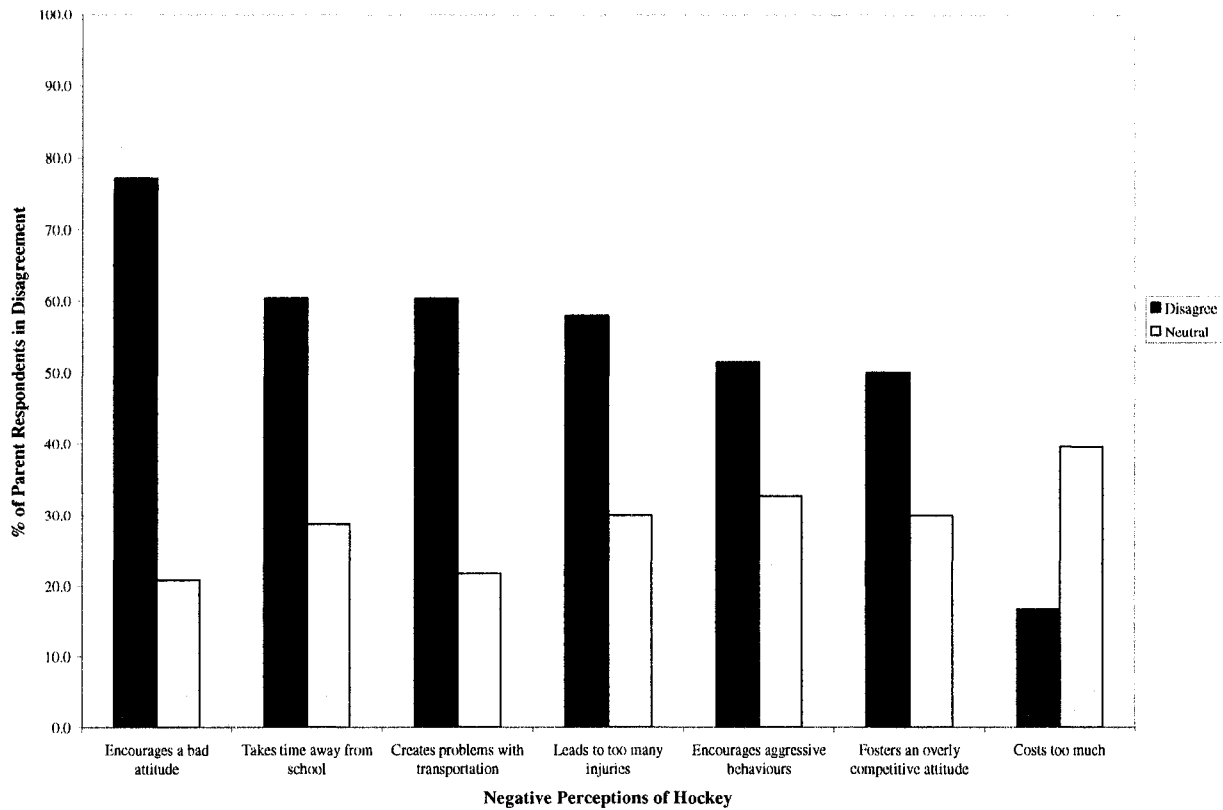
A large proportion of respondents did not agree with the negative statements provided to them regarding their child's participation in hockey (See Figure 4.2). About 58% of respondents disagreed, and 30.0% of parents were neutral, that participation in hockey leads to too many injuries. Similarly, 60.4% of respondents disagreed that hockey takes too much time away from school, and about 28.7% of respondents indicated neutrality. About 60.4% of respondents disagreed and 21.8% of respondents were neutral that hockey creates problems with transportation. Half (50.0%) of the respondents did not believe that hockey fosters an overly competitive attitude and 30.0% noted they were neutral. More than half (51.8%) of all respondents did not believe hockey to encourage aggressive behaviours, although 32.7% of

respondents were neutral. Nearly half of respondents agreed (43.6%) or were neutral (39.6%) that hockey costs too much. All parents (100.0%) in this cohort disagreed with the notion that participation in hockey encourages a bad attitude.

Fathers were significantly more likely than mothers to agree that hockey takes too much time away from school and that hockey creates problems with transportation,  $\chi^2(2, N = 98) = 6.9, p = .03$  and  $\chi^2(2, N = 98) = 7.8, p = .02$ , respectively. Moreover, it was also found within this cohort that fathers were significantly more likely than mothers to agree that hockey fosters an overly competitive attitude and that hockey encourages aggressive behaviours,  $\chi^2(2, N = 97) = 7.2, p = .03$  and  $\chi^2(2, N = 98) = 15.6, p = .00$ , respectively. The sample size was not sufficient to determine what sociodemographic characteristics may have been contributing to the number of fathers agreeing with negative statements regarding hockey participation. No other parent differences were found on these measures.

Figure 4.2

Percentage of Parents who were in Disagreement with the Negative Perceptions of Hockey



These findings are comparable with those found in the 1995 CFLRI Physical Activity Monitor (See Table 4.3). Minor differences were found with regards to hockey fostering an overly competitive attitude and hockey encouraging aggressive behaviours. Approximately 54.0% of parents in the CFLRI cohort agreed that physical activity fosters an overly competitive attitude. However, only 20.0% of parents in this study agreed with the same statement. Only one in five parents (20.0%) in this cohort believed that hockey fosters an overly competitive attitude. This finding contradicts the hypotheses proposing close to half of respondents in the current research would disagree that hockey fosters an overly competitive attitude. Future research

should address this question and determine if parents feel differently when asked first to respond in terms of the players, and then respond in terms of themselves and other parents.

About 54.0% of the CFLRI parent cohort agreed that physical activity encourages aggressive behaviours, while only 15.8% of respondents in this study agreed that hockey encourages aggressive behaviours. This suggests that parents of minor hockey players may hold very different beliefs about aggressive behaviours as a result of participation in hockey, and subsequently, physical activity. Parents of this study may not support the notion that hockey encourages aggressive behaviours, simply because aggression may be perceived part of the game. Chasing a player into the boards to steal the puck is a regular occurrence in hockey. Parents of children who do not play hockey may see this behaviour as unnecessary and incredibly aggressive.

Table 4.3

*Percentage of Parents who were in Disagreement with the Negative Perceptions of Hockey and Physical Activity; Current Research Versus 1995 CFLRI Physical Activity Monitor*

Negative Statements	<i>Percentage of Respondents in Disagreement</i>		
	<i>Current Research (Safe Hockey)</i>	<i>1995 CFLRI Study (Physical Activity)</i>	<i>% Difference</i>
Encourages a bad attitude	100.0	89.0	11.0
Leads to too many injuries	58.0	76.0	18.0
Takes too much time away from school	60.4	73.0	12.6
Creates problems with transportation	60.4	66.0	5.6
Costs too much	43.6	64.0	20.4
Encourages aggressive behaviours	51.8	57.0	5.2
Fosters an overly competitive attitude	50.0	46.0	4.0



Fathers more so than mothers believed that hockey takes too much time away from school and creates problems with transportation. This was very surprising as both mothers and fathers in this study equally reported that they liked the game the hockey. One could assume that fathers may be more involved in their child's hockey ventures (i.e. coaching, volunteering, tournaments, practices), thus devoting more time to the sport and possessing greater concerns for the amount of time and commitment the sport requires. Another explanation for fathers believing hockey takes too much time away from school and/or creates problems with transportation, is the level of hockey their child is playing. House league parents who simply have their child enrolled in the sport for exercise a few times per week may be more apt to agree that hockey encompasses too much commitment on behalf of the parent. On the other hand, parents who have children enrolled in representative hockey may not feel this way, as they believe their child is headed for professional hockey. These parents may be more willing to commit a large majority of their time in the off chance their child could be successful professionally.

In terms of cost, about half of all respondents agreed that hockey costs too much. Of those respondents who reported incomes of \$90,000 or more annually, 81.7% agreed or were neutral that hockey costs too much. It is curious then that many parents enrol their children in this expensive and time-consuming sport!

#### Child involvement in hockey

The next section of the questionnaire asked parents to indicate why they enrolled their child in hockey. A list of reasons was provided and parents were instructed to select all the options that applied to them. Three quarters (76.6%) of parents reported that they enrolled their child in hockey because their child wanted to play. Other responses included: promotes health and physical activity (67.6%); fun and enjoyment (66.7%); encourages teamwork (57.7%);

parent(s) likes sport (50.5%); popular Canadian sport (43.2%); opportunity to travel (7.2%); and other (7.2%). The “other” response option prompted parents to comment on what other reason(s) explain why they enrolled their child in hockey. Two themes were apparent; other family members played hockey and their child’s skating ability at a young age. No parents indicated affordability as a reason for enrolment.

Parents were asked why they enrolled their child in hockey to determine whether or not they placed value in the physical activity component of the game. To date, there are no studies that have asked parents a similar question in this context. In this study, asking parents why they enrolled their child in hockey was seen as an integral component in characterizing parents of this study and their attitudes towards hockey and physical activity. It is interesting to see the proportion of parents who enrolled their child in hockey because the parent personally liked the sport. In Southern Ontario, residents have access to National Hockey League games. Residents could potentially attend a game played by the Toronto Maple Leafs, the Buffalo Sabres, the Ottawa Senators, and the Montreal Canadiens, within driving distance. The Canadian culture of hockey has thus been ingrained in many residents of this part of Ontario. It also provides many opportunities for parents to dream that maybe one day their child may play for their favourite local team, and so too for the kids.

It may have been more beneficial to ask parents to rank the mutually exclusive options presented to them instead of asking them to select all the reasons for enrolment that applied to them, to see which reasons were most important. Future research in this field utilizing the proposed methodology would provide researchers with a better understanding of the motives to enrolment and the most effective ways to advertise enrolment into this sport.

The majority of parents reported that their child is involved in hockey related activities on ice two or more times per week (96.0%). In terms of hockey related activities off ice, 50.5% of parents indicated that this happens only once per week, followed by 2-3 times per week (38.1%), more than four times per week (11.4%), and everyday of the week (4.1%). The total number of hours per week spent participating in hockey related activities ranged from two hours to 20 hours. The average number of hours spent per week participating in hockey related activities was 7.1(3.6) hours.

Roughly forty-three percent (42.6%) of parents strongly agreed that physical activity was an important part in signing their child up for hockey. Another 51.5% of parents agreed with this statement, while only 6.0% either disagreed or were unsure.

One in five (20.4%) parents strongly agreed that they were concerned about the dangers of body contact when signing up their child for hockey. Twenty five percent (24.5%) also agreed with this statement, while 37.8% were neutral on the matter, 12.1% disagreed, and 5.1% strongly disagreed.

About half of all parents were in disagreement or were neutrally concerned about body contact in hockey. This suggests that parents may not be aware of increased risk of head and spinal cord injuries. In Canada, head and neck injuries are the second most common injuries in hockey, after musculoskeletal injuries (Cook et al., 2003). The limited level of concern regarding body contact in hockey could also suggest that parents have faith in the instruction ability of their child's coach and that their child's coach teaches behaviours that show their children how to properly give and receive a body check. Lastly, it could simply mean that parents are comfortable with body contact being part of the game. It is possible that this cohort has not encountered debilitating injuries within their minor hockey leagues thus the fear of their child

getting hurt is nonexistent. On the other hand, about 45% of parents are concerned. These parents may have children who have been injured in the past or know of someone who has. In the Cook et al. (2003) study, it was noted that coaches who had a personal history with concussion or knowledge of a player who had one, were far more likely to include safe hockey skills and drills in their coaching instruction. It is quite possible that parents of children, whose hockey coaches are not instructing body checking techniques, have no history of personal injury or knowledge of a player who was injured, thus placing little importance on instruction of this crucial hockey skill. Further research into coach beliefs and practices would help explain this result.

#### Child involvement in physical activity

Parents of this study reported that their children are physically active between one and eight hours per day [ $M = 2.7(1.3)$ ]. The average number of hours per day a child was active was compared to the activity level of the parent (See Figure 4.3). Almost all children (91.0%) were involved in an activity or sport other than hockey and the most commonly reported other sport was swimming (40.5%), followed by soccer (39.6%), basketball (35.1%), golf (34.2%), skiing/snowboarding (33.3%), and “other” (27.9%). Other activities/sports included lacrosse, volleyball, and fishing. The majority of children participate in these activities/sports at school (71.2%), a public facility (57.7%), and/or at home (44.1%). Parents in this study enrolled their child in an additional activity/sport mainly because their child wanted to (79.3%), the activity/sport promotes health and physical activity (68.5%), fun and enjoyment (67.6%), the activity/sport encourages teamwork (45.0%), and because the parent(s) likes the activity/sport (27.0%).

Like hockey enrolment, parents placed great emphasis on the physical activity component as a reason for enrolling their child in a sport/activity in addition to hockey (See Table 4.4). This

may suggest that parents hold physical activity as an important element to participation in sports and activities. It was hypothesized that parents with higher levels of physical activity would be more likely to have their child enrolled in additional activities outside of hockey. In the current research, this is not supported,  $\chi^2(3, N = 96) = 6.9, p = .29^{ns}$ . Parents of all activity levels (high, moderate, low to moderate, and low) were equally likely to have their child enrolled in additional activities outside of hockey. This finding suggests that regardless of respondent activity level, hockey parents recognize the importance of physical activity and encourage extracurricular activities outside of hockey for various reasons.

Table 4.4

*Reasons for Enrolment in Hockey versus Other Sports/Activities*

Reasons for Enrolment	<i>Percentage of Respondents</i>	
	<i>Hockey</i>	<i>Other Sport/Activity</i>
Child wanted to	76.6	79.3
Promotes health and physical activity	67.6	68.5
Fun and enjoyment	66.7	67.6
Encourages team work	57.7	45.0
Parent(s) likes sport/activity	50.5	27.0

About one in ten parents, who reported that their child is not involved in any other activity besides hockey (9.2%), said their child was too involved in hockey to participate in any other activity. This was followed by the time demands of homework (9.9%), no interest from their child (9.9%), and/or other reasons (5.4%). The most commonly reported 'other' reason was "not enough time".

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<sup>3</sup> *ns* = Not significant

The 2003 CFLRI Capacity Study addressed parents regarding barriers to participation in physical activity. The CFLRI study found that lack of convenient facilities, prohibitive cost, lack of programs or opportunities, safety concerns, and time demands of homework, were barriers to participation in physical activity. These concerns were addressed mostly by parents who had lower household incomes, lower levels of education, and worked part-time. Mothers more so than fathers noted that homework encompassed too much of their child's time whereas fathers believed traffic on the streets and commuting to and from organized activities were barriers to enrolment in physical activities. Due to an insufficient sample size accrued in this study, it was not possible to cross tabulate demographic variables with barriers to enrolment in additional activities. Additionally, the number of parents in this cohort who did not have their child enrolled in a sport or activity outside of hockey was less than ten respondents. Therefore, it is not possible to justify or contradict the hypotheses around barriers to enrolment.

Although not significant ( $F(3,85) = .76, p >.05^{ns}$ ), a trend was found between the number of hours a child is physically active per day and the physical activity level of the parent. As the physical activity level of the parent decreased, so did the number of hours per day the child was physically active (See Figure 4.3). It is quite possible that this could in fact be a good indication as to why children are not as active as they should be. As indicated in the 2003 CFLRI Physical Activity Monitor and Sport report, adults over the age of 20 years are similarly active to those parents in this cohort. In this cohort, about half of all parents were at least moderately active. This suggests that the remaining half of respondents have low to inactive physical activity levels.

If this cohort accrued a larger sample size, it may have been possible to determine whether or not the physical activity level of the parent predicted the physical activity level of the child. In the 2003 CFLRI study, barriers to adult participation in physical activity included

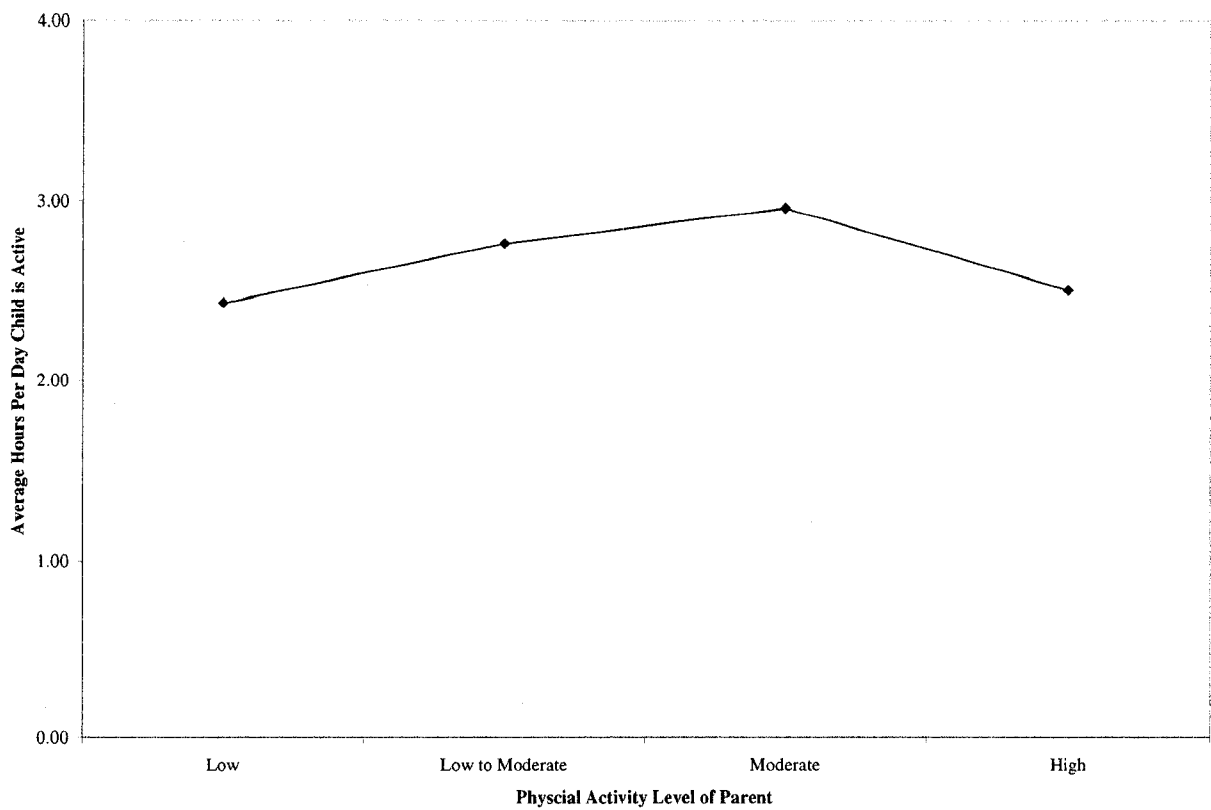
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<sup>4</sup> *ns* = Not significant

convenience, available programs, safety, skill and ability, cost, and social support. It would not be surprising to find that parents of this safe hockey cohort could not afford to enrol themselves into organized sports and activities. As mentioned previously, about two thirds of parents reported annual household incomes of \$90,000 or more. Similarly, parents also noted that the cost of enrolling their child in hockey was a barrier to enrolling their child in additional sports/activities. If this study had asked parents whether or not they were enrolled in organized sports/activities, it may have provided this study with information to conclude enrolment priorities within parent respondent households. It appeared as though parents are placing physical activity well-being of their children in front of their own. Parents could very well be sacrificing their own physical activities needs to afford hockey registration, equipment etc. for their children. This may be an indication of the how much the parent likes hockey; an overwhelming 50.5% stated that they enrolled their child in hockey for that reason among others.

Figure 4.3

Parent Activity Level and the Average Number of Hours per Day Their Child was Active





### *Recommendations*

The findings of this study are relevant to many organizations. The information gleaned can be applied to the work of municipal and provincial hockey league administrators, health professionals, coaches, and professional institutions such as the Canadian Spinal Research Organization (CSRO).

#### *Recommendations for Hockey League Administrators*

Hockey league administrators in Ontario govern the actions that take place in leagues and manage the decision-making process of proposed policies and procedures. League administrators also oversee the process of coach selection for representative and house league hockey teams. Recognizing that parents support a vision of all coaches taking a safe hockey course delivered online prior to coaching, league administrators should implement a policy by which all new coaching staff undertake a safe hockey program, such as 'Play it Cool', in their first year of coaching minor hockey.

#### *Recommendations for Health Professionals & Policy Developers*

The results of this study could inform public health policies, which recognize the risks posed to youth while playing minor hockey in Ontario. These policies could help guide safe hockey programming in the planning and developmental stages. Policies could be developed at local health units to reflect this vulnerable population and create programs that are complimentary to the target audience.

#### *Recommendations for Coaches*

In the literature review, it was briefly noted that coaches have the most impact on players in minor hockey as compared to parents and peers. Recognizing this, coaches should be educated and promote importance of practicing safe hockey to their players. Coaches should also be made

aware of the support they would have from parents regarding their participation in a safe hockey course online, as parents clearly value coaches receiving safe hockey training prior to coaching their child.

*Recommendations for Canadian Spinal Research Association (CSRO)*

The results of this study indicate a need for safe hockey education, and presents opportunities for funding and endorsing such a program. The CSRO recognizes the need for safe hockey instruction in minor hockey and has contributed greatly over the years in helping to develop safe hockey programs in Ontario. Other organizations with the ability to fund such programs should utilize that opportunity as they would receive much support from the hockey community.

*Further Research*

Further research is required to gain a better understanding of how parents of various demographics feel towards safe hockey and physical activity. Research is also required to determine the relationship between parent activity level and the activity level of the child. Finally, further research on why fathers (as compared to mothers) believe hockey encourages aggressive behaviours would be of interest. A cross-sectional study would be appropriate to determine the above indicators, and a self-assisted electronic questionnaire would be most suitable. Sampling at the beginning of the hockey season, and from a larger geographical area, will also provide more available respondents and ultimately, stronger statistical analysis.

## *Limitations*

### *Asking Demographic Questions*

As stated in the methodology section, coaches of the Group A cohort handed questionnaires directly to the parents. While a difficulty in attaining demographic information (i.e., income) from parents was recognized, parents may not have wanted to return the questionnaire to the coach in fear that the coach may read what they had written. This was learned as parents informed the research team via email and telephone that they preferred to return the questionnaire directly back to the research team instead of enclosing their response in the envelope provided and handing it back to the coach. This method has implications for response rate and bias.

Coaches also had an issue with parents being asked demographic information. They felt there was no value in the information and that their attitudes about safe hockey should be of utmost interest. While the latter is true, it was explained that the information was needed for academic purposes, and that parents had the choice to answer all or none of the demographic questions. The most important information within the questionnaire was parental attitudes about safe hockey and physical activity. Without the demographic section completed, there was still much value to the questionnaire, which is why it was clearly stated in the instruction that participation in the demographic section was voluntary, and in no way necessary for parents to complete. The limitation to not having demographic information in the data set is that inferences about the population cannot be made based on demographic characteristics.

### *Player Profile*

To be consistent with the Ontario Hockey Federation projects being conducted by Lakehead University, it was advised that all questionnaires include a “player profile” about their

child. The profile asked for the following information about the parent's child: name, age, position, weight, height, date of birth, team name, and league name. Although this information is very useful in the body checking analysis studies, parents argued it served no purpose in the questionnaire they were filling out. This section proved to limit our sample size as many parents showed concern with handing over this type of information.

### *Comparability of Questions*

The majority of questions were modeled after the 1995 CFLRI Physical Activity Monitor and through a wide-ranging literature review of hockey programs in Ontario. Questions from the CFLRI study were taken verbatim with some minor revisions to address hockey instead of physical activity. From the literature review, recommendations for future research provided a framework for additional questions and were created for the Ice Hockey Research Questionnaire. In hindsight, some of the questions that were created from the literature review and those that were used from the CFLRI study could have been worded differently to improve comparability when drawing conclusions about the study sample. Also, the type of question being asked (whether it be an agreement scale or ranking of importance measure) could have been explored further.

To elaborate on this limitation, two discrepancies were found when a) parents were asked to provide their opinion as to which statements best describe the game objectives of their child's coach; and b) when parents were asked to provide their personal opinion as to how important a select few of game objectives were in hockey. The response options to the first question (regarding the coach) were: to improve the skills of each player; to have fun; to ensure each player has equal playing time; and to win at all costs. Response options to the latter question (parent's personal perspective) were: to improve the skills of each player; to have fun; to practice

safe hockey; to ensure players have equal playing time; and to win games. The discrepancies between these two questions are:

1. The response options; in that the “winning games” statement for the coach component (to win at all costs) carries a negative connotation whereas the parent component (to win games) does not;
2. The wording of the questions. The parents are first asked to provide game objectives of their child’s coach and then they are asked to provide how important they deem specific game objectives of hockey.

The first discrepancy does not allow us to compare parent perceptions of winning games to that of the coach perspective (as seen by the parent). If these response options would have been worded identically, we could have calculated the per cent difference between the proportion of parents who deem winning games as an important element of hockey and the proportion of parent’s who believe their child’s coach places emphasis on winning games. The second discrepancy does not allow us to compare what is most important in hockey from a parent’s perspective and then from the coach’s perspective. The question regarding coach objectives carries no weight between one objective and the next. The parent objectives however, do. With the parent objectives, it can be seen at some level the importance parents place on winning games, equal playing time, etc.

### *Sample Size*

The analysis for this study was greatly limited by the sample size accrued from both groups. A total of 111 surveys were completed. With an expected  $n = 129$  from Group A alone, many of the hypotheses generated at creation of the study could not be tested. Timing may have been an issue in accruing a representative sample. With a representative sample, this study could

have drawn inferences about the hockey parent population in Toronto. The same is true for the Group B cohort had the methodology for that cohort been more explicit. Parents were presented with the questionnaire at the end of the hockey season. During the playoffs, coaches, parents, and players, are incredibly busy. Had the questionnaires been advertised at the beginning of the hockey season, a larger sample size may have been attainable. It was also found in this study that the online questionnaire generated more participation than did the paper-based survey. The paper-based survey collection period was approximately two months while the online survey was live for approximately 13 days. The online survey had more responses in a far less amount of time. While paper-based surveys are generally good at returning a high response rate, the online version turned out to be the better avenue for hockey respondents. This could be the result of convenience, lack of time to complete a paper-based copy, or higher feelings of confidentiality.

### *Conclusion*

Parent perceptions of safe hockey and their child's participation in physical activity are generally positive. Parents believe safe hockey is an important element in the game of hockey among other attributes such as equal playing time among players, winning games, and having fun. Parents are very supportive of their child's coach participating in a safe hockey course online, and most parents would use prior safe hockey training as criterion to selecting a coach for their child's team. Minor differences were found between mothers and fathers in regards to several positive and negative perceptions of hockey. More fathers than mothers believed that hockey encourages aggressive behaviours, fosters an overly competitive attitude, takes too much time away from school, and creates problems with transportation. There were some differences found between parent perceptions in the CFLRI cohort and the safe hockey cohort. This could be the result of cognitive dissonance. Cognitive dissonance is a psychological term referring to the

tension resulting from having two conflicting thoughts at the same time (Wikipedia, 2007). For instance, if a parent believes that aggressive play is wrong because it increases injury risk, but also believes that ice hockey is an important part of a young man's youth, beliefs will often change to reflect the ideal most closely tied with one's behaviour. This framework could be applied to this study in that parents who are invested in the sport of hockey may turn a blind eye to injuries associated with this sport. This is compared to parents not affiliated with hockey culture, who may be more receptive to the concerns around youth hockey injuries.

## Chapter 5

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## Appendixes

### *Appendix 1: Consent Form & Questionnaire*



## Lakehead University

### Ice Hockey Research Questionnaire

“Investigating parent perceptions of safe hockey and their child’s participation in physical activity”

Dear Potential Participant,

The Ontario Neurotrauma Foundation (ONF) and Lakehead University are conducting a study to determine parent perceptions of safe hockey practice. In addition, we will be asking you some questions about you and your child’s participation in physical activity. These questions will help us to understand the profile of parents with children in minor hockey; and more specifically, those with children at the atom, peewee and bantam levels. We feel this research study will have many positive implications on safe hockey programs, and would like your involvement.

Ice hockey is a very popular sport in Canada. Safe hockey programs are being developed in Ontario to help curb the rising incidence of head and spinal cord injuries. The focus of these programs is to teach young players how to properly give and receive a body check and to teach them other essential skills in hockey that will prevent debilitating injuries as they get older.

We plan to collect data via paper-based surveys. All questions presented to you are confidential, and it is your right to withdraw from this study at any time if you decide to no longer participate. Moreover, you are not required to answer any questions you do not feel comfortable answering. Once the questionnaire is complete, your involvement in this study is concluded.

If you are interested in participating in this study, please complete the enclosed questionnaire and return it to your child’s coach. There is five draws for a **\$50.00 voucher towards skate sharpening** at your home arena so be sure to complete the blue ballot attached to the questionnaire.

Thank you for reviewing this research request, and any consideration you have given to this study.

Sincerely,

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### Letter of Informed Consent

I understand that I will be asked to complete the following questionnaire regarding safe hockey and my child's participation in physical activity, **which includes** a player profile about my child. I understand that the information I provide will assist researchers in answering the research question: "What are parent perceptions of safe hockey and their child's participation in physical activity?"

I understand that my participation in this study is voluntary, and that I may withdraw from this study at any time and for any reason, without any reprisal to my child or me.

I understand that all data will be kept strictly confidential and only Dr. William Montelpare, and his research associates of which Alyshia Landry is a partner, will have access to the data. Once entered into the database, there will be no way to identify my child or I directly within the large set of data reported. The data will be stored for seven years in the school of Kinesiology at Lakehead University, according to university policy. I will obtain a final copy of the results once the study has been completed.

Signature of guardian/parent: \_\_\_\_\_

Date: \_\_\_\_\_

#### Player Profile

Name: \_\_\_\_\_ Age: \_\_\_\_\_ Position: \_\_\_\_\_

Height: \_\_\_\_\_ Weight: \_\_\_\_\_ lbs Date of Birth: \_\_\_\_\_

Team Name: \_\_\_\_\_ League Name: \_\_\_\_\_

## Parent Questionnaire

We appreciate your participation in this study. If you would like to be entered for five draws for a **\$50.00 voucher towards skate sharpening** at your home arena please provide us with your contact information on the blue ballot attached to this questionnaire.

### Part 1: About you...

*\*\*Please consider the following questions. If you do not wish to answer, please skip ahead to Part 2.*

1. Are you:

- Male  
 Female

2. Your age:

- Less than 35 years  
 35 to 44 years  
 45 to 54 years  
 55 or older

3. What is your annual household income?

- Less than \$30,000  
 \$30,000 to \$49,999  
 \$50,000 to \$69,999  
 \$70,000 to \$89,999  
 \$90,000 or more

4. What is the highest level of education you have achieved?

- Elementary or some high school  
  High school diploma  
  Trade or college certificate/diploma  
  University degree  
  Post-graduate education or more

5. What is your current employment status? *(Please choose only one)*

- Full-time worker        Part-time worker        Unemployed  
  Homemaker        Student        Retired  
  Other *(Please specify)* \_\_\_\_\_

6. What is your current activity level?

- High (participate in vigorous activity at least 4 days of the week)  
   Moderate to high (participate in vigorous activity 3-4 days of the week)  
 Moderate (participate in moderate activity at least 3 days of the week)  
 Low to moderate (participate in moderate activity at least 2 days of the week)  
 Low (participate in light physical activity such as biking or walking for less than 2 hours/week)

Lowest (almost no physical activity)

7. Marital Status:

Single or Never Married

Married or Common Law

Divorced or Separated

Widowed

8. How many children do you have in your household? \_\_\_\_\_

**Part 2: About your child's coach and safe hockey...**

9. Does your child's coach explicitly teach behaviours you would like your child to follow with regard to safe hockey?

Yes

Somewhat

No

Comment: \_\_\_\_\_

10. Do you believe your child's coach is adequately prepared to explicitly teach behaviours that may be regarded as elements of safe hockey?

Yes

Somewhat

No

Comment: \_\_\_\_\_

11. In your opinion, which of the following best describes the main objective of your child's coach?

To win at all costs

To ensure each player has equal playing time

To have fun

To improve the skills of each player

Other: *(Please specify)* \_\_\_\_\_

12. Are you aware of any **safe hockey** programs?

Yes

No

If yes, which one(s): \_\_\_\_\_

13. Are you aware of any **safety in sport** programs?

Yes

No

If yes, which one(s): \_\_\_\_\_

14. Is it obvious that your child's coach is trying to implement safe hockey behaviours into games and practices?

- Yes
- Somewhat
- No

*If not, what is the coach doing?*

\_\_\_\_\_

15. Would you select a coach for your child based on criteria that included whether or not the coach had prior training in methods to deliver a safe hockey program?

- Yes
- Maybe
- No

16. Would you support your child's coach in undertaking a safe hockey course online to learn about safe hockey skills and drills?

- Yes
- Maybe
- No

**Part 3: About your child's involvement in hockey...**

17. How many years has your child been playing hockey? \_\_\_\_\_ Years

18. Why did you sign up your child in hockey? (*Choose all that apply*)

- |  |  |
|--|--|
| <input type="checkbox"/> <input type="checkbox"/> Child wanted to                        | <input type="checkbox"/> Fun and enjoyment                     |
| <input type="checkbox"/> <input type="checkbox"/> Encourages teamwork                    | <input type="checkbox"/> Promotes health and physical activity |
| <input type="checkbox"/> <input type="checkbox"/> Popular Canadian sport                 | <input type="checkbox"/> Opportunity to travel                 |
| <input type="checkbox"/> Parent(s) Likes Sport   | <input type="checkbox"/> Inexpensive                           |
| <input type="checkbox"/> <input type="checkbox"/> Other: ( <i>Please specify</i> ) _____ |  |

19. About how many times per week is your child involved in hockey related activities: ON ICE?

- Once per week
- 2-3 times per week
- 4-6 times per week
- Everyday of the week

20. About how many times per week is your child involved in hockey related activities: OFF ICE?

- Once per week



- 2-3 times per week
- 4-6 times per week
- Everyday of the week

21. What is the total number of hours per week that your child spends in hockey related activities? \_\_\_\_\_ Hour(s)

22. Please indicate how you feel about the following issue: *Physical activity was an important part of signing my child up for hockey.*

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

23. Please indicate how you feel about the following issue: *I was concerned about the dangers of body contact when signing my child up for hockey.*

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

**Part 4: About your child's involvement in physical activity...**

24. How many hours per day is your child physically active? \_\_\_\_\_ Hour(s)

25. Is your child involved in any sport or activity other than hockey?

- Yes
- No (If no, please skip to Q.29)

26. What other sport or activity is your child involved in? (Choose all that apply)

- |                                     |                                   |  |
|-------------------------------------|-----------------------------------|--|
| <input type="checkbox"/> Soccer     | <input type="checkbox"/> Baseball | <input type="checkbox"/> Self-defense            |
| <input type="checkbox"/> Golf       | <input type="checkbox"/> Swimming | <input type="checkbox"/> Skiing/Snowboarding     |
| <input type="checkbox"/> Tennis     | <input type="checkbox"/> Football | <input type="checkbox"/> Other: (Please specify) |
| <input type="checkbox"/> Basketball | <input type="checkbox"/> Cycling  | _____  |

27. Where does your child participate in the above sport or activity? (Choose all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> <input type="checkbox"/> School           | <input type="checkbox"/> <input type="checkbox"/> Park/Playground |
| <input type="checkbox"/> <input type="checkbox"/> Public facility  | <input type="checkbox"/> <input type="checkbox"/> Home            |
| <input type="checkbox"/> <input type="checkbox"/> Private facility | <input type="checkbox"/> Other: (Please specify) _____            |

28. What were your reasons for signing up your child in the above sport or activity? (Choose all that apply)

- Child wanted to
- Promotes health and physical activity

- Fun and enjoyment
- Related to our culture
- Parent(s) likes sport
- Educational
- Explore creativity
- Encourages teamwork
- Opportunity to travel
- Inexpensive
- Arts
- Other: *(Please specify)* \_\_\_\_\_

*(Please skip to Q.30)*

29. Which of the following reasons explain why your child is NOT involved in any other sport or activity? *(Choose all that apply)*

- Cost
- Not enough convenient facilities
- Too much homework
- No interest from child
- Too involved in hockey
- Safety concerns
- Not enough programs
- Other: *(Please specify)* \_\_\_\_\_

**Part 5: Your thoughts...**

Please indicate the level of agreement for each statement below about ice hockey.

Hockey...	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
30. Helps in growth and development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. Builds self-esteem and self-image	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. Builds concentration and helps learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. Favours sharing and cooperation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. Develops social skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. Encourages positive friendships	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. Builds character	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. Provides quality time with family	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. Helps intellectual development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. Keeps their child from mixing with the wrong crowd	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. Encourages a bad attitude	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. Leads to too many injuries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. Takes too much time away from school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. Creates problems with transportation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

44. Costs too much	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. Encourages aggressive behaviours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46. Fosters an overly competitive attitude	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please indicate the level of agreement for each statement below regarding a few game objectives of ice hockey.

In hockey, it is important...	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
47. To win games	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. To ensure players have equal playing time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49. To have fun	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50. To improve the skills of each player	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51. To practice safe hockey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thank you for taking the time to complete this survey. Your participation is **greatly** appreciated.

If you would like to be entered for five draws for a **\$50.00 voucher towards skate sharpening** at your home arena, please provide us with either an email address to contact you **or** a name and telephone number. You can write this information on the blue ballot attached to the front page of this questionnaire, so that the ballot can be separated from the questionnaire to eliminate identifying information. Again, thank you for your participation.

Please place the completed questionnaire in the accompanying envelope, seal the envelope and pass it to the coach, manager, or trainer directly.

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