Evaluation of Cool 2 Be Safe: A Community-Based Intervention Program to Promote Positive Attitudes Towards Less Risky Play on Playgrounds in School-Age Children

by

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ABSTRACT

EVALUATION OF COOL 2 BE SAFE: A COMMUNITY-BASED INTERVENTION PROGRAM TO PROMOTE POSITIVE ATTITUDES TOWARDS LESS RISKY PLAY ON PLAYGROUNDS IN SCHOOL-AGE CHILDREN

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Falls from playground equipment are a leading cause of injury for children, hence, there is a need for intervention programs to reduce the risky behaviours associated with falls. The Cool 2 Be Safe program was developed based on the results of several research studies that identified effective strategies for reducing risk behaviours on playgrounds among individually tested school-age children. The current study evaluated the effectiveness of delivering this program in a group format within Boys and Girls Clubs. Baseline data assessing children’s attitudes and injury beliefs was collected with a questionnaire. Children then participated in four structured activity sessions in small groups, designed to increase risk awareness and reduce the frequency of risky play in playground settings. Children were then re-administered the initial questionnaire. Comparing pre- and post- data revealed positive changes in risk attitudes. Implications of these findings for preventing playground injuries and directions for future research are discussed.
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In Canada, as in most developed countries, unintentional injury is the leading cause of death for children over one year of age (Spinks, Nagle, Macpherson, Bain, & McClure, 2008). In fact, more children die each year from unintentional injury than from all other childhood diseases combined (Wallis, Cody, & Mickalide, 2003). Unintentional injury also ranks as a leading cause of hospitalization for children (Chen, Warner, Fingerhut, & Makuc, 2009). Falls, in particular, are a leading cause of hospitalization (e.g., Agran et al., 2003), and falls from playground equipment are especially likely to require medical treatment, with over 28,000 children in Canada receiving hospital treatment every year for playground-related injuries (Fiissel, Pattison, & Howard, 2005). Given the scope of this problem, it is not surprising that a large body of research has sought to identify factors and develop programs to reduce children’s risk of falls and injuries on playgrounds. Unfortunately, the majority of this research has been conducted in highly controlled settings with individual children, making the programs resource-intensive and difficult to deliver to large numbers of children (e.g., Morrongiello & Matheis, 2007). The current project aims to address this intervention issue by using empirically-based intervention techniques, delivering them to groups of children in a community setting, and evaluating whether they are still effective.

*Understanding Risk for Childhood Playground Injuries*

Many people assume that children are not likely to get hurt while playing on playgrounds because these playgrounds are built to meet particular safety standards. However, older playgrounds were not built with these standards in mind, and upgrading them is both time-consuming and costly, resulting in poor compliance with new standards (e.g., Bond & Peck,
For instance, Lesage (1995) examined play equipment in 254 playgrounds and found that 50% of pieces of equipment were installed on surfaces that did not conform to the Canadian standards. Further, 70% of swings had seats that were not made of the proper impact-absorbing materials. In addition to this, even playgrounds that comply with safety standards result in high rates of injury, because children engage in risk behaviours which they were not designed to prevent (Mott, et al., 1994; Howard et al., 2005). As such, protecting children from playground injuries must go beyond improving environmental safety regulations to also address children’s risk behaviours on playgrounds.

Consistent with several social-cognitive theories of behaviour change [e.g., Health Beliefs Model (Becker, 1974); Theory of Planned Behaviour (Ajzen, 1991)], a number of attitudes and injury beliefs have been shown to influence children’s risk taking behaviours, including beliefs about injury vulnerability, injury severity, and preventability of injury. For example, Morrongiello and Rennie (1998) examined school-age children’s attitudes towards playground risk taking and actual risk behaviours. They found that children who rated their own vulnerability to injury as low tended to take more risks than those who perceived themselves to be more vulnerable. In addition, low ratings of the potential severity of a particular injury were related to higher levels of risk taking. Further, children who tended to attribute injuries to bad luck, as opposed to their own behaviour, also took more physical risks, while those who believed they had the ability to prevent injuries took fewer risks. Similar results were reported by Morrongiello and Matheis (2007). These and other studies point to the need to incorporate methods for attitude change regarding vulnerability, severity, and preventability of injury into intervention programs designed to reduce risk taking behaviours in children.
Numerous studies have found that peers of all ages may pressure one another to behave in a risky fashion, and children who associate with peers who engage in injury-risk behaviours are more likely themselves to engage in such behaviours (e.g., La Greca, Prinstein, & Fetter, 2001; Gardner & Steinberg, 2005). The opinions expressed by peers have also been shown to influence children’s risk taking decisions. Morrongiello and Dawber (2004) found that children could be persuaded either to engage in greater risk-taking or greater risk avoidance when persuasion appeals came from a peer, particularly one with whom the child had a close relationship (similar results were reported by Christensen and Morrongiello, 1997). Thus, in addition to addressing child attitudes, an effective intervention should also discuss the important role of peers in risk-taking decisions, so children understand not only the impact they can have on peers but how they can resist peer appeals to engage in risk taking behaviours.

The Current State of Intervention Programs that Address Children’s Risk Behaviours on Playgrounds

Several programs designed to reduce children’s risk taking and injuries have reported success using a variety of methods, including: (1) enhancing children's hazard awareness skills; (2) employing an induced-hypocrisy approach, whereby children publicly pledge to avoid risky playground play (e.g., Morrongiello & Mark, 2008); (3) exposing children to injury stories to communicate vulnerability and injury severity information in attention-eliciting ways (e.g., Morrongiello & Matheis, 2007); and (4) using peer communications to advocate against risk taking and promote risk avoidance decisions (e.g., Morrongiello & Christenson, 1997). These programs provide the foundation for the current Cool 2 Be Safe program to be evaluated in this study.
Hazard Awareness Interventions. Although studies targeting hazard awareness on playgrounds have not been conducted, other aspects of hazard awareness have been studied. For example, Potts and Swisher (1998) developed a television safety program designed to increase hazard awareness and reduce physical risk taking in five to eight year old children. After completing initial activities assessing their willingness to take risks and their ability to identify safety hazards in a variety of situations, children viewed either the safety program or a control video that did not address safety issues. Post-viewing assessment revealed that children who viewed the safety video demonstrated significant increases in their hazard identification abilities, and these increases corresponded with decreases in willingness to take risks; children in the control condition showed no significant changes.

In another study, Harre and Coveney (2000) examined the impact of a school-based teaching program designed to increase children’s awareness of burn hazards around the home. Two schools with similar demographic profiles were selected to participate, with one acting as a control group. Children first completed an activity to determine their initial abilities to identify burn hazards, and then the intervention group took part in the program which involved teaching about household hazards, discussing safe alternatives, and completing homework activities related to burn safety. Children were also provided with materials which they could take home and use in order to make their home environments safer, such as stickers to mark windows to be used in case of a fire. After completing the program, children’s hazard awareness abilities were once again assessed. Results revealed that the children in the teaching program, compared to control children, showed significantly greater improvement in hazard identification, identifying an average of six more hazards than children in the control school. Importantly, families also reported that the program resulted in positive safety changes, providing evidence that increasing
hazard awareness may be an effective means of improving children’s safety. Building on these findings, activities to increase hazard awareness on playgrounds were incorporated into the Cool 2 Be Safe program tested herein (see Lesson One below).

**Induced Hypocrisy.** Induced hypocrisy approaches to injury prevention are based on the tenets of Dissonance Theory. This theory states that when a person publicly advocates against a particular behaviour and then proceeds to engage in that behaviour, the person experiences feelings of dissonance (Friedman & Arndt, 2005). These feelings are unpleasant for the individual and, as such, the person is motivated to change their ‘hypocritical’ behaviour so that it is in line with what they have preached. Thus, public advocacy against a risk behaviour can effect behaviour changes and reduce this behaviour.

Morrongiello and Mark (2008) applied this method in an intervention to reduce children’s intentions to risk take on playground equipment. Children were recruited from several schools and randomly assigned to the intervention or control condition. After completing an initial activity in which they identified which of a number of risky behaviours they personally would engage in on a playground, children in the intervention group were made aware of their past risky behaviour by being asked to generate a list of these behaviours. Following this, they were asked to publicly (i.e., in front of the experimenter) sign a poster about safe playground play, indicating that they would be cautious and play safely on the equipment; the children believed these posters would be viewed by other children in their school. Finally, children also created and audio-taped a “radio commercial” in which they advocated against risky playground behaviour, believing these ads would be played for other children in other schools. One month after completing these
activities, children were then given the opportunity to redo the initial activity, allowing them to change their minds as to which risky behaviours they would and would not do.

A significant proportion of children in the intervention, but not the control group, changed their mind about at least one activity, such that a risk behaviour initially endorsed was now something they said they would not do, and these changes in risk behaviours were predicted by increases in ratings of injury vulnerability and severity (Morrongiello & Mark, 2008). In addition, the reductions in risk intentions were generalized, in that even risk behaviours that were not specifically targeted in the intervention were significantly less likely to be endorsed following the intervention. Hence, children’s attitudes about risk behaviours had shifted toward avoiding risk behaviours. However, the individual focus for administration makes it difficult to implement these methods on a large scale to reach many children in a timely fashion. The current intervention project incorporates this approach, but assesses its effectiveness in a community setting (see Lesson 2 below).

**Injury Stories.** Researchers also have attempted to reduce risk taking behaviours on playgrounds by using stories that depict children sustaining serious injuries as a result of risky play. The premise behind such research is that exposure to these injury stories will make children aware of their own vulnerability to injury, as well as the potential severity of playground injuries, ultimately leading to reduced intentions to take risks. Morrongiello and Matheis (2007) used this method with school-age children in grades three to six. Children were initially asked to complete an activity in which they indicated which of a variety of moderate- and high-risk playground behaviours they would engage in; these data established a baseline measure of risk taking. Following this, each child was individually shown a number of videos depicting similar-age
children engaging in various types of risky behaviour on the playground, with at least one of these risk behaviours matched to one the child indicated s/he would do. For each video, the picture was frozen on the depicted risk behavior while the audio continued to play, allowing the participating child to hear a scream as the child in the video presumably fell, followed by the sound of the child hitting the ground, crying out in pain, and stating his/her serious injury. After a distractor task, participating children then repeated ratings regarding their own sense of vulnerability for injury if they were to engage in the behaviour shown in the video, as well as the potential severity of the injury they may incur if they were to fall while engaging in that behaviour.

Two months following the intervention, children were again asked to complete the initial activity indicating which risk behaviours they would engage in (Morrongiello & Matheis, 2007). The researchers found a significant decrease in the number of risk behaviours endorsed compared to baseline, and this decrease was observed for behaviours specifically targeted in the videos as well as some that were not targeted, indicating some generalization. Further, children’s ratings of fear while watching the videos and personal vulnerability for injury were found to predict reductions in intentions to risk-take, suggesting a potential benefit of emphasizing these factors in behaviour-change interventions. These methods were therefore incorporated into the community intervention tested in the present research (see Lesson 3 below).

Peer Persuasion as a Risk Reducing Strategy. There exists a plethora of research demonstrating the potential influence, both positive and negative, of peers on injury risk behaviour. In fact, research has shown that the mere presence of a peer is enough to increase risk
taking in children (Morrongiello & Sedore, 2005). It is therefore important to address the issue of peer persuasion in any injury prevention program targeting children.

One such intervention from the adolescent literature addressed the issue of smoking in adolescents, a behaviour that is strongly influenced by peers (Campbell et al., 2008). These researchers designed a peer-led, school-based approach to smoking prevention. Fifty-nine schools were randomly assigned to the control group or the intervention group. Influential students within the intervention schools were trained to act as peer-supporters outside of the classroom, during informal interactions, making it feel less like an education program and more like a normal interaction with peers. Over the course of ten weeks, these peer supporters engaged in multiple informal conversations about smoking during various non-classroom times with other adolescents. These conversations involved discussions of the positive aspects of not smoking, and the negative aspects of becoming a smoker. At three month and one year follow up, smoking prevalence was significantly lower in the intervention group compared to the control.

Similar results have also been found in research with children. Christensen and Morrongiello (1997) asked children to indicate which of several hypothetical paths, ranging from low- to high-risk, they would take to get from one point to another. After making their selection, a confederate peer came in and attempted to persuade the child to change his/her response, providing reasons as to why another path would be a better choice. Children were then asked to make their choice again, in order to determine whether the peer persuasion was effective. A significant portion of children switched from a low-risk to a high-risk path following peer persuasion. In addition, several children switched from a high-risk to a low-risk path, although there were too few children initially selecting a high-risk path to analyze for significant decision
changes. Overall, these findings demonstrate the potential influence peers can have, suggesting that targeting peers could be useful in planning interventions to reduce risky behaviour. Building on these findings, activities emphasizing peer interactions and feedback about risk behaviours were incorporated into the *Cool 2 Be Safe* Program evaluated in this study (see Lesson Four below).

**Gaps in the Playground Injury Prevention Literature Addressed by the Present Study.**

Despite the success of the above mentioned programs, the main limitation of these is that they are not amenable to distribution to large numbers of children in cost-effective ways because they are delivered using a one-on-one format (adult with individual child) and by highly trained researchers. What is needed, therefore, is to identify ways to reach larger numbers of children easily but without sacrificing effectiveness and scientific rigor. The *Cool 2 Be Safe* community intervention was designed to address this issue.

The *Cool 2 Be Safe* program is an evidence-based intervention program (i.e., it incorporates activities that previous research has shown to impact risk appraisals and reduce intentions to risk take on playgrounds). The program aims to reduce risky play on playgrounds and is designed to be disseminated in community settings by any adult capable of using the training materials provided. The present study was designed to evaluate the effectiveness of the program. Specifically, the program was implemented in small groups within several after school programs offered through the Boys and Girls Clubs of Canada. Over the course of four weeks, children participated in four “lessons”, each designed to address a particular aspect of injury prevention (e.g., attitudes, peer group pressure) using methods and materials that were successful in prior intervention research aimed at impacting children’s attitudes about risk taking. By
comparing baseline attitudes about risk taking to those measured post-intervention among children in Intervention and Control conditions, the efficacy of the program to positively impact attitudes toward risk behaviour was assessed. A control group of children from other Boys and Girls Clubs of Canada completed the measures at the same time intervals but did not participate in any programming.

It was hypothesized that children in the Intervention group who participated in at least three of the lessons would demonstrate significant positive attitude change from baseline to follow up, such that they would:

(a) rate themselves as being more vulnerable to injury
(b) rate the potential severity of playground injuries to be higher
(c) report an increased belief in their own ability to prevent playground injuries
(d) report a decreased belief in the role of fate in preventing playground injuries

No changes in these attitudes were expected among children in the Control group.

Method

Participants

The experimental group consisted of 80 children (43 male, 36 female, 1 unidentified), 7 to 12 years old ($M = 9.67$ years, $SD = 1.85$), who were members of three Boys and Girls Clubs in Ontario. A power analysis was conducted, assuming medium effect sizes and with Type I error rate set at .05 and power of .80, and this indicated that a sample size of 65 would be adequate (Cohen, 1992). The control group consisted of 24 children (5 male, 19 female), 7 to 12 years old...
(\(M = 9.22\) years, \(SD = 1.56\)), who were members of one Boys and Girls Club in Newfoundland. All children were fluent in English and consented to participation before any activities were initiated. Individual clubs were assigned to the intervention or control groups in such a way to facilitate evaluation of the program. Specifically, the three intervention clubs were so chosen due to proximity to the researchers, to allow for direct observation of some of the lessons so that fidelity of program delivery could be evaluated. The fourth participating club was located beyond driving distance, and thus assigned to the control condition.

The Boys and Girls Clubs of Canada provide support and services to families and youth, including after school programs to promote positive relationships with peers, family members, and other adults. The majority of children attending these programs are between the ages of 6 and 12 years, and are from low-income, single parent families. A non-profit organization, club fees are affordable and are often subsidized or waived for families in particular need.

Materials

Materials required for the implementation of the four lessons, along with training CDs, were provided to the participating clubs to ensure standardization of program delivery across sites. The extensive training materials included detailed descriptions of each lesson procedure with step-by-step instructions, as well as a training video demonstrating how each lesson should be implemented and answers to possible questions that might arise. It should be noted that these materials were developed based on extensive pilot testing over the course of a year with personnel at other Boys and Girls Clubs.

Lesson 1. The aim of lesson 1 was to increase children’s awareness of hazards that can appear on playgrounds. Evidence from warning labels research suggests that making individuals
aware of hazards and emphasizing the potential consequences is an effective means of increasing one’s sense of personal vulnerability to injury, ultimately leading to behaviour change to improve safety (e.g., Hammond, Fong, McDonald, Brown, & Cameron, 2004). Participating clubs were provided with copies of a Playground Safety Checklist (see Appendix A), designed for the current project based on CSA standards (CSA, 2007). This checklist asked children to examine and report on the safety of their local playground, looking for issues such as broken equipment and hazardous surfaces (e.g., ones that could cut or burn a child); children went as a group to their local playground and completed the checklist in groups of two or three children. If any problems were noticed, children were asked to make note on the checklist of exactly what and where the problem was. The checklist also included a section detailing injuries that could occur for each type of hazard (e.g., cracked equipment can lead to falls, cuts, etc.). Based on past research targeting improvement of hazard detection skills in children, finding hazards on their local playgrounds and being made aware of the types of injuries that can result from these hazards was expected to increase children’s awareness of their own vulnerability to injury by making the risks clear and relevant to them personally. In addition, clubs were provided with documents detailing steps to take to improve equipment safety should any hazards be found, including who to contact and how to follow-up with their local municipality.

Lesson 2. Lesson 2 employed the induced hypocrisy approach (cf. Morrongiello & Mark, 2008). In small groups (5 – 10), children were asked to create posters displaying lists of risky playground behaviours for four pieces of equipment, including slide, swings, climber, and one other chosen by the group based on their local playground. The participating Boys and Girls Clubs were provided with poster boards, as well as photos of the various types of playground equipment, taken at public playgrounds, to be attached to the posters that the children created.
The clubs were also provided with a sample poster to refer to when creating their own, as well as an electronic copy of a pledge form to be printed and given to each child to sign at the end of the lesson. Signing this pledge indicated that the child agrees to avoid risky playground play, leading to unpleasant feelings of dissonance should they then behave unsafely, ultimately motivating them to avoid these ‘hypocritical’ behaviours. These pledges were posted publically in the club and remained there in sight for the four weeks of the program.

**Lesson 3.** Previous research has shown that children attribute less risk to playground behaviours when the children engaging in those behaviours look happy and confident, compared to when they look fearful and unsure (Morrongiello & Rennie, 1998). The first part of lesson 3 aimed to teach children to think for themselves on the playground, rather than copying the behaviour of others because it looks like fun. Participating clubs were provided with a variety of 5 x 7 photos of children playing on playground equipment (slide, swings, climber, monkey bars), many of which showed children smiling and having fun while engaging in activities of various levels of risk; these photos were taken at local playgrounds in Guelph with children and parents who volunteered to participate in research. Clubs were also provided with instructions and aids detailing how to lead and maintain a discussion with the children about the photos. Children were taught the phrase “Don’t be fooled by a smiling face”, in order to emphasize the understanding that just because something looks fun does not mean it is safe.

The second part of lesson 3 aimed to increase children’s awareness of their own vulnerability to injury, as well as the potential severity of playground injuries. Morrongiello and Matheis (2007) found the use of injury stories to be effective in increasing this awareness, ultimately reducing risk-taking intentions, and the current intervention used methods adapted
from this study. Video clips produced by Morrongiello and Matheis (2007, described in detail above) were used again here, provided to the clubs in DVD format. A detailed discussion guide was also provided, instructing club staff in what to say and how to talk to the children after viewing the clips, placing particular emphasis on the severity of the injury depicted, and the children’s own vulnerability to injury. Clubs were also provided with a different “Pledge to Play Safe” form, to be printed out and signed by each child following the lesson. Again, these were to be publicly hung in the clubs.

Lesson 4. Previous research has demonstrated that peers have a significant influence on children’s risk taking behaviour (e.g., Morrongiello & Sedore, 2005), and lesson 4 was designed with this in mind. The goal was to teach children how to talk with their peers so they can resist pressure to risk take and effectively communicate to prevent other children from risk-taking; role plays have been used successfully before in intervention research aimed at reducing risk taking (e.g., Carey et al., 2004; Stanton et al., 2004). Participating clubs were given step-by-step instructions, leading them through a role-play exercise based on three provided vignettes, each of which described a situation in which children have to stop their peers from risk-taking. A fourth role-play was to be decided by the children, based on their own personal past experiences with peers on playgrounds. Clubs were given a discussion guide, detailing questions to ask during the role-plays in order to stimulate discussion. A list of possible ‘key messages’ was also included in the instruction package, to be used for helping children to come up with their own messages based on their learning throughout the program.

Measures
Injury Attitudes Questionnaire. Prior to participating in any of the lesson plans, children completed an Injury Attitudes Questionnaire, designed specifically for this research (see Appendix B). This measure was repeated at the conclusion of the program, allowing comparison of pre- and post-intervention scores in order to evaluate the impact of the program. This questionnaire was developed and refined based on extensive pilot testing with children (\(N > 100\), 7 – 12 years old). It contains 27 questions comprising several sub-tests, including beliefs about the severity of injuries (e.g., “When children get hurt, it can be quite serious”), personal vulnerability to injury (e.g., “When I am doing things at the playground I often think about the possibility that I could get hurt”), beliefs about the preventability of injury (e.g., “If I am careful, I can prevent accidents from happening to me”), and beliefs about the role of fate in preventing injuries (e.g., “No matter what I do, if I am going to have an accident it will happen”). Previous research indicates that children’s risk taking attitudes and intentions are valid indicators of actual behaviour (e.g., Morrongiello, 2004). Using a 6-point Likert scale (1 = don’t agree; 6 = agree completely), the children rate their extent of agreement with each statement. Scores for each of the sub-tests were calculated by summing the individual items, with higher scores indicating greater agreement. Chronbach’s alpha demonstrated adequate reliability for all sub-tests: severity (\(\alpha = .71\)), vulnerability (\(\alpha = .75\)), preventability (\(\alpha = .80\)), and fate (\(\alpha = .92\)). Correlations between sub-tests can be seen in Table 1.

Procedure

The following section details procedures for children in the intervention groups. Children in the control group simply completed the Injury Attitudes Questionnaire (see below) twice, four weeks apart, with no training in between.
Prior to proceeding with the intervention lessons, all children were sent home with a passive consent form for their parent/guardian to read, informing them about the project and giving them the opportunity to exclude their child from the research; information (e.g., posters) was also visible in the clubs for parent viewing by those who pick up their children. No parents requested their child not participate and all children agreed to complete the activities.

Participating children individually completed the baseline questionnaire. Once all children had completed this questionnaire, lesson plans began to be implemented, one lesson per week, to the children in each of the three clubs. The importance of the same children attending each of the four lessons was heavily emphasized to participating clubs, and attendance was found to be excellent. Lessons were administered in groups of up to ten children with one employee acting as a leader; the same interventionist delivered all modules, after completing the training activities provided. Employees were provided with thorough training, including specific written instructions, background information, a training video, as well as a training session delivered via webinar with the researchers to ensure consistency in delivery conditions. In addition, to confirm that implementation procedures were followed at all clubs, delivery of several of the lessons was observed. The lesson procedures were broken down into individual units of behavior and a checklist was created showing the sequence of specific activities that were meant to take place. Using this checklist, lessons two through four were each observed once, and items on the list were checked off as they occurred. Compliance scores were then determined by calculating the percentage of checklist items observed, and average compliance with procedures was found to be 87.5% (Range = 78 – 97, SD = 9.50).
Lessons were presented in the same order for all children in the intervention groups; this ordering was developed based on extensive pilot testing and feedback from those who delivered the program. Each lesson was intended to build on the knowledge presented in the previous sessions, with children first being exposed to potential environmental hazards, followed by learning about their own role in personal injury prevention, and finally being taught to speak with peers about risk taking. The induced hypocrisy method was introduced early in the sequence (i.e., lesson 2), and was continually reinforced in subsequent lessons.

**Lesson 1.** Lesson 1 is based on evidence from ‘warning labels’ research, which indicates that making individuals aware of hazards (e.g., broken glass is a hazard) and emphasizing the potential consequences (e.g., broken glass can lead to serious cuts) is effective to increase sense of personal vulnerability to injury (e.g., Hammond et al., 2004). Working in small groups, children visited their local playground armed with a checklist identifying potential playground hazards and emphasizing how these can lead to injury. Using this checklist, they were asked to identify any potential hazards that exist on their own playground that could lead to injury. Should they identify any hazards, they were provided with instructions from their leader (included in the training materials) as to the appropriate steps they could take (with their leader) in order to reduce the risk and eliminate these hazards. This involved writing letters to the city asking them to upgrade the equipment in order to conform to safety standards.

**Lesson 2.** The procedures followed those used by Morrongiello and Marks (2008) in the original intervention study that provides the basis for this module. Applying the induced hypocrisy approach, lesson 2 started by asking children to generate a list of risky behaviours they have engaged in, or seen others engage in, while on the playground. This was a brainstorming
session, with the leader recording their ideas on the blackboard. The leader was also provided with suggestions of risky behaviours, in case the children failed to come up with enough ideas on their own. Once the list had been generated, the children worked together to create a poster which used pictures and words to demonstrate the risky behaviours they just brainstormed. In the middle of the poster was the heading “Unsafe Playground Behaviours”, surrounded by pictures of four different pieces of playground equipment (swings, slide, climber, and one of their choice) and written items from the brainstormed list. Upon completion, each child was handed a pledge form which they were asked to sign as an endorsement of not doing risky things on the playground. This form stated that by signing, they were promising not to engage in the risky behaviours on the poster, or any other injury-risk behaviours, when they are playing on the playground. The poster, as well as the pledge forms, were subsequently posted on the walls of the club where they would always be in view; children were aware of this at the time they were asked to sign.

Lesson 3. Based on methods used by Morrongiello and Rennie (1998) and Morrongiello and Matheis (2007), lesson 3 attempted to teach children to think for themselves, and change children’s misperceptions regarding their vulnerability to injury and the potential severity of those injuries. Children were broken into groups of five to ten, with each group led by a trained staff member. The leader began by presenting photos of children playing on playground equipment, one at a time, and leading discussion about each of the pictures. Specifically, leaders asked the children whether the behaviour depicted is safe, why it is safe or unsafe, and what could potentially happen to the child in the photo (i.e., what injury could they sustain). Particular emphasis was placed on the photos of smiling children, ensuring that children understand that
just because someone is having fun does not mean that a particular behaviour is safe. The phrase “Don’t be fooled by a smiling face” was taught to help the children remember the main message.

Following the photo viewing exercise, children viewed three short video clips of other children playing on the playground, used in previous research (Morrongiello & Matheis, 2007). Each clip showed a child engaging in neutral play behaviour for several seconds, followed by a risky behaviour (e.g., standing at the top of a climber while not holding on; sliding down a slide face-first). After a few seconds, the video froze on the child doing the risky behaviour, but the audio continued. Children then heard the child presumably fall and seriously hurt themselves as a result of this risky behaviour. After each clip, the leader paused the video and engaged the children in a discussion. Specifically, children were asked to identify what was dangerous about the behaviour displayed, what they thought happened to the child in the video, and how they thought that outcome could have been prevented. During this discussion, the leader emphasized the severity of the injury (e.g., tell the group that the child broke their arm/leg), as well as the vulnerability factor (i.e., “Injuries can happen to anyone – that child didn’t think he/she was going to get hurt, and look what happened!”). Children were given the opportunity to discuss their feelings about the video, and to reflect on past experiences when they did something that could have resulted in an injury.

Lesson 4. The final lesson is based on evidence of peer influences on children’s risk taking (Christenson & Morrongiello, 1997; Morrongiello & Sedore, 2005). Children were presented with several scenarios and asked to role-play them in front of the group. These scenarios involved cases in which a peer is pressuring the child to engage in a risky behaviour, as well as cases in which a peer is behaving in an unsafe manner and the child wants to stop
him/her. During the role plays, children brainstormed ideas regarding what they could say/do in a given situation in order to rectify the problem. After completing the three provided scenarios, children were asked to think of at least one other, based on situations they may have experienced. They were then instructed to role-play several of these scenarios in the same way.

Following the role-play activities, children generated a list of what they thought the “key messages” should be; that is, they were asked to identify the most important things they learned, in this lesson and the previous three. Several suggestions for key messages were provided in the training materials, in case children had trouble getting started (e.g., “Don’t be a follower – just because your friend is doing it, doesn’t mean it’s safe”). Once several key messages were identified, they were written on a poster by the leader and subsequently posted in the club.

**Follow-up.** After completing the final lesson, children once again completed the initial questionnaire assessing injury attitudes. Their answers were compared with those they provided prior to participating in the lesson plans.

**Results**

A Split-Plot Analysis of Variance (ANOVA) was conducted separately on the data from each of the four subscales of the Injury Attitudes Questionnaire (severity, vulnerability, preventability, fate), with Condition (Intervention, Control) as a between-participant factor and Time (Pre, Post) as a within-participant factor. Descriptive statistics are presented in Table 2.

For the Fate subscale, results revealed a significant Time x Condition interaction, $F(1, 79) = 8.44, p = .005, \eta_p^2 = .10$. Follow-up tests revealed no difference in baseline scores between the
Intervention and Control groups, $t(28) = -1.64, ns$. Consistent with hypotheses, one-sample t-tests confirmed that in the Intervention group, children’s belief in fate as a major cause of injury decreased significantly following the intervention indicating that children showed a reduction in believing that injuries are due to bad luck, $t(57) = -3.74, p < .001$. In contrast, this belief increased significantly from Pre- to Post-test for the Control group, $t(22) = 2.97, p < .01$.

The results for the Preventability subscale also revealed a significant Time x Condition interaction, $F(1, 73) = 10.78, p < .01, \eta_p^2 = .13$. Again, there was no difference in baseline scores between the Intervention and Control groups, $t(27) = 1.63, ns$. Again, consistent with expectations, in the Intervention group, children’s belief in their own ability to prevent injuries increased significantly following the intervention, $t(53) = 4.93, p < .001$. In contrast, no change in preventability belief was found for the Control group, $t(20) = -1.58, ns$.

The results for the Severity subscale revealed a marginally significant Time x Condition interaction, $F(1, 82) = 3.20, p = .08, \eta_p^2 = .04$. There was a significant difference in baseline scores between the Intervention and Control groups, $t(89) = 5.30, p < .001$, such that these scores were significantly higher for the Control group at Pre-test, compared to the Intervention group. As such, although there was a significant increase in belief in the potential severity of injuries over time for the Intervention group, $t(59) = 2.95, p = .005$, compared to no change in the Control group, $t(23) = 1.45, ns$, these results must be interpreted with caution because baseline scores being higher for the Control group would allow less room for change in a positive direction.
The results for the Vulnerability subscale revealed a non-significant Time x Condition interaction, $F(1, 74) = .52, ns$. Thus, the intervention did not provoke changes in children’s perception of their vulnerability for injury.

Discussion

Playground injuries pose a significant health threat for elementary-school children (Fiissel et al., 2005). Environmental modifications to playgrounds are effective to reduce risk, however, these need to be complemented by behavior-change programs that address the fact that children engage in risk behaviours and experience injuries even on well-designed playgrounds that meet all safety standards (Howard et al., 2005). Although there have been some interventions developed to reduce playground risk taking and injuries in children, these have largely been conducted under highly controlled conditions, using a one-on-one delivery format, and with a highly trained experimenter. While this type is research is useful, it is not realistic to implement such a program in a more widespread fashion. As such, there is a pressing need for evidence-based intervention programs aimed at reducing child risk-taking that can easily be administered in community settings with groups of children and by adults with little or no research training. The Cool 2 Be Safe program was developed to address this need. Importantly, it was designed based on previous research demonstrating the effectiveness of each of the four activities incorporated into the program, and the results of the current evaluation of the program indicate that it holds much promise. To the best knowledge of the author this is the only evidence-based, group-administered program that addresses the important issue of children’s fall-risk behaviours on playgrounds.
Consistent with behavior-change models that emphasize risk appraisals as important
determinants of health behavior decisions in adults and adolescents (e.g., Health Belief Model;
Conner & Norman, 1996), past research with children has found that risk decisions are usually
predicted by some combination of perceptions of vulnerability, severity, preventability, and fate
(Morrongiello & Rennie, 1998; Morrongiello & Matheis, 2004, 2007). Hence, the fact that the
Cool 2 Be Safe program was successful in impacting most of these key appraisals of risk
(severity, preventability, fate) suggests that it should also reduce injury risk play behaviours on
playgrounds. Although the program did not produce positive changes in perceptions of injury
vulnerability this may not be a concern in terms of reducing risk taking by children. Several
studies have found that changes in perceptions of some risk appraisals (e.g., injury severity,
preventability) are sufficient to predict reductions in risk taking even when other appraisals (e.g.,
vulnerability) do not do so (Morrongiello & Matheis, 2007). Thus, it does not seem that one must
impact all of these risk appraisals to effect a reduction in children’s risk taking behavior.
Interestingly, similar effects have been noted in research examining parents’ appraisals of
children’s injury risks. One does not need to impact all risk appraisals in order to motivate
behavior change for greater implementation of safety practices at home (Morrongiello &
Kiriakou, 2004).

With respect to risk appraisals, the Cool 2 Be Safe program comprises four modules that
address different aspects of playground safety, including: awareness of hazards on playgrounds
(module 1), clarifying what injury risk behaviours are and eliciting a commitment to avoid doing
so (module 2), discussing the severity of injuries and that anyone is vulnerable (module 3), and
emphasizing ways to talk with peers and encourage resisting risk taking (module 4). In all the
research in which these activities were used, participation led to reductions in risk taking intentions, but, the risk appraisals predicting these post-intervention changes varied.

Importantly, evaluation of delivery of the program indicated that compliance with implementation guidelines was quite good. The fact that an adult with no research training was able to learn to implement the program in scientifically rigorous ways using the materials provided and with relatively little time spent learning to do so is critical for the success of the program in a community dissemination format. Fidelity of program implementation can be challenging but is necessary to maintain the evidence-based foundation of a program (e.g., Kaderavek & Justice, 2010; O’Donnell, 2008). The present training materials were developed based on extensive preliminary work, which probably explains why they worked as well as they did. It should be noted that extending this program to other community organizations may require refinement of these training materials and is an important next step in developing a plan to support broader dissemination of the program (e.g., via schools).

**Limitations & Directions for Future Research**

The *Cool 2 Be Safe* program addresses an important gap in the child injury-risk literature, being the first evidence-based, group-administered program to focus on playground safety for elementary-school children. Nonetheless, there are several limitations with the current research that are worth noting. First, the nature of the program implementation did not allow for collection of demographic characteristics of the children involved. As such, it is not possible to specify the extent of heterogeneity of the sample, making generalizability to other populations of children difficult. Relatedly, although information was collected regarding child age, due to a relatively small sample and several children failing to report age information, it was not possible to
examine the potential impact of the program based on age. Future research with the Cool 2 Be Safe program should aim to collect demographic data, as well as analyze program effectiveness based on child age. Further, given that boys tend to engage in more risk taking behaviours than girls (e.g., Morrongiello & Rennie, 1998), it is possible that the program would have a differential level of impact for boys versus girls. This issue should be addressed in future research.

Another limitation to the current study was the lack of random assignment to intervention and control groups. Random assignment is important for reducing potential bias among groups, and the failure to employ this method has implications for the results presented herein. It is possible that there were systematic differences between groups that made the intervention group more receptive to the program, and this could explain some of the positive results. In future research one should aim to use random assignment to groups in order to offset potential bias. If this is not feasible, then more extensive demographic information should be collected from participants in order to compare the groups on demographics and assess for potential biases.

The order of administered lessons is also a consideration that could be addressed in future research. The sequence used herein was chosen based on extensive pilot testing, with the goal that each lesson builds upon the knowledge and experience gained in the previous activities. Specifically, children first learn to be more aware of environmental hazards that could lead to injury, without considering their own role in injury prevention. Following this, children are made aware of behaviours they have previously engaged in, and sensitized to the risk associated with these behaviours. At this time, the induced hypocrisy method is employed, making children cognizant of the inconsistencies between their intentions and their actions, thus motivating them
to change their risk taking behaviours. This is further emphasized in subsequent lessons, to continue to motivate children to make their behaviour align with their stated intentions. Finally, after emphasizing their own role in injury prevention, children are taught to speak with their peers about risk taking. Although this order of presentation was designed to progress in a logical sequence, it may be beneficial for future research to examine multiple lesson sequences, to determine if this has an impact on outcomes.

Finally, for ethical and practical reasons, the outcome measure used in this study was focused more on attitudes and beliefs, than actual behaviours. Although the former have been shown to predict the latter (e.g., Morrongiello, 2004; Gerrard, Gibbons, Houlihan, Stock, & Pomery, 2008), it would be useful for future research to use behavioural observation measures at baseline and following program implementation to reaffirm these relations.

Conclusion

The current research provides an important first step in the evaluation of the Cool 2 Be Safe program. The findings herein indicate that the program is relatively simple to implement and effective in changing attitudes regarding engaging in risk behaviours on playground equipment. Although additional research is needed to determine the effectiveness of the program across settings and populations, the current results are extremely promising.
References


Table 1

Summary of Inter-correlations between Severity, Vulnerability, Preventability, and Fate sub-tests

at pre-test

<table>
<thead>
<tr>
<th>Sub-test</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fate</td>
<td>—</td>
<td>.14</td>
<td>-.11</td>
<td>-.14</td>
</tr>
<tr>
<td>2. Preventability</td>
<td>—</td>
<td></td>
<td>.38**</td>
<td>.22*</td>
</tr>
<tr>
<td>3. Severity</td>
<td>—</td>
<td></td>
<td></td>
<td>.45**</td>
</tr>
<tr>
<td>4. Vulnerability</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. *p < .05 **p < .01.*
Table 2

Subscale Means (SD) as a function of Time (Pre- and Post- intervention) and Condition (Intervention, Control)

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Intervention</th>
<th>Control</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Fate</td>
<td>3.53 (1.07)</td>
<td>2.64 (1.46)</td>
<td>2.90 (1.90)</td>
<td>3.12 (2.10)</td>
</tr>
<tr>
<td>Preventability</td>
<td>3.86 (0.90)</td>
<td>4.74 (0.92)</td>
<td>4.41 (1.85)</td>
<td>4.34 (1.85)</td>
</tr>
<tr>
<td>Severity</td>
<td>4.01 (0.87)</td>
<td>4.57 (1.09)</td>
<td>5.25 (1.16)</td>
<td>5.27 (1.17)</td>
</tr>
<tr>
<td>Vulnerability</td>
<td>3.84 (0.83)</td>
<td>4.15 (1.12)</td>
<td>4.47 (1.64)</td>
<td>4.55 (1.72)</td>
</tr>
</tbody>
</table>
### Appendix A

**Playground Safety Check List**

<table>
<thead>
<tr>
<th>What to check</th>
<th>If yes, describe exactly WHERE the problem is.</th>
<th>Why?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is there broken glass on the playground?</td>
<td>Yes    No</td>
<td>Broken glass can cause cuts and bruises.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>INJURY RISK: Cuts</strong></td>
</tr>
<tr>
<td>Is their garbage on the playground?</td>
<td>Yes    No</td>
<td>Garbage and sharp edges can cause cuts and bruises and could lead to tripping.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>INJURY RISK: Cuts, Bruises, Falls</strong></td>
</tr>
<tr>
<td>Are there sharp edges or bolts that stick out from any equipment?</td>
<td>Yes    No</td>
<td>Sharp edges and bolts that stick out may cause cuts and bruises. They may also mean that the equipment is unsafe.</td>
</tr>
<tr>
<td>Slides?</td>
<td></td>
<td><strong>INJURY RISK: Cuts, Bruises</strong></td>
</tr>
<tr>
<td>Swings?</td>
<td>Yes    No</td>
<td></td>
</tr>
<tr>
<td>Climbers/Monkey Bars?</td>
<td>Yes    No</td>
<td></td>
</tr>
<tr>
<td>See Saws?</td>
<td>Yes    No</td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>Railings?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stairs?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fireman Poles?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bridges?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merry-go-rounds?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other? (Tell us what it is)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Are there broken parts on any pieces of equipment?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slides?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swings?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climbers/Monkey Bars?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>See Saws?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Railings?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stairs?</td>
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<td></td>
</tr>
<tr>
<td>Fireman Poles?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bridges?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merry-go-rounds?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Broken playground equipment may mean that the equipment is not safe to use.

**INJURY RISK:** Cuts, Falls
<table>
<thead>
<tr>
<th>Other? (Tell us what it is)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>If the equipment is made of wood, are there any cracks in the wood?</th>
<th>Yes</th>
<th>No</th>
<th>Not Wood</th>
<th>Cracks in the wooden supports of the playground equipment may mean that the equipment is unsafe.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>If there is any equipment that is made of wood, is it very rough?</th>
<th>Yes</th>
<th>No</th>
<th>Not Wood</th>
<th>Rough patches on wood can cause cuts and splinters</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>If there is any equipment made of metal, is there any rust?</th>
<th>Yes</th>
<th>No</th>
<th>Not Metal</th>
<th>Rust in the metal equipment may mean that the equipment is unsafe.</th>
</tr>
</thead>
</table>

**INJURY RISK: Falls or Splinters**

**INJURY RISK: Cuts**

**INJURY RISK: Falls**
<table>
<thead>
<tr>
<th>Question</th>
<th>Yes/No</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are any areas that the child sits down on made of metal?</td>
<td></td>
<td>Metal equipment can get hot in the sun, which can lead to burns.</td>
</tr>
<tr>
<td>INJURY RISK: Burns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the playground surface made of something hard that could lead to getting hurt if a child fell on it, like if the surface is little sharp stones or rocks?</td>
<td>Yes/No</td>
<td>Playgrounds should have soft surfaces such as sand, pea gravel, wood chips, rubber crumb, or soft rubber mats. These types of surfaces will help to cushion a fall from the playground equipment.</td>
</tr>
<tr>
<td>Tell us what the surface is made of:</td>
<td></td>
<td>INJURY RISK: Falls, Cuts, Scrapes</td>
</tr>
<tr>
<td>If the playground surface is made of something soft that you can dig into, dig down to see how DEEP the surface goes. Is it at least 6 inches (15 cm)?</td>
<td>Yes/No</td>
<td>Playgrounds should have at least 6 inches of a soft deep surface. These types of surfaces will help to cushion a fall from the playground equipment.</td>
</tr>
<tr>
<td>Are there any areas that do not have railings, like on platforms, ramps, or other</td>
<td>Yes/No</td>
<td>Good handrails, barriers and/ or railings will help prevent falls.</td>
</tr>
</tbody>
</table>
### INJURY RISK: Falls

**Are there any play areas (not including railings) that are higher than 5 feet (1.5 metres or 150 cm) off the ground?**

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

Play areas higher than 5 feet from the ground can lead to serious injury in case of a fall.

**Are there any places where drawstrings, scarves, or other pieces of clothing near the neck could get caught?**

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

Clothing drawstrings or loose clothing could catch in spaces in playground equipment. A child could be strangled.

**INJURY RISK: Choking/Strangulation**

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Slides?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swings?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Climbers/Monkey Bars?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>See Saws?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Railings?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Stairs?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Question</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
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<td>----</td>
</tr>
<tr>
<td>Fireman Poles?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bridges?</td>
<td></td>
<td></td>
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<tr>
<td>Merry-go-rounds?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other? (Tell us what it is)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Are there any spaces in playground equipment that a small child could get their head stuck in? *(UNSAFE spaces are between 9cm and 22.5cm wide)* Good places to check are spaces between steps, gaps in railings, and anywhere else that you notice spaces between pieces of equipment.

Yes No

Young children have large heads compared to the size of their bodies. As a result, if the spaces are too small, they could fit their bodies through but get their heads stuck.

**INJURY RISK:** Choking/Strangulation

Are there areas that kids could trip over, like a raised curb or edge around the border of the playground?

Yes No

Children could trip and fall.

**INJURY RISK:** Falls
Appendix B

INJURY ATTITUDES QUESTIONNAIRE (SCORING)

Items marked with ** are reverse scored.

1. Whether I get injured is mostly a matter of luck. If I’m unlucky I will get hurt doing something and if I’m lucky then I won’t get hurt doing it. (FATE)

2. When children get hurt it can be quite serious. (SEVERITY)

3. **When children get hurt on the playground, it is not usually serious. (SEVERITY)

4. No matter what I do, if I am going to have an accident it will happen. (FATE)

5. **Young children are not likely to get hurt on playgrounds. (VULNERABILITY)

6. Kids that are lucky can usually stay safe even if they are in unsafe situations. (FATE)

7. Injuries “just happen”. It’s just bad luck. (FATE)

8. When I get injured, it is often my own fault because I was not careful about what I was doing. (PREVENTABILITY)

9. My safety depends mostly on what I decide to do. (PREVENTABILITY)

10. Kids who never get hurt are just plain lucky. (FATE)

11. **Injuries to children are not usually anything serious to worry about (SEVERITY)

12. **When I am playing with friends I don’t really think about what could go wrong and how I might get hurt. (VULNERABILITY)

13. **It’s not my fault if I get into something that is not safe – these things ‘just happen’ sometimes. (PREVENTABILITY)

14. **Falls on playgrounds are not usually serious injuries. (SEVERITY)

15. If I am careful I can prevent accidents from happening to me. (PREVENTABILITY)

16. When I am doing things at the playground I often think about the possibility that I could get hurt. (VULNERABILITY)

17. When I get injured it is usually because of something that I have done or that I didn’t do. (PREVENTABILITY)

18. **Children are not likely to get hurt when they’re just fooling around with friends. (VULNERABILITY)
19. When I am deciding what to do I often think about whether or not I might get hurt. (VULNERABILITY)