Interpersonal Safety Skills:
Assessing and Evaluating Outcomes for Children

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STATEMENT OF ORIGINALITY

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Codi White

September, 2017
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ABSTRACT

The safety of children is a priority within society. Programs have been created to boost young children’s interpersonal safety skills, including teaching children how to recognise and avoid risky situations and when to disclose to safe adults. However, behavioural outcomes of these programs have rarely been evaluated, so general knowledge about children’s use of these skills following program participation remains limited. Few standardised measures exist to assess these behavioural outcomes of risk avoidance or disclosure. To fill this gap, a new measure of children’s interpersonal safety skills, the Observed Protective Behaviours Test (OPBT), was developed and three studies were conducted that used the OPBT. The OPBT included a simulated lure that assessed children's motor and verbal responses to the lure, as well as their disclosure.

In Study 1, 611 children in Year 1 (5 to 7 years; 50% male), attending schools either allocated to receive Learn to be safe with Emmy and friends™ or on a waitlist, completed three assessments over seven months. Children were individually interviewed at each assessment and parents completed surveys at home. When compared to waitlist, the program was effective in improving interpersonal safety knowledge (child and parent-rated) and parent-rated interpersonal safety skills from pre-to post-program. At a 6-month follow-up improvements were retained, with children who participated in the program also reporting increased disclosure confidence compared to children on the waitlist. However, improvements in intentions to disclose and safety identification skills, as well as interpersonal safety skills as measured by the OPBT, did not differ between program and waitlist conditions.

In Study 2, the participants were 281 children who were assessed as part of Study 1. Two strata of children, those in Learn to be safe with Emmy and friends™ or on a waitlist, were randomly assigned to participate in the OPBT (i.e., an in-situ
training; IST) or not. Thus, four groups were compared: Waitlist, IST alone, Program alone, and Program+IST. All children completed two assessments separated by seven months. The IST was found to produce improvements, with children in the IST alone condition showing a greater increase in intentions to disclose compared to Waitlist, and children who participated in Program+IST showing greater improvements in disclosure intentions than those who received Program only or Waitlist, as well as displaying significantly greater increases in disclosure confidence compared to children who received Waitlist.

In Study 3, the participants were 118 children who had participated in the OPBT without any other intervention component in Study 1. Prevalence of interpersonal safety skills as measured by the OPBT (withdrawal from an unknown confederate, verbal refusal of an abduction lure and disclosure of confederate presence) were summarised, and correlates of OPBT responses were examined. In total, 27% children withdrew from the confederate, 48% refused the lure and 83% disclosed the presence of the confederate. The only significant correlate of these skills was anxiety, with children who had greater anxiety disclosing earlier and being more likely to accept the lure.

Overall, findings provide new information regarding training and correlates of interpersonal safety skills in young children. The *Learn to be safe with Emmy and friends™* program was effective in increasing safety knowledge, parent-rated safety knowledge and skills, and disclosure confidence. Further, using the OPBT as an IST resulted in greater increases in children's intentions to disclose and confidence in disclosure. However, whilst great variability was found in children's use of interpersonal safety skills as measured by the OPBT, the only significant predictor found for these skills was anxiety. Several avenues for further research are suggested, including examining further predictors for interpersonal safety skills, expanding the
OPBT to represent more interpersonal situations, evaluating the effectiveness of booster IST components on other interpersonal safety programs and expanding the age range of children examined.
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STATEMENT OF ETHICAL PROTOCOL

I confirm that ethical clearance was granted by the Griffith University Human Research Ethics Committee (GU Ref No: PSY/48/14/HREC; Appendix A) and the Research Committee at the Department of Education and Training, Queensland. Further, research for this thesis was supported by a grant from the Australian Research Council (ARC grant number LP130100304). I confirm that the research was conducted in accordance with the approved protocols.

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LIST OF RESULTING CONFERENCE PRESENTATIONS

LIST OF PUBLICATIONS FROM DOCTORAL RESEARCH PUBLISHED OR PREPARED FOR SUBMISSION


ACKNOWLEDGE OF PAPERS INCLUDED IN THIS THESIS

Section 9.1 of the Griffith University Code for the Responsible Conduct of Research ("Criteria for Authorship"), in accordance with Section 5 of the Australian Code for the Responsible Conduct of Research, states:

To be named as an author, a researcher must have made a substantial scholarly contribution to the creative or scholarly work that constitutes the research output, and be able to take public responsibility for at least that part of the work they contributed. Attribution of authorship depends to some extent on the discipline and publisher policies, but in all cases, authorship must be based on substantial contributions in a combination of one or more of:

- conception and design of the research project
- analysis and interpretation of research data
- drafting or making significant parts of the creative or scholarly work or critically revising it so as to contribute significantly to the final output.

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- Offer authorship to all people, including research trainees, who meet the criteria for authorship listed above, but only those people.
- accept or decline offers of authorship promptly in writing.
- Include in the list of authors only those who have accepted authorship
- Appoint one author to be the executive author to record authorship and manage correspondence about the work with the publisher and other interested parties.
• Acknowledge all those who have contributed to the research, facilities or materials but who do not qualify as authors, such as research assistants, technical staff, and advisors on cultural or community knowledge. Obtain written consent to name individuals.

Included in this thesis are papers in Chapters 6, 7, 8 and 9 which are co-authored with other researchers. My contribution to each co-authored paper is outlined at the front of the relevant chapter. The bibliographic details and status of these papers including all authors are:

**Chapter 6:** This chapter consists of a co-authored paper which has been published. As an open-access article, per BioMed Central guidelines copyright is retained by the authors, allowing this paper to be presented in full within this thesis. The citation details are provided below.


**Chapters 7, 8 and 9:** These chapters consist of articles in preparation for submission. The citation details for each are provided below.

Chapter 7:

Chapter 8:

Chapter 9:

Appropriate acknowledgements of those who contributed to the research but did not qualify as authors are included in each paper.

Codi White, PhD Candidate
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Supervisor: Dr Dianne Shanley
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Background Information and Overview of Studies

Children around the world continue to be at risk of encountering others, either adults or children, who may mistreat them physically, emotionally or sexually (Collin-Vézina, Daigneault, & Hébert, 2013; Jones & Pozzebon, 2010; World Health Organisation [WHO], 2006). In response, a number of school and community based programs have been developed to help address risks of interpersonal harm (Collin-Vézina et al., 2013; Poole & Tomison, 2000). As children may encounter these interpersonal risks in the absence of safe adults, a key goal of these programs is to improve children’s interpersonal safety knowledge and, through this, improve interpersonal safety skills such as knowing when and how to withdraw from the danger, as well as how to identify safe adults and disclose the danger. Unfortunately, many of these programs have not been thoroughly evaluated, despite frequent discussion of their importance, their widespread dissemination to children and parents, and the extensive time and money invested to implement them (Poole & Tomison, 2000; Walsh, Zwi, Woolfenden, & Shlonsky, 2015). This is problematic, as without thorough evaluations and measures with which to make these evaluations, it cannot be known if these programs are truly reaching their goals and having a beneficial effect. In the current thesis, three studies were conducted that together examined the effectiveness of an Australian protective behaviour program for Year 1 students (Study 1), tested whether an in-situ training (IST) of safety behaviour could act as a booster enhancing the effectiveness of the program (Study 2), and examined predictors of children’s observed interpersonal safety behaviour (Study 3).

In Australia, protective behaviour programs are one of the most common methods used to increase the safety of children (Johnson, 2000). Protective behaviour
programs focus on educating children about interpersonal safety skills, such as recognition of unsafe situations and identification of and disclosure to safe adults, which can be applied across a variety of unsafe interpersonal situations. In Queensland particularly, *Learn to be safe with Emmy and friends*™ is a protective behaviours program that has been provided to children in many Year 1 classrooms by the not-for-profit agency Act for Kids (Dale et al., 2015). The aim of Study 1 in the current thesis was to assess the effectiveness of this program, using a randomised controlled study design with a large sample of schools, including a range of outcome measures. A novel element of the study design was the development and implementation of the Observed Protective Behaviours Test (OPBT) as an outcome measure that was designed to directly assess children's interpersonal safety skills. The OPBT is an in-vivo, real-life scenario that allows for experimenter observation of children’s interpersonal safety behaviours. These behaviours were expected to be primary outcomes of the interpersonal safety program.

It was also expected that the OPBT could be a useful method for improving children’s interpersonal safety skills, given that the OPBT was designed to share some features of behavioural skills training (BST) and IST programs (Miltenberger, 2008). Informed by behaviourist theories, BST and IST programs focus directly on the use of modelling, repetition and feedback to teach skills, and through this these programs have been used to improve interpersonal safety skills. Not only does the OPBT allow for the observation of children’s interpersonal safety skills, but it also comprises a single-session disclosure based IST, through the provision of feedback and a teaching component during the debrief process. Intended for use with at-risk populations such as children or adults with disabilities, BST and IST programs for interpersonal safety skills have not been widely used in Australia, nor evaluated in conjunction with more
education focused school-based child safety programs (Godish, Miltenberger, & Sanchez, 2017). As such, the aim of Study 2 in the current thesis was to address these gaps by examining the effectiveness of the OPBT procedure as a single disclosure-based IST session in improving disclosure intentions, disclosure confidence and safety identification skills. The OPBT was examined for effectiveness both by itself and as a booster session to the *Learn to be safe with Emmy and friends™* program.

Understanding the factors that may help to influence the development or use of interpersonal safety skills could be useful information for practitioners, both in developing program elements to address those factors and in identifying children who require greater attention because they lack these skills. There are many theories of behaviour such as the Theory of Planned Behaviour (TPB; Ajzen, 1991) and the Health Action Process Approach (HAPA; Schwarzer, 2008) that could inform studies of the correlates of children’s interpersonal safety skills and the development of safety skills. However, few of these theories have been applied to research for interpersonal safety behaviours, in part due to the difficulties in measuring children’s use of these skills. The newly developed OPBT allows for interpersonal safety skills to be assessed through observation in a standardised and ethical manner. As such, the aim of Study 3 in the current thesis was to examine the correlates of children’s interpersonal safety skills suggested by both protective behaviour program logic models and theories of behaviour. Children’s protective behaviours knowledge, intentions and confidence, as well as demographic variables, were examined as correlates of observed interpersonal safety skills.

Overall, through each the studies described, the main goals of the current thesis are to help identify methods of improving interpersonal safety skills in young children and to investigate factors that may help to identify children who need further help in
developing these skills. Aim 1 focuses on evaluation of a current protective behaviours program in the community, Aim 2 focuses on additional ways that interpersonal safety skills may be improved through use of a novel IST booster session and Aim 3 focuses on identifying both the prevalence and predictors of interpersonal safety skills in young children. Through each of these aims the current thesis seeks to add to the literature on child maltreatment prevention and contribute to research on improving children’s safety in areas of interpersonal risk.
CHAPTER 2

Child Maltreatment and Risk of Harm: Background and Prevalence

Child maltreatment is a serious and widespread problem that affects all countries and demographic groups (Collin-Vézina, Daigneault, & Hébert, 2013; Jones & Pozzebon, 2010; Stoltenborgh, Bakermans-Kranenburg, Alink, & van IJzendoorn, 2015). In Australia, child maltreatment is categorised by child protection services into four main types: sexual abuse, physical abuse, emotional abuse and neglect (Australian Institute of Health and Welfare [AIHW], 2017). Children are at risk of harm, however, from a range of interpersonal interactions, in addition to those traditionally considered by child protection services. Indeed, the World Health Organisation (WHO, 2006) report on child maltreatment defines this term as applying to a range of harms against children, including child-focused interactions such as bullying. Further, experiences of these types of interpersonal harm or maltreatment during childhood share associations with a range of additional detrimental outcomes into adolescence and adulthood. These include greater rates of poverty, greater engagement with crime and increased mental and physical health concerns, as well as difficulties with physical, emotional, mental and social developmental trajectories (Currie & Widom, 2010; Felitti et al., 1998; Fergusson, Boden, & Horwood, 2008; Moore et al., 2015; Stouthamer-Loeber, Loeber, Homish, & Wei, 2001; WHO, 2006).

Despite widespread appeals and the implementation and dissemination of many prevention and intervention programs to prevent maltreatment, child maltreatment remains prevalent, both in Australia and worldwide. For example, bullying remains present within both primary and high schools, with studies finding that 15-16% of Australian children report being bullied (Cross et al., 2009; Rigby & Johnson, 2016). This is not an isolated trend, as a recent meta-analysis highlighted an estimated
international lifetime prevalence for cyberbullying at approximately 15%, with a lifetime prevalence of 35% for traditional bullying (Modecki, Minchin, Harbaugh, Guerra, & Runions, 2014).

Further, in 2016 a government report described increases across all maltreatment categories in the numbers of child protection notifications and substantiations, with a 7.7% increase in Australian children found to have been either harmed or at risk of harm compared to the previous year (AIHW, 2017). Consistent with this, Mathews, Bromfield, Walsh, Cheng, and Norman (2017) found that over a 20-year period, there was a significant increase in both the number of reports and number of substantiated reports of child sexual abuse (CSA) in Victoria, Australia. Further, Australia has been reported to have a 21.5% lifetime prevalence for CSA in girls, which is the highest lifetime prevalence rate in girls worldwide (Stoltenborgh, van IJzendoorn, Euser, & Bakermans-Kranenburg, 2011). However, more recent studies have reported prevalence rates of approximately 14% for girls and 5% for boys (Moore et al., 2015). This high prevalence of CSA is not unique, with international lifetime prevalence rates for CSA estimated between 7-8% for boys and 18-19% for girls (Pereda, Guilera, Forns, & Gomez-Benito, 2009; Stoltenborgh et al., 2011).

The prevalence of emotional abuse in children has also been found to high, with reported estimated lifetime prevalence between 6 to 17% internationally (Cohen et al., 2006; Price-Robertson, Smart, & Bromfield, 2010; Rosenman & Rodgers, 2004) and a recent meta-analysis reporting a worldwide prevalence of 36% when self-report data is the source of information (Stoltenborgh, Bakermans-Kranenburg, Alink, & van IJzendoorn, 2012). In addition, global prevalence rates for physical and emotional neglect are estimated to be between 16-18% (Stoltenborgh, Bakermans-Kranenburg, & van IJzendoorn, 2013). Meanwhile, physical abuse of children, including hitting,
shaking, throwing and biting, has been found in past studies to have an estimated lifetime prevalence of 5 to 18% (Cohen et al., 2006; Mazza, Dennerstein, Garamszegi, & Dudley, 2001; Price-Robertson, et al., 2010; Rosenman & Rodgers, 2004). A recent meta-analysis also reported a worldwide child physical abuse prevalence of 23% when the source of information was self-report (Stoltenborgh, Bakermans-Kranenburg, van IJzendoorn, & Alink, 2013). Given these numbers, it is clear that there is still much more work needed in investigating and implementing effective techniques of reducing child maltreatment.

Interestingly, and consistent with the higher prevalence rates when sources rely on self-report information, researchers suggest that the incidence and prevalence rates reported by both government agencies and research studies may represent only the ‘tip of the iceberg’ (Alaggia, 2004). Indeed, it has been found that many individuals experience abuse and bullying without officially disclosing it (Alaggia, Collin-Vézina, & Lateef, 2017). This is important as it suggests that current prevalence rates may underreport actual prevalence rates for bullying or sexual, physical or emotional abuse. This delayed or lack of disclosure can have profound effects by preventing the child from receiving needed supports and in some cases may prevent authorities from intervening to stop any abuse or bullying that may be occurring (Alaggia, 2004; Alaggia et al., 2017). As such, further work is needed to better understand and increase not only prevention efforts regarding child maltreatment but also in particular disclosure of maltreatment or risk of harm when it does occur.

**Child Maltreatment Prevention: Legislation and Frameworks**

Article 19 of the United Nations *Convention of the Rights of the Child* recommends that governments should take “legislative, administrative, social and educational measures to protect the child from all forms of physical or mental violence,
injury or abuse, neglect or negligent treatment, maltreatment or exploitation, including sexual abuse” (p. 5, United Nations, 1989). This convention, and its appeals against child maltreatment, has been ratified and supported by legislation in over 150 countries around the world, including Australia (United Nations, 1989; 2013). Indeed, in order to further address the continuing concern regarding child risk of harm, the National Framework for Protecting Australia’s Children 2009-2020 was developed by the Council of Australian Governments (COAG; COAG, 2009).

The end goal, as specified in the Convention as well as the National Framework, is to address child maltreatment or harm already occurring, as well as to prevent it from occurring in the first place (COAG, 2009; United Nations, 1989). Methods of addressing this goal include legislation regarding child abuse and mandatory reporting, education to adults in the community, and parenting programs directed towards at-risk populations of parents (Rudolph & Zimmer-Gembeck, 2016). However, whilst the onus of responsibility is on the surrounding adults to protect children, there are many incidents where a child will come into contact with a risky situation or individual, without the presence or intervention of a trustworthy adult. As such, there is a need for methods that can teach children skills about how to recognise these situations, remove themselves from them if possible and inform responsible adults about the risk. To help address this concern, in the National Framework there has been a focus placed on both funding maltreatment prevention based programs, and on filling research gaps to enhance and complement evidence-based practice in the child protection and maltreatment prevention domain (COAG, 2009). By developing new strategies for better evaluating an interpersonal safety program, both of these goals have been addressed in the current research thesis.

Child Maltreatment Prevention Programs
There are multiple programs designed to teach children skills that could help them to prevent maltreatment. Such programs usually consist of the teaching and practice of strategies that aim to prevent child maltreatment before it occurs (Collin-Vézina et al., 2013; Poole & Tomison, 2000; WHO, 2006). The usefulness of this type of program can be questioned, as they are often universal and, as such, are designed to address the needs of all children, many of whom may never encounter a risky situation (Stoltenborgh et al., 2015; Walsh, Zwi, Woolfenden, & Shlonsky, 2015). However, the use of primary prevention programs has persisted primarily because providing a universal program (one that is not tailored to particular populations) is often cheaper and easier to implement than multiple targeted programs and ensures that all children have the opportunity to learn skills which are thought to minimise risk of harm (Johnson, 2000; Poole & Tomison, 2000).

While the widespread adoption and dissemination of maltreatment prevention programs for children have been aimed at improving interpersonal safety skills, there has been a comparative lack of methodologically rigorous evaluations of the effectiveness of these programs (Davis & Gidycz, 2000; Lynas & Hawkins, 2017; Sanderson, 2004; Topping & Barron, 2009; Walsh et al., 2015; Walsh, Zwi, Woolfenden, & Shlonsky, 2016). For example, many evaluations do not use gold-standard evaluation and analysis techniques, including use of control groups, randomisation to conditions, blind evaluators, follow-up assessments, reporting of implementation fidelity, adequate sample sizes, appropriate statistical controls for missing data and attrition, cluster-adjustments for nesting effects or reporting of relevant intra-cluster coefficients, and/or examination of other potential moderators. Some evaluations have made efforts to incorporate some controls or other more rigorous research techniques (Morris et al., 2017), however, the best evidence for program effectiveness results from evaluations
specific to each program. Different programs may cover similar topics or share common aims, but the specific concepts and skills taught within each program, and the different activities, materials and methods used to communicate and teach these concepts and skills, can result in program differences that ultimately affect the effectiveness of that particular program. In addition, while program evaluations have been published in the literature, not all of these programs are currently being disseminated or available for use (Brassard & Fiorvanti, 2014), limiting the usefulness of such research to individuals seeking to utilise such a program within their community. This suggests a need for not only methodologically rigorous evaluations but also for effectiveness evaluations of current programs being used or available within community settings.

Like in many other countries, the last few decades have seen a proliferation of child maltreatment prevention programs in Australia (Collin-Vézina et al., 2013; Poole & Tomison, 2000; Walsh, Berthelson, Brandon, & Nicholson, 2012). In the past two decades, a series of initiatives have been made in Australia to collate and examine the effectiveness of these programs. One of the most comprehensive initiatives has been the National Audit of Child Abuse Prevention Programs conducted by the National Child Protection Clearinghouse and Australian Institute of Family Studies with the support of State and Territory government departments, as well as that of the National Council for the Prevention of Child Abuse and Neglect (Poole & Tomison, 2000). In this audit, information regarding 1814 different child maltreatment prevention programs was collected and examined, with the authors concluding that very few thorough evaluations of child abuse prevention programs had been conducted in Australia. Specifically, it was found that 85% of programs (1357 programs) used at least one measure to evaluate program outcome (e.g., participant satisfaction), but only 23.8% (435) collected data pre- and post-program participation to examine difference or change over time, and only
2.6% in total (47 programs) had conducted an evaluation of program effectiveness that included a comparison group. Without the use of methodologically rigorous evaluation techniques such as control groups and randomised designs, this means that any results derived from such evaluations are subject to multiple biases and an inability to conclude that the program was the cause of any improvements observed among children. As such, many questions still remain as to how effective these programs are and whether the money funding them may, in fact, be better spent elsewhere.

Later efforts to collate the research regarding child abuse and neglect in Australia have also highlighted the relative dearth of comprehensive and rigorous program evaluations. The national audit of child protection research in Australia from 1995-2004 and the protecting Australia’s children research audit 1995-2010 each aimed to identify the state of child protection research, both what had been done and the existing research gaps (Higgins, Adams, Bromfield, Richardson, & Aldana, 2005; McDonald, Higgins, Valentine, & Lamont, 2011). Much like their predecessor, these national audits found that many research studies lacked methodological rigour. In particular, it was found that there was a dearth of experimental, quantitative research with a longitudinal focus and research that was hypothesis testing rather than exploratory. It was also noted that previous studies needed to be replicated with studies using more rigorous methods, such as experimental controls and reliable measures derived from clear program goals and/or sound theory. In particular, Higgins et al. (2005) concluded that a primary issue in the Australian research on child protection was the shortage of research, and that it was not possible to claim an adequate evidence-base for sound policy and practice decisions. Similar concerns regarding the methodological rigour of studies including sample size and controls for cluster-adjustment have been raised in a recent Australian report examining the current research evidence for sexual
abuse prevention programs for pre-schoolers (Pitts, 2015). Overall, whilst Australia has many child maltreatment prevention programs, it is clear there is a need to further investigate and ensure the quality or effectiveness of those programs. Furthermore, there is a need for an evaluation that addresses multiple outcomes of these programs that are important for understanding their effectiveness, such as parent satisfaction, children’s knowledge, intentions to engage in safety behaviours, and actual safety behaviour.

Child-focused child maltreatment prevention programs can be categorised into two main domains, programs that focus primarily on skills training and programs that also include a focus on a knowledge or education, including protective behaviour programs. In the current thesis, gaps in the literature surrounding program evaluations, particularly within an Australian context, are addressed by evaluating both an existing protective behaviours program, Learn to be safe with Emmy and friends™, and a novel behavioural paradigm that involves an in-situ training (IST) component, the Observed Protective Behaviours Test (OPBT). By evaluating both an existing program and a paradigm which may be added as a booster to this program, the current thesis also seeks to address the relative dearth of program evaluations for existing programs used within communities (Brassard & Fiorvanti, 2014; Higgins et al., 2005; McDonald et al., 2010).

**Protective behaviour programs.** Child protection education programs are some of the most commonly available and implemented child maltreatment programs (Poole & Tomison, 2000; Walsh et al., 2015). However, despite teaching children similar interpersonal safety skills, such as disclosure of harm, many of these programs focus only on prevention of specific types of risk, including anti-bullying programs, sexual abuse prevention programs and abduction prevention programs (Rigby & Johnson, 2016; Walsh et al., 2015). This may reduce the efficiency desired from primary prevention, with either multiple programs being conducted covering similar concepts or
children only being taught to apply their interpersonal safety skills for a singular type of harm or risk context. By contrast, when programs aim to prevent a range of harms, as is seen in protective behaviours programs, this can assist in justifying their delivery, particularly when such programs are able to demonstrate noticeable, positive changes in participant behaviour.

Protective behaviours programs are one of the most prevalent types of child protection education programs in Australia (Johnson, 2000). These programs often focus on the three core concepts outlined by the founder of this framework, Flandreau-West (1989), namely safety (identification of safe and unsafe situations), early warning signs (recognising bodily signals that might indicate an unsafe situation) and networking (identifying and encouraging communication with trusted adults that the child can disclose to). Since the 1970’s, many variations of protective behaviours programs have been created, incorporating new modules to enhance children’s safety, such as good/bad touch, safe/unsafe secrets, and peer pressure (Dale et al., 2015). One of the major benefits of protective behaviours programs is that, unlike other child maltreatment prevention programs which focus solely on one type of harm (e.g., sexual abuse, physical abuse, bullying), protective behaviours programs aim to equip children with skills to recognise, react to and report multiple types of harm. In this sense, protective behaviours programs may be more efficient by providing children with tools that can be generalised to and utilised in multiple situations. However, as with other types of child maltreatment prevention programs, despite their widespread administration and the support shown for them by governmental agencies and state police forces (Queensland Police Service, 2017), very few program evaluations have been conducted to assist in demonstrating their effectiveness.

*Learn to be with Emmy and friends™. Learn to be safe with Emmy and*
friends™ is a free primary prevention, protective behaviours program designed for Year 1 students (Dale et al., 2015). It consists of five 1-hour sessions provided in children’s normal classroom once per week with each session focussing on a different theme. Each session for Learn to be safe with Emmy and friends™ has been designed using a best practice model drawing from research on behavioural training, development, bullying, sexual abuse, and child abuse prevention. Indeed, Learn to be safe with Emmy and friends™ incorporates many aspects that have been identified as key effective components of programs preventing child sexual abuse and bullying. These include active participation (i.e., role play), explicit training (specification and rehearsal of desired behaviours), standardised materials, integration into the school curriculum, and repeated presentations and summaries of materials (Davis & Gidycz, 2004; Jones & Pozzebon, 2010). The Learn to be safe with Emmy and friends™ program also addresses the three core themes common across child protection programs: teaching children how to recognise potentially dangerous people or situations, teaching children to resist (i.e., say no and remove themselves from the situation) and encouraging children to report or disclose any past, ongoing or future abuse or dangerous encounters to trusted authority figures (Wurtele, 2009). Each of the five Learn to be safe with Emmy and friends™ sessions, as well as their theoretical basis, are outlined in Table 2.1.

Evaluation of Learn to be safe with Emmy and friends™. A previous version of the Learn to be safe with Emmy and friends™ program has been subjected to both a process and an outcome evaluation (Dale et al., 2015). In this evaluation, 245 Year 1 students from five Queensland primary schools participated. Classrooms were randomised to an intervention or waitlist comparison group. Children who completed the program showed a greater increase in protective behaviours knowledge from pre- to post-participation, relative to the comparison group. Further, parents of children in the
intervention condition reported an increase in children’s knowledge and use of protective behaviour concepts. However, increases in children’s intention to respond in a safe manner to unsafe situations did not differ between the program and the comparison groups from pre- to post-participation. There was also no significant change over time found for the intervention and comparison groups in reported anxiety levels. A 6-month follow-up was also conducted with children in the intervention condition (Dale et al., 2015). Children’s gains in protective behaviours knowledge were found to be maintained at this time point, as was the increase in children’s knowledge and use of protective behaviour concepts as reported by parents. Further, the safety intentions of the intervention group significantly increased further between post and 6-month follow-up. Overall, this preliminary data indicates that the Learn to be safe with Emmy and friends™ program appears to be effective in increasing protective behaviours knowledge and parents seem to observe children’s improvements in this understanding.

The Dale et al. (2015) evaluation of Learn to BE SAFE with Emmy™ did have some limitations. First, generalisability of the findings may have been compromised because of the restricted sample size and sampling. Second, by randomising classrooms, contamination effects could have occurred through children in the control condition learning concepts of the program when interacting with children participating in the intervention. Third, due to the need for all children to complete the program, children in the control condition were unable to be assessed at follow-up. This made it difficult to determine the extent that changes during the follow-up period were due to program effects and the extent to which those changes may have been due instead to developmental and maturational effects. Fourth, it was reported by Dale et al. that the response options for the intention measure did not fit well for the majority of children’s

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1 Program name changed from Learn to BE SAFE with Emmy™ to Learn to be safe with Emmy and friends™.
Table 2.1.

Overview of Learn to Be Safe with Emmy and Friends™ Program Content and Purpose.

<table>
<thead>
<tr>
<th>Session</th>
<th>Content and Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Emotion Recognition and Early Warning Signs.</strong> Content focuses on body signals that indicate various emotions as well as emotions or feelings that might indicate danger. Strategies to assist in remaining calm and reducing anxiety or worry are also taught. This is so that children are able to recognise when they might be feeling scared or angry, and know how to calm down so that they can more effectively respond to situations.</td>
</tr>
<tr>
<td>2</td>
<td><strong>Early Warning Signs and Safe/Unsafe Situations.</strong> Content focuses on early warning signs (i.e., indicators given by the body that a situation may be unsafe), discriminating safe and unsafe situations, and identifying situations that may feel unsafe but are either fun (e.g., roller coasters) or within the child’s control (e.g., a test).</td>
</tr>
<tr>
<td>3</td>
<td><strong>Personal Space and Private Body Areas.</strong> Content addresses the concept of personal space and private body areas as well as teaching responses to personal space violations and information regarding disclosure.</td>
</tr>
<tr>
<td>4</td>
<td><strong>Safe/Unsafe Secrets.</strong> Content focuses on examples of safe and unsafe secrets and distinguishing between these two types of secrets. Encouragement is also given to disclosing potentially unsafe secrets to safe adults.</td>
</tr>
<tr>
<td>5</td>
<td><strong>Identification of Safe Adults and Safety Networks for Disclosure.</strong> The final session focuses on recognising and developing networks of safe adults from whom children may seek help. This includes personal networks individual to each child as well as provision of contact information for specialist services for children such as Kids Help Line.</td>
</tr>
</tbody>
</table>

responses. Finally, although an intention measure was used, behavioural skills were not assessed outside of parent-report.

**Summary and Aim 1**

The limitations of the Dale et al. (2015) evaluation described above highlight an opportunity to further evaluate *Learn to be safe with Emmy and friends*™ using more rigorous methodological and statistical techniques to provide greater confidence in program effects. Moreover, such a study would also contribute to the evidence base for methods of increasing interpersonal safety more generally, given that most program evaluations have been limited in either scope of program content, sample size for evaluations, or in use of appropriate methodological and statistical controls (McDonald, et al., 2011; Pitts, 2015; Walsh et al., 2015). To this end, Aim 1 of the current thesis was to evaluate the effectiveness of *Learn to be safe with Emmy and friends*™ addressing some of the methodological challenges Dale et al. faced.

After providing further background for all studies of this thesis in Chapters 3, 4 and 5, Chapter 6 of the current thesis described the evaluation protocol for the large, multi-site, cluster-randomised trial that addressed Aim 1 (White et al., 2016). Compared to Dale et al. (2015), the possibility generalising the findings was improved via recruiting more schools and a larger sample of children. Further, randomisation was conducted at the school, rather than the classroom, level to help address potential contamination effects where children playing in the same playground might share knowledge. In addition, to allow differentiation between maturational and program effects, children remained in the waitlist control condition until 6-month follow up data had been collected. Concerns about the appropriateness of protective behaviour intention options were addressed by making this measure open-ended, with thematic
scoring and additional constructs such as safety identification skills were also added. Finally, perhaps the most important addition to previous studies, the relative lack of assessment of behavioural data was addressed through the development and use of a behavioural measure of interpersonal safety skills, the OPBT. The decision to publish a methodological protocol for this trial, was important to further promote use of effective evaluation practices in the child maltreatment prevention and interpersonal safety skills domains. By publishing this information and ensuring that it is open-access, information on evaluation design can be better disseminated to inform and encourage other individuals seeking to evaluate existing or novel child maltreatment prevention programs.

Chapter 7 describes the findings of the cluster-randomised trial described in Chapter 6 at the Gold Coast site. As the Gold Coast site was the only site where the OPBT interpersonal safety skills measure was implemented, this thesis only reports results from that site. In particular, this chapter focuses on the effects of participation in the Learn to be safe with Emmy and friends™ program as compared to a waitlist, both immediately, and six months after participation.
CHAPTER 3

Increasing Interpersonal Safety Skills: Behavioural Skills and In-Situ Training

Protective behaviours programs are one of the most prevalent types of personal safety programs in Australia, but other programs with a greater focus on safety skills training do exist (Johnson, 2000; Miltenberger, 2008). In particular, Behavioural Skills Training (BST) programs train children and adults to avoid and report safety risks across a variety of domains, including poison consumption, gun safety, road safety and interpersonal safety concerns such as abduction prevention and sexual abuse prevention (Fisher, Burke & Griffin, 2013; Miltenberger, 2008). Individual programs for a BST approach are often risk-specific, but they share a primary focus on the acquisition of desired interpersonal safety skills (e.g., removing oneself from the risk situation, disclosure of the risk) through use of demonstration, rehearsal and feedback during training. As such, the primary theoretical basis for such programs draws from traditional behavioural techniques such as modelling and conditioning (Miltenberger, 2008).

Child protection education programs and protective behaviours programs in particular, are often administered in classroom settings within schools to large groups of children. In contrast, programs using a BST approach have traditionally involved greater one-on-one interaction and as such have been administered either individually or in small groups (Fisher, Burke, & Griffin, 2013; Miltenberger, 2008; Walsh, Zwi, Woolfenden, & Shlonsky, 2015). This is partially due to the training component of programs using a BST approach, which is often conducted during in-person role plays, although some studies have adapted these to computer formats (Miltenberger, 2008; Vanselow & Hanley, 2014). Due to its focus on rehearsal over comprehension, dissemination of BST has also been predominantly administered with individuals from populations at increased risk of harm. These populations include children younger than...
school age, children and adults with developmental and intellectual delays and children and adults with other mental health concerns (Egemo-Helm et al., 2007; Fisher et al., 2013; Godish, Miltenberger, & Sanchez, 2017; Sanchez & Miltenberger, 2015).

**Behavioural Skills Training Evaluation**

Unlike evaluations of child protection education programs, the primary assessment measures used to evaluate BST and IST programs have been focused on behavioural measures of safety skills (Miltenberger, 2008). This involves the use of in-situ assessments where a risk is simulated to allow the individual to display the desired safety skill. Research on the efficacy of BST training of interpersonal safety skills in children has focused on the simulated risk context of abduction prevention.

However, few evaluations of BST for interpersonal safety have been published (Miltenberger, 2008). Those that have been published have reported programs using a BST approach as partially effective in increasing immediate interpersonal safety skills. Specifically, for refusal of abduction lures (immediate verbal safety response) Poche, Brouwer, and Swearingen (1981) found that all 3 children trained (aged 3-5 years) refused the abduction lure provided by an unknown confederate. Holcombe, Wolery, and Katsenemeyer (1995) found that, of 46 children trained across multiple trials, 67-71% refused the lure. For withdrawal from the stranger (immediate motor safety response), all 3 children in Poche et al.’s study withdrew from the unknown confederate, as well as 45 of 46 children in Holcombe et al.’s study. More recently, Johnson et al. (2006) found that immediately post-training, 6-7 year old children who participated in BST demonstrated greater interpersonal safety skills than children in a control condition. However, despite showing greater use of interpersonal safety skills than the control group, only 57% displayed the full criterion behaviours (refusing the lure, withdrawing from the danger and disclosing to an adult).
By contrast, there has been limited evidence for the long-term effectiveness of BST alone. For Poche et al. (1981), only one of the two remaining children demonstrated both the motor and verbal safety responses at a 6-month follow-up. Further, in their 3-month follow-up, Holcome et al. (1995) found that only 2 of 6 remaining children met criterion motor safety responses and verbal safety responses respectively. Johnson et al. (2006) also demonstrated this lack of skill retention with the number of children displaying full criterion behaviours dropping from 57% to 45% of children at their 3-month follow-up.

**In-Situ Training**

Another version of this training model that addresses difficulties in skill generalisability, retention and acquisition, is in-situ or in vivo training (Miltenberger, 2008). In-situ training (IST) occurs when the individual is placed within a simulated risk context, naïve to its simulated nature, and feedback is provided on use of interpersonal safety skills in that scenario (Miltenberger, 2008). This feedback is often paired with opportunities for rehearsal. As such, IST takes advantage of the in-situ assessments that are used in BST to assess interpersonal safety skill use. By allowing training in a simulated risk context, IST is thought to allow greater generalisation of the safety skills being taught and maintenance of those skills over time (Johnson et al., 2006; Miltenberger, 2008).

Thus far, evaluations of IST have typically been conducted as additions to BST evaluations. This research has found that adding IST to existing programs using a BST approach can allow individuals to acquire safety skills when BST was unsuccessful and allow greater maintenance of those skills (Gatheridge et al., 2004; Himle, Miltenberger, Gatheridge, & Flessner, 2004). Johnson et al. (2005) also found that when IST was administered concurrently within an abduction prevention program, all children
demonstrated the desired interpersonal safety skills. Further, in an additional study, Johnson et al. (2006) compared IST+BST to BST alone. While no differences were found in the use of interpersonal safety skills of children immediately post-training, it was found that the use of IST resulted in significantly greater maintenance of interpersonal safety skills over time. Specifically, at a 3-month follow-up, 85% of children who participated in both IST+BST demonstrated all criterion interpersonal safety behaviours, whilst only 45% demonstrated those skills when BST alone was used.

The use of IST has also been examined as an added component to video-based education safety programs focused on abduction prevention. Specifically, Beck, Miltenberger, & Ninness (2009) reported that when the video-based education program was used no children demonstrated the criterion interpersonal safety skills (moving away from the confederate and telling an adult). However, as with BST research, the use of IST (conducted by parents) resulted in improvements in interpersonal safety skills. Use of the education program+IST was particularly effective, with 11 of 12 children in this condition attaining criterion interpersonal safety skills compared to 9 of 14 who received IST alone. Similarly, in a more recent evaluation, Miltenberger et al. (2013) found that use of parent-administered IST significantly improved interpersonal safety skills in children who did not meet the criterion using the video education program alone. However, in contrast to Beck et al., Miltenberger et al. found no significant differences in the effectiveness of the program+IST condition compared to IST alone.

**Summary and Aim 2**

IST has shown effectiveness as a booster component to both traditional BST and to video-based education safety programs, in increasing interpersonal safety skills (Beck et al., 2009; Johnson et al., 2006). Thus far however, there have been no evaluations
examining the effectiveness of IST as an addition to the popular school-based safety education programs. In addition, past research that has evaluated IST components have placed little focus on the traditional outcomes used to evaluate such education based programs, including knowledge, intentions and confidence related to interpersonal safety skills. To address this gap, Aim 2 of the current thesis was to evaluate the effectiveness of a single-session disclosure focused IST both by itself and as a booster component to the Australian protective behaviours program, Learn to be safe with Emmy and friends™.

Chapter 8 of the current thesis examines the value of adding an IST to a protective behaviours program by comparing children who participated in the IST + the protective behaviours program, those who participated in the protective behaviours program alone, those who participated in the IST alone, and those in the waitlist condition who received neither the program nor the IST. Child participants were drawn from the larger cluster-randomised trial described in Chapter 8. Data were collected at baseline and 7 months later. The use of a long-term (i.e., 7-month) follow-up was selected to best capture the maintenance-enhancing effects suggested in previous IST research (Johnson et al., 2006). Due to concern about testing effects due to the distinctive nature of the OPBT IST, it was decided focus on the impact of the IST on outcomes traditionally used to assess child protection education programs such as interpersonal safety intentions, confidence and safety identification skills. This represents a novel addition to the IST literature, where the impact of such training on children’s interpersonal safety intentions and confidence has yet to be examined.
CHAPTER 4

Measures of Interpersonal Safety

Part of the difficulty in conducting evaluations for child maltreatment prevention programs may be due to a relative dearth of appropriate measures, particularly for protective behaviour programs which focus on interpersonal safety across a variety of contexts. Indeed, despite common program targets (i.e., increased disclosure, psychoeducation), most measures used in the child maltreatment prevention field are either specific to certain types of risk or specifically designed for individual programs. Furthermore, there are very few studies evaluating protective behaviour programs that have been able to measure direct behavioural skill, as opposed to changes in knowledge or intentions. The current thesis aimed to adapt the interpersonal safety measures developed by Dale et al. (2015) to better assess children’s responses and to develop an observed behaviour skills test, the Observed Protective Behaviour Test (OPBT), to examine behavioural responses that indicate interpersonal safety skills in children aged 5-8. In particular, Chapter 9 examined the degree to which children’s scores on these traditional evaluation outcomes for child protection education programs (i.e., interpersonal safety knowledge, intentions and confidence) predicted children’s use of interpersonal safety skills during an in-situ assessment through the OPBT.

Knowledge

Increased knowledge about types of risk and risk protection behaviours are often one of the key targets of prevention programs (Kenny, Capri, Ryan, & Runyon, 2008; Wurtele, Marrs, & Miller-Perrin, 1987). However, despite this, many programs still do not effectively evaluate knowledge gained. For example, one Australian report found that only 2.6% of sexual abuse prevention programs compared changes in knowledge of children undergoing the prevention program with a control group of children who did
not receive the program (Sanderson, 2004). Furthermore, while effective knowledge questionnaires do exist, such as Good Touch, Bad Touch Curriculum Test (ÇeÇen-Eroğul & Hasirci, 2013; Harvey, Forehand, Brown, & Holmes, 1988) and Personal Safety Questionnaire (Wurtele, Kast, & Melzer, 1992; Zhang et al., 2013) they often focus on content to specific to certain types of maltreatment (e.g., sexual abuse). As such, these would not be appropriate for protective behaviour programs, which are more generalised risk reduction programs.

In response to the lack of effective protective behaviour knowledge questionnaires Dale et al. (2015) created and used the Protective Behaviours Questionnaire (ProBeQ) in a previous evaluation of the Learn to be safe with Emmy and friends™ program. This knowledge questionnaire assessed content such as safe and unsafe secrets, early warning signs and safe and unsafe situations and disclosure to safe adults. This measure was used in all three main studies of the current thesis (Chapters 7, 8 and 9) as an indicator of interpersonal safety knowledge.

**Intention**

Measures of children’s intention to perform protective behaviours are commonly used within the literature as a surrogate for measures of behavioural skill. This is mostly due to ethical concerns surrounding placing the child in real ‘unsafe’ situations to test their safety skills. They have also been used as a measure for children’s ability to recognise dangerous situations. Commonly, children’s intentions to use protective behaviours are assessed by presenting vignettes of safe and unsafe situations (Wurtele et al., 1987; Wurtele, 1990). The benefits of vignettes are that they provide a way of evaluating a child’s potential response to a risk situation without placing the child at risk of harm. One reliable measure that uses vignettes is the “What If?” Situations Test that uses three vignettes displaying appropriate requests to touch children’s genitals and
three inappropriate requests (Wurtele, Hughes, & Owens, 1998). However, this measure, like most available in the literature, measures scenarios specific to sexual abuse.

In a previous evaluation of the Learn to be safe with Emmy and friends™ program, a generalised measure of interpersonal safety intentions was created by Dale et al. (2015), the Applied Protective Behaviours Test (APBT). This measure included scenarios from a range of risk domains (including bullying, and disclosure of abuse by a friend) and participants were asked what their most likely response would be from a set of safe and unsafe behaviours (e.g., fight). This measure provided a way of measuring how well interpersonal safety intentions generalised to a range of unsafe situations.

Although the APBT was a valuable intention measure, there were some limitations to it (Dale et al., 2015). For example, response options were reported to not match the majority of children’s desired responses. Therefore, for the main studies reported in the current thesis (Chapters 7, 8 and 9) a revised version of the APBT was utilised, where children’s responses were recorded in an open-ended qualitative format and then thematically analysed in terms of an ideal interpersonal safety response coding for each scenario to provide an indicator for disclosure/help-seeking intentions. Further, the previous APBT measure accounted for children’s responses to unsafe situations, but did not evaluate whether children could distinguish safe from unsafe situations (as the “What If?” Situations Test has previously demonstrated; Wurtele et al., 1998). Therefore, for the main studies reported in the current thesis (Chapters 7, 8 and 9) a new component to this measure was added to assess children’s abilities to accurately discriminate between ‘safe’ and ‘unsafe’ situations.

While vignettes have been a useful addition to assess behavioural intentions, they may not accurately reflect behaviour change. In particular, as children are not
placed in a "real" situation of danger, it may not trigger the danger or warning signs that are indicators of an unsafe situation. However, written vignettes have been the preferred method of assessing intentions in child protective programs in the literature to date (Walsh, Zwi, Woolfenden, & Shlonsky, 2015). This has been due to their ease of administration and the fact that they are more accepted by parents. As such, it is important to establish whether written vignettes sufficiently indicate the development of interpersonal safety skills, to increase the validity of such measures in the current literature as well as in future research. Comparing children’s responses to vignettes with a behaviour skills test would provide a better indication of the value of such vignettes.

In Chapter 9, this comparison is provided by assessing how well children’s intentions to disclose and seek help, as assessed by a series of vignettes, predicts their enacted interpersonal safety responses to a simulated risk scenario.

**Interpersonal Safety Skills**

Despite being a key target for intervention, few child protection education program evaluations measure children’s behavioural skills in response to at-risk situations (Johnson et al., 2005). This is primarily due to the fact that the benefits of setting up naturally risky settings for research, in order to observe children's responses, are not expected to outweigh the risks involved. Further, asking children (or parents) to recall situations and report on responses may not be accurate. Such retrospective reporting is made difficult by a number of factors, including memory or reporting biases, and difficulties in standardisation given that risk situations are relatively infrequent and vary in nature. As such, not every child will encounter a natural risk situation to be able to demonstrate skills they have, and those that do will encounter different risk situations.

To counter these difficulties, studies examining Behavioural Skills Training
Interpersonal Safety Skills for Children

(BST) programs have developed methods for measuring behaviour change by constructing a controlled situation that mimics a risky situation while not placing the child at harm. Utilising a controlled risk situation to evaluate safety behaviours within BST is common when assessing children’s behaviour within other risk situations, such as gun safety (Gatheridge et al., 2004). Within the domain of interpersonal safety skills, BST and In-situ Training (IST) studies have used a potential abduction as the simulated risk situation (Fryer, Kraizer, & Miyoshi 1987a, b; Miltenberger & Thiesse-Duffy, 1988; Poche, Brouwer, & Swearingen, 1981). This is of interest as it provides a standardised way of measuring response to a risk situation directly relevant to interpersonal safety skills. However, whilst BST research has typically examined interpersonal safety skill use as a single construct, each interpersonal safety skill was individually examined in the current thesis. In particular these skills were broken down into: immediate responses in the risk context, including both verbal and motor interpersonal safety responses; and disclosure after exposure to the risk context, including both timing and rate of disclosure.

**Immediate responses to risk.** One of the earliest programs to utilise a simulated risk paradigm to assess interpersonal safety skills was Poche et al. (1981). More recently, Johnson and colleagues (Johnson et al., 2005, 2006) used simulated risk situations or ‘in-situ assessments’ while evaluating an abduction prevention training program for 6 to 7 year old children. These in-situ assessments examined how well participants utilised newly taught skills in response to a potential threat. Participants’ performance during in-situ assessments are used as an opportunity for learning, correcting as necessary any disadvantageous responses made by the participant. Within the current thesis, a modification of this in-situ assessment was used to form the first stage of the OPBT. In particular, stage 1 of the OPBT consisted of a stranger lure in-situ
assessment where children’s immediate verbal (refusal of lure) and motor (withdrawal from confederate) interpersonal safety responses were recorded. Further details of this measure are provided in Chapters 6-9.

**Disclosure after risk exposure.** There are very few studies that have been able to measure children’s level of disclosure, despite increased disclosure being one of the main targets of protective behaviours programs. Sometimes referred to as secret-keeping, non-disclosure is a key component in preventing the child from receiving help (Alaggia, 2004). In the *Learn to be safe with Emmy and friends*™ program, the self-protection mantra of ‘tell, tell, tell again until someone listens and helps’ is considered a core concept.

Increasing children’s disclosure remains an important theme amongst self-protection programs. Yet, there is continued difficulty in assessing whether the aim of increasing disclosures has been met. Of the many evaluations that have been conducted, very few have assessed rate of disclosures (Beland, 1986; Walsh et al., 2015). Further, even amongst those studies that assessed disclosures, there is controversy over how to interpret the data (Hazzard, 1993). For example, it has been argued that higher disclosure rates indicate more effectiveness of a program, but is has also been argued that higher disclosure rates indicate the program was ineffective in preventing abusive situations. As such, there is a need for a way to measure ease of disclosure without the confound of prevention of abuse.

Whilst there are no existing measures of disclosure within abusive situations, other than measuring rates of spontaneous disclosure, secret-keeping paradigms do exist. Due to ethical reasons, children’s ability to keep a secret has been used as an analogue of children’s likelihood of disclosing during abuse situations (Bethel, Stevenson, & Scassellati, 2011). In one study it was found that half of five-year-olds
would lie for a stranger who asked them to conceal spilling ink and similar levels of secret keeping were found from children aged 2-8 years when they were asked to keep the secret that a stranger had destroyed a book (Martin, 1996 as cited in Dunkerley & Dalenberg, 2000; Tate, Warren, & Hess, 1992). However, there were limitations to this design as a proxy for disclosure in risk situations, as there was no perception of risk on the part of the child. Further, with a yes/no dichotomy there was not much scope for sensitivity within this measure as some children may have disclosed given more time.

One study that incorporated increased sensitivity of disclosure assessment was conducted by Dunkerley and Dalenberg (2000). To assess child disclosure rate, an experimental situation was designed where children would be exposed to a ‘good’ secret (i.e., a surprise present left for the interviewer by a confederate) or a ‘bad’ secret (i.e., a confederate hiding the interviewer’s wallet). A set script was created for the confederate who would enter and ask for help in keeping the secret. Upon the return of the initial research assistant, children’s level of disclosure was then measured on a 7-point disclosure scale, which provided multiple prompts, increasing in intensity. Thus, this scale was able to provide a framework to more accurately measure disclosure level of each child. Within the current thesis, a modification of this disclosure scale and script was used to comprise the second stage of the OPBT. In particular, stage 2 of the OPBT consisted of prompts from the interviewer regarding the presence of the confederate who provided the lure during stage 1 of the in-situ assessment. In this way, unlike other BST studies, disclosure could be examined as a separate interpersonal safety skill. Also, by using measurement of both timing and rate of disclosure greater discrimination between levels of interpersonal safety skill could be provided. Further details of this measure are provided in Chapters 6-9.

Correlates of Children’s Interpersonal Safety Skills
Investigating the correlates of interpersonal safety skills could provide critical information about both mechanisms of change and ways of identifying children who may gain more benefit from further attention. For example, the associations between interpersonal safety skills and other constructs used to determine outcomes of programs, such as interpersonal safety knowledge, intentions, confidence and safety identification skills, could potentially identify pathways of behaviour change. If so, findings could be used to tailor program content to better target a range of interpersonal safety responses, including motor interpersonal safety responses, verbal interpersonal safety responses and disclosure. In addition, identification of demographic factors related to interpersonal safety skills could allow greater tailoring of program content to at-risk populations. The relationships between interpersonal safety skills and measures of interpersonal safety knowledge and intentions are also of interest due to the common use of these measures over direct measures of skill in program evaluations. However, thus far research into interpersonal safety skills and the covariance these skills share has been rarely addressed in child maltreatment prevention research. Instead, knowledge regarding potential mechanisms of change and predictors of interpersonal safety skills has primarily come from theories of behaviour, research into secret-keeping behaviours and research with individuals who have been mistreated on actual disclosure.

**Theories of behaviour.** Both the Theory of Planned Behaviour (TPB) and the Health Action Process Approach (HAPA) have been used as frameworks in examining many protective behaviours relating to health and risk behaviours, such as driving, physical activity and sexual behaviours (Ajzen, 1991; Schwarzer, 2008; Webb & Sheeran, 2006). The TPB states that intention (resulting from personal and normative beliefs and knowledge) acts as an immediate antecedent or predictor for behaviour. The HAPA also identifies intention as one of the predictors of action (influenced by risk
perception and outcome expectancies). However, while small to moderate associations have been found between intention and behaviour in other domains, this association has not been examined for the area of interpersonal safety skills (Castanier, Deroche, & Woodman, 2013; McEachan, Conner, Taylor, & Lawton, 2011; Rhodes & Dickau, 2011). This is particularly important given that intentions are often used within evaluations of child maltreatment prevention programs as an indicator of interpersonal safety skills. Both theories also state that confidence in the ability to perform the stated behaviour (perceived behavioural control/task self-efficacy) can serve as an important moderating influence (Fishbein & Cappella, 2006). This relationship has also yet to be examined within the child maltreatment prevention domain.

**Secret-keeping research.** Secret-keeping paradigms have been used by previous researchers as an analogue for disclosure (Ahern, Stolzenberg, McWilliams, & Lyon, 2017). The most consistent predictor of disclosure within this research field has been question type, with greater disclosure to yes/no questions than for free recall (Ahern et al., 2017; Stolzenberg, McWilliams, & Lyon, 2017; Talwar, Arruda, & Yachison, 2015). Indeed research using this paradigm has found that less than 40% of children disclose without prompting (Ahern et al., 2017; Lyon et al., 2014; Stolzenberg et al., 2017).

Research has also identified some potential demographic-based predictors of disclosure. For example, greater delays in disclosure has been found for children from single-parent families and those from families with lower income or parents with lower education levels (Dunkerley & Dalenberg, 2000). Age has been a mixed predictor, with some finding younger children have greater disclosure rates (Ahern et al., 2017; Gordon, Lyon, & Lee, 2014; Stolzenberg et al., 2017) and some that older children have greater disclosure rates (Ahern et al., 2017). Gender meanwhile, has not been found to be predictive of disclosure in secret-keeping research (Ahern, et al. 2017; Heyman,
Whilst this research does provide initial information on potential predictors of disclosure, it is limited in its generalisability to predictors of interpersonal safety skills in real risk contexts. In particular, past research using secret-keeping paradigms have focused on the disclosure of secrets that are not harm or risk related. These ‘secrets’ instead typically focus on misbehaviour involving property, with confederates stealing or breaking objects (Heyman et al., 2016). As such, these secrets may not prompt the same kinds of responses elicited when there is potential risk of harm to oneself.

**Disclosure research.** A final source of information regarding interpersonal safety predictors is from research that has focused on recalled disclosure with individuals who have been mistreated. However, this research has predominantly focused on child sexual abuse (CSA) rather than disclosure of interpersonal risks in general and the findings of these research studies are often different to those findings reported within the secret-keeping literature.

Demographic, social and psychological predictors of disclosure have been identified within the CSA disclosure field. Contrary to secret-keeping research, both age and gender are consistent predictors of CSA disclosure, with older and female children being more likely to disclose (Alaggia, Collin-Vézina, & Lateef, 2017; Olafson & Lederman, 2006). In addition, social support, particularly from parents, has also been reported as a predictor (Alaggia et al., 2017; Olafson & Lederman, 2006). By contrast, feelings of fear or shame and minority ethnicity have both been reported as predictors of non-disclosure of CSA or disclosure delays (Alaggia, 2004; Alaggia et al., 2017; McElvaney, 2015; Olafson & Lederman, 2006).

However, as with the secret-keeping literature, there are a number of limitations to this method of research. It is the most ecologically sound method of gaining
information, however the majority of research is conducted with a focus only on CSA. Further, such research is inherently not standardised, with different individuals suffering differing types and intensities of harm. In addition, there is no control for confounding variables. This is particularly important given that it is then difficult to determine whether characteristics are related to increased risk of harm or whether they are related to increased likelihood of disclosure (i.e., do more girls disclose because more girls are harmed or because girls having better disclosure skills; Hazzard, 1993). In addition, since research in the disclosure field can only be conducted with those individuals who have either disclosed or where independent evidence of harm is present, this may result in a selection bias for this research.

**Summary and Aim 3**

Aim 3 of the current thesis is to examine predictors of interpersonal safety skills using a standardised paradigm of the OPBT. Research into predictors of interpersonal safety has typically been restricted to disclosure only through the use of secret-keeping paradigms. However, research for disclosure tends to utilise relatively ‘safe’ secrets, limiting the generalisability of the results. Meanwhile, studies investigating actual disclosure are ecologically useful, but make it difficult to evaluate changes in, or predictors of, protective behaviours and disclosure skills due to their non-standardised nature and selection biases. As such, there is a need to examine these skills in a way that allows greater standardisation from a research perspective, and the development of the OPBT provides this opportunity.

Chapter 9 of the current research thesis describes the findings of a study regarding predictors of interpersonal safety skills, including motor interpersonal safety responses, verbal interpersonal safety responses and disclosure timing. The children within this study had not participated in the protective behaviours program or in any
prior BST. This allowed for the best examination of potential predictors of responses in the OPBT (e.g., disclosure) for children aged 5-8 years, unaffected by other potential influences. The prevalence of young children’s interpersonal safety skill use are also described in this study.
CHAPTER 5

Summary of the Aims and Chapters

The general purpose of the current thesis is to build upon past research within the child maltreatment prevention domain, to provide further evidence regarding effectiveness of prevention programs, and to provide further knowledge regarding interpersonal safety skills. To this end three main aims are addressed.

The first aim was to provide a methodologically rigorous evaluation for the effectiveness of an existing protective behaviours program, Learn to be safe with Emmy and friends™. This aim is addressed in Chapter 6 of the current thesis which provides the published methodological protocol for a large multi-site randomised control trial. It is further addressed in Chapter 7 (Study 1), which examines the interpersonal safety outcomes including skills measured in the Observed Protective Behaviours Test (OPBT), for one site of this trial up to a 6-month follow-up.

The second aim was to evaluate the effectiveness of a single-session disclosure focused In-Situ Training (IST) (the OPBT) both by itself and as a booster component to the Australian protective behaviours program, Learn to be safe with Emmy and friends™. This aim was addressed in Chapter 8 (Study 2) of the current thesis where the interpersonal safety outcomes of children who participated in the IST alone condition, program alone condition, waitlist condition and Program+IST conditions compared across a seven month time frame.

The third aim was to examine predictors of interpersonal safety skills in a standardised manner, using the OPBT. This aim is addressed in Chapter 9 (Study 3) of the current thesis where the relationships between interpersonal safety skills, other interpersonal safety measures (e.g., knowledge, intentions, confidence), demographic predictors (gender, age, parent information) and school/social variables were examined.
In addition, this paper described the levels of interpersonal safety skills present for children aged 5-8 years, prior to any child maltreatment prevention interventions.

Finally, the thesis concludes by summarising key findings and implications for each of the studies described. This includes methodological implications resulting from the OPBT and evaluation design as well as recommendations for future protection education programs, including *Learn to be safe with Emmy and friends™* and IST based programs. Suggestions are also provided for areas to explore in further research and concluding comments presented.
CHAPTER 6

Cluster randomised-control trial for an Australian child protection education program: Study protocol for Learn to Be Safe with Emmy and Friends™

Chapter 6 presents a published journal article. As such the original referencing style for this publication is retained and the references for this paper are placed at the end of this chapter. This article provides the protocol for a large randomised-control trial of an Australian protective behaviours program: Learn to Be Safe with Emmy and Friends™. Information regarding the aims, program administration, data collection, measures and planned analyses for this trial across three locations in Queensland is provided. The current thesis utilises data drawn from one of the sites described in this article. Publicly available protocols are an important component to helping further effective research and increase implementation of effective evaluations. By providing an in-depth description of a methodologically rigorous design, Chapter 6 contributes to Aim 1 of this thesis.
Statement of Contribution to Co-authored Paper

This chapter includes a co-authored paper. The bibliographic details of the co-authored paper, including all authors, are:


My contribution to the paper involved:

- Review of the literature
- Development of hypotheses
- Contributed to development of overall methodology
- Co-development of some measures and the interview protocol
- Applying for ethical and research approvals
- Selection of analyses
- Lead in writing of paper
- Corresponding author of paper

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(Countersigned) ___________________________

Supervisor: Dr Dianne Shanley

(Countersigned) ___________________________

Supervisor: Professor Melanie Zimmer-Gembeck
Cluster Randomised-control Trial for an Australian Child Protection Education Program: Study Protocol for the Learn to Be Safe with Emmy and Friends™

Title
Cluster Randomised-control Trial for an Australian Child Protection Education Program: Study Protocol for the Learn to Be Safe with Emmy and Friends™

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Abstract

Background

Child maltreatment has severe short-and long-term consequences for children’s health, development, and wellbeing. Despite the provision of child protection education programs in many countries, few have been rigorously evaluated to determine their effectiveness. We describe the design of a multi-site gold standard evaluation of an Australian school-based child protection education program. The intervention has been developed by a not-for-profit agency and comprises 5 1-h sessions delivered to first grade students (aged 5–6 years) in their regular classrooms. It incorporates common attributes of effective programs identified in the literature, and aligns with the Australian education curriculum.

Methods/Design

A three-site cluster randomised controlled trial (RCT) of Learn to be safe with Emmy and friends™ will be conducted with children in approximately 72 first grade classrooms in 24 Queensland primary (elementary) schools from three state regions, over a period of 2 years. Entire schools will be randomised, using a computer generated list of random numbers, to intervention and wait-list control conditions, to prevent contamination effects across students and classes. Data will be collected at baseline (pre-assessment), immediately after the intervention (post-assessment), and at 6-, 12-, and 18-months (follow-up assessments). Outcome assessors will be blinded to group membership. Primary outcomes assessed are children’s knowledge of program concepts; intentions to use program knowledge, skills, and help-seeking strategies; actual use of program material in a simulated situation; and anxiety arising from program participation. Secondary outcomes include a parent discussion monitor, parent
observations of their children’s use of program materials, satisfaction with the program, and parental stress. A process evaluation will be conducted concurrently to assess program performance.

Discussion

This RCT addresses shortcomings in previous studies and methodologically extends research in this area by randomising at school-level to prevent cross-learning between conditions; providing longer-term outcome assessment than any previous study; examining the degree to which parents/guardians discuss intervention content with children at home; assessing potential moderating/mediating effects of family and child demographic variables; testing an in-vivo measure to assess children’s ability to discriminate safe/unsafe situations and disclose to trusted adults; and testing enhancements to existing measures to establish greater internal consistency.

Trial registration

Australian and New Zealand Clinical Trials Register (ACTRN12615000917538). Registered (02/09/2015).

Keywords

Prevention Child protection education School-based program Cluster randomised controlled trial Protocol
Cluster Randomised-Control Trial for an Australian Child Protection Education Program: Study Protocol for the Learn to Be Safe with Emmy and Friends™

Background

Child maltreatment is a serious and widespread problem affecting children around the world[1], [2]. The term child maltreatment refers to one or more of 4 major subtypes: physical abuse, emotional (or psychological) abuse, sexual abuse, and neglect. Child maltreatment can involve acts of omission or commission by parents, caregivers, or community members (e.g., teachers, clergy) and may result in death, serious injury, or exploitation [3], [4]. Epidemiological monitoring reveals it is associated with a variety of specific negative outcomes for children, including higher levels of mental illness, poverty, greater engagement with crime, and physical, emotional, mental and social maladjustment across the entire developmental trajectory [5],[6], [7],[8].

One way to help children to learn about and safeguard themselves from maltreatment is through school-based child protection education programs, which were first implemented in the USA in the 1980s [9], [10]. Also known as child abuse prevention, child assault prevention, child safety, personal safety, and protective behaviours programs [9], [11], [12], [13], these typically focus on teaching several core concepts, including how to recognise safe and unsafe situations, how to react when approached, and how to identify safe adults to speak with about unsafe situations [14]. A major benefit of child protection education programs is that, unlike programs focusing solely on one type of harm (i.e., bullying, physical violence, sexual harassment), they equip children with knowledge and skills that may be generalised to recognise, react to and report multiple types of harm and risk situations.

Despite the wide uptake of child protection education programs in countries as diverse as Germany, Hong Kong, Taiwan, Turkey, and the United States [15], systematic
reviews and meta-analyses highlight that very few highly rigorous program evaluations exist [16], [17], [18], [19], [15]. Indeed, it has been identified that few evaluations have used control groups and randomised designs, whilst fewer still track outcomes for more than 6-months to examine the long-term effectiveness of these programs. There have also been concerns regarding the measures utilised to evaluate outcomes. For example, recommendations for future research designs include the need to measure: a) primary or targeted program outcomes such as self-protective skills, behaviour change, abuse disclosures; b) multiple program outcomes including knowledge, intentions, skills, and program satisfaction, within the one sample; and c) potential negative impacts such as increased fear or anxiety.

This study extends an earlier successful Australian study of a specific child protection education program, Learn to Be Safe with Emmy™ [20]. This was a quasi-experimental study in which classrooms were randomised to conditions (program and waitlist); with the waitlist comparison group receiving the program after they completed post-test measures (five weeks after administration of baseline measures). In this study, a total of 245 first grade students (aged 5-6 years) participated in the Learn to Be Safe with Emmy™ program, recruited from five primary (elementary) schools on the Gold Coast, Queensland. The study demonstrated the program was effective in increasing participants’ self-protective knowledge and skills, and their intentions to respond in a safe manner to unsafe situations including hypothetical situations with risks of bullying, abuse and sexual assault, without increasing or decreasing child anxiety.

The current study will extend on Dale et al. [20] in six ways. It will: (i) use a larger sample, with schools from a broader range of demographic areas; (ii) randomise at school-level to prevent cross-learning between conditions; (iii) provide a 6-month follow-up for the waitlist control condition, and 12- and 18-month follow-ups for the
intervention condition; (iv) examine the degree to which parents/guardians discuss intervention content with children at home; (v) develop and utilise an in-vivo measure to assess children’s ability to discriminate safe/unsafe situations and disclose their experience to trusted adults; and (vi) enhance the intentions to respond measure by asking about both safe and unsafe situations to test if safety responses (i.e., telling an adult) were used appropriately according to the level of perceived risk.

**Aims**

The aim of this study is to conduct an empirical assessment, using a cluster randomised-controlled trial [21], of key outcomes of the *Learn to Be Safe with Emmy and Friends*™ program. Specifically, the current study will test the following five hypotheses:

1. When compared to children in the waitlist condition for the same period, children in the intervention condition will show the following changes from pre-test to post-test:
   
   a. significantly greater increase in knowledge of interpersonal safety  
   b. significantly greater ability to distinguish between safe and unsafe situations  
   c. significantly greater intention to engage in safe responses to unsafe situations  
   d. significantly greater confidence to take appropriate action in unsafe situations  

2. When compared to parents/guardians of children in the waitlist condition for the same period, parents/guardians of children in the intervention condition will report significantly greater increases in their child’s knowledge of interpersonal safety and use of self-protective skills.
3. Post-intervention, children in the intervention condition will:
   a. refuse a simulated in vivo lure by an unfamiliar adult at post-intervention at a higher rate than children in the waitlist condition.
   b. disclose the presence of an unfamiliar adult i) earlier; and ii) at a higher rate, than children in the waitlist condition.

4. Children's post-intervention knowledge of interpersonal safety will be positively correlated with both behavioural intentions, application of self-protective skills, and disclosure.

5. Children’s anxiety scores will not change from pre-intervention to post-intervention.

**Methods/Design**

The Human Research Ethics Committees at Griffith University (GU Ref No: PSY/48/14/HREC) approved this study, as did the Research Committee at the Department of Education and Training, Queensland. It is also registered with the Australian and New Zealand Clinical Trials Register (ACTRN12615000917538) and has received Australian Research Council funding under the Linkage Projects scheme (ID: LP130100304) in a partnership between Griffith University, James Cook University, Queensland University of Technology and the not-for-profit organisation, Act for Kids.

The study consists of a three-site cluster randomised control trial using a waitlist-control group. The unit of randomisation will be the school. The unit of analysis will be individual children; however the nesting effects of classes, schools, and site location will be taken into account through hierarchical modelling. Data from parents/guardians about immediate child outcomes will be paired with the respective child data. The main outcome evaluation will be supplemented by a process evaluation
using fidelity data from facilitators, session auditors, and satisfaction surveys completed by parents/guardians and teachers.

**Recruitment and Participants**

The study will be conducted in first grade classrooms with children aged 5-6 years in three education regions in Queensland, Australia: Brisbane (Metropolitan Region, urban schools), Gold Coast (South East Region, urban schools), and Townsville (North Queensland Region, rural schools). Eight schools in each region will be randomly selected to participate. Trained research assistants not involved in data collection will initially contact schools. An information sheet detailing the Learn to Be Safe with Emmy and Friends™ program and explaining the evaluation will be sent to school principals who will be asked to provide consent for their school’s participation. Randomisation will be conducted following principal consent, after which time, schools will be asked to distribute standardised information sheets with consent forms (either waitlist-control or intervention version) to parents/guardians (hereafter, parents) of all children enrolled in first grade. Parents return consent forms to the school if they agree for their child to participate.

A simple random sampling strategy with individuals as the primary sampling unit was assumed, and G*Power was then used to estimate sample size. This returned a suggested total sample size of at least 100 children per group at each of three sites. Based on similar studies [22] that have used cluster sampling with schools as the primary sampling unit, the sample size with this design effect was estimated to be approximately 1.5, taking into account potential attrition of (20%) owing to student absences and/or mobility. In addition, enough power will be needed to examine the effects for subgroups (sex/school/family/stress, etc.). Therefore, a total sample size of at least 1,350 is required in this study to test the effectiveness of the intervention.
Assuming conservative class sizes of 20 students per class (60 children per school; 9 schools in each region), a final initial sample size of 1,620 Year 1 children and their parents is planned to give sufficient power for this study.

**Inclusion/exclusion criteria**

Children will be eligible to participate in the study if they are enrolled in a first grade classroom at a participating school. Schools who have taught an alternative child protection education program to their first grade students will be ineligible to participate in this RCT.

**Randomisation**

After school recruitment and principal consent, a concealed randomisation process will be undertaken using a computer-generated list of random numbers. Entire schools will be randomised to intervention or control to prevent knowledge and skill sharing among students across conditions. Researchers conducting data collection and data analysis will be blinded to group membership.

**Intervention: Learn to Be Safe with Emmy™**

*Learn to Be Safe with Emmy and Friends™* is a child protection education program designed for first grade students [23]. It consists of five 1-hour sessions provided free-of-charge by trained facilitators, delivered in children’s regular classrooms once per week for five weeks. A unique program feature is the presence of an adult-size program mascot called “Emmy” who, as a child-like character, assists program facilitators by drawing attention to key themes, and modelling strategies in developmentally-appropriate ways. The *Learn to Be Safe with Emmy and Friends™* program addresses many of the core themes common to effective child protection and bullying prevention programs including 1) teaching children how to recognise potentially dangerous people or situations, 2) teaching children how to respond (i.e.,
with rehearsed statements and positive actions) and 3) encouraging children to report or disclose past, current or future abuse or unsafe encounters to trusted authority figures [24], [25], [26], [27]. The main topics for each of the five *Learn to Be Safe with Emmy and Friends*™ sessions are shown in Table 6.1.

*Learn to Be Safe with Emmy*™ incorporates many of the delivery methods identified in effective psycho-education programs including active participation (i.e., role play), explicit training (specification and rehearsal of desired behaviours), standardised materials, and repeated presentations and summaries of materials as well as program materials sent home for parental review [16], [28], [26]. The program also aligns with the *Australian Curriculum: Health and Physical Education* [29].

**Control Group**

Waitlist-control schools will receive the school curriculum as usual and will be waitlisted for the intervention. They will participate in the pre-assessment (baseline), post-assessment (5 weeks after baseline) and six-month follow-up data collection points for the evaluation. They will commence the program after the six-month follow-up assessment has been completed.

**Child Measures**

Trained research assistants will administer all child measures during individual verbal interviews at participating schools. Measures to be administered will include children’s knowledge of program concepts, intentions to use program knowledge, skills, and help-seeking strategies, actual use of program material in a simulated situation, and anxiety as a result of program participation.
Table 6.1. Overview of the *Learn to Be Safe with Emmy and Friends*™ Program

**Content and Purpose.**

<table>
<thead>
<tr>
<th>Session</th>
<th>Content and Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Emotion Recognition and Early Warning Signs.</strong> Content focuses on body signals that indicate various emotions as well as emotions or feelings that might indicate danger. Strategies to assist in remaining calm and reducing anxiety or worry are also taught. This is so that children are able to recognise when they might be feeling scared or angry, and know how to calm down so that they can more effectively respond to situations.</td>
</tr>
<tr>
<td>2</td>
<td><strong>Early Warning Signs and Safe/Unsafe Situations.</strong> Content focuses on early warning signs (i.e., indicators given by the body that a situation may be unsafe), discriminating safe and unsafe situations, and identifying situations that may feel unsafe but are either fun (e.g., roller coasters) or within the child’s control (e.g., a test).</td>
</tr>
<tr>
<td>3</td>
<td><strong>Personal Space and Private Body Areas.</strong> Content addresses the concept of personal space and private body areas as well as teaching responses to personal space violations and information regarding disclosure.</td>
</tr>
<tr>
<td>4</td>
<td><strong>Safe/Unsafe Secrets.</strong> Content focuses on examples of safe and unsafe secrets and distinguishing between these. Encouragement is also given to disclosing potentially unsafe secrets to safe adults.</td>
</tr>
<tr>
<td>5</td>
<td><strong>Identification of Safe Adults and Safety Networks for Disclosure.</strong> The final session focuses on recognising and developing networks of safe adults from whom children may seek help. This includes personal networks individual to each child as well as provision of contact information for specialist services for children such as Kids Help Line.</td>
</tr>
</tbody>
</table>
**Protective Behaviours Questionnaire [20].** The ProBeQ is a self-report 12-item questionnaire assessing children’s knowledge of the six core interpersonal safety concepts covered in the five Learn to Be Safe with Emmy™ program lessons: (i) emotion recognition, (ii) early warning signs, (iii) private and public body parts, (iv) personal space, (v) safe and unsafe secrets and (vi) identification of safe adults as well as the program mantra ‘tell, tell, tell again until someone listens and helps’. Scores will be summed to provide a Total Protective Behaviours Knowledge score (maximum score of 22) with higher scores indicating greater knowledge of the concepts [20]. Because the ProBeQ is a test of knowledge with potential answers that range in their content and structure, psychometric properties are not calculated.

**Application of Protective Behaviours Test-Revised (APBT-R).** The APBT-R will be administered both at pre- and post-test evaluation. This is a revised version of the original APBT developed by Dale et al. [20] as a six-item, child-report measure assessing children’s intention to apply self-protective knowledge and skills, and seek appropriate help in unsafe situations. In the APBT-R, unsafe scenarios were retained and two new safe scenarios were added. Two developmental psychologists and two child abuse prevention experts screened new safe scenarios. The APBT-R thus includes two safe and four unsafe scenarios presented to children by interviewers as verbal narratives accompanied by simple line drawings. Children’s responses for unsafe scenarios will be rated according to the degree to which they are self-protective. Scores for each scenario will be summed across unsafe scenarios to provide a Total Self-Protective Intention score with higher scores indicating greater protective behaviour intentions. Children will also be asked to rate for all scenarios whether or not each scenario is safe on a yes/no response. These responses will be marked as correct or incorrect and summed to further provide a Total Risk Accuracy score with higher scores indicating greater
accuracy in classifying scenarios.

**Observed Protective Behaviours Test (OPBT).** This will be administered to children in the control and intervention conditions at either post-test evaluation or the six-month evaluation. A structured two-part in vivo behavioural situation has been developed by the first author expressly for this study and will be used to test children’s ability to implement the safety skills learned during *Learn to Be Safe with Emmy and Friends*™. Part 1 will measure recognition of unsafe situations and the application of relevant safety skills. Children will be presented with a simulated unsafe situation enacted by an unfamiliar confederate. In the script for the unsafe situation after greeting the child, the interviewer will leave the room under the pretext of making a telephone call [30]. During the interviewer’s absence, a confederate will enter the room and ask the child to leave with them. The confederate will then remember that they have forgotten a bag and leave, asking the child to keep their presence a secret and dropping a pen to the floor as they leave. The manipulation will take approximately 1 minute with the interviewer returning within 30 seconds of the confederate exiting and resuming the interview.

Part 2 will test children’s disclosure of the unsafe situation. In this, children will be presented with 6 prompts to disclose the presence of the confederate (e.g., “You probably didn’t notice if the pen was in the room before, did you?”). At the end of the interview, prior to administering the anxiety measure the confederate will return and the secret will be revealed. This will provide an opportunity for the interviewer to model disclosure of the unsafe situation with the child and engage in debriefing. The OPBT is based on behavioural skills training and measures used by Johnson et al. [31], [32] and Gunby et al. [33] in evaluations of children’s personal safety skills, as well as the secret-keeping scenario and seven point secret-keeping scale created by Dunkerley and
Dalenberg [30].

Revised Children’s Manifest Anxiety Scale 2nd Edition (RCMAS-2 Short Form), [34]. The RCMAS-2 Short Form consisting of 10 yes/no items will be used to examine whether children experience increased or decreased anxiety as a result of program participation. A Total Anxiety score can be calculated and three anxiety subscales include, physiological anxiety, worry, and social anxiety. (α= .82), [34]. Test-retest reliability has been calculated at .54 for the total score with a US sample [34] and .61 to .68 with an Asian sample [35].

Parent Measures

All parent measures will be administered as self-report. Measures to be administered will include family demographics, discussion monitor, program concepts checklist, satisfaction questionnaire, and a parent stress inventory.

Demographics. Family and child demographic information will be collected in 10 items including child gender, child age, parental gender, parental age, family structure, parental income and parental education. In these items family community engagement and the child’s social and school engagement will also be assessed.

Parent Discussion Monitor. Parents will complete a 4-item measure each week documenting: time spent reviewing the program information sheets with their children at home, time spent discussing information from Learn to Be Safe with Emmy and Friends™ lessons with their children and whether the content of the discussion was raised by the child or parent.

Parent Protective Behaviours Checklist (PPBC), [20]. The PPBC is a ten-item parent-report measure. For each item, parents’ assesses the extent to which they observed that (i) their children using self-protective skills; and/or (ii) their child understood the six concepts taught in the Learn to Be Safe with Emmy and Friends™
program. Parents will indicate using a response scale of 1 (Not at all) to 4 (Always) for self-protective skills, and 1 (Unsure) to 4 (Very sure) for understanding. Scores will be summed to provide a Total PPBC score. This measure has good internal consistency ($\alpha = 0.84$), [20].

**Parent Satisfaction Questionnaire (PSQ), [20].** The 3-item PSQ will be used to assess parental subjective satisfaction with the program, perceptions of changes in their child’s presentation or behaviour since program commencement, and any additional comments via open-ended text response.

**Parent Stress Inventory: Short Form (PSI/SF), [36].** The PSI/SF is a 36-item parent-report measure that assesses stress in parents of children aged 1 month to 12 years. A Total Stress score is calculated from three subscales including Parental Distress, Parent-Child Dysfunctional Interaction, and Difficult Child. The PSI has acceptable test-retest reliability ($r = .84$) and good validity and internal consistency ($\alpha = .91$), [36].

**Program Performance Measures**

Measures of attendance and program compliance will be used in the program’s process evaluation. These will be completed by program facilitators for each of the program sessions and also by trained research assistants during audits of 10% of all sessions at each site.

**Attendance List.** To evaluate effects due to partial versus complete attendance, program facilitators will complete an attendance record will be taken for every session.

**End of Session Checklist.** A session checklist [20] will be used to identify the extent to which specific program content and methods were covered as intended in each session.

**Data Collection**
Assessment Procedures T1-T5. Data will be collected at three sites (Brisbane, Gold Coast, and Townsville) and five main time points (T1 to T5). The Time 1 (T1) assessment (pre-test) will be conducted one week prior to program delivery. Time 2 (T2) assessment (post-test) will occur one week after program completion for the intervention group and five weeks after Time 1 for the waitlist control group. Time 3 (T3), Time 4 (T4) and Time 5(T5) assessments will be conducted 6-months, 12-months and 18-months after program completion respectively.

Program and Process Evaluation. Two trained facilitators employed by the not-for-profit agency, Act for Kids, will deliver all program sessions. Facilitators have qualifications in early childhood education, psychology, or child protection. First grade teachers will be present during the sessions. At the start of each session an attendance record will be taken and a brief review of the previous session content covered. At the end of each session facilitators will record the concepts covered and any factors impacting that session’s program delivery. In 10% of sessions a research assistant will attend to audit the session content.

Planned Analyses

Mixed factorial analyses of variance (ANOVAs) will be used to examine the effectiveness of the program for primary outcomes. Analyses will be conducted to assess differences between the intervention and waitlist control conditions over time using 2 (Group: intervention, waitlist-control) x 3 (Time: T1, T2, T3) mixed ANOVAs. Primary or target outcomes include children’s knowledge of program concepts, intentions to use program knowledge, skills, and help-seeking strategies, and anxiety as a result of program participation. T-tests will be conducted to examine the difference between groups in use of program skills and disclosure during the simulated situation conducted at T2 and T3.
Following the 6-month follow-up of the children who received the program, data will be analysed to assess stability of improvement in the treatment group from post to, 6-, 12- and 18-month follow-up. One-way ANOVAs will also be conducted for these variables for the intervention group across the five time points (T1, T2, T3 and T4, T5).

Hierarchical linear modelling [37] will be used to examine any effects of the hierarchical structure of the study design. If there are hierarchical effects, this analysis will be used to account for influences of classroom (level 2) and school level effects (level 3), while examining the effects of condition (Emmy/waitlist) and within student changes over time. Regression will be used to test the mediation analyses and to examine any effects of moderators (e.g., demographic variables, parental stress, dose-response) to determine which factors may differentiate intervention effects. Intent-to-treat analyses will also be conducted to account for potential effects of differential drop-out.

Discussion

This RCT will assess the effectiveness of the Learn to Be Safe with Emmy and Friends™ program administered to first grade children in three regions in the state of Queensland, Australia. This program will be rigorously evaluated in the first multi-site cluster randomised controlled trial of a school-based child protection education program conducted in Australia. This child protection education program targets first grade children (aged 5-6 years), and draws on a set of core concepts identified in child protection and bullying prevention programs. Several key program outcomes will be assessed at multiple stages. We hypothesise that children’s short-term (T1 to T2) knowledge of program concepts, intentions to use program knowledge, skills, and help-seeking strategies, and actual use of program material in a simulated situation will increase. We also hypothesise that children will show long-term (T2 to T5) retention of
these knowledge and skills. Children’s anxiety will also be measured to rule out any potential adverse effects of raising awareness of dangers and risk related to child protection issues. Other key program elements that will be assessed include parental discussion of material, parents’ observations of their children’s use of program materials, parents’ satisfaction with the program, and parental stress. The effectiveness of this program will also be evaluated for moderating effects, which will determine whether adaptations are required for different populations. Few experimental evaluations of a child protection education program have ever been reported in Australia (see [20], for an exception); this study, therefore, will fill an important gap in the child maltreatment prevention literature and will provide robust evidence of the benefits or otherwise of school-based child protection education programs in this context. The Learn to Be Safe with Emmy and Friends™ program, while delivered selectively to volunteering schools at present, may have potential to become a more widely-used program should its effectiveness be determined.

**Competing interests**

The authors declare that they have no competing interests. Authors affiliated with Act for Kids will be instrumental in the running and facilitation of the program but will not participate in data collection or analysis.

**Acknowledgements**

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Susan Rowe (Griffith University) as well as the help of all research assistants who have or will help in data collection. We also could not have even imagined this RCT without the involvement of the expert program facilitators from Act for Kids.
References


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Summary of Chapter 6

The published paper provided in this chapter described the methodological protocol for a large randomised-control trial of the *Learn to be safe with Emmy and friends™* program. By describing in detail a methodologically rigorous design and making this publically available in an open access journal, this paper could serve as a template for future evaluations to adapt as needed. In this way, it helps to contribute to the overall aim of this thesis to increase interpersonal safety skills and help prevent child maltreatment. As the beginning process to conducting a randomised-controlled trial, this article also contributed to Aim 1 of this thesis which is to assess the effectiveness of *Learn to be safe with Emmy and friends™*. In the next study, reported in Chapter 7, the findings are described from the Gold Coast site of the project mentioned in this protocol.
CHAPTER 7

Promoting Young Children's Knowledge, Intentions, Confidence, and Protective Behaviour Skills: Outcomes of a Randomised Controlled Trial

Chapter 7 consists of a journal article that has been prepared for publication. In this study (Study 1) the effectiveness of an Australian protective behaviours program: Learn to be safe with Emmy and friends™ is evaluated. In particular, the findings are reported from the Gold Coast site, which included measures of behavioural interpersonal safety skills (withdrawal, refusal and disclosure). Children from Year 1 were interviewed over a 7-month timeframe, with both intervention and waitlist conditions. This study is the first to examine interpersonal safety skills and disclosure confidence for this program and is the first to extend the evaluation to include a 6-month follow-up for the waitlist condition. Therefore, Study 1 contributed to Aim 1 of the thesis, which was to evaluate a currently disseminated program, Learn to be safe with Emmy and friends™. Evaluating a program that is already in widespread use ensures that evidence-based practice is being employed within the community and ensures that effective decisions can be made regarding program adjustments and dissemination.
Statement of Contribution to Co-authored Paper

This chapter includes a co-authored paper. The bibliographic details of the co-authored paper, including all authors, are:


My contribution to the paper involved:

- Review of the literature
- Co-development of hypotheses
- Development of some measures and the interview protocol
- Applying for ethical and research approvals
- Training and supervision of data collection staff, and collection of data
- Contributed to entering and coding of data
- Selection and running of analyses
- Lead in writing of paper

Student/Corresponding author of paper: Codi White

(Countersigned) ___________________________

Supervisor: Dr Dianne Shanley

(Countersigned) ___________________________

Supervisor: Professor Melanie Zimmer-Gembeck
Promoting Young Children's Interpersonal Safety Knowledge, Intentions, Confidence, and Protective Behaviour Skills: Outcomes of a Randomised Controlled Trial

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Abstract

Promoting young children’s interpersonal safety knowledge, intentions confidence and skills is the goal of many child maltreatment prevention programs; however, evaluation of their effectiveness has been limited. In this study, a randomised controlled trial was conducted examining the effectiveness of the Australian protective behaviours program, *Learn to be safe with Emmy and friends™* compared to a waitlist condition. In total, 611 Australian children in Grade 1 (5 to 7 years; 50% male) participated, with assessments at Pre-intervention, Post-intervention and a 6-month follow-up. This study also included a novel assessment of interpersonal safety skills through the Observed Protective Behaviours Test (OPBT). Analyses showed participating in *Learn to be safe with Emmy and friends™* was effective post-program in improving interpersonal safety knowledge (child and parent-rated) and parent-rated interpersonal safety skills. These benefits were retained at the 6-month follow-up, with participating children also reporting increased disclosure confidence. However, *Learn to be safe with Emmy and friends™* participation did not significantly impact children’s disclosure intentions, safety identification skills, or interpersonal safety skills as measured by the OPBT. Future research may seek to evaluate the effect of further parent and teacher integration into training methods and increased use of behavioural rehearsal and modelling to more effectively target specific disclosure intentions and skills.
Promoting Young Children's Interpersonal Safety Knowledge, Intentions, Confidence, and Practical Protective Behaviour Skills: Outcomes of a Randomised Controlled Trial

In recent years there has been a widespread proliferation of harm prevention programs for young children. These programs have arisen from significant community concern about children’s wellbeing and safety including prevention of abuse and bullying. In Australia, for example, approximately 8% of individuals will experience sexual, physical and/or emotional abuse over the course of their childhood (Moore et al., 2015). High prevalence rates for maltreatment across childhood have also been reported internationally, ranging from 12.7% for child sexual abuse to 36.3% for emotional abuse (Stoltenborgh, Bakermans-Kranenburg, Alink, & IJzendoorn, 2015). In addition, approximately 15% of Australian children report experiencing bullying (Rigby & Johnson, 2016), with estimations for international lifetime prevalence from 15% for cyberbullying to 35% for traditional bullying. However, despite the plethora of harm prevention programs to address these concerns, questions remain about the effectiveness of these programs and their utilisation of evidence-based practices (Higgins, Adams, Bromfield, Richardson, & Aldana, 2005; Walsh, Zwi, Woolfenden, & Shlonksy, 2015).

Even when an evaluation has been completed, many designs, especially in the area of child maltreatment prevention, lack the methodological rigour recommended for interventions, including use of randomisation, control groups, blind evaluators, follow-up analyses and attention to fidelity checks (Davis & Gidycz, 2000; Lynas & Hawkins, 2017; Sanderson, 2004; Schulz, Altman, & Moher, 2010; Topping & Barron, 2009). Further, there is some evidence that, at least within child sexual abuse prevention programs, methodological rigour may have decreased over time (Walsh et al., 2015). Without rigorous evaluation, the true benefit of these programs cannot be known, and decisions regarding program adoption and implementation will rest on incomplete or
inadequate empirical evidence.

In addition, although many harm prevention programs have been implemented in schools for young children, there has been little co-ordination between programs. Recent meta-analyses have found support for the usefulness of both sexual abuse and bullying programs (Jiménez-Barbero, Ruiz-Hernández, Llor-Zaragoza, Pérez-García, & Llor-Esteban, 2016; Walsh et al., 2015). However, since these programs focus on specific harms, domain-specific outcome measures have often been used to evaluate efficacy. Given that many of these programs share similar concepts and skills, such as identifying feelings of a lack of safety, it may be more cost-effective to integrate these prevention programs. Such integration might enhance efficiency in programs delivery and minimise undue repetition or the receipt of narrow prevention efforts focussed on only one type of harm.

Protective behaviours programs (Flandreau-West, 1989; Queensland Police Service, 2014) aim to provide an integrated approach, teaching young children that ‘we all have the right to feel safe all the time’ and ‘nothing is so awful we can’t talk with someone about it’. In these programs, two core concepts are emphasised: early warning signs (recognising bodily signals that might indicate an unsafe situation) and networks (identifying and encouraging communication with trusted adults that the child can disclose to). Using these concepts PBP focus on allowing children to generalise their use of safety skills to a range of unsafe interpersonal situations.

The present study extends upon the only previous randomised controlled trial for an Australian protective behaviours program, the Learn to be safe with Emmy and friends™ program (Dale et al., 2016). Dale et al. (2016) randomised 245 Year 1 students from five schools in an urban area of Australia, to a program or waitlist condition, with measures administered at baseline and 5 weeks following baseline (post-intervention).
Findings indicated that the protective behaviours program was effective in increasing children’s protective behaviours knowledge, as measured in child and parent/caregiver reports. They also found that Learn to be safe with Emmy and friends™ participants increased in their intentions to perform protective behaviours, although this was not significantly greater than improvements observed on this measure for the waitlist condition. A 6-month follow-up was also conducted for children in the program condition and it was found that children significantly increased in both protective behaviours knowledge and intentions across this timeframe. Importantly no change in anxiety was observed amongst protective behaviours program participants.

**Extensions in the Current Study**

In the present study, we examined a greater range of program outcomes than any previous protective behaviours program evaluation, whilst also using a 6-month long-term follow-up for both the program and waitlist conditions to differentiate between maturational and program effects at follow-up. Thus, we expanded on the previous Dale et al. (2015) study of Learn to be safe with Emmy and friends™ by (i) including a larger sample, (ii) using randomisation by school to prevent knowledge-sharing between conditions, (iii) conducting 6-month follow-ups for the waitlist in addition to the program children, and (iv) using new measures, including more proximal indicators of behaviour change such as confidence in disclosing unsafe situations, ability to recognise unsafe situations and a direct behavioural skills measure of both disclosure and interpersonal safety behaviours.

**Children's intentions and confidence.** Prominent theories of behaviour change, such as the Theory of Planned Behaviour, suggest that intentions and confidence in performing an action influence whether that action will be implemented (Ajzen, 1991;
However, the relationship between protective behaviour intentions and skills has yet to be examined, and in other fields (such as physical activity, dietary, and abstinence behaviours) correlations between behavioural intentions and actual behaviour have been found to vary greatly in strength, from strong to moderate, or even weak in some cases (McEachan, Conner, Taylor, & Lawton, 2011). Despite this, many child protection education programs rely only on knowledge or intention changes as indicators of effectiveness and in many cases, as proxy or replacement measurements for behavioural change (Walsh et al., 2015).

**Children's behavioural skills.** Direct observation can be the best way to measure behaviour (Miltenberger, 2008). However, evaluations for child protection education programs typically rely on self-report or interview measures due to ethical concerns about observing and not intervening when children are in unsafe situations (Johnson, 2000; Miltenberger, 2008). There is an alternative however, in Behavioural Skills Training (BST) programs, which have been used with children in domains such as gun safety, prevention of poison consumption, and fire safety as well as more interpersonal focused domains such as stranger abduction (Dancho, Thompson, & Rhoades, 2008; Himle, Miltenberger, Gatheridge, & Flessner, 2004). These programs have assessed behaviour change by using simulated scenarios that give the illusion of risk while allowing standardised observation of child responses. Despite recommendations, these measures have not been used as evaluation outcomes for school-based child protection education programs, with the exception of two studies in the 1980s (Fryer, Kraizer, & Miyoshi 1987a, b; Kraizer, Witte, & Fryer, 1989). The present study is the first to use a simulated scenario to evaluate behaviour change for a protective behaviours program.

Promoting disclosure of harm is a common protective behaviours program
component. To directly assess behavioural skills involved in disclosure, researchers have used secret-keeping paradigms as an analogue of disclosure (Dunkerley & Dalenberg, 2000; Heyman, Loke, & Lee, 2016). As with BST evaluations, these studies involve the use of a simulated secret, however this secret is often non-safety related (i.e., a toy is broken) and as such may have limited generalisability to safety-related disclosures. In this study, methodologies from BST approaches and secret-keeping research were drawn upon to design and implement a behavioural skills test of children’s use of protective behaviours.

**The Current Study and Hypotheses**

**Impact evaluation.** An impact evaluation was conducted, using a cluster-randomised controlled trial, following recommendations from the Consolidated Standards of Reporting Trials (CONSORT; Schulz, et al., 2010). It was predicted that following a protective behaviours program, children in the program condition would demonstrate a number of benefits when compared to children in the control condition. These benefits would include i) increased knowledge of protective behaviours, ii) increased parent-reported protective behaviours knowledge and skills, iii) improved ability to discriminate between safe and unsafe hypothetical situations, iv) greater intentions to use disclosure and help-seeking in hypothetical unsafe situations, v) greater confidence in disclosure and help-seeking in hypothetical unsafe situations, vi) improved interpersonal safety responses in a simulated unsafe scenario, vii) earlier disclosure of the presence of a confederate in a simulated unsafe scenario, and viii) greater numbers of children disclosing the presence of the confederate in a simulated unsafe scenario.

The impact evaluation also examined whether children experienced an increase in anxiety as a result of participation, with predictions that there would be no
differences in levels of anxiety for children in the program condition compared to children in the control condition. The examination of anxiety is particularly important to ensure that program participation does not result in potentially negative impacts. Outcome variables were examined for both immediate and long-term treatment effects at three time points: pre-test, post-test, and 6-month follow-up.

**Process evaluation.** In accordance with Dale et al.’s (2015) evaluation of the *Learn to BE SAFE with Emmy™* program, a process evaluation was also conducted, based on a program logic model to ensure program fidelity. The aim of the process evaluation was to determine whether the program was delivered as intended, whether delivery was standardised across all participating schools, and to assess program acceptability with children’s parents/caregivers.

**Method**

**Participants**

Participants were 611 Year 1 students (aged 5 to 7 years) from state (public) schools in Queensland, Australia. Based on their school, children were assigned to the ‘Program’ *Learn to be safe with Emmy and friends™* or to the ‘Waitlist’. The Program condition included 375 children (\(M = 5.8\) years, \(SD = 0.4\) years, 51% girls). The Waitlist condition included 236 children (\(M = 5.8\) years, \(SD = 0.4\) years, 48% girls). Details of participant retention and attrition are outlined in the study flow diagram shown in Figure 7.1.

Schools were randomly stratified into Program or Waitlist conditions. Children within schools who consented to participate in the simulated behavioural skills assessment were further randomly assigned to receive the OPBT at the Post-test assessment, the 6-month follow-up or neither time point. Hence, four OPBT conditions
Figure 7.1. Study flow diagram of participant allocation and participation.
were formed: (i) Program OPBT Post \((n=106)\), (ii) Program OPBT Follow-up \((n=65)\), (iii) Waitlist OPBT Post \((n=67)\), and (iv) Waitlist OPBT Follow-up \((n=54)\). There were no significant differences in age or gender between Program and Waitlist conditions, or amongst OPBT subgroups.

In addition, the children’s parents or caregivers \((n=357)\) provided completed measures for at least one time point. This total was made up of 207 parents or caregivers from the Program group and 150 Waitlist parents or caregivers. Program parents or caregivers were aged 25-66 years \((M_{age}=36.8, SD=6.0; 44\text{ missing age})\) and Waitlist parents or caregivers were aged 25-67 years \((M_{age}=38.0, SD=5.7; 41\text{ missing age})\).

**Inclusion and exclusion criteria.** Inclusion and exclusion criteria were applied in sampling. Included were children enrolled in Year 1 at randomly chosen state primary (elementary) schools. Schools selected were determined by randomising a sequential contact list of all schools within the city. Excluded were: (i) children in Prep (the year before Year 1) or Year 2 within mixed grade classrooms, (ii) younger children from families who had more than one participating child (data from the eldest child was included, and data from a randomly selected twin was included), (c) children who had previously participated in this program or another similar program, (d) children who were unable to participate in interviews due to comprehension or communication concerns (e.g., children from Non-English speaking backgrounds), and (e) parents or caregivers of children who did not complete data collection (e.g., owing to absenteeism on the day).

**Procedure**

**Ethical approval.** The Human Research Ethics Committees at Griffith University (GU Ref No: PSY/48/14/HREC) and the Queensland Research Committee at the Department of Education and Training provided ethical approval for this project.
The study was registered with the Australian and New Zealand Clinical Trials Register (ACTRN12615000917538).

**Recruitment and consent.** Primary schools were randomly assigned to either the Program or Waitlist contact lists via a random number generator. To ensure data collectors remained blind to the participants’ study condition, a trained research assistant who did not participate in data collection completed the randomisation and it was undertaken at the school-level to prevent contamination effects (i.e., knowledge and skills sharing between program and waitlist children). School principals could opt to receive the program with or without the research component. All waitlist schools received the program after the waitlist period.

Classroom teachers arranged for participant information sheets and consent forms to be sent home to parents or caregivers via their children. Active parent or caregiver consent was required. Parents/caregivers provided permission for their child to participate in: (i) the program, (ii) the program and all research components, or (iii) the program and certain parts of the research. Written child assent was also offered in this consent package and child assent was again sought from children on the testing day.

**Program procedures.** The *Learn to be safe with Emmy and friends*™ program ran for five, one-hour weekly sessions. Sessions were held on school grounds and run by trained facilitators, independent to the research team. These facilitators were part of the non-profit organisation, Act for Kids, which specialise in the prevention and treatment of child maltreatment. The content of the five sessions included: (i) Emotion recognition and early warning signs; (ii) Identification of safe/unsafe situations; (iii) Personal space and private body areas; (iv) Safe/unsafe secrets; and (vi) Identification of safe adults and safety networks for disclosure.

**Assessment procedures.** Data were collected across three time points (Pre-test,
Post-test, and Follow-up). Pre measures were administered just prior to program participation or at the beginning of the wait period. Post measures were administered 5 weeks after Pre for both conditions (post program for the Program condition). Follow-up measures were administered six months after Post. After the 6-month follow-up, children in the Waitlist condition commenced the *Learn to be safe with Emmy and friends*TM program. Child report and observation measures were completed in a 10-15 minute individual interview with each child at each time of assessment. These interviews were conducted during school hours in a private room on school premises. All research assistants received training in the administration of measures.

Parent/caregiver measures were returned in prepaid envelopes at each time point.

**Process evaluation.** Attendance data were collected at the beginning of each session. Facilitators completed checklists at the end of each session to capture program fidelity. An independent auditor randomly selected 20% of sessions for a content audit.

**Program measures**

**Attendance.** Program facilitators recorded child attendance at each session. For consenting research participants, the percentage of sessions attended was calculated.

**End of Session Checklist.** To assess consistency of administration, facilitators coded the content covered and activities scheduled for each *Learn to be safe with Emmy and friends*TM session. A 3-point scale of 0 (Not at all), 1 (Partially) and 2 (Fully covered) was used (Dale et al., 2015). A program consistency score was calculated by averaging session consistency scores across all sessions. For a randomly chosen 20% of sessions at each school, an independent auditor coded session content. A session consistency score was calculated as a percentage of completed content to indicate program fidelity.

**Parent/caregiver measures**
**Parent Protective Behaviours Checklist (PPBC).**

The PPBC is a 10-item measure assessing parent or caregiver perceptions about their child’s understanding of protective behaviour concepts, and application of those behaviours (Dale et al., 2015). For each item, parent or caregivers record their perceptions of statement representativeness for their child on a 4-point scale from 1 (*Not at all/Unsure*) to 4 (*Very/Always*). Items are summed to calculate a total PPBC score which represents *parent-rated protective behaviours knowledge and skills*. Cronbach’s alpha for the current study was .823.

**Parent Satisfaction Questionnaire.**

The Parent Satisfaction Questionnaire asks parents or caregivers about their satisfaction with their child’s participation in the program using a single item on a 5-point scale from 1 (*Very Unhappy*) to 5 (*Very Happy*). It also asks parents/caregivers if they had noticed any changes (positive or negative) in their child after participation.

**Child measures**

**Demographic Questions.** Child age, gender, classroom, school, interviewer, and time of day were recorded at the start of the interview.

**Protective Behaviours Questionnaire (ProBeQ).** The ProBeQ is a 12-item child-report measure that assesses children’s knowledge of the six core interpersonal safety concepts taught in the *Learn to be safe with Emmy and friends™* program (Dale et al., 2015). It assesses: (i) Emotion Recognition, (ii) Early Warning Signs, (iii) Private and Public Body Parts, (iv) Personal Space, (v) Safe and Unsafe Secrets, and (vi) Identification of Safe Adults. It also assesses children’s knowledge of the program’s protective behaviours mantra ‘tell, tell, tell again until someone listens and helps’. Items are awarded marks based on correct answers and all scores are then summed to calculate the total protective behaviours knowledge score (range 0-22), representing *child-rated*
protective behaviours knowledge. Higher scores indicate greater knowledge of the concepts (Dale et al., 2015).

**Application of Protective Behaviours Test-Revised (APBT-R; see Appendix B).** The APBT-R is a child-report measure assessing how well children distinguish between safe and unsafe situations, their intentions to use protective behaviours in unsafe situations and how confident children are that they would perform these behaviours. The APBT-R consists of six scenarios. Two safe scenarios (i.e., a safe secret regarding a birthday surprise; and another child accidentally breaking a crayon and apologising) and four unsafe scenarios (i.e., physical bullying/fighting; social exclusion; violations of personal space; and an unsafe secret about another child being hurt) are presented to children as line drawings with a verbal script. This measure is a revised version of the previously developed APBT (Dale et al., 2016) in which only unsafe scenarios were used. Two safe scenarios were added for the current study. All scenarios were screened for suitability prior to administration, by a team of developmental psychologists and child abuse prevention experts.

**Disclosure Intentions.** To assess disclosure intentions from the APBT-R, each scenario is presented to the child one at a time, and the child is asked what they would do. Responses to these questions are thematically analysed in terms of safety and coded on a 4-point scale from 0 (Unhelpful), 1 (Neutral), 2 (Helpful) and 3 (Disclosure or Help-Seeking). As some children describe multiple behaviours in response to a scenario, the highest rated behaviour described by a child for a scenario is used. Scores are then summed across unsafe scenarios to provide the total disclosure intentions score for each child (range 0-12), representing disclosure intentions. Higher values indicate increased safety of reported action intentions. Inter-rater reliability for coding of qualitative responses for this measure was at .997.
**Disclosure Confidence.** To assess disclosure confidence from the APBT-R, after children have provided their intentions they are also asked how sure they are that they would perform those intentions from 1 (Not Sure) to 4 (Completely Sure). This rating is used to provide a disclosure confidence score. Children whose highest intention response is rated as unhelpful, neutral, or helpful but not disclosure/help-seeking are given a score of 0. Children who provide responses indicating protective behaviours of disclosure/help-seeking have confidence scores ranging from 1-4. These are then summed across unsafe scenarios to provide the total disclosure confidence score for each child (ranges from 0-16), representing disclosure confidence. Higher values indicate more confidence in performing protective behaviours.

**Safety Identification Skills.** To assess Safety Identification Skills from the APBT-R, children are also asked if each scenario was safe. Responses are recorded as Yes, No or Don’t Know and later scored as True (1) or False (0). These scores are summed across all safe and unsafe scenarios to provide a safety identification skills score (ranges from 0-6). Higher scores indicate greater ability to distinguish between safe and unsafe situations.

**Observed Protective Behaviours Test (OPBT).** The OPBT is a 2-part in-vivo situation, designed for the current study, to examine children’s ability to implement safety skills. The OPBT is based on paradigms used by Johnson et al. (2005; 2006) and Gunby, Carr and Leblanc (2010) for behavioural skills training and evaluations of children’s personal safety skills, as well as a secret-keeping scenario and seven-point secret-keeping scale created by Dunkerley and Dalenberg (2000). The OPBT was administered to randomly selected children at either post-test evaluation or 6-month follow-up.

Part 1 of the OPBT assesses children’s ability to recognise and respond to a
simulated unsafe situation. This scenario begins with the interviewer leaving the room under the pretext of having forgotten some materials. An unfamiliar male confederate then enters the room and asks the child to leave with him, using one of three scripts (simple, assistance or incentive). After either a child response or 5 seconds of non-response from the child, the confederate ‘remembers’ that he had forgotten a bag. The confederate then asks the child to keep his presence a secret and ‘accidentally’ drops a pen to the floor as he leaves. This manipulation takes approximately 1 minute, and within 30 seconds of the confederate exiting the interviewer returns and resumes the interview. Children are rated by the confederate on verbal responses (agreed to leave, neutral, refused) and motor responses (approached, neutral, withdrew) to the confederate, representing verbal interpersonal safety skills and motor interpersonal safety skills respectively. During training, confederate coding on these variables was cross-checked to ensure until complete agreement was obtained.

Part 2 of the OPBT assesses children’s disclosure of the simulated unsafe situation. When the interview resumes, children are presented with 6 prompts providing the opportunity to disclose that the confederate had entered the room. Children receive (i) a disclosure timing score corresponding to the prompt when they disclosed and (ii) a disclosure rate score of 1 (disclosed) or 0 (did not disclose) during the prompting phase (see Table 7.1). At the end of the interview, prior to administering the anxiety measure, the secret is revealed when the confederate returns for his pen. The confederate reveals to the interviewer that he asked the child to keep his presence secret, acknowledges that he was wrong to do so and apologises to the child. This provides a learning opportunity for the child where the interviewer reinforces and models disclosure of the unsafe situation, and provides a debriefing.
Table 7.1

Disclosure Prompts and Scoring Modified from Dunkerley and Dalenberg’s (2000)

Seven Point Secret-Keeping Scale.

<table>
<thead>
<tr>
<th>Prompt (Score if Discloses Secret)</th>
<th>Context of the Disclosure about confederate’s presence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Immediate Disclosure (6)</td>
<td>Child discloses the secret of the confederate’s presence immediately with no prompting.</td>
</tr>
<tr>
<td>2. Prompt 1 (5)</td>
<td>Child discloses after the research assistant makes an idle comment about the object on the ground (2 minutes after returning; i.e., “Oh, I didn’t notice that pen on the ground before”)</td>
</tr>
<tr>
<td>3. Prompt 2 (4)</td>
<td>Child discloses after the research assistant directly involves the child in conversation about the dropped item without asking about the confederate (i.e., “You probably didn’t notice if the pen was in the room before, did you?”).</td>
</tr>
<tr>
<td>4. Prompt 3 (3)</td>
<td>Child discloses after the research assistant asks about the confederate, (i.e., “Did you see anyone at the door who might have dropped the pen?”)</td>
</tr>
<tr>
<td>5. Pressure 1 (2)</td>
<td>Child discloses after the research assistant asks the child to “think hard” about whether they saw the confederate (i.e., “Think really hard, did you see anyone at the door who might have dropped the pen?”)</td>
</tr>
<tr>
<td>6. Pressure 2 (1)</td>
<td>Child discloses after the research assistant tells the child that it is very important to find out who was there and directly asks the child (i.e., “It’s very important that I find out who dropped the pen. Who was here?”)</td>
</tr>
<tr>
<td>7. No disclosure (0)</td>
<td>The child does not disclose before the end of the interview.</td>
</tr>
</tbody>
</table>
Revised Children’s Manifest Anxiety Scale 2nd Edition: Short Form (RCMAS-2). The RCMAS-2 Short Form is a 10-item child-report measure assessing anxiety in children aged 6-19 years (Reynolds & Richmond, 2008). Children are asked whether each statement is true of them with responses coded as 1 (Yes) or 0 (No). Items are summed to provide a total anxiety score (ranging from 0-10), representing child anxiety. Cronbach’s alpha was .70 in the current study.

Overview of Statistical Analyses

Missing data and multiple imputation. All analyses used IBM SPSS Statistics 22 (IBM Corp, 2013). Overall, 33.81% of data were missing due to absence, missed items or non-administration of items. Specifically 23-28% of responses for measures indicating child knowledge, child anxiety, disclosure intentions and safety identification skills were missing items. In addition, 33% of responses for the measure of disclosure confidence and 68% for the measure of parent-rated protective behaviours knowledge and skill were missing data. Missing data were addressed through use of multiple imputation, which is regarded as the gold standard method to address data missing at random (Manly & Wells, 2015). Consistent with recommendations from White, Royston, and Wood (2011) that the number of imputations should be equal to or exceed the percentage of data missing, a fully conditional specification with 35 imputations was used to impute data with all outcome variables as well as age, gender, term, school and class. Imputed results were pooled using SPSS default pooling for simple effects, and a SPSS macro (van Ginkel, 2016) for main and interaction effects. All descriptive statistics for imputed analyses use pooled estimated marginal means. Imputed analyses were not used for the parent-rated protective behaviours knowledge and disclosure confidence measures due to their high percentage of missing data and the cluster-adjustments used.
**Mixed models.** For analyses, repeated measures linear mixed effect models and population averaged models were used to examine potential nesting effects and account for repeated measures. For population averaged models, Time (Pre, Post or Follow-up), Condition (Intervention, Waitlist) and the interaction of Time x Condition were included as fixed effects. Time was also included as a repeated effect. For linear mixed effect analyses, a random effect of intercept within class or school was added. As motor and verbal interpersonal safety responses were only examined once per child, time was not included in these models.

To provide the best model fit using Likelihood ratio tests, an unstructured covariance structure for the repeated effect of Time was selected for all linear mixed effect and population averaged analyses. As recommended by Heck, Thomas, and Tabata (2010), restricted maximum likelihood (REML) was used when comparing random effects and covariance structures in the model. All final analyses were conducted using REML.

**School and classroom nesting.** Prior to the main analyses, data were examined for clustering due to nesting at school and classroom levels, using an empty linear mixed model for each continuous outcome variable of interest. Prior to program administration, intraclass correlations (ICC) for classroom and school were below .10, for most variables. Thus, school and classroom random intercepts were not included in those analyses. Substantial clustering was observed however at both classroom and school levels on the measure of disclosure confidence ($ICC_{class} = .277, ICC_{school} = .166$). Further, for measures of interpersonal safety skills (administered to subsets of children at Post and Follow-up), substantial clustering was observed at classroom level on the measures of verbal interpersonal safety responses at Post ($ICC_{class} = .100$), and in verbal interpersonal safety responses at both Post ($ICC_{class} = .107$) and Follow-up ($ICC_{class} =$
As such, relevant school and class level random intercepts were included for analyses using these variables to account for nesting.

**Results**

**Analyses of the Immediate Program Effects (Pre-Post)**

**Protective Behaviours Knowledge.** Child-reported protective behaviours knowledge significantly increased from Pre to Post, $F(1, 292) = 142.64, p < .001$, and this pattern differed between Program and Waitlist, $F(1, 212) = 42.54, p < .001$ (see Table 7.2). Specifically, children who participated in the program experienced significantly greater improvements in protective behaviours knowledge from Pre to Post than children on the waitlist. Similar results were found for parent-reports of the children's protective behaviours knowledge and skills. Children were reported to significantly increase in knowledge and skills from Pre to Post, $F(1, 186) = 23.48, p < .001$. This pattern differed between conditions, $F(1, 186) = 7.87, p = .006$ (see Table 7.2), with only parent or caregivers whose children participated in the program reporting significant improvements from Pre to Post.

**Disclosure Intentions, Confidence, and Safety Identification.** Child-reported intentions to disclose and seek help, confidence in doing so, and ability to identify safe situations significantly increased from Pre to Post, $F(1, 245) = 22.33, p < .001$; $F(1, 428) = 93.16, p < .001$; and $F(1, 197) = 20.52, p < .001$, respectively. However, these increases did not significantly differ between Program and Waitlist children (see Table 7.2).

**Interpersonal Safety Skills.** Interpersonal safety skills were examined using verbal and motor safety responses to the simulated risk scenario for the children tested at post-test. There was no significant difference between Program ($M = 1.16, SD = 0.09, n = 103$) and Waitlist ($M = 1.20, SD = 0.11, n = 67$) children, $F(1, 52) = 0.10, p = .759$.
## Table 7.2.
*Treatment Effects, Means and Standard Deviations for Program and Waitlist groups.*

<table>
<thead>
<tr>
<th>Measures</th>
<th>Group</th>
<th>Pre $M$ (SD)</th>
<th>Post $M$ (SD)</th>
<th>6-Month Follow-up (FU) $M$ (SD)</th>
<th>Pre to Post 95% CI Difference</th>
<th>Pre to FU 95% CI Difference</th>
<th>Group x Time (Pre/Post) $F$</th>
<th>Group x Time (Pre/FU) $F$</th>
<th>Group x Time (Post/FU) $F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protective Beh Knowledge (Child)</td>
<td>Program</td>
<td>9.96 (0.12)</td>
<td>11.85 (0.14)</td>
<td>11.93 (0.17)</td>
<td>1.62, 2.16</td>
<td>1.63, 2.31</td>
<td>42.54</td>
<td>12.26</td>
<td>3.63</td>
</tr>
<tr>
<td></td>
<td>Waitlist</td>
<td>10.25 (0.15)</td>
<td>10.76 (0.15)</td>
<td>11.34 (0.17)</td>
<td>0.21, 0.81</td>
<td>0.75, 1.43</td>
<td>$p &lt; .001$</td>
<td>$p &lt; .001$</td>
<td>$p = .059$</td>
</tr>
<tr>
<td>Protective Beh Knowledge (Parent)</td>
<td>Program</td>
<td>29.77 (0.42)</td>
<td>32.14 (0.33)</td>
<td>33.02 (0.48)</td>
<td>1.54, 3.20</td>
<td>2.30, 4.64</td>
<td>7.87</td>
<td>4.24</td>
<td>0.92</td>
</tr>
<tr>
<td></td>
<td>Waitlist</td>
<td>30.42 (0.45)</td>
<td>31.03 (0.40)</td>
<td>32.31 (0.44)</td>
<td>-0.33, 1.54</td>
<td>0.67, 2.96</td>
<td>$p = .006$</td>
<td>$p = .041$</td>
<td>$p = .339$</td>
</tr>
<tr>
<td>Disclosure Intents</td>
<td>Program</td>
<td>13.53 (0.13)</td>
<td>14.04 (0.11)</td>
<td>14.32 (0.14)</td>
<td>0.25, 0.77</td>
<td>0.72, 2.92</td>
<td>0.06</td>
<td>1.47</td>
<td>1.16</td>
</tr>
<tr>
<td></td>
<td>Waitlist</td>
<td>13.66 (0.14)</td>
<td>14.12 (0.12)</td>
<td>14.17 (0.14)</td>
<td>0.18, 0.75</td>
<td>0.18, 0.84</td>
<td>$p = .805$</td>
<td>$p = .228$</td>
<td>$p = .283$</td>
</tr>
<tr>
<td>Disclosure Confidence</td>
<td>Program</td>
<td>4.71 (0.70)</td>
<td>6.99 (0.72)</td>
<td>10.03 (0.63)</td>
<td>1.59, 2.99</td>
<td>4.31, 6.28</td>
<td>1.92</td>
<td>4.24</td>
<td>1.51</td>
</tr>
<tr>
<td></td>
<td>Waitlist</td>
<td>5.26 (1.40)</td>
<td>8.26 (1.53)</td>
<td>9.12 (1.42)</td>
<td>2.15, 3.84</td>
<td>2.93, 4.75</td>
<td>$p = .167$</td>
<td>$p = .040$</td>
<td>$p = .220$</td>
</tr>
<tr>
<td>Safety Identification Skills</td>
<td>Program</td>
<td>4.30 (0.06)</td>
<td>4.70 (0.06)</td>
<td>4.62 (0.09)</td>
<td>0.24, 0.55</td>
<td>0.13, 0.51</td>
<td>2.04</td>
<td>0.32</td>
<td>0.45</td>
</tr>
<tr>
<td></td>
<td>Waitlist</td>
<td>4.19 (0.08)</td>
<td>4.41 (0.08)</td>
<td>4.44 (0.09)</td>
<td>0.01, 0.41</td>
<td>0.03, 0.45</td>
<td>$p = 1.54$</td>
<td>$p = .572$</td>
<td>$p = .503$</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Program</td>
<td>4.05 (0.14)</td>
<td>3.39 (0.14)</td>
<td>3.40 (0.17)</td>
<td>-0.99, -0.32</td>
<td>-1.06, -0.24</td>
<td>4.79</td>
<td>2.15</td>
<td>0.23</td>
</tr>
<tr>
<td></td>
<td>Waitlist</td>
<td>3.55 (0.18)</td>
<td>3.49 (0.17)</td>
<td>3.36 (0.18)</td>
<td>-0.48, 0.38</td>
<td>-0.65, 0.27</td>
<td>$p = .030$</td>
<td>$p = .144$</td>
<td>$p = .634$</td>
</tr>
</tbody>
</table>

*Note.* Beh = Behaviour, M = Mean, SD = Standard Deviation, CI = Confidence Interval
in verbal refusal of the confederates’ lure, nor between Program ($M = 0.84$, $SD = 0.08$, $n = 104$) and Waitlist ($M = 0.93$, $SD = 0.10$, $n = 67$) children, $F(1, 52) = 0.54$, $p = .466$ in motor withdrawal from the confederate.

When the point of disclosure was examined using an independent group $t$-test to compare Program ($M = 3.69$, $SD = 2.04$, $n = 104$) children to Waitlist ($M = 3.24$, $SD = 2.17$, $n = 67$) children at Post, there was no significant difference in timing of disclosure, $t(169) = 1.39$, $p = .168$ [95% CI of difference: -0.19, 1.10]. Disclosure rate was also examined, with participants coded as either having disclosed or not disclosed. There was no significant difference between Program (87.5% disclosed) and Waitlist (82.0% disclosed) children in rate of disclosure, $\chi^2(1) = 0.96$, $p = .328$.

**Anxiety.** Children significantly decreased in anxiety from Pre to Post, $F(1, 178) = 6.44$, $p = .012$. There was a significant difference in this decrease between conditions, $F(189.85, 1) = 4.79$, $p = .030$ (see Table 7.2), with only children in the program condition reporting a significant decrease in anxiety from Pre to Post.

**Analyses of the Follow-up Program Effects (Pre to Follow-up)**

**Protective Behaviours Knowledge.** Child-reported protective behaviours knowledge significantly increased from Pre to Follow-up, $F(1, 194) = 160.99$, $p < .001$. The increase differed between conditions, $F(1, 157) = 12.26$, $p < .001$, with children who participated in the program reporting a greater improvement in protective behaviours knowledge from Pre to Follow-up than children on the waitlist. Similar results were found for parent or caregivers reports of children’s protective behaviours knowledge and skills. Children were reported to significantly increase from Pre to Follow-up for both conditions, $F(1, 227) = 39.64$, $p < .001$. This pattern differed between conditions, $F(1, 227) = 4.24$, $p = .041$ (see Table 7.2), with parent/caregivers reporting greater improvements when their children participated in the program.
compared to those of the waitlist children.

**Disclosure Intentions, Confidence, and Safety Identification.** From Pre to Follow-up, child reported intentions to disclose and seek help, confidence in doing so, and ability to identify safe situations significantly increased, $F(151.59, 1) = 27.55, p < .001; F(1, 339) = 177.90, p < .001; \text{and} \ F(1, 171) = 15.04, p < .001$, respectively (see Table 7.2). For disclosure confidence, this increase differed between conditions, $F(1, 339) = 4.24, p = .040$, with children who participated in the program exhibiting greater improvement from Pre to Follow-up than that observed in the waitlist condition. There were no differences in improvements from Pre to Follow-up between Program and Waitlist children for disclosure intentions and safety identification.

**Interpersonal Safety Skills.** There was no significant difference between Program ($M = 1.32, SD = 0.11, n = 66$) and Waitlist ($M = 1.31, SD = 0.12, n = 54$) children, $F(1, 28) = 0.01, p = .941$ in verbal refusal of the confederates lure, nor between Program ($M = 0.98, SD = 0.10, n = 66$) and Waitlist ($M = 0.93, SD = 0.11, n = 54$) children, $F(1, 33) = 0.12, p = .736$, in motor withdrawal from the confederate.

When the point of disclosure was examined using an independent groups t-test to compare Program ($M = 3.40, SD = 1.95, n = 65$) children to Waitlist ($M = 3.53, SD = 2.13, n = 53$) children at the 6-month follow-up, there was no significant difference in timing of disclosure, $t(116) = -0.34, p = .734 \ [95\% \ CI \ of \ difference: -0.87, 0.62]$. Disclosure rate was also examined, with participants coded as either having disclosed or not disclosed. There was no significant difference between Program (87.7% disclosed) and Waitlist (84.9% disclosed) children in rate of disclosure, $\chi^2(1) = 0.19, p = .660$.

**Anxiety.** Children significantly decreased in anxiety from Pre to Follow-up, $F(1, 142) = 7.15, p = .008$ (see Table 7.2). This pattern did not significantly differ between groups.
Analyses of Maintenance (Post to Follow-up).

**Protective Behaviours Knowledge.** Child-reported and parent-reported protective behaviours knowledge significantly increased from Post to Follow-up, $F(1, 134) = 6.65, p = .011$, and $F(1, 166) = 12.90, p = <.001$, respectively. However, these increases did not significantly differ between Program and Waitlist children.

**Disclosure Intentions, Confidence, and Safety Identification.** No significant changes in child-reported intentions to disclose and seek help, and abilities to identify safe situations were observed from Post to Follow-up. Children’s confidence in disclosure and help-seeking significantly increased from Post to Follow-up, $F(1, 369) = 23.18, p < .001$. However, this increase did not significantly differ between Program and Waitlist children.

**Anxiety.** No significant changes in children’s anxiety were observed from Post to Follow-up.

**Analyses of Moderator and Covariate Effects**

Potential moderating variables were examined for each primary variable. As moderating variables were not the primary factors of interest a forward selection strategy was used to determine if moderation had occurred (Cheng, Edwards, Maldonado-Molina, Komro, & Muller, 2010). Moderators were examined on an individual basis and included attendance proportion for the program condition as well as gender, age, parent/caregiver education, school term of assessment, child school difficulty and child school enjoyment. The only variable to have a significant moderating impact on treatment effect over time was school term of assessment. However, the inclusion of interactions with term into predictive models did not change the direction nor significance of any findings.
Process Evaluation

There were between 13 and 21 concepts to cover in each of the five Learn to be safe with Emmy and friendsTM classes. A classroom audit of 20% of sessions by a trained research assistant showed that approximately 97.1% of content was delivered during the appropriate session within the program (range = 92.3% - 100.0%), with 100% in sessions 1, 3 and 5. This highlighted that this program was delivered in a standardised manner across classes and schools.

Parent/Caregiver Satisfaction. Of those parents or caregivers who completed questionnaire items about program satisfaction (n = 169), 92.9% (157) rated themselves as happy or very happy that their children had participated. Parents or caregivers were also asked if they had observed changes in their child, with 100 of 157 respondents (67.1%) indicating change in their children's behaviours. Of these parents or caregivers, 87 reported a positive change, with another 2 parents reporting an increase in anxiety and 9 not indicating whether the change was positive or negative. Themes of change from parent/caregiver reports are presented in Table 7.3.

Table 7.3.

<table>
<thead>
<tr>
<th>Changes Observed</th>
<th>N (% of total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased knowledge of program concepts (e.g., safety, secrets, body parts)</td>
<td>47 (29.94%)</td>
</tr>
<tr>
<td>More open, confident and comfortable in discussion of safety topics/Greater frequency</td>
<td>31 (19.57%)</td>
</tr>
<tr>
<td>Increased general confidence and self-awareness</td>
<td>15 (9.55%)</td>
</tr>
<tr>
<td>Greater knowledge of safe adults and organisations</td>
<td>13 (8.28%)</td>
</tr>
<tr>
<td>Greater knowledge and management of emotions</td>
<td>11 (7.01%)</td>
</tr>
</tbody>
</table>
Discussion

This study provided a methodologically rigorous evaluation of the Australian protective behaviours program, *Learn to be safe with Emmy and friends*™, with both an impact and process evaluation. This evaluation was novel in its assessment of multiple outcomes, including children's disclosure confidence and safety identification skills, and by including a behavioural measure of interpersonal safety skills, in addition to the previously evaluated outcomes of protective behaviour knowledge and disclosure intentions (Dale et al., 2016). It was predicted that participation in the program would result in greater improvement over time on all variables. Child anxiety was also examined to assess the possibility of negative program effects. The process evaluation was used to inspect program fidelity and parent/caregiver satisfaction.

Impact Evaluation

The impact evaluation consisted of a registered school-level cluster randomised trial following CONSORT guidelines (Schulz et al., 2010). Perhaps the most innovative aspect of this trial was the use of a live simulated unsafe scenario to assess whether children used disclosure skills they had learned during the protective behaviours program, in comparison to children on a waitlist. By drawing on literature from physical safety related fields (e.g., gun-safety training, prevention of poison consumption, and fire-safety, Dancho et al., 2008; Himle et al., 2004), using scenarios from other behavioural skills training approaches (Gast, Collins, Wolery, & Jones, 1993; Gunby et al., 2010; Johnson et al., 2005, 2006; Poche, Brouwer, & Swearingen, 1981) and incorporating paradigms from secret-keeping research (Dunkerley & Dalenberg, 2000), this study has provided a novel contribution to the field of interpersonal safety in children. It has also improved upon previous protective behaviours program research through inclusion of a 6-month follow-up of the Waitlist condition to help differentiate
maturational and program effects.

It was surprising, however, that children were not found to improve in their interpersonal safety skills following the program when compared to waitlist children. Rather, what was found, was that children who participated in the program showed greater improvements in their protective behaviours knowledge, as well as greater parent/caregiver-reported improvements in child’s protective behaviours knowledge and skills, than children who did not participate. This was also maintained at a 6-month follow-up. Children who participated in the Learn to be safe with Emmy and friends™ program also showed improvement from baseline in disclosure intentions, confidence in disclosing interpersonal safety risks and ability to discriminate between safe and unsafe situations. However, this improvement was not significantly greater than that observed in the waitlist condition.

**Protective Behaviours Knowledge (Child and Parent Rated).** The significant increase in knowledge for children who participated in the program was consistent with Dale et al.’s (2015) evaluation of an earlier version of the current program, Learn to BE SAFE with Emmy™. The current results added a 6-month follow-up for both the program and waitlist condition, demonstrating that program participants maintained knowledge gains more so than waitlist participants. These findings indicate that the Learn to be safe with Emmy and friends™ program seemed to be effective in increasing children’s knowledge regarding a wide range of harms and protective skills. It also indicates this increased knowledge was sustained and as such it meets the short- and long-term objectives of knowledge change.

**Disclosure Intentions, Confidence and Safety Identification Skills.** Improvements in disclosure confidence were observed children in the program and on the waitlist from Pre to Post, however when examining the follow-up period (Pre to
Follow-up), these improvements were significantly greater for children who participated in the program. This suggests that over a longer time frame the *Learn to be safe with Emmy and friends* program seems to be effective in increasing confidence to disclose and seek help. By contrast, there were no significant differences in rates of improvement for disclosure intentions and safety identification skills. The finding that both the Program and Waitlist conditions increased in disclosure intentions from Pre to Post is consistent with Dale et al. (2015). However, the current study expanded upon this, finding that the improvement was maintained over a 6-month follow-up period for both conditions. A similar pattern was observed for safety identification skills. One potential explanation for the improvement observed among all children was that there might have been shared ideas amongst classmates. However, in the current study, randomisation was conducted at a school level to address this concern. It is also unlikely that maturational effects accounted for improvements, given that improvement was noted from Pre to Post, but this increase was not replicated across the larger time frame from Post to 6-month Follow-up. Further, age did not moderate outcomes and the Pre to Post timeframe fell at different points of the year for different schools, making effects of curriculum as usual school-based experience unlikely.

Instead, it is most probable that waitlist increases were due to practice effects or previous exposure to the measures (Topping & Barron, 2009). Although feedback on answers was not provided and the correct answers were not revealed in the measurement session, it may be the case that exposure to the topic prompted children in the Waitlist condition to further consider these topics, or to enquire about and discuss these topics with friends and trusted adults such as teachers and parents/caregivers. The fact that improvement was only noted from Pre to Post suggests that there is something unique about the first exposure to questions regarding safety related content that results
Interpersonal Safety Skills for Children

in shifts regarding disclosure intentions and safety identification skills.

**Interpersonal Safety Skills.** The measures of interpersonal safety behaviours were administered to a separate randomly selected subgroup of the sample at the Post and Follow-up time points. For these children, it appeared that program participation did not differentiate responses to the confederate lure nor result in changes to the timing and rate of disclosures. There are a number of factors that may explain this finding. First, whilst both short and long-term behavioural changes have been reported, previously, for school-based safety programs (Fryer et al., 1987a, b; Kraizer, et al., 1989), these programs were targeting the specific harm of abduction and as such corresponded directly to the harm that was behaviourally assessed. In contrast, the current program did not explicitly teach abduction prevention, but focused on teaching children to recognise and respond to ‘early warning signs’ that may apply to a range of different harms. It may be the case that children did not perceive the situation as unsafe (especially given the ‘safe’ school setting) or children may have had difficulty in generalising the skills they had learned to a type of harm that had not been specifically taught.

Second, previous BST studies that reported behavioural change have taught and had children model specific responses to the behavioural scenarios, and repeated these modelling attempts over time (Gast et al., 1993; Gunby et al., 2010; Himle et al., 2004; Johnson et al., 2005; 2006; Miltenberger et al., 2008; Poche et al., 1981). Indeed it has been noted that children often require multiple attempts to perform the correct response (Johnson et al., 2006). It may be the case that the 5 hours of program time were not sufficient to reinforce behavioural change. To address this, more behavioural modelling could be incorporated as part of the program, and future research could examine the impact of differing lengths of training on the quality of behavioural responses. BST
research also suggests that a more comprehensive suite of teaching strategies may be necessary to enhance behavioral skills including instruction, modelling, rehearsal, social reinforcement, shaping, feedback, and group mastery (Chen, Fortson, & Tseng, 2012; Lee, 1998; Saslawsky & Wurtele, 1986; Wurtele, Saslawsky, Miller, Marrs, & Britcher, 1986). These are pedagogical strategies identified as effective in education generally (Hattie, 2009), that could easily be further incorporated and emphasised in the current child protection education program and tested.

It may also be the case that children did not recognise that the responses they had learned for unsafe situations, such as telling a safe adult (disclosure), applied in the in-vivo situation. Indeed, as the interviewers were not school staff they were equally as ‘unknown’ to the children as the confederate. Future research may examine if there was a ‘familiarity’ effect by using known individuals such as parents or teachers as interviewers.

Finally, it may be the case that other variables besides safety training played a role in the response to the confederate and children’s decision to keep the secret (i.e., not disclose) or reveal the secret (i.e., disclose). As children were not asked to explain why they did or did not disclose and why they had agreed to leave with the confederate or not leave, it is possible that they might have had a variety of motives, such as feeling safe with the confederate, fear of consequences (getting into trouble for telling, getting in trouble for agreeing to leave), fear of disbelief, or responses may have been impacted by factors such as shyness or trust (Alaggia, Collin-Vézina, & Lateef, 2017; Olafson & Lederman, 2006). Alternatively, they may have been influenced by the school context, which is promoted as a safe place (Education Services Australia, 2010), or they may be subject to power imbalances implicit between children and adults in institutions (Moore, McArthur, Noble-Carr, & Harcourt, 2015). The decision not to enquire about motives
was made on ethical grounds as the researchers were conscious to minimise harm to children via their rumination on the scenario or feeling guilt for ‘doing the wrong thing’.

**Anxiety.** Another important factor considered in the current study, was examination of iatrogenic effects that may have resulted from program participation. It is always important to take into consideration that programs may have both positive and negative effects (Dale et al., 2015). In particular, it was possible that the focus of the program on safety and protective behaviours may have increased anxiety. However, no iatrogenic effects were observed in the current study. Instead, a decrease in anxiety was observed across time for both conditions, with children who participated in the program showing significantly greater declines in anxiety from Pre to Post.

**Process evaluation: Fidelity and Parent/Caregiver Satisfaction**

The *Learn to be safe with Emmy and friends™* program was administered in a consistent and standardised manner. Fidelity was present in both facilitator ratings of session content and observations by an independent assessor. This indicated that the program was delivered as intended, and the standardised delivery provided confidence that outcomes from this randomised controlled trial were more likely due to the program rather than variation in content administration.

Further, parent/caregiver satisfaction with the program was high with over 90% Happy-Very Happy ratings, and over half of responding parents or caregivers also observing positive changes in their child’s knowledge, confidence or program-related skills. This high satisfaction among responding parents/caregivers and their observations of changes were present both immediately after program participation and at the 6-month follow-up. Despite the relatively small number of respondents, response rates are typical of mail-in parent questionnaires (Pophillat et al., 2016) and these findings support an overall positive perception of the program and its effects amongst
families.

**Limitations and Future Research**

Some limitations and avenues for future research were identified in the current study. First, although schools that had participated in another child protection education program were excluded from the current study, schools were not asked to report on their use of other programs, such as those relating to poisons, fire-safety, substance abuse, or positive behaviour, all of which are relatively common in Australian primary schools. Similarly, some concepts taught within the program may also have been addressed in the standard Australian Curriculum: Health and Physical Education (Australian Curriculum, Assessment and Reporting Authority, 2017), which includes content relating to health, safety, and relationships in the early years of schools. This may have resulted in children from the Waitlist condition being inadvertently exposed to concepts and behavioural skills also taught in the *Learn to be safe with Emmy and friends™* program. Our analyses of school-based differences in variables were conducted using cluster-analyses, and statistical controls were used where school based differences were observed. Despite this level of rigour, future research may seek to collect data on the full range of programs provided in target schools, and examine the collective impact of school-based programs on outcome variables.

This study has limited generalisability, as only Year 1 students (aged 5 to 7) in state schools in a suburban region in Queensland, Australia were examined. Future research could extend findings in this area by conducting randomised-control trial evaluations for other programs, locations, age groups or more diverse participant populations, including children in rural or remote areas, children from culturally and linguistically diverse areas, children from Indigenous backgrounds, and children with disability.
Finally the impact of parent and teacher engagement was not evaluated. Previous literature on school-based child protection education theorises that involvement of parents and teachers may be key in knowledge gain, behaviour change and retention of changes (Briggs & Hawkins, 1994; Kenny, Capri, Ryan, & Runyon, 2008; Tutty, 1997; Walsh et al., 2015). Future research could examine the influence of parents and teachers on program outcomes, as well as the potential effectiveness of specific parent- and teacher-focused program components.

**Implications**

The current study provides several implications for practice. First, it provides an example of a methodologically rigorous evaluation for a child safety program. This helps to address calls both in Australia and internationally, for both more evidence-based interventions and greater methodological rigour within existing program evaluations.

For *Learn to be safe with Emmy and friends™* specifically, this research helps build its evidence base and suggests it is successful in its goals to increase knowledge and disclosure confidence over a 6-month period. However, there may also be room for improvement in effecting change in disclosure and behavioural skills. In particular, practicing specific behaviours or responses modelled during program presentations may help translate the knowledge gained into behavioural responses. Previous BST research also suggests that modelling and practice (i.e., rehearsal) should be accompanied by the provision of feedback to help shape the response (Chen, et al., 2012; Saslawsky & Wurtele, 1986; Wurtele, et al., 1986). One way to do this might be to incorporate modelling and rehearsal tasks during program presentation, with repetition and rehearsal by classroom teachers with provision of constructive feedback and social reinforcement in a group setting. Additionally rehearsal could be encouraged as ‘homework’ with
modelling provided to parents/caregivers in ways convenient to them (e.g., via podcasts or social media). This may also help to promote generalisation of these responses across contexts (Miltenberger, 2008).

The current study also provides a step forward in the assessment of disclosure and protective behaviours, allowing both to be assessed in a time efficient and ethical manner. This is just the first step however and future research may seek to adapt this measure to assess a wider range of unsafe situations, examine the impact of different disclosure recipients and/or to examine reasons behind decisions to use or not use protective behaviours or disclosure.

**Conclusion**

Overall, the current study was successful in providing a rigorous evaluation for an Australian protective behaviours program and found strong support for the effectiveness of *Learn to be safe with Emmy and friends™* in advancing and improving interpersonal safety knowledge as well as confidence in disclosure over a 6-month time period. This was also reflected in parent/caregiver satisfaction and feedback that children engaged in greater discussion of safety topics. Areas for further research were also identified for intention and skill-related variables. In particular the association noted between assessment and improved protective behaviours intentions, and safety identification skills, suggests potentially beneficial effects of exposure to safety topics in general. Recommendations were also developed regarding greater use of behavioural modelling, practice or rehearsal, and feedback in protective behaviours programs and for further research into factors that can predict children’s responses in, and disclosure of, unsafe situations.
Summary of Chapter 7

Study 1, reported in this chapter, was presented as a journal article that has been prepared for publication. In this study, the effectiveness of the Australian protective behaviours program, *Learn to be safe with Emmy and friends™*, was evaluated using a randomised controlled trial with Year 1 children, contributing to Aim 1 of the current thesis. This chapter focused on the findings from the Gold Coast site, which included measures of behavioural interpersonal safety skills using the OPBT. The findings indicated that the *Learn to be safe with Emmy and friends™* program was effective in significantly increasing interpersonal safety knowledge (child and parent-rated) and parent-rated interpersonal safety skills both post-program and at a 6-month follow-up. Children in the intervention condition also experienced increased disclosure confidence during the 6-month follow-up. However, the program did not appear to impact disclosure intentions, safety identification skills or observed interpersonal safety skills when compared to the waitlist condition. This lack of impact for observed interpersonal safety skills may be in part due to the risk context examined, which was not emphasised within the program content. As such, future research may seek to examine the impact of this program with other types of risk (i.e., abuse disclosure, bullying). Alternatively, to address the lack of impact for disclosure intentions, safety identification skills and observed interpersonal safety skills, *Learn to be safe with Emmy and friends™* may seek to adapt material to have a greater emphasis on specific scenarios and skills, and incorporate greater modelling and behavioural rehearsal. This was addressed in Study 2 of the current thesis, described in the next chapter, which examined whether use of disclosure rehearsal and feedback through a single session disclosure IST could improve children’s disclosure intentions, disclosure confidence and safety identification skills.
CHAPTER 8

Outcomes of In-Situ Training for Disclosure as a Standalone and a Booster to a Child Protective Behaviours Education Program

Chapter 8 consists of a journal article that has been prepared for publication. In this study (Study 2) the effectiveness of the in-situ training (IST) component of the Observed Protective Behaviours Test is examined as its own novel intervention component. In particular, this single session IST is examined both as a sole component and as a booster to the Learn to be Safe with Emmy and friends™ program. Children from Year 1 either participated in the no training, IST alone, program alone, or Program+IST condition and were interviewed at both a baseline and seventh months later. For Study 2, it was hypothesised that the more active component of the IST might help to promote disclosure intentions, disclosure confidence and safety identification skills. Past research using IST has typically used small samples, utilised multiple training sessions until learning retention and has focused exclusively on behavioural outcomes. The current study is the first to examine intention-related outcomes and focuses on the use of a short single-session IST to best examine its effectiveness as a time-effective booster add-on. Therefore, Study 2 contributed to Aim 2 of the thesis, which was to evaluate the effectiveness of a novel training component in increasing interpersonal safety, both by itself and as a booster session.
Statement of Contribution to Co-authored Paper

This chapter includes a co-authored paper. The bibliographic details of the co-authored paper, including all authors, are:


My contribution to the paper involved:

- Review of the literature
- Development of hypotheses and methodology
- Development of in-situ training and some measures
- Applying for ethical and research approvals
- Training and supervision of data collection staff, and collection of data
- Contributed to entering and coding of data
- Selection and running of analyses
- Lead in writing of paper

Student/Corresponding author of paper: Codi White

(Countersigned) ___________________________
Supervisor: Dr Dianne Shanley

(Countersigned) ___________________________
Supervisor: Professor Melanie Zimmer-Gembeck
Outcomes of In-Situ Training for Disclosure as a Standalone and a Booster to a Child Protective Behaviours Education Program

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Russell Hawkins
Katrina Lines
Abstract

Behavioural and in-situ skills training programs (BST and IST) have been used to help develop children’s skills across a range of domains, including interpersonal safety skills. This study sought to evaluate the effectiveness of a single-session disclosure-focused IST, the Observed Protective Behaviours Test (OPBT), both as a standalone intervention component and as a booster session to the child protective education program, Learn to be safe with Emmy and friends™. In total, 281 Year 1 children (5 to 7 years; 52% male) participated, with data examined from a baseline and 6-month follow-up. Children were randomly assigned to one of four conditions: Waitlist, IST only, Program only, and Program+IST. The IST component of OPBT was found to be effective as a standalone component, with greater improvements in children’s intentions to disclose across time compared to children in the Waitlist conditions. The OPBT was also effective as a booster session to Learn to be safe with Emmy and friends™ for disclosure intentions, with children who participated in both interventions showing greater improvements in disclosure intentions than those who were in the Waitlist or Program only conditions. The children Program+IST condition also displaying significantly greater increases in disclosure confidence than children on the Waitlist. No differences were observed between groups in safety identification skills and no conditions were found to increase anxiety. Future research may seek to evaluate effects of increased IST sessions, effectiveness of ISTs focused on different interpersonal safety skills and the impact of the OPBT IST on future disclosure behaviours.
Outcomes of In-Situ Training for Disclosure as a Standalone and a Booster to a Child Protective Behaviours Education Program

School-based programs with didactic teaching and group activities are commonly used approaches in the prevention of interpersonal harm towards children, such as bullying, family violence and abduction (Topping & Barron, 2009; Walsh et al., 2015). Protective behaviour programs are prevention programs that educate children about how to respond to multiple types of interpersonal harm. By focusing on skills relevant to responding to multiple types of harm, protective behaviour programs aim to maximise time and cost-effectiveness, allowing dissemination to a wider audience. Indeed, protective behaviour programs have been found to increase children's interpersonal safety knowledge and confidence in disclosing interpersonal safety risks (Dale et al., 2015; see Chapter 7). Nonetheless, these programs have yet to demonstrate effective change in safety identification skills and in intentions of using safety skills such as disclosure and help-seeking, changes that are likely necessary for implementation of these skills in potential risk situations. Thus, there is a need to consider adjuncts or additional components that may be useful for increasing program effectiveness (Rudolph & Zimmer-Gembeck, 2017). One possibility is drawing upon another type of harm prevention programs, behavioural skills training (BST) and its specialised variant in-situ training (IST; Miltenberger, 2008).

Developed from traditional behavioural techniques, such as modelling and conditioning, BST involves acquiring behavioural skills through instruction, demonstration, rehearsal and feedback (Miltenberger, 2008). Traditional BST provides training in-person through role-plays, although the instruction and demonstration components have also been adapted to electronic/online formats (Vanselow & Hanley, 2014). IST is a variant of BST that utilises training in the risk context to allow greater
generalisation of skills. In the current study, an in-situ training in disclosure for young children was evaluated. The training involved direct disclosure feedback and rehearsal, conducted within an experimental paradigm that simulated a risk scenario, while minimising the risk of harm. Children's ability to identify potentially unsafe interpersonal situations, intentions of disclosure and confidence in ability to disclose were compared between multiple groups, including children who received no training, those who received the IST or protective behaviours program only and children who received the IST as an adjunct to the protective behaviours program.

BST has been used in previous interpersonal harm reduction programs, but most of these involved small samples or case studies (Miltenberger, 2008). One of the earliest programs to utilise BST for interpersonal harm was described by Poche, Brouwer, and Swearingen (1981); they evaluated three children (aged 3 to 5) who practiced refusing abduction lures and withdrawing from the individual making the lures during role plays, with modelling and social reinforcement, over a one week period (5-6 sessions). They found all three children showed immediate improvement in their ability to refuse and withdraw during a simulated in-situ risk assessment with an unknown confederate. However, only one of two children examined at the 3-month follow-up displayed both refusal and withdrawal. In another study of BST for abduction prevention (Holcombe, Wolery, & Katsenemeyer, 1995), BST was re-administered 1-2 weeks prior to assessment, finding that 45 out of 46 children (aged 3 to 4) correctly met the criterion motor response (i.e., withdrawing from the stranger) and 67-71% of children refused the lure. However, at an optional 3-month follow-up, only 2 of 6 children met the motor criterion response, and only 2 of 6 children met the verbal response criterion. More recently, Johnson and colleagues (Johnson et al., 2006) also examined a BST for abduction prevention with 6- to 7-year-old children. They found that those who received
BST displayed greater interpersonal safety behaviours during an in-situ assessment than their counterparts in a control condition. However, only 57% of children displayed the full criterion behaviours immediately post-training and this reduced to 45% of children at a 3-month follow-up. Thus, success for BST has been mixed, with studies finding it useful for skills acquisition, however not all children seem able to generalise skills to the in-situ assessments or to maintain skills over time. One method of addressing this concern is through use of IST.

In IST, BST practices are core, but IST utilises training in risk contexts to enable greater generalisation of skills. This is accomplished by adding feedback and correction processes to in-situ assessments either during or at the end of training. The combination of BST and IST has shown improvements in the acquisition and maintenance of interpersonal safety skills when BST alone was unsuccessful (Gatheridge et al., 2004; Himle, Miltenberger, Gatheridge, & Flessner, 2004). For example, in one study of gun safety in children aged 4 to 5 years (Himle et al., 2004), 6 of 8 children needed IST in addition to BST to display criterion behaviours and in a second study of children aged 6 to 7 years (Gatheridge et al., 2004), 4 of 15 children who had received BST required an additional IST session to demonstrate criterion behaviours. Further, 13 of the 15 children who received a standard education based gun-safety program without BST did not display criterion behaviours. The addition of one session of IST was associated with increased skill acquisition, with 11 of these 13 children subsequently meeting criterion gun-safety behaviours.

Similar results were found when examining use of IST for interpersonal safety skills. In a comparison of a video-based safety education program to a control, no children (aged 6 to 8) met criterion safety skills (Beck, Miltenberger, & Ninness, 2009). However, when IST was implemented by parents as an adjunct, 9 of 14 children who
had received IST only and 11 of 12 children who received the video program and IST met criterion behaviours in a second in-situ assessment. More recently, Miltenberger et al. (2013) conducted a further evaluation combining the IST and a video-based education safety program. In this, children (aged 6 to 8) who did not meet criterion interpersonal safety skills after receiving the video-based Program only, subsequently received IST from parents. This resulted in significant increases in interpersonal safety skills displayed at a second assessment; however, unlike Beck et al., this increase did not differ between children who received IST only and children who received both the video-based safety education program and IST.

Still other studies have focused on abduction prevention. In one study, Johnson et al. (2005) found that all children (aged 4 to 5) learned the abduction prevention skills when in-situ training was embedded throughout the BST training. Johnson et al. (2006) also contrasted the outcomes of a children (aged 6 to 7) who participated in a BST+IST program, BST alone program and a control condition. Interestingly, post-program there was no difference between children in the BST+IST compared to the BST alone programs although both had significantly better abduction prevention skills during in-situ assessments than the control group. However, at the 3-month follow-up, children who had received BST+IST displayed significantly better skills than children who received BST alone, with 85% of BST+IST children displaying all criterion behaviours compared to only 45% of children in the BST alone condition. This suggests IST may be important not only for generalisation of skills as suggested by Miltenberger (2008), but also for maintenance of skills over time.

Protective behaviours programs are an alternate method of helping children to learn and generalise interpersonal safety skills. Learn to be safe with Emmy and friends™ is one such protective behaviour program disseminated in Australia (Dale et
Interpersonal Safety Skills for Children

In five 1-hour sessions conducted in schools, this program discusses several topics, including how to identify unsafe situations, how to identify unsafe secrets and when, to whom, and how to disclose. Past evaluations have found *Learn to be safe with Emmy and friends* increases protective behaviours knowledge in children aged 5-7 years of age compared to children in waitlist classrooms (Dale et al., 2015) or schools (see Chapter 7). Evaluations have also found that children improve over time in protective behaviours/disclosure intentions, disclosure confidence, and ability to identify unsafe situations. However, generally these improvements over time have not differed significantly between intervention and waitlist control groups. One way to address this may be through the addition of an extra module or training component following the protective behaviour program. This could solidify taught content by allowing children to implement/rehearse interpersonal safety skills and receive direct feedback to modify and increase intended skill use if needed or to reinforce correct use.

In the current study, the long-term (6-month) effectiveness of a single-session IST in increasing disclosure intentions, disclosure confidence and identification of unsafe situations was evaluated. This single-session IST was delivered through the Observed Protective Behaviours Test (OPBT; White et al., 2016), which uses a simulated risk scenario to focus on presentation of an unsafe secret and disclosure of this secret. IST has been reported to assist children who did not display criterion behaviours after BST in acquiring the behavioural skills, both in single and multiple session formats (Beck et al., 2009; Miltenberger, 2008). As such, IST may be a time- and cost-effective method for combining assessment and training in one procedure. While IST has been examined as an addition to BST and video-based education
programs, it has not yet been examined as an addition to other forms of training such as school-based protective behaviour programs.

Four groups were compared in the present study to examine the impact of the IST implemented in the OPBT: a Program group who received Learn to be safe with Emmy and friends™ prior to IST (Program+IST); a Program group who did not receive IST (Program only); an IST only group (IST only); and a Waitlist group who did not receive Learn to be safe with Emmy and friends™ nor IST (Waitlist). It was predicted that:

1. IST would provide a booster effect for children who participated in the protective behaviours program, whereby children who received the additional IST would maintain greater improvements in their: (a) intention to disclose unsafe situations, (b) self-efficacy in ability to disclose, and (c) ability to identify an unsafe situation, than children who participated in the program without IST.

2. Children in the Program+IST, and the IST only groups would likewise demonstrate improvements in their (a) intention to disclose the presence of a stranger, (b) self-efficacy in disclosure intentions and (c) ability to identify an unsafe situation, compared to children on the Waitlist.

Further, change in children's anxiety was evaluated to examine any possible iatrogenic effects; however, no change over time or group difference was expected.

Method

Participants

Participants were Year 1 students (age 5 to 7 years) from eight state (government) schools in Queensland, Australia. Schools were randomly assigned to receive Learn to be safe with Emmy and friends™ (Program; n = 140) or to a waitlist (n = 141). This assignment was blind to individuals' collecting data and conducting the
IST. Children within each school were further randomly assigned to either an IST or a no IST condition using a random number generator. Demographic details for each group are presented in Table 8.1 below. Exclusion criteria included prior participation in a protective-behaviours program, parental non-consent for the IST and incomplete administration of the IST. Where multiple children from the same family provided data, only one child was randomly selected to be included in the current analysis.

Table 8.1

<table>
<thead>
<tr>
<th>Participant Group Sample Sizes, Gender and Mean Age and Standard Deviation</th>
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<tbody>
<tr>
<td></td>
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<td></td>
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<tr>
<td>Program (n = 140)</td>
</tr>
<tr>
<td>IST</td>
</tr>
<tr>
<td>Sample size</td>
</tr>
<tr>
<td>Sex (% Male)</td>
</tr>
<tr>
<td>Age</td>
</tr>
</tbody>
</table>

Measures

Application of Protective Behaviours Test-Revised (APBT-R; see Appendix B). The APBT-R is a revised version of the Application of Protective Behaviours Test (Dale et al., 2015), that assesses how well children can distinguish safe and unsafe situations (safety identification skills), their intentions to disclose and help-seek in unsafe situations (disclosure intentions), and their confidence in performing these actions (disclosure confidence). These are measured using three subscales. The APBT-R includes six scenarios (four unsafe, two safe) that are verbally presented to a child with a supporting picture. The safe scenarios included descriptions of a secret about a birthday surprise and a child who had accidentally broken a crayon and apologised. The unsafe scenarios included descriptions about physical bullying, social exclusion, violations of personal space and a secret that another child had been hurt. The measure
begins with asking the child what he/she would do in the situation. To measure disclosure intentions, responses for each scenario are thematically analysed in terms of safety and coded on a 4-point scale from 1 (Unhelpful), 2 (Neutral), 3 (Helpful) and 4 (Disclosure/Help-seeking). Where multiple responses are given, the highest rated behaviour is used. Scores for disclosure intentions (ranging from 4-16) are calculated by summing unsafe scenario scores. As reported in Chapter 7, inter-rater reliability for coding of responses for this measure was at .997.

Once children had provided their disclosure intentions they were asked how sure they were that they would enact those intentions from 1 (Not Sure) to 4 (Completely Sure) as a measure of disclosure confidence. Children who reported an intention to disclose received a corresponding disclosure confidence score (ranging from 1-4). Children who did not report an intention to disclose received a score of 0. Scores for disclosure confidence (ranging from 0-16) were calculated by summing all unsafe scenario scores.

Finally, children were asked if each of the six scenarios were safe as a measure of safety identification. Responses were recorded as Yes, No or Don’t Know and later scored as True (1) or False (0) with Don’t Know responses scored as 0. Summing this provided a safety identification score (ranging from 0-6), indicating ability to distinguish between safe and unsafe secrets.

**Revised Children’s Manifest Anxiety Scale 2nd Edition: Short Form (RCMAS-2).** The RCMAS-2 was used to measure children's anxiety (Reynolds & Richmond, 2008). The RCMAS-2 is a reliable and valid 10-item measure assessing anxiety for children aged 6-19 years. Children were asked whether each statement was true of them and responses were coded as 1 (Yes) or 0 (No). Items were summed for an anxiety score (ranging from 0-10). Cronbach’s alpha was .713.
Procedure

Ethical approval. Approval for the study was provided by Human Research Ethics Committees at Griffith University (GU Ref No: PSY/48/14/HREC) and the Queensland Research Committee at the Department of Education and Training prior to school and participant recruitment and data collection.

School recruitment and consent. This study was part of a larger cluster-randomised controlled trial evaluating the effectiveness of a protective behaviours program. State schools in an urban area of Australia (Gold Coast) were randomly assigned to either the Program or Waitlist contact lists using a random number generator. Interested school principals provided consent for (a) the program and (b) the research and IST to be conducted within their school. Principals could opt to receive the program without the research component. Waitlist schools assigned to receive the IST completed this during the waitlist period. All waitlist schools received the program after the waitlist period. Classroom teachers delivered information sheets and consent forms to parents. Parents provided consent for their child to participate in: (a) the program, (b) the program and all research components including IST, or (c) the program and research without IST. Written and verbal child assent to participate in research was also obtained at the time of data collection.

Child protective education program procedures. The Learn to be safe with Emmy and friends™ program comprised five, 1-hour weekly sessions. Sessions were delivered in school buildings by trained facilitators independent to the research team and the schools. The content of the five sessions included emotion knowledge and regulation, early warning signs of danger, personal space, private body area, safe and unsafe secrets, disclosure and disclosure networks. These topics were taught using didactic teaching methods and group-based activities to enable learning of knowledge
and skills that could generalise to defend against multiple harms.

**IST Procedures.** In-situ training occurred 5 weeks after baseline assessment. It was conducted using the OPBT, an in-situ assessment of protective behaviour skills (White et al., 2016). In this assessment, as part of the individual structured interview procedure, the IST trainer pretended to forget some papers and departed the interview room leaving the child alone in the school room. In the trainer's absence, an unknown male confederate entered the room and asked the child to leave with them, representing a simulated risk scenario. In response, a child could either say no or go with the confederate. If the child said no, or did nothing after 10 seconds, the confederate left. If the child said yes, the confederate instructed the child to remain in the room and to keep his presence a secret. When the interviewer returned, the child was then given multiple prompts for disclosure at 1-2 minute intervals throughout the remaining interview or until child disclosure occurred.

All children received the training component of the IST at the end of the structured interview, regardless of whether they had disclosed the presence of the confederate. The training included a number of components. First, the confederate returned to the room and revealed that they had asked the child to keep their presence a secret. The trainer then explicitly stated to the confederate that this was not allowed. Next, the confederate apologised for asking the child to keep the secret and feedback was provided to the child from the trainer. Children who had correctly disclosed were praised and given confirmation they had taken the correct action for an unsafe secret. Children who had not disclosed at any point were given the opportunity to correctly provide the desired response by stating what they could do if this happened again and whom they could tell in the future, with feedback provided. Finally, an additional teaching instruction was provided at the end of the IST for all children encouraging
them to check with trusted adults if secrets are safe to keep. The simulated nature of the IST was not revealed nor was the IST repeated, in order to reduce the possibility of desensitising the child to a true risk situation.

**Assessment procedures.** Data were collected on disclosure intentions, disclosure confidence, safety identification and anxiety were collected from children at two time points in 10-15 minute interviews with trained research assistants. These interviews were conducted individually with children during school hours in a private room on school premises. The first time of assessment, *baseline*, was completed prior to any intervention. The second time of assessment, *follow-up*, was administered six months following IST. After follow-up, the Waitlist schools also received the *Learn to be safe with Emmy and friends™* program.

**Overview of the data analyses**

All analyses were conducted using IBM SPSS Statistics 22 (IBM Corp, 2013). Overall 16.7% of data were missing due to student absence from school, missed items and non-administration. Specifically, 24.1% was missing for Disclosure Confidence, 18.7% for Anxiety and 12-18% for Disclosure Intentions and Safety Identification. Multiple imputation was used to address missing data, which is regarded as the gold standard method to address data missing at random (Manly & Wells, 2015). Consistent with White, Royston, and Wood’s (2011) recommendations, a fully conditional specification with 17 imputations was used to impute data with all outcome variables as well as age, sex and school term (i.e., the phase in the school year in which data were collected). School and class were also included as predictors due to the multilevel nature of the data collection. Imputed results were pooled for *B* and *t*-test statistics using SPSS default pooling, and for *F*-test statistics an SPSS macro created by van Ginkel (2016) was used. Imputed results are presented for all analyses, and the unadjusted means for
Repeated measures linear population averaged models and mixed models were used for analyses. For these models, fixed effects of Time (Baseline, Follow-up) and Group (Program+IST, Program only, IST only, Waitlist) were tested. An unstructured covariance structure for the repeated effect of Time was specified. For the overall analyses, as suggested by van Ginkel and Kroonenberg (2014), effect coded group variables were used, with one model using Program+IST as the reference category, and a second using the Waitlist condition as reference category. When a Time x Group interaction was significant, simple effect analyses were conducted to determine where the significant difference occurred, retaining the fixed and repeated effects of time and using dummy coded group variables. Assumptions of all analyses were met.

Intracluster correlation coefficient (ICC) analyses were conducted to test for significant higher-level effects of classroom and school. These showed there was substantial clustering based on school and class for Disclosure self-efficacy ($ICC_{school} = .443; ICC_{class} = .597$). All other school-level ICCs were below .09, suggesting little effect of classroom or school on measures. For classroom, there was also some evidence of clustering for Safety Identification Skills ($ICC_{class} = .129$). As such, for these variables classroom was included as a random effect and a mixed model was conducted using the same fixed effects as described earlier.

**Results**

**Disclosure Intentions**

Table 8.2 provides the $M$s and $SD$s at Baseline and Follow-up for the four conditions. Overall, children's intentions to disclose and seek help significantly increased from Baseline to Follow-Up, $F(1, 124.27) = 13.66, p < .001$. However, significant Time x Waitlist, $F(1, 99.44) = 4.62, p = .034$, and Time x Program+IST, $F(1,
(196.04) = 5.10, \( p = .025 \), interactions were present (see Figure 8.1). Follow-up analyses revealed that children in the Program+IST condition had a significantly greater increase in disclosure intentions from Baseline to Follow-up compared to children in the Program only condition, \( B = -1.04, SE = 0.44, t = -2.36, p = .018 \), and children in the Waitlist condition, \( B = -1.23, SE = 0.46, t = 2.68, p = .008 \). Further, children in the IST only condition, \( B = 1.06, SE = 0.46, t = 2.31, p = .021 \), had a significantly greater increase from Baseline to Follow-Up than children in the Waitlist condition.

**Disclosure Confidence**

Similar to what was found for Disclosure Intentions, children’s confidence to disclose and seek help significantly increased from Baseline to Follow-Up,

Table 8.2

*Mean and Standard Deviations for Outcome Variables by Condition*

<table>
<thead>
<tr>
<th></th>
<th>Waitlist M (SD)</th>
<th>IST Only M (SD)</th>
<th>Program Only M (SD)</th>
<th>Program+IST M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( n = 81 )</td>
<td>( n = 60 )</td>
<td>( n = 67 )</td>
<td>( n = 73 )</td>
</tr>
<tr>
<td><strong>Baseline</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disclosure Intentions</td>
<td>14.14 (1.79)</td>
<td>13.27 (2.04)</td>
<td>13.80 (2.04)</td>
<td>13.03 (2.42)</td>
</tr>
<tr>
<td>Disclosure Confidence</td>
<td>6.65 (6.34)</td>
<td>4.13 (5.40)</td>
<td>4.51 (5.86)</td>
<td>1.94 (4.36)</td>
</tr>
<tr>
<td>Safety Identification</td>
<td>4.22 (1.10)</td>
<td>4.22 (1.15)</td>
<td>4.27 (1.08)</td>
<td>4.25 (1.32)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>3.77 (2.57)</td>
<td>3.17 (2.42)</td>
<td>3.99 (2.19)</td>
<td>3.68 (2.35)</td>
</tr>
<tr>
<td><strong>6 Month Follow-Up</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disclosure Intentions</td>
<td>14.13 (2.04)</td>
<td>14.27 (1.67)</td>
<td>14.02 (1.79)</td>
<td>14.19 (1.88)</td>
</tr>
<tr>
<td>Disclosure Confidence</td>
<td>9.77 (5.46)</td>
<td>9.80 (5.02)</td>
<td>9.58 (4.39)</td>
<td>9.53 (5.40)</td>
</tr>
<tr>
<td>Safety Identification</td>
<td>4.43 (1.24)</td>
<td>4.52 (1.06)</td>
<td>4.56 (1.18)</td>
<td>4.45 (1.13)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>3.68 (2.23)</td>
<td>3.34 (2.17)</td>
<td>3.08 (2.22)</td>
<td>3.53 (2.35)</td>
</tr>
</tbody>
</table>

*Note.* \( F \) statistics from between-groups comparisons of change from baseline to 6-month follow-up are reported in the text.
Figure 8.1. Change from Baseline to 6-Month Follow-up for Conditions on Disclosure Intentions

Note. Disclosure Intention scores have a possible range from 4 to 16.

$F(1, 158.43) = 149.77, p < .001$ (see Table 8.2 for $M$s and $SD$s for each group). Further, Time × Waitlist, $F(1, 166.18) = 8.43, p = .004$, and Time × Program+IST, $F(1, 161.82) = 5.21, p = .024$, interactions were significant (see Figure 8.2). Follow-up analyses showed that children in the Program+IST condition, $B = 3.93, SE = 1.23, t = 3.19, p = .002$, increased significantly more from Baseline to Follow-Up than children in the Waitlist. There were also marginally greater increases in disclosure confidence for children in the IST only condition, $B = 2.46, SE = 1.27, t = 1.95, p = .052$, and Program only conditions, $B = 2.26, SE = 1.28, t = 1.77, p = .077$, compared to children in the Waitlist condition. These marginal trends were significant in the original data prior to multiple imputation (IST only: $p = .040$; Program only: $p = .013$).

Safety Identification Skills

Children’s ability to identify unsafe situations significantly increased from Baseline to Follow-Up, $F(1, 83.34) = 8.61, p = .004$ (see Table 8.1 for $M$s and $SD$s for
This increase did not differ between groups (i.e., time × group interactions were not significant).

Figure 8.2. Change from Baseline to 6-Month Follow-up for Conditions on Disclosure Confidence

**Note.** Disclosure Confidence scores have a possible range from 0 to 16.

**Anxiety**

Children’s anxiety did not significantly change from Baseline to Follow-Up (see Table 8.1 for Ms and SDs for each group). However, children in the Program only condition showed greater decrease in anxiety from Baseline to Follow-Up than children in the Program+IST condition, $B = -1.36$, $SE = 0.64$, $t = -2.14$, $p = .034$, and children in the Waitlist condition, $B = -1.16$, $SE = 0.70$, $t = -1.67$, $p = .099$ (see Figure 8.3).
Discussion

The aim of this study was to evaluate the impact of a single session disclosure-focused IST in children followed for six months. The current study built upon previous work from the BST field (Beck et al., 2009; Johnson et al., 2006), to assess the outcomes of using an IST as a booster session for a child protective education program, as well as the impact of IST as a standalone intervention. Novel outcome measures for this form of training were also used, with changes in disclosure intentions, disclosure confidence and safety-identification skills examined over a 6-month follow-up period. It was predicted there would be greater improvement for the children in the Program+IST condition than children in the Waitlist and Program only conditions. Further it was predicted there would be greater improvement for children in the IST only condition compared to children in the Waitlist condition. Children's anxiety was also examined.

**IST as booster to a protective education program**

Significant improvement from baseline to follow-up was observed for disclosure intentions, disclosure confidence, and safety identification skills across all children.
Further, when groups were compared, a booster effect of IST was found; children in the Program+IST condition showed significantly greater improvements than children in the Program only condition for disclosure intentions. Also, IST is an effective adjunct to a protective education program, with children in the Program+IST condition showing significantly greater improvements in disclosure intentions and confidence when compared to children in the Waitlist condition. By contrast, children in the Program only condition did not show significantly greater improvement than children in the Waitlist on any disclosure outcome variables, although a marginal trend was noted for greater improvement in disclosure confidence.

The greater improvement in disclosure intentions and confidence observed for the Program+IST children, as compared to a Waitlist condition, and the greater improvement in disclosure intentions compared to a standard child protective education program, supports the findings of previous BST-based research (Johnson et al., 2006). Although previous research has not examined the effect of IST on disclosure intentions and confidence specifically, consistent with the current study Johnson et al. (2006) found that when IST was added to a program using a BST approach, there was greater maintenance of desired interpersonal safety skills at a 3-month follow-up relative to BST alone. Results are also consistent with those observed in Beck et al. (2009) where use of interpersonal safety skills was most effective in a video-based education Program+IST condition, and Miltenberger et al. (2013) where the addition of parent-administered IST resulted in significant improvement in interpersonal safety skill use for children, compared to that demonstrated in participation in the program alone and waitlist groups. Overall, the current results support past research on the efficacy of IST and suggest a single-session disclosure-based IST for an unsafe secret does appear to
provide a long-term booster effect for both disclosure intentions and confidence when presented with future potential risk scenarios.

One exception to the pattern noted above was safety identification skills. Skills improvement was found for all children, but improvement was not greater in the Program+IST condition compared to children in other conditions (IST only, Program only, or Waitlist). It may be that safety identification was not emphasised enough in the IST, as the IST specifically focused on teaching disclosure of an unsafe secret and not safety identification (i.e., distinguishing safe and unsafe scenarios). Indeed, the protocol of the teaching component, in which the trainer encourages children to check if secrets are safe with trusted adults, did not address safety identification skills. This suggests that IST may generalise to directly related concepts (i.e., disclosure intentions and disclosure confidence from a disclosure IST), but may not generalise to situations or concepts that are not specified within the teaching protocol. That is, for safety identification outcomes to be enhanced, the IST would also need to address concepts directly related to safety identification skills.

**IST as a standalone intervention**

Predictions for IST as a standalone intervention were also partially supported. Children in the IST only condition were not significantly different in their rate of improvement when compared to the Program+IST or the Program only. Children in the IST only condition also improved more than children in the Waitlist condition on disclosure intentions and there was a marginal trend observed for disclosure confidence. As with the Program+IST condition, no difference in rate of improvement was observed from the Waitlist condition for safety identification skills.

Although previous research has not examined intentions and confidence specifically for disclosure, these findings are partially consistent with past research on
the impact of IST only on interpersonal safety skills, including disclosure (Beck et al., 2009; Miltenberger et al., 2013). Overall, this suggests that although single-session disclosure-based IST may be effective in increasing children disclosure intentions, the combination of both Program+IST may be needed to significantly increase disclosure confidence, above the level of improvement already present due to maturational effects. This is essential given that many theories, such as the Theory of Planned Behaviour (e.g., Ajzen, 1991), suggest that confidence or self-efficacy is a factor that can influence the likelihood of translating intentions into enacted behaviour.

Anxiety

An important factor to consider when undertaking any research utilising interventions is the possibility of inadvertent iatrogenic or adverse effects, such as increases in children’s anxiety. However as predicted, for the current study no iatrogenic effects were observed, with no difference in anxiety for children in either IST condition compared to children in the Waitlist over the six month time frame examined. The Program only condition however did display significantly greater decreases in anxiety over time compared to both the Waitlist and the Program+IST, although results did not differ compared to IST only.

Limitations and future research

The current study contributes novel information regarding the effectiveness of IST on disclosure related outcomes. Nonetheless, two primary limitations of the study should be mentioned. Perhaps the most important limitation to mention is in the generalisability of the IST. Unlike many previous programs using a BST approach, IST was administered in only one session and the impact of this training on disclosure was examined using only measures of disclosure intentions and disclosure confidence, rather than actual disclosure. This was done so as to prevent potential desensitisation of
participating children to future risk situations, such that they might believe that future risk encounters are another simulated test. Future research may seek to address this methodological limitation by utilising a wider range of in-situ assessments to avoid potential desensitisation to any single risk context. This may also enable evaluation of whether there is a dose impact for IST with more than one session.

A second limitation to mention is the focus of the IST. The IST in the current study focused only on disclosure of unsafe secrets. Future research may seek to examine whether single-session IST for other types of disclosure (e.g., observing bullying) or differing types of interpersonal safety skills (e.g., safety identification, withdrawal from the risk context) also increases intentions and confidence for performing those behaviours. This is particularly important given that the impact of IST was only evident for the disclosure specific variables.

**Conclusion**

In summary, the current research suggests IST may be promising as a booster session for child protective education programs to improve disclosure intentions and disclosure confidence in school-age children. This was particularly so for disclosure intentions, where participation in both the program and IST resulted in greater improvements over time than participation in the child protective education program only. Results also provided support for the standalone use of the single session disclosure-focused IST to improve disclosure intentions. Future research should extend the current study findings, both through examination of different types of IST and application of the current single-session disclosure-focused IST to new programs and new populations.
Summary of Chapter 8

Study 2, reported in this chapter, was presented as a journal article prepared for publication. In this study the effectiveness of a single-session disclosure-focused IST was examined as both as a standalone session and as a booster session to the child protective education program, Learn to be safe with Emmy and friends™, contributing to Aim 2 of this thesis. Children participated in one of four separate conditions: Waitlist, IST only, Program only and Program+IST. The findings indicated that the IST only condition was effective in improving disclosure intentions compared to outcomes for children in the Waitlist condition. However, the IST only condition did not significantly affect disclosure confidence or safety identification skills. Further, children in the Program condition did not significantly improve on any disclosure related outcome. However, for children in the Program+IST condition, significant improvement was seen in both disclosure intentions and disclosure confidence, compared to children on the Waitlist. This suggests the OPBT IST may be effective as a booster session. It also suggests Learn to be safe with Emmy and friends™ may be able to improve disclosure intentions and disclosure confidence outcomes by seeking to adapt material to incorporate greater behavioural rehearsal and feedback. Study 2 focused on the effect of the OPBT IST on intentions and confidence related outcomes however future research may seek to evaluate the impact of this IST on observed disclosure behaviours. In the next chapter of the thesis, Study 3 is presented. In Study 3, the aim was to identify potential correlates of interpersonal safety skills, in order to enable practitioners to better address any potential mechanisms of behaviour change in program development and better target programs to those most likely to require further training. In Study 3, the emphasis is also placed on how well traditional measures of program effectiveness (e.g., knowledge and intentions) reflect enacted interpersonal safety behaviours.
CHAPTER 9

Tell, tell, tell again": The Prevalence and Correlates of Young Children's Response to and Disclosure of an In-vivo Lure from a Stranger

Chapter 9 consists of a journal article that has been prepared for publication. In this study (Study 3), both the prevalence of interpersonal safety skills and potential correlates of these skills were examined in a sample of Year 1-2 children. Correlates examined included child and parent demographic characteristics (e.g., age, gender, parental education), child and parent school and community engagement (e.g., family community engagement, school enjoyment), and measures of other interpersonal safety constructs (e.g., interpersonal safety knowledge, disclosure intentions and confidence). Past research for interpersonal safety skill correlates has been limited by either lack of standardisation or use of scenarios that do not simulate risk. The OPBT, as a standardised measure of interpersonal safety skills using a simulated risk situations, addresses these concerns. Therefore, Study 3 addresses Aim 3 of the thesis which is to examine potential predictors of interpersonal safety skills in a standardised manner. This represents an important contribution as by identifying these correlates, potential mechanisms of interpersonal safety skill development may be identified for program development and programs may be disseminated more effectively by identifying children who may be more likely to require further training in these skills.
Statement of Contribution to Co-authored Paper

This chapter includes a co-authored paper. The bibliographic details of the co-authored paper, including all authors, are:


My contribution to the paper involved:

- Review of the literature
- Development of hypotheses and methodology
- Development of in-situ training and some measures
- Applying for ethical and research approvals
- Training and supervision of data collection staff, and collection of data
- Contributed to entering and coding of data
- Selection and running of analyses
- Lead in writing of paper

Student/Corresponding author of paper: Codi White

(Countersigned) ___________________________

Supervisor: Dr Dianne Shanley

(Countersigned) ___________________________

Supervisor: Professor Melanie Zimmer-Gembeck
“Tell, tell, tell again”: The prevalence and correlates of young children's response to and disclosure of an in-vivo lure from a stranger

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Abstract

Despite being a key target outcome to prevent child maltreatment, little research has been conducted to examine the prevalence and predictors of interpersonal safety skills in a standardised manner. In this study, interpersonal safety skills were measured in a Year 1-2 student sample through use of a standardised simulated risk scenario, with three primary skills examined: withdrawal from an unknown confederate (motor safety response), verbal refusal of an abduction lure (verbal safety response) and disclosure of confederate presence. Children who participated in this study had not completed any prior behavioural skills training or child protective education programs. Overall, the prevalence of interpersonal safety skills varied, with 27% children withdrawing from the confederate, 48% refusing the lure and 83% disclosing the confederate’s presence. For correlates, motor and verbal safety responses were positively associated with each other. However, the only other correlate of interpersonal safety skills was anxiety, with children who had greater anxiety disclosing earlier but also being more likely to agree to leave with the confederate. Future research may seek to examine whether these correlates remain present with different types of interpersonal safety risk (e.g., bullying) and to identify other potential predictors of interpersonal safety skill use.
"Tell, tell, tell again": The Prevalence and Correlates of Young Children's Response to and Disclosure of an In-vivo Lure from a Stranger

Many children encounter abuse, neglect, unsafe stranger interactions, bullying and sexual assault (Collin-Vézina, Daigneault, & Hébert, 2013; Jones & Pozzebon, 2010). In many of these situations the child comes into contact with potential danger in the absence of a safe adult. When this occurs, child disclosure is needed before adults can be aware of the risk and intervene or put in place future safeguards to reduce the possibility of another unsafe situation. As a result, many child safety programs (or curricula) focus on teaching children interpersonal safety skills, such as how to extract themselves from risk situations and to tell safe adults about it (Collin-Vézina et al., 2013; Dale et al., 2015; Walsh, Zwi, Woolfenden, & Shlonsky, 2015; Wurtele, 2009).

Whether such child-focused interpersonal safety skills programs actually do increase children's rate or timing of disclosure for risk situations when they occur has been more difficult to determine. Outcomes most often assessed in interpersonal safety programs for young children include improvements in knowledge, disclosure intentions, and confidence in disclosure and help-seeking (Dale et al., 2015; Walsh et al., 2015). Assessment is based on the assumption that these proximal measures will be indicators for actual safety and behavioural change. Theoretically, these claims are partially supported by both the Theory of Planned Behaviour (TPB; Ajzen, 1991; Fishbein & Cappella, 2006) and the Health Action Process Approach (HAPA; Schwarzer, 2008), which suggest that knowledge and attitudes can modify intentions, and intentions to act are immediate antecedents of behaviour, alongside potential moderating factors such as perceived behavioural control (confidence/self-efficacy; Ajzen, 1991; Fishbein & Cappella, 2006; Schwarzer, 2008; Webb & Sheeran, 2006). However, in the TPB, knowledge is not a pre-requisite for action and knowledge has been shown to be a poor
Interpersonal Safety Skills for Children

predictor of enacted behaviour (Ajzen, Joyce, Sheikh, & Gilbert Cote, 2011). Further, prior research in health and risk domains has found that the strength of the relationship between intention and behaviour is not always strong, and can vary from small to moderate (Castanier, Deroche, & Woodman, 2013; McEachan, Conner, Taylor, & Lawton, 2011; Rhodes & Dickau, 2011; Sheeran, 2002). Within the domain of children’s interpersonal safety, the relationship between intentions and actual behaviours has not yet been examined. The primary aim of the current study was to address this gap in knowledge by testing the relationships between interpersonal safety knowledge, disclosure intentions and behavioural skills among young children.

One complication for conducting such a study was the need to produce an easy to implement behavioural skills test that could be understood by young children, was relevant to a potential interpersonal risk situation (but not too troubling or distressing for children), and could be used to objectively assess interpersonal safety skills in the context of a potential interpersonal risk encounter. This is a significant challenge, which explains why there has, historically, been little measurement of interpersonal safety skills in studies in child-focused prevention programs (Fryer, Kraizer, & Miyoshi 1987a; 1987b; Kraizer, Witte, & Fryer, 1989; Walsh et al., 2015). Without such a measure, however, it has been difficult to determine: (i) the prevalence of children’s interpersonal safety skills; (ii) the degree to which these skills improve as a result of intervention exposure; and (iii) what factors predict variability in children’s use of the skills. Identifying predictors of children’s use of interpersonal safety skills is particularly important, given that it may help to identify not only which children may need further intervention/instruction but also help identify mechanisms to target for enhanced skill acquisition and use.

Fortunately, theory and research on Behavioural Skills Training (BST) programs


(Johnson et al., 2006), secret-keeping (Heyman, Loke, & Lee, 2016) and disclosure (Alaggia, Collin-Vézina, & Lateef, 2017) does exist, and much of it is useful as guidance for the development of a measure of children's disclosure skills. This theory and the associated research was also relevant for identifying specific factors that may impact on children's ability to enact interpersonal safety skills.

**Theory and Research to Derive a Measure of Interpersonal Safety Skills**

**Evaluation of programs using a BST approach.** In evaluations of programs using a BST approach, interpersonal safety skills have been examined directly, including for abduction refusal (immediate verbal safety response), removal from the unsafe situation (immediate motor safety response), and disclosure. These programs involve repeatedly modelling the desired behaviours, and often utilise in-situ assessments (Fisher, Burke, & Griffin, 2013; Johnson et al., 2005; 2006). BST research has focused on the impact of repeated modelling of behavioural responses, with many studies reporting improvement in interpersonal safety skills for the group overall and others reporting individual variation in the degree of modelling necessary (Fisher et al., 2013; Poche, Brouwer, & Swearingen, 1981). However, despite noting that there may be individual factors influencing children’s interpersonal safety skills, there has been little focus in BST research on predictors of interpersonal safety skill (e.g., gender, safety knowledge) outside of the influence of BST itself. In part this is due to limited power, with BST research often conducted using case study methodologies (Holcombe, Wolery, & Katsenemeyer, 1995; Poche et al., 1981) or small samples ($n<25$; Beck, Miltenberger, & Ninness, 2009; Fisher et al., 2013).

**Secret-keeping.** In studies of secret-keeping, the focus has been on predictors of disclosure, particularly through simulated secret-keeping paradigms. Researchers using these paradigms have found that individual factors, related to both child (e.g., age,
socioeconomic background) and interview style (i.e., type of question asked), have been able to predict variation in rates of secret-keeping and length of time until disclosure (Ahern, Stolzenberg, McWilliams, & Lyon, 2017; Heyman et al., 2016). Age has mixed support as a predictor, with some researchers finding younger children are more likely to disclose secrets relative to older children (Ahern et al., 2017; Gordon, Lyon, & Lee, 2014; Stolzenberg, McWilliams, & Lyon, 2017), others finding that older children are more likely to disclose than younger children when prompted (Ahern et al., 2017), and still others finding no age-related associations with secret-keeping (Talwar, Lee, Bala, & Lindsay, 2004). Children from families with low income, single-parent families, or children with parents with lower education levels tend to disclose secrets later relative to other children (Dunkerley & Dalenberg, 2000). By contrast, gender has not been predictive of secret-keeping (Ahern et al. 2017; Heyman et al., 2016; Stolzenberg et al., 2017).

Question type is perhaps the most consistent correlate in secret-keeping research (Talwar, Arruda, & Yachison, 2015). For example, two studies with 4- to 9-year-old children found less than 40% of children disclosed when using invitations for free recall (Ahern et al., 2017; Stolzenberg et al., 2017). However, in these studies over 45% of remaining children disclosed when subsequently asked direct yes/no questions (Ahern et al., 2017; Stolzenberg, et al., 2017). This is consistent with other studies finding more than 60% of children do not disclose in response to invitations for free recall (Lyon et al., 2014).

However, there are limitations in the generalisability of findings within the secret-keeping literature to the study of interpersonal safety skills. Specifically, to elicit children’s disclosure, the paradigms have typically used secrets that do not involve risk. For example, one popular paradigm is to have a confederate or parent perform a
property related transgression such as stealing or breaking something (Heyman et al., 2016). Advantages of these designs are that they simulate some aspects of interpersonal safety risk by using interactions which begin positively and end in a transgression that is implied by the confederate to be a shared secret (Stolzenberg et al., 2017). However, although these designs do involve confederates breaking normative standards, these scenarios might not create a risk of harm generalisable to risk of interpersonal harm from abuse, neglect, bullying, or sexual assault.

**Harm and the decision to disclose.** Investigations of disclosure of actual harm, and the factors that influence decisions to disclose (Alaggia et al., 2017; Malloy, Brubacher, & Lamb, 2013), is also relevant to the current study. Previous research has particularly focused on disclosure of child sexual abuse (CSA). Unlike secret-keeping research, one of the most consistent findings in this field is that younger and male children are less likely to disclose (Alaggia et al., 2017; Olafson & Lederman, 2006). Degree of social support has also been suggested as a disclosure predictor, with low parental support, especially, predicting delays or decreases in disclosure of CSA (Alaggia et al., 2017; Olafson & Lederman, 2006). Family relationship with the perpetrator, minority ethnicity, and feelings of fear or shame are other commonly reported factors related to delayed or decreased disclosure of CSA (Alaggia, 2004; Alaggia et al., 2017; McAlvaney, 2015; Olafson & Lederman, 2006).

While being the most ecologically sound method of assessing children’s disclosure behaviour also has limitations, with the most prominent being the lack of literature on non-CSA harm disclosure. Another limitation in the existing research is that individuals who have been sexually abused are not randomly selected nor subject to the same type and degree of harm, making standardisation and the removal of confounding variables difficult. This makes it challenging to determine if characteristics
examined are related to increased risk of harm (i.e., more girls disclose due to more girls being harmed), or related to increased likelihood of disclosure (i.e., more girls disclose because they have better disclosure skills; Hazzard, 1993). A further limitation is the retrospective nature of disclosure studies and their reliance on self-report of potential predictors (Olafson & Lederman, 2006). Further, disclosure studies can be conducted only with those who have disclosed themselves, or in cases where independent evidence of harm is present. This selection bias may result in non-representative research, especially given consensus in the literature that most children subject to CSA do not disclose until adulthood (McElvaney, 2015).

The Current Study

In the current study, the purpose was to answer two research questions: (i) what is the prevalence of children's interpersonal safety skills?; and (ii) what predicts children's better use of interpersonal safety skills? To answer these questions, theory and research on BST and secret-keeping were drawn upon to develop a novel Observed Protective Behaviours Test (OPBT). The OPBT is a standardised, simulated risk scenario presented to children in Year 1 and 2. The risk scenario involved two confederates: one who was a stranger that requested the child to leave with them, and a second confederate who was known to the child. Children’s initial physical (i.e., motor interpersonal safety skills) and verbal (i.e., verbal interpersonal safety skills) responses to the simulated risk scenario were recorded. The OPBT also included an incremental series of prompts used by the known confederate providing multiple opportunities for children to demonstrate disclosure skills (Ahern et al., 2017).

To address the second research question, several potential predictors were selected. As disclosure research has predominantly found that younger age, male gender, and emotions of shame, self-blame and fear are associated with delayed or
lower rates of disclosure, demographic variables of age, anxiety, and gender, were included (Alaggia et al., 2017; Olafson & Lederman, 2006; Stolzenberg et al. 2017). Given the association found in disclosure literature between low social support and delayed or lower rates of disclosure, several social-oriented variables were incorporated, including perceived school enjoyment, perceived school difficulty, involvement in structured and unstructured social activities, parental stress, and family involvement in the community (Alaggia et al., 2017; Olafson & Lederman, 2006). Potential risk predictors were also included such as parent education, parent age, and school achievement (Dunkerley & Dalenberg, 2000). Finally, to test potential TPB relationships, predictors included interpersonal safety knowledge, disclosure intentions, confidence in disclosure intentions, and safety identification skills (Ajzen, 1991).

Method

Participants

Participants included 118 Year 1 and Year 2 (i.e., First and Second Grade) students from randomly-selected State (government) schools in Queensland, Australia. This sample was part of a larger study, whereby only a subset of children completed the OPBT. Children were aged 5 to 8 years at time of testing ($M = 6.15$ years, $SD = 0.45$ years; 62 male; 56 female). Data were also collected from 53 parents/primary caregivers aged 25-50 years ($M = 37.76$ years, $SD = 5.21$ years; all female).

Parent-report Measures

Demographics. Marital status, highest education level and age were collected at the time of consent. Child’s age, gender and respondents’ perceptions of children’s difficulty with school (child school difficulty) rated from 1 (Very Easy) to 5 (Very Hard) and enjoyment of school (child school enjoyment) rated from 1 (Dislikes a lot) to 5 (Likes a lot) were also collected. Information was further collected on family
involvement in the community, as well as amount of time the child spent in unstructured
and structured social activities all rated from 1 (*Not at all*) to 5 (*6 or more days a
month*).

**Parent Protective Behaviours Checklist (PPBC; Dale et al., 2015).** The PPBC
was used to assess parent’s perceptions of how well their child understood protective
behaviour concepts and how often their child used protective behaviours skills. Parents
recorded how representative each of the 10 statements was of their child on a 4-point
scale from 1 (*Not at all/Unsure*) to 4 (*Very/Always*). All items were summed to provide
a Total PPBC score. The Cronbach's $\alpha$ was .78.

**Parent Stress Inventory: Short Form (PSI/SF; Abidin, 1995).** The PSI/SF is a
36-item reliable and valid parent-report measure that assesses stress in parents of
children aged 1 month to 12 years of age. A total stress score (range from 36 to 180)
was calculated by summing items assessing parental distress, parent-child dysfunctional
interaction and perceptions of a difficult child, with higher scores indicating greater
parental stress. The Cronbach's $\alpha$ was .93.

**Child-report Measures**

**Protective Behaviours Questionnaire (ProBeQ; Dale et al., 2015).** The
ProBeQ was used to assess children’s knowledge of interpersonal safety concepts
relevant to protective behaviours including: Emotion recognition, early warning signs,
private and public body parts, personal space, safe and unsafe secrets, identification of
safe adults and disclosure. The ProBeQ has 12-items and is a child-report measure
administered by trained interviewers with marks awarded for correct answers. A total
protective behaviours knowledge score (range from 0-22) was calculated by summing
item marks, with higher scores indicating greater knowledge of the protective
behaviours concepts.
Application of Protective Behaviours Test-Revised (APBT-R; see Appendix B). The APBT-R is a revised version of the previously developed APBT (Dale et al., 2015) and was used to assess how well children could distinguish between safe and unsafe situations, their intentions to use protective behaviours in unsafe situations and confidence in performing those behaviours. These are referred to as disclosure intentions, disclosure confidence, and safety identification skills.

The APBT-R presents six scenarios to children in drawings accompanied by a verbal script. Four scenarios retained from APBT were classified as unsafe, including scenarios regarding physical bullying, social exclusion, personal space and unsafe secrets. Two scenarios regarding a surprise birthday party and a child who accidentally broke a crayon and apologised were classified as safe. Developmental psychologists and experts in child abuse prevention undertook selection and screening of scenarios to ensure suitability. Disclosure intentions were measured by reading each scenario and asking children to describe what they would do if that happened to them. The child’s answer was recorded as a qualitative response and thematically analysed in terms of safety behaviours. Each response was coded on using a 4-point scale of 0 (Unhelpful), 1 (Neutral), 2 (Helpful) and 3 (Disclosure/Help-seeking). If multiple actions were stated, the highest rated behaviour was used as the child’s scenario score. A total disclosure intentions score (ranging from 0-12) was then calculated by summing scores across unsafe scenarios, with higher values indicating greater disclosure intention. As reported in Chapter 7, inter-rater reliability for coding of responses for this measure was at .997.

Disclosure confidence was assessed by asking children how sure they were that they would perform the actions, using responses from 1 (Not Sure) to 4 (Completely Sure). Children whose highest scoring response was rated as unhelpful, neutral or helpful but not ideal were given a score of 0. Children who provided the ideal response
were allocated a score from 1-4 corresponding to their confidence rating. These scores were then summed across unsafe scenarios to provide a total disclosure confidence score (ranging from 0-16), with higher values indicating increased disclosure confidence.

Finally, to assess their safety identification skills children reported whether or not they felt each situation was safe. Responses were recorded as Yes, No or Don’t Know and scored as True (1) or False (0). The safety identification score (ranging from 0-6) was calculated by summing scores across all safe and unsafe scenarios, with higher scores indicating greater safety identification skills.

**Observed Protective Behaviours Test (OPBT; White et al., 2016).** The OPBT is a two-part in vivo behavioural test designed to assess children’s ability to implement protective behaviours knowledge and skills. It is based on the behavioural skills training measures used by Johnson et al. (2005, 2006) and Gunby, Carr and Leblanc (2010), as well as the secret-keeping scenario and seven point secret-keeping scale created by Dunkerley and Dalenberg (2000). The test produces measures of a motor response to the lure, a verbal response to the lure, and disclosure.

The first part of the OPBT test measured children's motor and verbal safety responses to a lure; these responses were recorded in approximately the first 1.5 minutes of the test. To assess these responses, the interviewer (the known confederate) left the room pretending that he/she had forgotten a form. During his/her absence a male (the unknown confederate) entered the room, introduced himself and offered one of three lures to the child (simple asking, incentive, or assistance as shown in Table 9.1). Each child’s immediate motor response to this manipulation was rated by the confederate as 0 (Approached), 1 (Neutral), or 2 (Withdrew). The child's immediate verbal response was also rated as 0 (Agreed), 1 (Neutral), or 2 (Refused). During training, confederate’s
coding of responses were cross-checked until complete agreement was achieved. Consistent with previous work by Johnson et al. (2005, 2006), upon receiving a response or 10 seconds elapsing with no response, the confederate pretended he had forgotten his bag and proceeded as if to leave, asking the child to keep his presence a secret. If the child agreed or attempted to leave with the confederate, the child was instructed by the confederate to ‘stay here’. For all children, upon exiting, the confederate dropped a pen ‘accidentally’ as he left.

Table 9.1

*Types of Abduction Lures and Examples*

<table>
<thead>
<tr>
<th>Type of Lure</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple Asking</td>
<td>“Will you come with me?”</td>
</tr>
<tr>
<td>Incentive</td>
<td>“Will you come with me? You can have some lollies”</td>
</tr>
<tr>
<td>Assistance</td>
<td>“Will you come with me? I need help looking for my puppy”</td>
</tr>
</tbody>
</table>

The second part of the OPBT measured children's disclosure. Consistent with Dunkerley and Dalenberg’s (2000) protocol, if the child did not spontaneously disclose the confederate’s presence to the interviewer (the known confederate), the interviewer ‘noticed’ the dropped pen and provided an indirect prompt by wondering out loud where it could have come from. If there was still no disclosure, the interviewer began a series of prompts at approximately 1.5-2 minute intervals throughout the remainder of the interview, providing opportunities for disclosure. Prompts were measured on a seven-point disclosure scale modified from Dunkerley and Dalenberg, with scores from 0 (*No disclosure*) to 6 (*Immediate disclosure* as shown in Table 9.2). If the child disclosed at any stage the interviewer provided a scripted response praising the child for disclosing, and the remaining prompts were not given.

After these two parts of the test and regardless of disclosure, the unknown
Table 9.2

Disclosure Prompts and Scoring Modified from Dunkerley and Dalenberg’s (2000)

Seven Point Secret-Keeping Scale

<table>
<thead>
<tr>
<th>Prompt (Score if Discloses Secret)</th>
<th>Context of the Disclosure about confederate’s presence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Immediate Disclosure (6)</strong></td>
<td>Child discloses the secret of the confederate’s presence immediately with no prompting.</td>
</tr>
<tr>
<td><strong>2. Prompt 1 (5)</strong></td>
<td>Child discloses after the research assistant makes an idle comment about the object on the ground (2 minutes after returning; i.e., “Oh, I didn’t notice that pen on the ground before”)</td>
</tr>
<tr>
<td><strong>3. Prompt 2 (4)</strong></td>
<td>Child discloses after the research assistant directly involves the child in conversation about the dropped item without asking about the confederate (i.e., “You probably didn’t notice if the pen was in the room before, did you?”).</td>
</tr>
<tr>
<td><strong>4. Prompt 3 (3)</strong></td>
<td>Child discloses after the research assistant asks about the confederate, (i.e., “Did you see anyone at the door who might have dropped the pen?”)</td>
</tr>
<tr>
<td><strong>5. Pressure 1 (2)</strong></td>
<td>Child discloses after the research assistant asks the child to “think hard” about whether they saw the confederate (i.e., “Think really hard, did you see anyone at the door who might have dropped the pen?”)</td>
</tr>
<tr>
<td><strong>6. Pressure 2 (1)</strong></td>
<td>Child discloses after the research assistant tells the child that it is very important to find out who was there and directly asks the child (i.e., “It’s very important that I find out who dropped the pen. Who was here?”)</td>
</tr>
<tr>
<td><strong>7. No disclosure (0)</strong></td>
<td>The child does not disclose before the end of the interview.</td>
</tr>
</tbody>
</table>
confederate re-entered the room looking for his pen. The unknown confederate revealed to the interviewer that he had asked the child to keep his presence a secret and apologised to the child for asking that the secret be kept. The interviewer then used this opportunity to provide an additional positive teaching experience for the child.

Depending on whether they had disclosed the secret or not, this was done by either: (i) praising the child for disclosing or (ii) having the child model the correct response and then praising them. This debriefing process allowed the child to leave the room without worry over a non-disclosure and decreased the risk of desensitising children to unsafe situations. Further, it enabled an in-situ opportunity to rehearse interpersonal safety skills.

**Procedure**

**Ethical Approval.** Approval for the study was provided by Human Research Ethics Committees at Griffith University (GU Ref No: PSY/48/14/HREC) and the Queensland Research Committee at the Department of Education and Training prior to school and participant recruitment and data collection. The procedure was registered with the Australian and New Zealand Clinical Trials Register (ACTRN12615000917538).

**School and individual child recruitment.** Data were collected for the current study as part of a larger randomised trial examining the effectiveness of a protective behaviours program (White et al., 2016). For that trial, a list of all state schools containing a Year 1 class in the Gold Coast region was compiled. Schools were randomly assigned to participate in the protective behaviours program or a waitlist condition. Exclusion criteria included schools participation of the Year 1 cohort in a prior program teaching interpersonal safety skills.

After school consent was obtained from principals, information and consent
forms were distributed to parents via classroom teachers. From the larger randomised trial, children who had parental consent to participate in the OPBT from the waitlist condition were randomly selected to participate in this study. Children gave their oral assent before the OPBT began.

**Overview of Statistical Analyses**

All analyses were conducted using IBM SPSS Statistics 22 (IBM Corp, 2013). Very little of the child-report data were missing, with measures indicating disclosure confidence and disclosure intentions related missing 9-11% of data, and measures of children’s anxiety, protective behaviours knowledge and safety identification skills missing less than 6% of data. No missing data were present for child age, sex, child disclosure, and motor and verbal safety interpersonal safety responses. Greater percentages of parent/caregiver-reported data were missing. Measures of parent/caretaker ratings of child protective behaviours knowledge were missing 57% of data and parent/caregiver stress 36%. Parent/caregiver age was also missing for 51% of participants. Social and school related variables had approximately 28-30% data missing (school enjoyment and school difficulty, parent education, family community engagement, child structured activities, child unstructured activities). Missing data were addressed through multiple imputation, which is regarded as the gold standard method to address data missing at random (Manly & Wells, 2015). Imputation was not used for analyses using parent/caregiver age and parent/caretaker ratings of children protective behaviours knowledge and skills due their high level of missing data (>50%). For all other variables, consistent with recommendations from White, Royston, and Wood (2011) that the number of imputations should be equal to or exceed the percentage of data missing, a fully conditional specification with 36 imputations was used to impute data with all analysis variables as well as additional predictor variables of age, gender,
school and classroom. Pooled results were provided for analyses by SPSS. Imputed results are reported however, where discrepancies were present, results based on analysis of the original data are also reported. Means and standard deviations are reported using unpooled data.

**School and classroom nesting.** Prior to the main analyses, data were examined for clustering due to nesting at school and classroom levels, using an empty linear mixed model for each continuous outcome variable of interest (Verbal Safety Response, Motor Safety Response and Disclosure Timing). Overall, intracluster correlation coefficients (ICC) for classroom and school were below .010 for most variables, with the highest clustering occurring for at .047 for classrooms at Disclosure timing. As such, no adjustments for clustering were used for subsequent analyses.

**Results**

**Research Question 1: Prevalence of Children's Interpersonal Safety Skills**

Approximately half (48.3%) of the children verbally refused the lure provided by the confederate. A further 31.4% did not refuse, but also did not agree to leave. The remaining 20.3% of children agreed to leave with the confederate. Regarding children's motor response to the lure, 27.1% of the sample made some attempt to withdraw from the confederate, with a further 39.8% neither approaching nor withdrawing. The remaining third of the children (33.1%) approached or attempted to leave with the confederate.

Overall the majority of the children disclosed the presence of the confederate at some point in the interview, with 16.9% not disclosing at all. However, only 27.1% disclosed without prompting from the interviewer. This highlights that without prompting from an interviewer, 72.9% of children did not disclose the presence of the confederate. Both indirect prompts resulted in an additional 8.5% of the children
disclosing. The strongest cue for disclosure was being asked a direct question regarding the presence of the confederate, with 27.1% of the children (and 48.5% of children who had not yet disclosed), revealing the presence of the confederate at that point. By comparison, the use of pressure prompts resulted in only minimal additional disclosures, at 5.1% and 6.8% of the children respectively, and 17.6% and 28.6% of those who had not yet disclosed.

Finally, children’s verbal, motor, and disclosure responses were compared between types of lures. Children's average responses did not differ by lure type for verbal response $F(2, 115) = 2.27, p = .108, \eta^2 = .038$, motor response $F(2, 115) = 2.36, p = .099, \eta^2 = .039$, and disclosure $F(2, 115) = 1.00, p = .371, \eta^2 = .017$.

Research Question 2: Correlates of Children’s Interpersonal Safety Skills

All school and education-related measures, as well as safety identification skills were not significantly associated with children's interpersonal safety skills (see Table 9.3). Similarly, most demographic variables and most measures of children’s protective behaviours knowledge, disclosure intentions, and disclosure confidence were not significantly associated with interpersonal safety skills. There were some exceptions, however.

First, child anxiety was significantly associated with disclosure timing, with children who had greater anxiety disclosing the confederate’s presence earlier, $r = .26, p = .004$. There was also a significant association between children's anxiety and verbal safety response, with children who had greater anxiety being less likely to refuse the confederate’s lure, $r = -.19, p = .045$. Child anxiety was not significantly associated with withdrawal from the confederate (motor safety response).

Second, motor and verbal safety responses were significantly associated with each other, with children who had greater refusal of the confederate lure also being
Table 9.3

Means, Standard Deviations and Correlations between All Measures (N = 118)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
<th>Verbal Safety Response</th>
<th>Motor Safety Response</th>
<th>Disclosure Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Age</td>
<td>6.15 (0.45)</td>
<td>.02</td>
<td>.03</td>
<td>.07</td>
</tr>
<tr>
<td>Parent Age</td>
<td>37.76 (5.21)</td>
<td>-.02</td>
<td>-.15</td>
<td>-.15</td>
</tr>
<tr>
<td>Child Anxiety</td>
<td>3.14 (2.18)</td>
<td>-.19*</td>
<td>.12</td>
<td>.26**</td>
</tr>
<tr>
<td>Parent Stress</td>
<td>1.89 (0.49)</td>
<td>-.01</td>
<td>-.01</td>
<td>.16</td>
</tr>
<tr>
<td>Child Structured Activities</td>
<td>4.11 (1.18)</td>
<td>.03</td>
<td>.02</td>
<td>-.10</td>
</tr>
<tr>
<td>Child Unstructured Activities</td>
<td>4.26 (0.92)</td>
<td>-.02</td>
<td>-.01</td>
<td>.03</td>
</tr>
<tr>
<td>Family Community</td>
<td>3.09 (1.16)</td>
<td>.07</td>
<td>-.11</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Child School Enjoyment</td>
<td>3.96 (0.94)</td>
<td>.08</td>
<td>.03</td>
<td>-.13</td>
</tr>
<tr>
<td>Child School Difficulty</td>
<td>2.57 (0.75)</td>
<td>-.13</td>
<td>.04</td>
<td>-.08</td>
</tr>
<tr>
<td>Parent Education</td>
<td>4.04 (1.10)</td>
<td>.01</td>
<td>-.01</td>
<td>-.07</td>
</tr>
<tr>
<td>Parent-Rated Knowledge and Skill</td>
<td>31.43 (4.45)</td>
<td>.16</td>
<td>-.10</td>
<td>.03</td>
</tr>
<tr>
<td>Child Knowledge</td>
<td>11.00 (2.20)</td>
<td>.17*</td>
<td>.08</td>
<td>.09</td>
</tr>
<tr>
<td>Child Disclosure Intentions$^1$</td>
<td>13.93 (1.85)</td>
<td>.19*</td>
<td>-.01</td>
<td>.15</td>
</tr>
<tr>
<td>Child Disclosure Confidence$^1$</td>
<td>7.30 (5.33)</td>
<td>.04</td>
<td>-.05</td>
<td>.17*</td>
</tr>
<tr>
<td>Safety Identification Skills$^1$</td>
<td>4.45 (1.11)</td>
<td>-.06</td>
<td>.03</td>
<td>-.11</td>
</tr>
<tr>
<td>Disclosure Timing</td>
<td>3.37 (2.15)</td>
<td>.10</td>
<td>.10</td>
<td>-</td>
</tr>
<tr>
<td>Motor Safety Response</td>
<td>0.94 (0.78)</td>
<td>.55****</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Verbal Safety Response</td>
<td>1.28 (0.78)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

$^a p<.10; ^* p<.05; ^** p<.01; ^*** p<.001$

Correlations were also estimated between scores on the unsafe-secret scenario of this measure and interpersonal safety skills. Results were not substantially different, except for the relationship between disclosure intentions and verbal safety response, which was significant ($r = .22, p = .025$), rather than marginally significant.
more likely to withdraw from the confederate, $r = .55, p < .001$. However, neither verbal nor motor safety responses to the confederate were associated with disclosure timing.

Third, a marginal association was also found between children's disclosure confidence and disclosure timing, whereby children who expressed more confidence displayed earlier disclosure of the presence of the confederate, $p = .087$. This trend was significant with the original dataset prior to multiple imputation, $r = .20, p = .043$. Children’s disclosure confidence was not significantly associated with either verbal or motor safety responses.

Fourth, marginal associations were observed for children with greater protective behaviours knowledge, $p = .074$, and greater intentions of performing protective behaviours, $p = .052$, to have greater verbal refusal of the abduction lure. The correlation between protective behaviours intentions and verbal safety responses to the lure was significant with the original data, $r = .20, p = .040$, but not in the imputation dataset. These variables did not share significant associations with motor safety responses or disclosure timing.

Discussion

In this study, a novel assessment of young children's interpersonal safety skills was utilised to measure immediate verbal and motor responses to a simulated risk scenario (i.e., abduction), as well as the rate and timing of disclosure of an unsafe secret. Children were provided with several structured opportunities to disclose throughout the test. Developing a reliable way to evaluate interpersonal safety skills is particularly important given that past research has tended to have very small samples, lack standardisation (including confounds between risk of harm and display of skill), and has been focused on secrets that lacked risk of harm. Further, proxy variables for interpersonal safety skills, such as knowledge and intentions, have often been used in
the evaluation of programs designed to address safety risks, with no past investigation of whether knowledge and intention are related to young children's interpersonal safety skills. The current study sought to identify whether these relationships were present. In addition, a set of variables were examined as potential correlates of individual differences in children's protective behaviour skills. If subsets of children who are less likely to disclose unsafe information could be identified, this may enable practitioners to tailor intervention programs to these more vulnerable groups of children.

**Prevalence of Protective Behaviours and Disclosure**

Interpersonal safety skills were measured in three main ways using the new Observed Protective Behaviours Test (OPBT), namely an immediate verbal response to a simulated risk scenario (i.e., an abduction lure from an unknown confederate), an immediate motor response to this simulated risk scenario, and the timing of disclosure across a sequence of disclosure prompts. This allowed for greater clarity into the acquisition of specific skills, with past research noting children often display only partial skill mastery (Goldfarb, O'’Brien, & Krackow, 2008). Partial skill mastery may have been demonstrated in the results of the present study as there was a strong positive relationship between motor and verbal safety responses. However disclosure was not found to be significantly related to either motor or verbal safety responses from children. This suggests that (i) interpersonal safety skills during an unsafe situation and (ii) disclosure, which would normally occur after an unsafe situation, are distinct skills that may require differentiated training and assessment. It also suggests that, even in the case of a child successfully removing him/herself from an unsafe situation, disclosure may not occur, increasing the likelihood of reoccurring risk without adult awareness. It is possible, however, that the design of the OPBT could be an alternative explanation for these findings. For example, children may not have identified the in-vivo situation as
unsafe (i.e., the lure in the present study took place within the child’s school) or may not have been confident enough in their judgement to inform an adult. This could be an area for further exploration and may emphasise the important of risk identification as an area to target in child maltreatment prevention programs.

When presented with the abduction lure from an unknown confederate, less than half of the children offered a verbal refusal. This is consistent with early research that children aged 3-7 years will have difficulty refusing abduction lures, with 75-90% being persuaded to leave in simulated stranger studies (Poche et al., 1981; Poche, Yoder, & Miltenberger, 1988). More recently, Goldfarb et al. (2008) found that prior to intervention, only 25% of children aged 4-5 years verbally refused an abduction lure from an unfamiliar confederate in a school setting. Comparatively, despite the low refusal rate, only 20% of children in the current study offered a verbal acceptance of the lure, with the remainder of children neither agreeing nor disagreeing in the timeframe provided. In past research it has been difficult to identify the children who respond neutrally as assessment in programs using a BST approach typically relies upon dichotomous ratings such as refuse/did not refuse, or agree/did not agree ratings. Subtle variation, may be important however, as the proportion of children neither accepting nor refusing the lure is concerning. This highlights that some children may require further, more overt, or more targeted interpersonal safety training than others.

Children were more mixed in their motor response to the lure from the unknown confederate. Consistent with past research (Miltenberger et al., 2013), withdrawal from the unfamiliar confederate was the least common response comprising slightly less than 30% of the current sample. Furthermore, 33% of the children who participated actively approached the confederate upon receiving the abduction lure. This finding is of particular interest as some children approached the confederate without verbally
agreeing and in some cases the child verbally refused yet still approached the confederate. This contradictory action illustrates the importance of gathering multiple types of information on children’s responses. Although BST research often examines both motor and verbal responses these are often included in an aggregated score alongside disclosure, which does not allow further investigation of discrete skills (Johnson et al., 2006). It must also be noted that it may not be overly surprising that a third of the children approached the stranger. Children were in a school building and at no time was it suggested to them that they would leave the school, therefore, these circumstances may have been perceived as safe. Past research has found that even after BST training children are more likely to offer verbal refusal to lures, withdraw from strangers, and report a stranger’s presence when at home rather than at school (Goldfarb et al., 2008). As such, child responses might be different had the confederate attempted to lure them away from the school or if children’s responses were examined in another different environment.

Disclosure was the final interpersonal safety skill examined. This type of interpersonal safety skill has been investigated most often in past research (Alaggia et al., 2017). Consistent with past literature, the current study examined disclosure at multiple levels, with prompts increasing in intensity from free recall to indirect questions, through direct questions, to pressures (Ahern et al., 2017). Nearly one-third of participating children immediately disclosed the presence of the confederate even after they were asked to ‘keep it a secret’. Whilst these children were still a minority of the sample, these results suggest that there is a subgroup of children who are likely to disclose an unsafe secret in the absence of any external cues. However, consistent with past research, indirect prompts after this initial disclosure period yielded only minimal extra disclosures (Ahern et al., 2017). Instead, the largest proportion of the sample
(nearly half of all those who had disclosed) reported the presence of the stranger only after they were asked directly. This is consistent with previous findings that direct questions, particularly those of a yes/no nature, are the most helpful in eliciting children's disclosures. It must be noted, however, that nearly one-third of the sample still did not disclose, even with a direct question. Applying pressure (e.g., "think really hard, it’s really important") resulted in some further disclosures however, these were few with 16.9% of the total sample not disclosing at all. This suggests that some children may be unlikely to disclose even with supportive prompts and direct questions.

**Predictors and Proxies of Interpersonal Safety Skills**

Why do some children disclose and use other interpersonal safety behaviours? In the current study, when potential correlates of children's interpersonal safety skills were examined, very few significant correlates were identified. The primary exception to this pattern was children's anxiety. Very little research has examined children's anxiety and interpersonal safety skills, however disclosure research has suggested that related emotions such as shame, self-blame, and fear can delay and deter disclosure of CSA (Alaggia et al., 2017; Olafson & Lederman, 2006). Consistent with this, in the current study a significant relationship was found between anxiety and verbal response to the confederate, with children who were more anxious being less likely to refuse the confederate lure. This suggests that children who are more anxious may be more vulnerable to unsafe situations. However contrary to past research, in the current study child anxiety also appeared have a protective function as well, with a positive relationship found between anxiety and disclosure indicating that children reporting greater anxiety also disclosed the presence of the confederate earlier. One explanation for this finding of anxiety as a protective factor, may that as with other children who experience anxiety, children who were more anxious in the current study may have had
lower threat thresholds and therefore have been more likely to perceive the secret as an ‘unsafe secret’ which needed to be disclosed (Muris, Merckelbach, & Damsma, 2000; Muris, Rapee, Meesters, Schouten, & Geers, 2003). This difference from findings on disclosure predictors may also suggest an avenue for further research, to examine if there are differences in the relationships shared by anxiety as a generalised trait (as in the current study) compared to anxiety-based emotions specifically related to the unsafe secret. Disclosure is also likely to be related to the type of harm experienced, with the risk posed in the current study being less likely to invoke emotions such as shame and self-blame than, for example, CSA, a factor that reiterates the importance of examining disclosure for specific and multiple types of harms.

Consistent with the secret-keeping literature, disclosure did not differ between boys and girls in the current study, nor was child gender related to immediate interpersonal safety responses (Heyman et al., 2016; Stolzenberg et al., 2017). These findings are inconsistent with CSA disclosure research (Ahern et al., 2016; Alaggia et al., 2017). One explanation for the discrepancy between the current findings and those from CSA disclosure studies may be that CSA disclosure research may confound the likelihood of mistreatment and level of interpersonal safety skills (i.e., more girls disclose due to higher levels of maltreatment, rather than girls overall having greater interpersonal safety skills). Alternatively, these discrepancies may be due to differences in the type of harm being disclosed, with the current study and secret keeping research typically assessing non-sexual types of potential harm. Inconsistent with the majority of both secret-keeping and CSA disclosure literature, no association was found between disclosure (or immediate interpersonal safety responses) and age (Ahern et al., 2016; Alaggia et al., 2017; Stolzenberg et al., 2017). However, as the present study targeted only a 3 year age range (children aged 5-7 years) it is possible this may be an artefact of
Unlike previous literature (Alaggia et al., 2017; Olafson & Lederman, 2006), there was also no association between social or school-related variables and disclosure in the current study. However, it is possible this maybe a product of disclosure assessment by an interviewer, rather than a familiar and trusted adult such as a parent/caregiver or teacher. Indeed, factors such as social support and comfort with school may have enhanced the likelihood of disclosing if disclosure had instead been directed towards these individuals. However, the lack of relationship between social and school factors and immediate interpersonal safety response for the current sample may indicate that these variables are not influential when the child is experiencing an interpersonal risk alone.

Given that many child-focused interpersonal safety programs use knowledge and intention as outcome measures, knowledge, intentions, confidence and safety-identification, were examined as predictors of interpersonal safety skills (Walsh et al., 2015). Overall, it was found that these variables were not significantly correlated with enacting interpersonal safety skills. The lack of relationship found between interpersonal safety knowledge and interpersonal safety skills is consistent with previous findings that relationships between knowledge accuracy and behaviour may be small to non-existent (Ajzen et al., 2011). However, the lack of relationship between disclosure intentions and disclosure behaviour is in contrast to findings in other domains, which have reported that intention significantly predicts behaviour (Ajzen et al., 2011; McEachan et al., 2011). It is consistent, however, with some early research in the interpersonal safety field, which found that children often displayed behaviours contrary to their self-reported safety intentions (Carroll-Rowan & Miltenberger, 1994). This may suggest that intentions are less strongly tied to behaviour for interpersonal
safety in children and that other factors such as attitudes, beliefs and motivation may influence the use of these skills. The lack of relationship between knowledge and intentions with interpersonal safety skills is particularly important given that knowledge and intentions have been used as markers of behavioural change in the evaluation of many child-focused interpersonal safety programs (Walsh et al., 2015). As such, the present findings suggest that measures that directly assess children's behaviours need to be a part of future child harm prevention program evaluations.

Limitations and Future Research

By examining whether children's knowledge and behavioural intentions are, in fact, associated with interpersonal safety skills encouraged in child-focused interpersonal safety programs (including disclosure to adults of a risky or uncomfortable interpersonal situation) the current study represents an important step towards greater standardisation and clarity within research regarding protective behaviours and disclosure. Yet, this study did have some limitations. One of the major limitations was that due to the limited timeframe, disclosure was conceptualised as a one-off event, rather than an on-going process and, as such, all findings relate to a single disclosure (Alaggia et al., 2017). To address this, future research may utilise a longitudinal design to examine changes in the process (including recantation and new disclosures). A second limitation is that only a single type of harm was examined in the simulated risk situation (an abduction lure from a stranger). In the future, research may examine the impact of risk type and whether similar predictors are applicable across different types of risk of interpersonal harm. Third, the knowledge, intention, confidence and safety identification measures used in the current study were focused on interpersonal safety skills across a range of contexts. Future research may seek to use measures that more specifically map onto specific actions/intended behaviours, as suggested by Ajzen et al.
Finally, for standardisation purposes, factors, such as relationship to perpetrator and the full social-ecological context (including disclosure to known individuals), were not explored. In particular, within the current study neither the interviewer nor the confederate were familiar and trusted adults, which may have resulted in children being less willing to disclose to an unknown individual or being more willing to disclose about the confederate due to their lack of familiarity. Varying these factors and other ecologically-based variables is important in further research given that disclosure of real harm is more likely to occur to known individuals, and as a result of known perpetrators.

**Conclusion**

This is the first study to describe the prevalence of interpersonal safety skills, including motor and verbal responses and disclosure, during a simulated interpersonal risk scenario in a large sample of young Australian children. This study is also the first to examine predictors of these skills in an interpersonal safety context. However, although distinct variability was noted in children’s responses to an abduction lure, few significant predictors of responses and disclosure emerged. Despite this, the current study suggests a number of avenues for future research, including examination of additional explanations for variability in children’s disclosures, the testing of different types of interpersonal harm, their placement in different contexts, and the use of a longitudinal design. The study’s findings also have implications for the evaluation of interpersonal safety programs, with the lack of significant relationships between interpersonal safety skills and traditional outcome measures suggesting there may be a need to go beyond knowledge and intention measures when assessing the impact of child-focused interpersonal safety programs on children. Overall, this research represents an important step in the process of helping to identify the factors that account
for children’s use of interpersonal safety skills, and what mechanisms of change might be incorporated into interpersonal safety intervention designs, evaluations and target populations at risk.
Summary of Chapter 9

Study 3, reported in this chapter, is presented as a journal article prepared for publication. In this study prevalence of interpersonal safety skills and a range of potential correlates for these skills were examined, contributing to Aim 3 of this thesis. Interpersonal safety skills were measured through use of the OPBT which provided outcomes for immediate verbal and motor safety responses as well as disclosure. Overall, 28% of children demonstrated the desired motor safety response by withdrawing from the confederate, 48% of children demonstrated the desired verbal safety response by refusing the confederate lure and 83% of children disclosed the presence of the confederate. Despite this variability in children’s responses few significant correlates were identified. Of those that were significant, immediate interpersonal safety responses (motor and verbal) predicted one another but not disclosure timing. Anxiety also emerged as a significant predictor for both disclosure timing and verbal safety response. For disclosure, anxiety appeared to be a protective factor, with children who had greater anxiety disclosing the confederate’s presence earlier. However, anxiety appeared to indicate increased vulnerability in the immediate risk context, with those who reported greater anxiety also being more likely to agree to leave with the confederate. Overall, this study contributed to the literature by providing new information regarding both prevalence and correlates of interpersonal safety skills using a standardised assessment procedure. The final chapter of this thesis will form a general discussion for the findings described thus far and potential areas for further research.
CHAPTER 10

General Discussion

The general purpose of this thesis was to understand how to improve children’s interpersonal safety skills. The first aim was to ascertain the effectiveness of *Learn to be safe with Emmy and friends™*, an Australian protective behaviours program for children in Year 1 (aged 5-7 years). This involved conducting a randomised controlled trial, in 8 schools with 611 children, focused on multiple outcomes relevant as indicators of the effectiveness of the program, including protective behaviours knowledge, disclosure intentions, disclosure confidence and safety identification skills. Most novel was the assessment of children’s observed interpersonal safety skills captured with the newly developed Observed Protective Behaviours Test (OPBT). The second aim was to determine whether the OPBT improved children’s interpersonal safety skills when used as a single-session, disclosure focused in-situ training (IST), both by itself and as a booster component to *Learn to be safe with Emmy and friends™*. The final aim was to identify correlates (e.g., demographic characteristics, social and community engagement, interpersonal safety knowledge and disclosure intentions) of children’s interpersonal safety behaviours when these were observed using the OPBT.

Three studies were conducted, with each study designed to address one of the three aims. Across the three studies multiple measures were used, including self-report measures conducted in interviews with the children, parent-report measures sent home to parents or caregivers in questionnaire packages, and observation measures of direct skills use, assessed by trained research assistants using the OPBT. Together, findings from these studies illustrate areas of strength and weakness in programs developed to improve interpersonal safety skills of young children. The findings also highlight the importance of using multiple measures of interpersonal safety due to distinctive
differences in findings depending on whether the focus was on interpersonal safety knowledge, intentions or observed behaviours. In this final chapter, the key findings of all studies are summarised and consolidated. In addition, the implications of the study findings and areas for further research are proposed, before concluding comments are provided.

**Three Key Findings**

**Finding 1: The *Learn to be safe with Emmy and friends*™ program increases children’s interpersonal safety knowledge.** In the first study, *Learn to be safe with Emmy and friends*™, was evaluated. This program is a developmentally appropriate program delivered to classrooms in Australian schools based on research in behavioural training, pedagogy, and harm prevention. In this program, knowledge and skills are delivered to children through education, explicit training and active participation (Dale et al., 2015; Davis & Gidycz, 2004; Jones & Pozzebon, 2010). Chapter 6 presented the published methodological protocol for a large multi-site cluster-randomised controlled trial for *Learn to be safe with Emmy and friends*™ and Chapter 7 described the findings from the Gold Coast site of this trial. Both a process evaluation, including fidelity checks for program administration and an outcome evaluation, were presented within Chapter 7. Children who participated in the program and those on a waitlist were evaluated for short (5 weeks) and long-term (6-month follow-up; total of 7 months involvement in the study) interpersonal safety improvements.

Overall, the *Learn to be safe with Emmy and friends*™ program was found to be effective at increasing children’s interpersonal safety knowledge directly post the intervention (and at follow-up) and disclosure confidence at the longer term follow-up, but had no significant effect on children’s intentions to enact safety behaviour or their observed interpersonal safety behaviours. In addition, *Learn to be safe with Emmy and*
Finding 2: The OPBT is associated with increases in children’s disclosure intentions and confidence. In the second study, a novel single-session disclosure-focused IST, conducted using the OPBT, was evaluated as a way to improve children’s interpersonal safety intentions, confidence and ability to identify unsafe situations. Like other ISTs the OPBT utilised behaviourist principles of rehearsal, reinforcement and scaffolding, to focus on maintaining or increasing disclosure (as well as disclosure intentions and confidence) in future risk situations (Miltenberger, 2008). Chapter 8 compared the effectiveness of four conditions (Waitlist, Program Alone, IST Alone and Program+IST) in increasing safety identification skills, disclosure intentions and disclosure confidence. Consistent with literature suggesting that IST can play a key role in maintenance of intervention effects (Johnson et al., 2006; Miltenberger, 2008); the long-term effectiveness of these conditions over a 7-month timeframe was examined. Overall, there was no evidence that the IST had an effect on safety identification skills. However, compared to the waitlist condition, the use of IST as a sole intervention component did result in significantly greater increases in children’s intentions to disclose risk situations. Further, the use of the OPBT as a booster component to *Learn to be safe with Emmy and friends*™ appeared to be effective in increasing both disclosure intentions and disclosure confidence compared to a waitlist. Children who participated in the IST component also demonstrated significantly greater improvements in disclosure intentions compared to children who received *Learn to be safe with Emmy and friends*™ alone.

Finding 3: Children’s anxiety symptom level was a significant correlate of more observed interpersonal safety behaviour. In a third study, analyses were conducted to inform program development and delivery by helping to assess potential
predictors of interpersonal safety skills, with a particular focus on potential pathways suggested by theories of behaviour, such as the Theory of Planned Behaviour (TPB; Ajzen, 1991; Webb & Sheeran, 2006) and Health Action Process Approach (HAPA; Schwarzer, 2008). Thus, in Chapter 9, the investigation focused on the associations of three interpersonal safety skills (lure refusal, withdrawal from confederate and disclosure) with various demographic, social, knowledge and intention based variables suggested by previous secret-keeping, disclosure and health/risk behaviour research (Ahern et al., 2017; Alaggia, Collin-Vézina, & Lateef, 2017; Ajzen, 1991; Dunkerley & Dalenberg, 2000; Fishbein & Cappella, 2006; Schwarzer, 2008; Webb & Sheeran, 2006). In this chapter, the level of interpersonal safety skills amongst Year 1-2 Australian children was also described.

Despite examining many correlates of children’s observed interpersonal safety behaviour and disclosure, only one significant correlate was found; those children who reported greater anxiety also disclosed the presence of an unfamiliar confederate earlier and with less prompting. The lack of other significant relationships with interpersonal safety behaviours is of particular interest given the variability noted in children’s responses to the confederate lure and secret request. In total, 27% of children withdrew from the confederate, 48% refused the lure and 83% disclosed the presence of the confederate.

**Methodological Implications**

The studies outlined in the current thesis contribute to both the field of child maltreatment prevention and child interpersonal safety skills in a number of ways. Perhaps most importantly, these studies introduce the OPBT, as a method of both training interpersonal safety skills and of interpersonal safety skill measurement. Each of the studies described also sought to address previous criticisms of child maltreatment
prevention program evaluations, by adopting various recommended methodological and statistical elements to help eliminate risk of biased or inaccurate findings. Further details regarding each of these implications and their contribution to child interpersonal safety research and practice domains are described below.

**Measurement of interpersonal safety.** The OPBT was developed to be an ethical and time-efficient assessment of interpersonal safety skills. The OPBT uses a simulated risk context of a lure from a stranger to allow for observation of children’s interpersonal safety skills and rate of disclosure. Thus, the OPBT makes a standardised observation of these skills possible. This new assessment method will allow future research to move beyond the overreliance on retrospective reporting of risk experiences and responses or real life implementation where it can be difficult to separate risk of harm and level of skills (i.e., do children in one group disclose more because they are at more risk or due to greater disclosure skills; Hazzard, 1993). In addition, the OPBT improves upon past methods of measuring interpersonal safety by allowing the examination of predictors for children who do not disclose as well as those that do. The use of a simulated risk context in the OPBT also allows a more realistic evaluation of interpersonal safety skills than similar disclosure designs used within the secret-keeping literature, where the secrets used are unrelated to child maltreatment (Heyman, Loke, & Lee, 2016). In particular, the OPBT better captures outcomes related to a child maltreatment program because it can be differentiated from recent in-situ assessments used within the BST and IST fields by the specificity of the measurements it provides (Johnson et al., 2005, 2006; Miltenberger, 2008). In the OPBT, three interpersonal skills are examined with separate scores instead of being aggregated (disclosure, motor response and verbal response), and disclosure is measured both in terms of overall disclosure rate and a 7-point disclosure timing scale to allow greater differentiation
between different levels of interpersonal safety skills. By using the OPBT to measure interpersonal safety skills in both an evaluation (Chapter 7) and research (Chapter 9) context this thesis provides an applied example of this paradigm and demonstrates the viability of utilising the OPBT as a research tool.

**Evaluation for child maltreatment programs.** Across Chapters 6, 7 and 8, methodological details were provided for the fidelity and efficacy evaluations of child maltreatment prevention programs, addressing a critical gap within the child maltreatment prevention literature (Higgins, Adams, Bromfield, Richardson, & Aldana, 2005; Lynas & Hawkins, 2017; McDonald et al., 2011; Walsh, Zwi, Woolfenden, & Shlonsky, 2015; Walsh, Zwi, Woolfenden, & Shlonsky, 2016). Further, by describing the full methodological protocols used to conduct these evaluations, including procedures, measures and statistical techniques, these chapters provide examples of rigorous program evaluation strategies that can be adapted to examine the effectiveness of other programs within this field. Some examples of the methodological and statistical aspects included within the present studies that have been highlighted as areas of deficit in the child maltreatment prevention literature include: the use of fidelity checks to ensure consistent administration, use of both short and long-term assessment points, use of cluster-randomisation using blinding procedures for those collecting data, data analysis that used missing data / cluster-adjusted analyses where appropriate and use of multiple measures of interpersonal safety. By publishing the methodological protocol in an openly available journal (see Chapter 6), this provides an accessible template that others can use as a model or can adapt for use where relevant. The increased use of methodological and statistical techniques that have been highly recommended in the literature (Lynas & Hawkins, 2017; Sanderson, 2004; Topping & Barron, 2009; Walsh et al., 2015, 2016) also contributes to an expected standard for other evaluations within
the field and promotes further use of evaluation and evidence-based practices in program development, review and dissemination.

Program and Theory Implications, Recommendations and Future Research

Learn to be safe with Emmy and friends™. Effectiveness evaluations for the Learn to be safe with Emmy and friends™ program were conducted in both Chapter 6 and Chapter 7. When taken together, these findings have a number of implications for the development and dissemination of this program. In Chapter 6, the program fidelity evaluation showed that Learn to be safe with Emmy and friends™ was administered in a standardised manner across sessions and schools. This suggests that the current administration of the program is consistent with planned content and consistent across sessions. Thus, support is shown for the current training methods for Learn to be safe with Emmy and friends™ facilitators.

The process evaluation also showed that parents of children who participated in Learn to be safe with Emmy and friends™ reported high satisfaction with the program and provided qualitative feedback that they had observed changes in children as a result of the program, including greater knowledge of and discussion of interpersonal safety topics. The outcome evaluation supported these reports, with significantly greater interpersonal safety knowledge gains found in the program condition compared to children in the waitlist. These gains were found in both a knowledge test and in parent-ratings of children’s knowledge and skills across a short and long-term time frame. This is also consistent with findings from a previous evaluation of the Learn to be safe with Emmy and friends™ program (Dale et al., 2015). Overall, the findings of the current thesis further provide support for the effectiveness of the Learn to be safe with Emmy and friends™ program in promoting children’s interpersonal safety knowledge and in increasing children’s comfort in discussing such topics with parents and caregivers.
Given that few methodologically rigorous evaluations have been conducted for Australian child maltreatment prevention programs, this is an important differentiation between the Learn to be safe with Emmy and friends™ program and other Australian protective behaviours programs.

The cluster-randomised controlled trial in Chapter 7 suggested that the program may increase long-term disclosure confidence, however in Chapter 8 this increase of disclosure confidence was not significantly different than that experienced by children on the waitlist. As such, evidence for the benefits of the Learn to be safe with Emmy and friends™ program alone in improving disclosure confidence is mixed. Further, in both chapters there was no significant difference found between children who participated in Learn to be safe with Emmy and friends™ alone and those on the waitlist in their rate of improvement for ability to identify risk situations and their intentions to disclosure. Therefore, the findings of the current thesis do not support the effectiveness of the Learn to be safe with Emmy and friends™ program in improving these skills and intentions. This suggests areas that may be further adapted or targeted within the Learn to be safe with Emmy and friends™ to better promote risk identification and disclosure. In particular, findings from Chapter 8, suggest that a booster session or added activities surrounding disclosure may improve both disclosure intentions and disclosure confidence. As such, this program would likely be more effective at changing children’s intentions and observed safety behaviours if additional attention was given to incorporating a greater degree of rehearsal, role-play and feedback to individual children. This may be done with facilitators, in class with teachers or as homework activities with parents. By increasing the number of contexts these skills are practiced in, this may also help to generalise children’s interpersonal safety skill use.

Finally, the impact of participation in Learn to be safe with Emmy and friends™
upon children’s use of interpersonal safety skills within a simulated risk context was examined (Chapter 7). No differences were found between children who participated and those who did not. This may be in part due to the fact that the simulated risk context (abduction lures from an unfamiliar adult) were not discussed in detail within the program itself. Further, children may not have felt at risk within the simulated risk context given that it was conducted within school grounds. Overall, these findings suggest that the ‘early warning signs’ taught as the main risk identification method within the *Learn to be safe with Emmy and friends*™ program may not generalise to all risk types or that the location in which the risk is encountered may limit children’s attention to or experience of ‘early warning signs’. As many cases of child maltreatment occur with known individuals or in familiar contexts (Alaggia et al., 2017), this suggests that the *Learn to be safe with Emmy and friends*™ may need to develop further content or activities to target children’s ability to identify risk scenarios. This may include providing information about both an increased range of risks and an increased range of contexts in which such risks may occur.

The findings described in Chapters 6 and 7 suggest two research directions related to the further evaluation and improvement of the *Learn to be safe with Emmy and friends*™ program. First, the program could be tested within different age groups and in different locations, as well as administered to children from differing ethnicities to determine whether this program remains effective in teaching interpersonal safety knowledge in these populations. Second, parent and teacher engagement were not examined in the current study and future research could seek to examine the degree to which discussion of interpersonal safety topics or rehearsal of skills with teachers and parents may act as boosters or additive components to the program to help improve children’s interpersonal safety knowledge, intentions, confidence and skills. This may
be particularly useful in the context of safety identification skills, where children could be exposed to a greater range of risky situations outside the classroom and receive more thorough training regarding early warning signs for specific situations from trusted adults.

**OPBT IST component.** In Chapter 8, the usefulness of the OPBT for improving children’s disclosure intentions, disclosure confidence and safety identification skills was examined, both as an individual component and as a booster session to *Learn to be safe with Emmy and friends*™. Overall, the findings of this study suggested that the IST component of the OPBT was effective in increasing long-term intentions to disclose. However, it was most effective when combined with *Learn to be safe with Emmy and friends*™, where significantly greater long-term improvements were also reported for children’s disclosure self-efficacy compared to children both on the waitlist and participating in *Learn to be safe with Emmy and friends*™ alone. Together, these findings provide important implications by suggesting that a single session of IST may be sufficient to induce change over a 7-month period. Further, while a single rehearsal of skills and scaffolding disclosure using the OPBT prompts were utilised, this IST component also primarily focused on reinforcement through praise for correct skill usage and corrective feedback for children who did not display disclosure skills. This may indicate that these behavioural principles could be key elements to incorporate or emphasise further in other child maltreatment prevention programs. The increased effectiveness when the IST was added to *Learn to be safe with Emmy and friends*™ also suggests that single session IST boosters may be effective in further promoting confidence in interpersonal safety skills for other school based education programs.

These findings in Chapter 8 suggest several areas for further research on the OPBT as an IST. In particular, only one interpersonal safety skill for a singular risk
context was focused upon in the training aspect, namely disclosure of unsafe secrets. This measure may be adapted to better teach children other interpersonal safety skills (lure refusal and withdrawal from danger) as well as other risk domains such as bullying and secrets regarding abuse. The current study also used a single IST session to avoid children becoming aware of the simulated nature of the OPBT. The development of a wider range of in-situ assessments may help to address this issue. Alternatively, a longer time may be spent in the corrective feedback stage of the OPBT IST to better examine dose impacts of this form of training.

**Predictors of interpersonal safety skill.** In Chapter 9, potential predictors of interpersonal safety behaviours were investigated, and the general prevalence of these behaviours were described for Australian children in Year 1-2. This information is novel, given that there has been little research into predictors of young children’s interpersonal safety behaviours. However, it was surprising that only children’s self-reported anxiety was a significant predictor, with children who had higher levels of anxiety being more likely to accept the confederate lure but also disclosing the presence of an unfamiliar confederate earlier. The findings regarding immediate verbal response suggest that the presence of anxiety in children may indicate increased vulnerability in the risk context. However, the earlier disclosure amongst children high in anxiety also suggests that in some cases anxiety may facilitate children’s assessment of risk and prompt earlier disclosure. In particular, one possible explanation for this finding is that children who are more anxious may be hypervigilant to potential threats and may therefore be more likely to engage in interpersonal safety behaviours in response to the perceived threat. By contrast, children who are less anxious may not perceive the risk scenario as dangerous and therefore may not perceive the use of interpersonal safety skills as necessary. Thus, some anxiety may be protective for children in some
instances. This does not explain, however, why children who were more anxious also had increased agreement to leave with the confederate, and instead this discrepancy suggests that different predictors may be present for different types of interpersonal safety skills. As such, despite potential protective elements of anxiety in regards to disclosure, finding out how to mitigate anxiety at the same time as helping children to avoid risk is an area that deserves our future attention. This discrepancy also illustrates the importance of examining interpersonal safety skills individually rather than as a single construct when conducting further research into this area.

Further, the findings also present important implications for the assessment of interpersonal safety and for the application of theories of behaviour to the use of interpersonal safety skills in children. Traditionally, within the child protection education domain, program effectiveness has been evaluated using measures of interpersonal safety knowledge, interpersonal safety intentions and interpersonal safety self-efficacy (Higgins et al., 2005; McDonald et al., 2011; Walsh et al., 2015, 2016). This is consistent with relationships suggested by theories of behaviour such as TPB and HAPA (Ajzen, 1991; Schwarzer, 2008; Webb & Sheeran, 2006). However, Chapter 9 presents the first empirical examination of these relationships using a standardised measure of interpersonal safety skills. No interpersonal safety behavioural skills were significantly correlated with measures of children’s assessed safety knowledge, intention or confidence. This is important since it suggests that not all elements of traditional theories of behaviour may apply to this subject matter or age group. Further, it highlights the importance of measuring interpersonal safety skills directly since improvements in children’s interpersonal safety knowledge and intentions may not accurately represent their use of these skills within potential risk contexts. Future research may seek to further this by examining different age groups, populations and
domains of risk. As other elements of these models were not examined such as attitudes and beliefs, future research may also seek to examine if theorised relationships for intentions and behaviour, are present for the domain of interpersonal safety behaviours in children.

As described earlier, it may also be the case that the OPBT did not provide the right context or did not tap behaviours validly. Thus, it might be the case that the OPBT could need modifications or extensions to better line with knowledge and intentions as suggested in theories of health behaviour. In particular, only one risk context was examined (i.e., the presence of an unknown adult presenting an abduction lure and resulting unsafe secret). Thus, the OPBT may be adapted to better assess other risk domains such as bullying and secrets from others regarding abuse. Through this, differential impact of programs upon multiple domains may be assessed and the unique prevalence and predictors for interpersonal safety skills in differing risk contexts may be identified. Further, within the disclosure measurement of the OPBT, prompting stopped once children had disclosed. In this, disclosure was conceptualised as a one-off event instead of an ongoing process involving both recantation and new disclosure. As such, future research may seek to examine disclosure as a continuing process using longitudinal techniques.

**Conclusion**

In conclusion, the findings in the current thesis contribute significant knowledge on the enhancement and measurement of children’s interpersonal safety skills by evaluating the effectiveness of interventions to prevent child maltreatment and by contributing knowledge regarding predictors and prevalence of interpersonal safety skills in Year 1-2 Australian children. Support was found for the effectiveness of the *Learn to be safe with Emmy and friends*™ program in increasing children’s short and
long-term knowledge of interpersonal safety concepts and in increasing their comfort in discussing these topics with parents and caregivers. However, the program did not appear to significantly improve young children’s disclosure intentions and observed interpersonal safety behaviours skills. In contrast, the OPBT was effective as a single-session disclosure-focused IST in increasing disclosure intentions. Overall, the combination of Learn to be safe with Emmy and friends™ with the OPBT (as an IST) appeared most effective, with significantly greater increases in disclosure intentions and disclosure confidence reported for children who received both interventions. These findings suggest ways to enhance the Learn to be safe with Emmy and friends™ program by adding further rehearsal and feedback elements for desired skills, either within the program or as tasks to be conducted with teachers or caregivers. Information was also provided regarding interpersonal safety skills, with findings that children who have greater anxiety may be more likely to disclose risk situations. A number of implications and areas of interest resulted from the findings of the current thesis, including methods and measures used in program design and areas to focus upon in program content and delivery. While this thesis represents a significant contribution, child safety is an area of premier importance and further work should seek to add to and develop research efforts in both theory-oriented and program evaluation fields.
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Appendix A: Ethical Approval

GRiffith University Human Research Ethics Committee

22-Oct-2014

Dear Miss White

I write further to the additional information provided in relation to the conditional approval granted to your application for ethical clearance for your project "Full Review: Learn to BE SAFE with EMMY(TM): A randomised control trial of an Australian protective behaviours program" (GU Ref No: PSY/48/14/HREC).

This is to confirm receipt of the remaining required information, assurances or amendments to this protocol.

Consequently, I reconfirm my earlier advice that you are authorised to immediately commence this research on this basis.

The standard conditions of approval attached to our previous correspondence about this protocol continue to apply.

Regards

Rick Williams
Manager, Research Ethics
Office for Research
Bray Centre, N54 Room 0.15 Nathan Campus
Griffith University
Appendix B: Application of Protective Behaviours Test- Revised (APBT-R)

13) This bigger person is Martin. The smaller person is you. Martin starts a fight with you.
How would you feel?

1. Happy
2. Scared
3. Angry
4. Sad
5. I don’t know
6. Other: _________________

What would you do if this happened?
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

What else would you do if this happened?
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

Is this situation (describe) safe?

Yes

No
14) This is Jenny. This is You. These are Jenny’s friends. Jenny and her friends won’t let you play with them. How would you feel?

1. Happy
2. Scared
3. Angry
4. Sad
5. I don’t know
6. Other: ________________

What would you do if this happened?
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

What else would you do if this happened?
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

Is this situation (describe) safe?

Yes
No
Don’t Know
15) This is Julie. This is you. Julie is telling you a secret. She is telling you that someone has been hurting her. How would you feel?

1. Happy
2. Scared
3. Angry
4. Sad
5. I don’t know
6. Other: ________________

What would you do if this happened?
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

What else would you do if this happened?
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

Is this situation (describe) safe?

Yes
No
Don’t Know
16) This is Jack. This is you. Jack likes to be near you, but you don’t like Jack in your personal space. How would you feel?

1. Happy
2. Scared
3. Angry
4. Sad
5. I don’t know
6. Other: _______________

What would you do if this happened?
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

What else would you do if this happened?
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

Is this situation (describe) safe?

Yes
No
Don’t Know
17) This is Tom. This is you. Tom accidently breaks your crayon. He says sorry. How would you feel?

1. Happy  
2. Scared  
3. Angry  
4. Sad  
5. I don’t know  
6. Other: __________________

What would you do if this happened?
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

What else would you do if this happened?
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

Is this situation (describe) safe?

Yes

No

Don’t Know
18) This is Sarah. This is you. Sarah is telling you a secret. She is telling you about a surprise party for your best friend. How would you feel?

1. Happy
2. Scared
3. Angry
4. Sad
5. I don’t know
6. Other: _______________

What would you do if this happened?
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

What else would you do if this happened?
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

Is this situation (describe) safe?

Yes
No
Don’t Know