**Supervising for Home Safety Program: A Randomized Controlled Trial (RCT) Testing Community-Based Group Delivery**

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**Abstract**

**Objective** The individually delivered *Supervising for Home Safety* (SHS) program improves caregivers’ injury-related beliefs and supervision practices. The current randomized controlled trial used a group delivery in a community setting and assessed program impact, feasibility, and acceptance. **Methods** Caregivers of 2–5-year-olds were randomized to receive either the SHS or an attention-matched control program. **Results** In the SHS group only, there were increases from baseline to postintervention in the following: beliefs about children’s vulnerability to injury, caregiver preventability of injuries, and self-efficacy to do so; readiness for change in supervision; and watchful supervision. Face-to-face recruitment by staff at community organizations proved most successful. Caregivers’ satisfaction ratings were high, as was caregiver engagement (95% completed at least seven of the nine sessions). **Conclusion** The SHS program can be delivered to groups of caregivers in community settings, is positively received by caregivers, and produces desirable changes that can be expected to improve caregivers’ home safety practices.

**Key words:** injury prevention; preschoolers; RCT; Supervising for Home Safety program; supervision.

In most developed countries, unintentional injury is the leading cause of death for children (World Health Organization, 2008). Each day in the United States, for example, injuries account for about 22 deaths and 25,000 hospital visits for youth 1–18 years of age (National Center for Injury Prevention & Control, 2015). Importantly, research has shown that up to 90% of childhood injuries can be prevented by implementing changes to behavior and/or the environment (Rimsza, Schackner, Bowen, & Marshall, 2002). Because young children are often injured in their homes (McDonald et al., 2003; Shanon, Bashaw, Lewis & Feldman, 1992), identifying ways to motivate caregivers to engage in practices that promote children’s safety is important. The current study addresses this issue, with the primary aim being to evoke improvements both in caregivers’ supervision of young children (2–5 years) in the home and the psychological factors that have been shown to be associated with caregivers’ engagement in child-safety practices (i.e., beliefs about children’s injury vulnerability, injury preventability, parent self-efficacy, and readiness to change).

Numerous advancements in research on caregiver supervision have occurred in the past 10 years. The importance of defining supervision in terms of watchfulness, proximity, and continuity of these behaviors has been established (Gitanjali et al., 2004; Morrongiello, 2005). There are questionnaire measures of supervision that have been validated with caregivers of toddlers (Morrongiello & Corbett, 2006) and elementary-school children (Morrongiello, Corbett, & Kane, 2011), and for high-risk situations such as the beach (Petrass, Blitvich, & Finch, 2011).
Most importantly, there is now clear evidence of the protective value of supervision: across a broad age range in childhood, more watchful and/or proximal supervision is associated with reduced frequency of injuries (e.g., Damashek & Kuhn, 2013; Harrell, 2003; Morrongiello, Corbett & Brison, 2009; Morrongiello, Corbett, & Kane, 2011; Morrongiello, Kane, & Zdzieborski, 2011; Morrongiello, Ondejko, & Littlejohn, 2004; Pollack-Nelson & Drago, 2002), as well as with reduced severity when injuries occur (Schnitzer, Dowd, Kruse, & Morrongiello, 2014).

Given the importance of supervision for preventing childhood injuries, it is surprising how few interventions have sought to target and improve this behavior. The Supervising for Home Safety (SHS) program is the only program we are aware of that has been proven, in a rigorously designed efficacy trial, to improve caregiver supervision practices (Morrongiello, Zdzieborski, Sandomierski, & Munroe, 2013). Specifically, after the intervention, caregivers’ daily supervision diaries revealed an increase in the time the child was watched and kept within view, an increase in the level of supervision provided when the child was out of view (i.e., listening in, frequency of going to check on the child), and a decrease in the time the child was completely un supervised (i.e., out of view and parent has no knowledge of the child’s location and activity). Consistent with these self-reports, when caregiver supervision was unobtrusively measured in a naturalistic setting, it was found that caregivers watched their child significantly more than before the intervention. Along with these behavioral changes, caregivers’ beliefs about children’s vulnerability to injury, the preventability of injuries to young children, and self-efficacy about enacting better supervision practices to prevent injuries all also increased significantly (Morrongiello, Sandomierski, Zdzieborski, & McCollum, 2012). Obtaining a successful outcome in that efficacy trial establishes that this program can achieve desired positive outcomes when delivered individually to caregivers using a one-to-one format. However, the utility of the program and its cost-effectiveness would be greatly increased if it could be delivered in a group format and still achieve positive outcomes. The current effectiveness trial addressed this issue.

**Present Study**

The SHS program applies a psychological approach to prevention and targets not only supervision behaviors, but also caregivers’ beliefs about children’s vulnerability for experiencing injuries, the preventability of injuries, and their self-efficacy to implement safety precautions (Morrongiello et al., 2012). Past research has shown that targeting caregivers’ beliefs about injury vulnerability, preventability, and self-efficacy are important components in child injury prevention. Caregivers enact more safety strategies when they believe children are vulnerable to injury (Morrongiello & Kiriakou, 2004) or that injuries are preventable (Peterson, Farmer, & Kashani, 1990). Similarly, Russell and Champion (1996) found that caregivers’ self-efficacy about their ability to successfully engage in injury-prevention practices was the best predictor of them implementing those measures. In addition, studies of behavior change reveal that “readiness for change” is an additional psychological variable that can influence the impact of interventions (Prochaska & Velicer, 1997). The premise is that individuals go through stages in implementing changes to achieve greater health behaviors, decreasing in Precontemplation (i.e., not considering changing their behavior), and increasing in Contemplation (considering it) and/or Action (working to implement change). Another positive outcome of an intervention, therefore, is if it can create greater readiness for behavior change among participants by reducing Precontemplation scores and/or increasing Contemplation and/or Action scores (e.g., Connors, DiClemente, Velasquez, & Donovan, 2012). In the current study, measures of each of these potential psychological impacts were taken.

The specific goals of the study were to assess: (1) the impact of the program on caregivers, as measured by the following: beliefs about children’s injury vulnerability, the preventability of injuries, and their self-efficacy to do so; readiness for changing supervision; and actual supervision practices; (2) feasibility of a group delivery format, as well as of recruitment and program implementation through a community organization in a community setting; and (3) participants’ acceptability of the program, as indicated by retention and participation rates, as well as ratings of satisfaction with the program and facilitator. The 9-week program was delivered in a group format through a multi-site community organization that provides programming, education, and support to families (Ontario Early Years Centres, OEYC).

**Method**

**Participants**

Fifty-four caregivers of children 2–5 years of age were recruited to participate. Exclusion criteria included (1) not fluent in English, (2) plans to move from the area before study completion, (3) caregiver <18 years of age, and (4) children or caregivers with severe health conditions (i.e., heart disease, asthma); note, the latter was an exclusion criteria because severe health conditions can produce changes in children’s behaviors (e.g., restricted or decreased motor activity, more play indoors rather than outside) that can affect the nature and extent of supervision caregivers provide. Of the
54 participants recruited, two in each group withdrew and two additional caregivers in the intervention group were lost to follow-up, resulting in 21 in the intervention and 27 in the control group. Descriptive information about these groups can be found in Table I. The study was approved by the university research ethics board and all caregivers granted written consent.

Recruitment
Two OEYCs of three within driving distance (i.e., within 50 km) participated in recruitment, which involved three approaches: placing a notice on their website, making brochures available to caregivers at the center, and in-person recruitment by center staff based on guidelines we provided to them. The staff were given a general script for main points to say to potential participants (e.g., general study goals, time required, what incentives were offered), and what not to say (e.g., we were testing an intervention to improve caregiver supervision); for the few recruitment episodes that were observed, the staff followed the script and all parents expressed interest. The staff was asked to approach whoever they knew to meet the study criteria. There were no incentives offered to sites, only to participants. At the time of recruitment, caregivers were told that the research was testing a program to help caregivers raise healthy children. Of those recruited, there were no couples and the caregivers reported having only one child in the appropriate age range.

Randomization
Owing to space limitations at the OEYCs, we were unable to provide our intervention and control sessions on the same day. Therefore, caregivers initially selected and signed up for one of the two weekly sessions offered at each site, based on convenience for them; they were unaware of who else had signed up for a given session when they made their choice. The project manager then used a stratified randomization scheme to assign each session at each site, with one being intervention and the other control; the strata, therefore, were the OEYC sites. Thus, there were four groups, one intervention and one control at each site. There was a minimum of 10 and a maximum of 14 parents per group.

Program Materials

Intervention Program
There are a number of components of the SHS program that were developed based on research evidence. These were all amenable to group presentation and delivered in the present study; hence, this program was the same as that delivered in the original randomized controlled trial (RCT). First, the program involves presenting video-based messaging to caregivers about four common types of home injuries affecting young children (i.e., drowning, falls, burns, poisoning). Extensive research with caregivers guided the content, design, and production aspects of these video vignettes (Morrongiello, Zdzieborski, Sandomierski, & Lasenby-Lessard, 2009). Table II indicates the topics covered each week and the materials used, including videos. Second, SHS introduces caregivers to a flexible approach to reducing injury risk that is based on the mnemonic ALTER (see Table III). The merit of such flexibility is that it allows caregivers to tailor their prevention approach to meet their own individual needs and preferences, avoiding prescriptive messages (e.g., “caregivers should...”) that caregivers often reject (Morrongiello, Corbett, & Falls-Prevention Team, 2016). Tailoring is important because it has been shown to improve effectiveness of interventions (McDonald et al., 2005; Nansel et al., 2002; Nansel, Weaver, Jacobsen, Glasheen & Kreuter, 2008). Third, each caregiver was asked to sign a “Practice It” contract in which they agreed to try ALTER between sessions and share their experiences at the next session. Public commitment to safety behaviors has been shown to increase the likelihood of these occurring (e.g., Morrongiello & Marks, 2008). Finally, SHS promotes practice in using ALTER through homework. Caregivers are asked to complete ALTER Recording Sheets when they use the strategy, and to indicate what the safety issue was and what letter was used. To
Table II. Weekly Topics Covered in the SHS Program and Materials Used

<table>
<thead>
<tr>
<th>Session</th>
<th>Topic addressed*</th>
<th>Materials used to prompt guided discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Scope of childhood injury issue ALTER acronym explained [Activity, Location, Timing, Environment, Resources]</td>
<td>Watchful Caregivers, Safe Children videotape (20') An Introduction to ALTER videotape (10') and acronym Explain ALTER Recording Sheet (to practice at home)</td>
</tr>
<tr>
<td>2</td>
<td>Drowning prevention at home using ALTER</td>
<td>Discuss ALTER homework sheets that participants completed and others presented by facilitator Video vignettes: drowning risks at home (bathtub; siblings) Explain ALTER Recording Sheet (to practice at home)</td>
</tr>
<tr>
<td>3</td>
<td>Falls prevention at home using ALTER</td>
<td>Discuss ALTER homework sheets that participants completed and others presented by facilitator Video vignettes: fall risks at home (stairs, furniture; siblings) Explain ALTER Recording Sheet (to practice at home)</td>
</tr>
<tr>
<td>4</td>
<td>Attending to self-talk can help in using ALTER</td>
<td>Discuss ALTER homework sheets that participants completed and stories by facilitator of other caregivers' experiences</td>
</tr>
<tr>
<td>5</td>
<td>Burn prevention at home using ALTER</td>
<td>Discuss ALTER homework sheets that participants completed and others presented by facilitator Video vignettes: burn risks at home (hot liquids of all types, fire-related risks) Explain ALTER Recording Sheet (to practice at home)</td>
</tr>
<tr>
<td>6</td>
<td>Poisoning prevention at home using ALTER</td>
<td>Discuss ALTER homework sheets that participants completed and others presented by facilitator Video vignettes: poison risks at home (medicine, cleaners) Explain ALTER Recording Sheet (to practice at home)</td>
</tr>
<tr>
<td>7</td>
<td>Home safety challenges and problem solving using ALTER</td>
<td>Stories by facilitator of other caregivers' experiences and sharing between caregivers in the group, using ALTER homework experiences</td>
</tr>
<tr>
<td>8</td>
<td>Bringing it all together</td>
<td>Review main messages of program from caregivers' perspective and discuss current and potential future applications of ALTER and how to balance use of it with other values (e.g., promoting independence)</td>
</tr>
</tbody>
</table>

*The four injury topics were delivered in random order for the two groups.

motivate completion of these sheets, caregivers are told that these examples of effective use of ALTER strategies can benefit other caregivers who may be struggling to manage the same safety issue but unsure of how ALTER can help.

Control Program

Parents and Tots Together (PTT) is an intervention designed to address obesity-prevention-related behaviors (e.g., eating, physical activity, sleep) and is delivered to caregivers of young children via group sessions. Detailed information regarding the program can be found elsewhere (Haines et al., 2012), as can information on program impact (Walton, Filion, Gross, Morrorgiello, & Haines, 2015). Like SHS, this is a nine-session program that uses video vignettes, facilitated group discussion, and homework activities.

Measures

Supervision

The questions that asked about supervision were formulated based on the nature of the changes in supervision found in the original RCT, because these were the changes expected from exposure to the SHS program (Morrongiello et al., 2013). Specifically, increasing time watching the children and keeping them within view was the main outcome expected; therefore, caregivers were asked: What percentage of the time yesterday would you say you were actually watching your child? To capture a decrease in the time their child was completely unsupervised and/or an increase in the level of supervision provided when the child was out of view we asked: What percent of the time would you say that you knew exactly what your child was doing yesterday? Note that we asked about the previous day because those self-reports by caregivers minimize memory issues and have been shown to positively correlate with objective indices of supervision (Morrongiello, Corbett, McCourt, & Johnston, 2006). Thus, these few questions are reasonable proxy measures for caregivers' general supervision practices.

Beliefs

Participants’ beliefs about children’s vulnerability to injury was based on their extent of agreement ratings (6-point scale, higher numbers indicate more agreement) to three questions (Cronbach’s alpha = .86, e.g., To what extent do you agree that “young children are especially vulnerable to being injured?”). Beliefs about preventability of childhood injuries was based on their extent of agreement ratings (6-point scale, higher numbers indicate more agreement) to three questions (Cronbach’s alpha = .86, e.g., To what extent do you agree that “injuries to children are preventable?”).
Questions about vulnerability and preventability were developed by the authors. Their self-efficacy for preventing injuries to their child was based on their completing the Protection subscale of the Self-Efficacy for Caregiving Tasks Index (Coleman & Karraker, 2003), which included 12 items (Cronbach’s alpha = .74) about keeping children safe (e.g., When I leave my child in someone else’s care, I make sure the provider is capable of protecting my child from harm; I believe in my ability to react well and keep my child safe, should an emergency arise in which my child’s physical well-being is in danger). Higher scores on the 6-point rating scale indicate greater self-efficacy.

Readiness to Change
To assess caregivers’ readiness to change their supervision practices, they gave extent of agreement ratings (6-point scale, higher numbers indicate more agreement). For items tapping Precontemplation (six items, Cronbach’s alpha = .75, e.g., As far as I’m concerned, there isn’t any problem with how I supervise my child) a postintervention decrease in scores would indicate greater readiness for change. In contrast, for Contemplation (nine items, Cronbach’s alpha = .89, e.g., I’ve been thinking that I might want to change my supervision practices) and Action (six items, Cronbach’s alpha = .86, e.g., I am trying to supervise my child more closely), an increase in postintervention scores would indicate greater readiness for change; the questions for these subscales were developed by the authors.

Satisfaction Survey
Caregivers were asked to indicate their extent of satisfaction with the program by indicating the extent to which they would recommend it to a friend (would not, would recommend it, would highly recommend it), and their extent of satisfaction with the program facilitator (not at all, a little, satisfied, very satisfied) and with the program itself (not at all, a little, satisfied, very satisfied).

Procedures
General Testing Protocol
Caregivers began by attending an Information Session at which they completed consent forms and the baseline questionnaire. Both the intervention and control programs then ran for nine weekly (2-hr) group sessions. Sessions generally followed the same sequence of events: discussion of any homework or program-related activities that occurred during the week, with the emphasis on participants sharing their experiences with each other; facilitator presented video-vignettes followed by guided discussion of these; addressing questions caregivers raised and problem solving about ALTER (e.g., how to use ALTER in a child bathing situation); and discussion of homework to be completed. A week after the program ended, groups convened to complete the postintervention questionnaire.

Because children can motivate caregivers to participate in weekly programs (Haines, Neumark-Sztainer, Perry, Hannan, & Levine, 2006), caregivers were encouraged to bring their young children at the time of these sessions. The children participated in fun interactive activities (e.g., arts and crafts, singing and music, story time with puppets) that ran concurrently to the caregiver program but in another room; these activities varied every week. Caregivers were provided bus tickets (if needed) and a nutritious meal (lunch or dinner) was available to them and their child just before every session. Typically, caregivers and children ate together and then separated for the 2-hr programs.

Families received a $20 gift card for completing each assessment (baseline, postintervention). To minimize risk of measurement contamination, there were separate follow-up assessments for intervention and control groups and the staff who conducted these measurements was not involved in program delivery.

Facilitator Training
The same two facilitators (MA level graduate students in Psychology and Family Studies) delivered all sessions in the SHS groups, one at each OEYC; two other MA level students delivered the control program, one at each site. All facilitators received training on group facilitation skills (4 hr) and program content (4 hr). No one had prior experience delivering the programs, but on a posttraining survey, the facilitators all reported feeling “very confident” in the ability to lead the program sessions based on the training received.
A SHS manual guided week-by-week delivery of the SHS program and indicated: what materials were needed; what activities were to be delivered; key points to cover, including any specific wording to use; anticipated issues that might arise in discussion and ways to address these; and homework (i.e., “practice”) activities. A similar manual guided delivery of the control program.

Children’s activities were delivered by undergraduate student volunteers in upper Family Studies and Psychology classes who had prior experience working with children. They followed a manual that gave session by session detailed information on activities and tips for guiding the children in these. They attended a 1-hr training session as a group, and before each session they met with a supervisor for 15 min to review the activities and prepare. An on-site supervisor monitored them and the children at all times, and provided assistance and guidance as needed.

Fidelity Checks
Fidelity of program delivery was assured by having every session observed and using a checklist that aligned with the program delivery manual to monitor that required elements were covered during every session (e.g., proper sequencing of activities, key points were delivered, any specific wording was followed). These checklists confirmed that all of the required elements were covered during every session for both programs.

Analytic Approach
Descriptive and parametric statistics were applied to characterize the data and compare the pattern of results across groups. Preliminary data checking procedures were applied before analyses were run (i.e., normality of distributions, screening for outliers), and no problems were detected based on established guidelines (Howell, 2007). The same design was used for all analysis of covariance (ANCOVA) tests reported, namely—group (2: Intervention, Control) was a between-participant factor, with child gender, age (months), and baseline score entered as covariates. This design was used to control for differences across groups in baseline scores when assessing for postintervention group differences; despite random assignment, the Control group scored higher than the Intervention at baseline for some measures (see Table IV), although they were not at ceiling for any of these. Age and gender were used as covariates because both variables can impact children’s behavior and parent safety practices (Morrongiello et al., 2004, 2006). Therefore, we adopted a conservative approach and corrected for these variables before assessing for group differences.

Results
Demographics
As shown in Figure 1, there were 54 caregivers (25 = intervention, 29 = control) recruited. The demographic characteristics for participants in each group

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>Baseline</th>
<th>Postintervention</th>
<th>Change score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervision</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Watching Child</td>
<td>Intervention</td>
<td>70.85 (14.62)</td>
<td>83.75 (10.87)</td>
<td>12.90</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>79.96 (12.58)</td>
<td>80.23 (14.21)</td>
<td>-.27</td>
</tr>
<tr>
<td>Exact knowledge</td>
<td>Intervention</td>
<td>80.50 (15.45)</td>
<td>85.90 (9.08)</td>
<td>5.40</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>84.00 (15.45)</td>
<td>83.23 (12.49)</td>
<td>-.77</td>
</tr>
<tr>
<td>Beliefs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vulnerability</td>
<td>Intervention</td>
<td>67.67 (18.63)</td>
<td>83.48 (13.97)</td>
<td>15.81</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>77.15 (13.19)</td>
<td>83.10 (15.42)</td>
<td>5.95</td>
</tr>
<tr>
<td>Preventability</td>
<td>Intervention</td>
<td>64.59 (23.49)</td>
<td>68.57 (17.35)</td>
<td>3.98</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>78.22 (17.36)</td>
<td>76.38 (16.42)</td>
<td>-1.84</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>Intervention</td>
<td>3.09 (0.45)</td>
<td>3.30 (0.41)</td>
<td>.21</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>3.32 (0.36)</td>
<td>3.28 (0.37)</td>
<td>-.04</td>
</tr>
<tr>
<td>Readiness to change</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Precontemplation</td>
<td>Intervention</td>
<td>2.86 (0.98)</td>
<td>1.67 (1.77)</td>
<td>-1.19</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>2.74 (0.86)</td>
<td>2.71 (1.42)</td>
<td>-.03</td>
</tr>
<tr>
<td>Contemplation</td>
<td>Intervention</td>
<td>2.45 (2.34)</td>
<td>3.33 (1.31)</td>
<td>.88</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>4.03 (2.83)</td>
<td>3.19 (1.63)</td>
<td>-.84</td>
</tr>
<tr>
<td>Action</td>
<td>Intervention</td>
<td>2.94 (1.26)</td>
<td>2.79 (2.50)</td>
<td>-.18</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>3.85 (1.04)</td>
<td>3.33 (1.07)</td>
<td>-.52</td>
</tr>
</tbody>
</table>

Note. Possible range of scores:
- 0–100%,
- 1–6 (higher scores indicate more of the variable).
- ANCOVA assessing for group difference at baseline after controlling for child age and gender, $p < .05$.
- ANCOVA assessing for group difference at postintervention, after controlling for child age, gender, and baseline score: **$p<.05$, ***$p = .05$.  

Table IV. Scores for Intervention and Control Groups for Each Variable at Baseline and Postintervention, With Change Scores Given (Postintervention Minus Baseline Score)
who completed all measures (21 = intervention, 27 = control) are given in Table I. As indicated, most participants were the biological mothers, were married or living with a partner, and self-identified as Caucasian. Approximately 64% of all participants had at least some college/university experience and 62% of families reported total household incomes of >$50,000/year. Higher-order Chi square tests comparing the intervention and control group for each demographic category in Table I (Education, Ethnicity, Income, Child age) revealed only a significant group difference for child age, $X^2(3) = 11.75, p < .05$.

Program Impact
Supervision
An ANCOVA was applied to the postintervention score for caregivers’ reports of the percentage of time they were watching their child when they were both at home and awake the preceding day. A significant group effect was found, $F(1, 42) = 4.24, p < .05$, $\eta_p^2 = .09$. As shown in Table IV, after completing their program, caregivers in the intervention group, but not the control group, showed a significant increase in the percentage of time they reported watching their child. Similarly, an ANCOVA was applied to caregivers’ reports of the percentage of time they knew exactly what their child was doing yesterday. Group differences at postintervention (see Table IV) were evident and in the expected direction (i.e., greater in intervention than control group); however, this difference missed reaching statistical significance, $p = .10$.

Beliefs
An ANCOVA was applied to caregivers’ beliefs at postintervention about young children’s vulnerability for experiencing serious injuries. Results revealed a significant group difference, $F(1, 43) = 5.74, p < .05$, $\eta_p^2 = .12$. As shown in Table IV, caregivers in the intervention showed a 15% increase between baseline and postintervention in their belief that young children...
are particularly vulnerable to experience serious injuries.

An ANCOVA was applied to caregivers’ beliefs about the preventability of childhood injuries at postintervention. As shown in Table IV, between baseline and postintervention, caregivers in the intervention group showed an increase in the percentage of injuries they believed could be prevented, whereas those in the control group showed a decrease. This differential change pattern across groups was marginally significant, $F(1, 43) = 3.92, p = .05, \eta_p^2 = .07$.

An ANCOVA was applied to caregivers’ beliefs about their self-efficacy for supervising more closely to prevent injuries. A significant group difference emerged, $F(1, 43) = 11.69, p < .01, \eta_p^2 = .21$. As shown in Table IV, the change in self-efficacy from baseline to postintervention showed an increase in the intervention group, but decreased in the control group.

**Readiness to Change**

Finally, to assess if readiness for change in supervision practices varied with group, an ANCOVA was applied separately to caregivers’ ratings at postintervention for Precontemplation, Contemplation, and Action. A significant group difference was found for Precontemplation, $F(1, 43) = 6.99, p < .01, \eta_p^2 = .12$. As shown in Table IV, caregivers in the intervention group showed a significant decrease in Precontemplation scores following the intervention, whereas those in the control group did not show this change pattern.

**Feasibility of Program Implementation: Recruitment**

Three recruitment strategies were used (website, flyers, staff); however, having the OEYC staff manage recruitment proved to be the most successful strategy. Of the two sites, one recruited 30 participants and the other 24, with 81% of caregivers recruited through face-to-face interview by OEYC staff and 19% recruited via the center website; flyers at the centers did not result in any participants being recruited.

**Acceptability of Program to Participants**

Acceptability of the Intervention program to participants was reflected in retention rate, attendance, and participants’ ratings on the satisfaction survey. Defining program “completion” as having completed at least five sessions, the retention rate for those who started the SHS program was 92% (see Figure 1). In fact, attendance across sessions was excellent, with 95% ($n = 20$) attending seven or more of the nine sessions and 5% ($n = 1$) attending five to six sessions. Consistent with these statistics, on the satisfaction survey, caregivers reported they would either “highly recommend” (75%, $n = 16$), or “recommend” (25%, $n = 5$) the program to a friend, and all reported they were “very satisfied” (76%, $n = 16$) or “satisfied” (24%, $n = 5$) with their program facilitator. Comparable results were obtained for the Control group: retention rate was high (93%); 89% attended seven or more sessions; and ratings of satisfaction were high for both the program (87% would highly recommend the program to a friend and 13% would recommend it) and the facilitator (89% were very satisfied and 11% were satisfied); there were no significant group differences in any of these values, based on Chi square tests, $p > .05$.

**Discussion**

Watchful and proximal supervision is effective for preventing injuries to children (Damashek & Kuhn, 2013; Schnitzer et al., 2014). However, not all caregivers routinely supervise in these ways (e.g., Morrongiello et al., 2006; Morrongiello et al, 2004). One way to promote caregivers’ engagement in these supervision practices is through intervention. The SHS program has been shown to successfully improve the supervision practices of caregivers (Morrongiello et al., 2013). However, the fact that the program was individually delivered to one caregiver at a time makes it costly and pragmatically challenging to achieve broad dissemination and implementation on a large scale. Addressing these issues, the current effectiveness trial used a group delivery format in a community setting and assessed program impact, feasibility, and participant satisfaction. Generally, the results were quite positive. Despite delivering the program in a group format, similar impacts were obtained as with individual delivery.

Following completion of the SHS program, caregivers showed an increase in their ratings of young children’s vulnerability to injury, the preventability of these events, and their self-efficacy to do so. These changes are important because caregivers who hold these beliefs have been shown to engage in more safety-promotion practices (Morrongiello & Kiriakou, 2004; Morrongiello et al., 2012; Peterson et al, 1990; Russell & Champion, 1996). Caregivers who received the SHS intervention also showed greater readiness for making changes to their supervision practices; this was indicated by a significant decrease in precontemplation ratings. There is an extensive research literature demonstrating that creating readiness for change is associated with success in achieving behavior change (e.g., Connors et al., 2012). Although this issue was not considered in the original research on the SHS program, the current findings suggest that the program achieves the additional desirable outcome of creating readiness for change in supervision. Finally, caregivers who completed the SHS program also
reported a significant increase in watchfulness of their child, which is the primary supervision behavior that is targeted in the program (Morrongiello et al., 2013); changes in this key aspect of supervision were captured in the original RCT based both on parent self-report data and naturalistic unobtrusive observations of parent–child interactions. Although supervision scores were at reasonable levels even at baseline in the Intervention group (71% watchfulness), past research has shown that with more time out of view, youngsters’ risk of injury significantly increases (Morrongiello et al., 2001, 2004, 2006). Hence, increasing this score to 84% watchfulness in the SHS group is not only statistically significant, but also clinically meaningful. In sum, indices of impact in this study replicate those found when the SHS was delivered to caregivers individually, and include changes in both caregiver beliefs and supervision behaviors relevant to children’s safety.

Important results also emerged with regard to feasibility and participant satisfaction. For feasibility of implementing the program, involving community staff in recruitment produced the best outcomes. Posters and web-based recruitment evoked some interest among potential participants, but not much. For future dissemination of this program, therefore, it will be important to identify organizations in the community with staff who feel comfortable to champion the program and play an active role in recruitment. The program was delivered in a community setting that was easily accessible and familiar to participants, which are attributes that also may have promoted participation. Space limitations in the building, however, created some constraints on when groups could be held and the size of these groups. The weighting of these various issues must be carefully considered in deciding between delivering the program in a community versus university setting. In terms of feasibility of staffing the program, using a manual for program delivery and training made it easy for the facilitator to become proficient in using the materials and conducting the groups, despite no prior experience with the program. The effectiveness of this training is reflected in participant satisfaction ratings: these were uniformly high for both the moderator and the program itself. Caregiver engagement with the program was high, based on participation rates and the lively discussions that routinely occurred during groups. In summary, although there were some constraints that arose from delivering the program in a community setting, these were manageable and did not compromise the quality of implementation of the program. Delivering the SHS program in a community setting, therefore, is feasible.

Based on indices of impact, feasibility, and participant satisfaction, therefore, the current results affirm past findings that the SHS program is well received by parents and effective for promoting positive changes in caregivers’ beliefs and supervision practices relevant to young children’s safety.

Study Limitations and Future Research Directions

Although this study yields several important findings, there are some limitations that must be acknowledged and considered in future research on this topic. First, caregivers self-selected in volunteering to participate. Although they did not know the full purpose of the study, this recruitment strategy may have resulted in systematic differences between participants and nonparticipants that somehow affects generalizability of our findings to the broader population of parents. Related to this, participants selected which session they would attend, based on what worked best for their schedule. Although they did not know who else had selected that session at their time of choice and sessions were later randomized to intervention or control, this may have somehow introduced response biases that affected our results. Our decisions to implement the study in these ways was motivated by practical considerations. Nonetheless, in future research, it will be important to systematically study how such decisions affect the results obtained (e.g., participation and attendance) and if unanticipated response biases occur as a consequence.

Second, the demographics of the sample recruited favored Caucasians, caregivers with some university experience, and families earning >$50,000 annually. Hence, the results may not be generalizable to caregivers with other demographic characteristics. The population that attends OYECs is diverse in income, education, and ethnicity (Mothercraft, 2013). In an effort to recruit a diverse sample and address potential barriers to participation, we offered bus tickets and meals. However, these strategies were not sufficient to recruit a highly diverse sample. Identifying more effective strategies is essential in future research, particularly if one plans to target groups at higher risk for childhood injury (e.g., lower income families) or those whose supervision practices are concerning and merit intervention (e.g., parents identified as neglectful).

Finally, although measures were based on past research, they were self-reports. Importantly, past research has shown high correspondence between caregivers’ self-reports and their actual supervision behaviors (Morrongiello & Corbett, 2006; Morrongiello et al., 2006; Morrongiello & House, 2004). Nonetheless, incorporating more objective observation-based measures of supervision (e.g., parents with their children in the playroom) would be important to do in
future research on delivering the SHS program in community settings.

Conclusion
Given that improved supervision is associated with a reduction in children’s frequency and/or severity of injuries, identifying programs that can create readiness for change or improve caregivers’ supervision is essential. Consistent with past research (Morrongiello et al., 2012, 2013), the current findings suggest that the SHS program is such a program. Outcome measures of impact, feasibility, and satisfaction all were uniformly positive. Moreover, the program was effectively delivered using a group format in a community setting, which greatly improves cost-effectiveness compared with the individual delivery method used in the original efficacy trial. Overall, the results suggest that the SHS program holds promise as an intervention that can positively impact caregivers’ beliefs and practices relevant to children’s safety, and that group delivery in a community setting can yield comparable positive outcomes with those obtained through individual delivery.

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