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Promoting Safety Behaviors Among Korean American Students in USA: Evaluation of the *Risk Watch*® Curriculum

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CONTENTS

Ⅰ. Introduction

Injury among children is a major public health issue because of the magnitude of the number of injuries, the years of life lost, and the associated costs to society. Injury is the leading cause of death during childhood, killing more children aged 5 to 14 years than all other causes combined (Hoyert et al., 2001). Each year, approximately 20 million children are injured severely enough to require medical attention, including 5.5 million children who visit hospital emergency departments (Burt and Fingerhut, 1998; Danseco, Miller, and Spcer, 2000).

It is difficult for adults to monitor children's safety behaviors continuously because they cannot always be around to protect them. Thus, children must acquire the skills necessary to prevent injuries (Gillham and Thomson, 1996).

Injury prevention interventions are more effective when they are integrated into the community and when approaches are tailored to address unique community characteristics such as ethnicity or socioeconomic status (Klassen et al., 2000). Asian Americans currently make up 4.2% of the total population, and Korean-Americans who are persons of

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Korean ancestry who were either born or are immigrants of the United States represent the fourth largest group of the Asian American population, numbering about 1,228,427 and becoming one of the most rapidly growing ethnic groups in the United States (Barnes and Bennett, 2000).

According to the records of health insurance coverage of immigrant children, children of Haitian (48.4%) and Korean (45.3%) immigrants are the most uninsured among immigrant groups (Huang, 1997). Moreover, according to an unpublished survey conducted by the authors to identify Korean-American children's health risk behaviors using the Youth Risk Behavioral Survey (n=60 with a mean age of 14 years), several health and safety concerns were revealed such as a low prevalence of wearing seat belts and bicycle helmets, a high prevalence of riding with a driver who had been drinking alcohol, school fighting, and getting injured due to fighting. Only prevention can help to reduce human suffering, loss of human potential, and death, as well as medical expenses and other economic costs related to injuries.

Despite the dramatic increase in the number of Korean immigrants during the last decade and the low prevalence of safety behaviors among children, there is a dearth of research about the implementation and evaluation of injury prevention programs for Korean-Americans (Kim, 1995; Sohng and Sohng, 2002). Korean schools, managed by Korean communities or churches to provide Korean history, languages, and cultural education for children, may represent an untapped resource for implementing culturally and linguistically appropriate injury prevention lessons for children of a growing influx of Korean immigrants.

The purpose of this study is to evaluate the impact of the "*Risk Watch*®" curriculum on safety behaviors, behavioral intentions, and knowledge among students attending Korean school classes outside of public school hours in Atlanta, Georgia.

The *Risk Watch*® curriculum, implemented in Summer, 2000, was evaluated using a quasi-experimental design with a nonequivalent control group. The intervention group received the curriculum over a period of three weeks while the control group did not receive any safety education curriculum. Before and after the intervention, students in both groups completed a pretest and posttest, and these were compared to evaluate the effectiveness of the curriculum.

Ⅱ. METHODS

Study Participants

Approximately 15 Korean schools are located in Atlanta, but most do not provide

summer programs. Five out of them that provided a summer program were contacted to request their participation in the study, and of these, two were interested in implementing and evaluating the *Risk Watch*® curriculum, two desired to limit their participation in this study to identify their students' safety behaviors, and one chose not to participate in the study. Thus, the intervention and control groups did not have pre-experimental sampling equivalence because they were not randomly assigned to groups.

Every student in the two groups of schools completed the pretest (N=161); of these, 59 did not complete the posttest because of traveling, participating in other summer programs, being sick, or dropping out of the school program. The final sample was composed of 102 students, composed of 48 students who received the intervention and 54 students from the control schools (Table1). No statistically significant differences were found between the 59 students who did not complete the posttest and the 102 students who completed both tests on most demographic variables: gender, intervention or control group assignment, grade level, birth of place, and self-identity. However, students who failed to take the posttest were more likely to be older than those who completed the both tests, F (1, 152)= 4.61, p=.033. The mean age of the students who did not complete the posttest was slightly higher (M=8.8, SD = 2.64) than those who completed both tests (M=7.9, SD = 2.83). These two groups of students displayed no significant differences in safety behaviors and behavioral intentions of wearing a seat belt, wearing a helmet, and getting out of the house if a smoke detector sounds.

Table 1. Demographic characteristics for study participants among students who completed both pre-and post-test (n=102)

Categories		%
Gender		
	Boys	51.5
	Girls	48.5
Intervention type		
	Control	52.9
	Intervention	47.1
Grade level		
	PreK, K	25.5
	Grades 1, 2	24.5
	Grades 3 to 8	50.0
Place of Birth		
	United States	44.7
	Korea	51.1
	Other	4.3
Self-identity		
	American	3.1
	Korean	64.9
	Korean-American	32.0
Age: Mean (SD)		7.9 (2.83)

Note: Some percentages do not add up to 100% due to rounding.
Some variables do not have the same total number of participants due to missing data.

Intervention

Risk Watch® is a school-based, unintentional injury prevention curriculum for children in preschool through eighth grade, developed by the National Fire Protection Association (NFPA) in 1998. To date, few evaluations have been conducted, and none have been published (National Fire Protection Association, 1999a). The *Risk Watch*® curriculum is designed to help children and families create safer homes and communities by teaching them the skills and knowledge needed to make positive choices about their personal safety and well-being (National Fire Protection Association, 1999b). Each module addresses the following topics: motor vehicle safety, fire and burn prevention, choking, suffocation and strangulation prevention, poisoning prevention, falls prevention, firearms injury prevention, bike and pedestrian safety, and water safety. In this study, three topics were taught to the students: motor vehicle safety, fire and burn prevention, and bike and pedestrian safety.

A caregiver letter, which was a part of the *Risk Watch*® curriculum, was translated to Korean and hand-delivered to parents by students. It included information about the safety lessons students taught in the safety topics, as well as the schools' baseline results for related safety behaviors. This letter was an important part of the intervention because of the influence of parents on their child's knowledge and practice of safety behaviors. Students were asked to obtain their parents' signature after showing the letters to their parents to ensure these had been received.

Procedures

A pretest was conducted before the intervention, and a posttest was conducted 4 weeks afterwards in all schools. The *Risk Watch*® was implemented in the two intervention schools between June 12 and July 7, 2000. Each safety topic was taught by grade levels during a 2 hour weekly class, for a total of 6 hours of instruction over three weeks. Teachers in the control group schools were informed that they should not discuss safety related topics in the class between pretest and posttest except normal communication about school safety rules in order to prevent contamination of the study.

Six bilingual (English and Korean speaking) volunteers helped to conduct the pretest and the posttest after training to administer the questionnaires. During the pretest and posttest administrations, volunteers read the prepared instructions to the students. For prekindergarten (PreK) and kindergarten (K) students, both tests were administered individually and orally. Overhead transparencies were used for students in grades 1 and 2. For students who were not fluent in English, the volunteers translated the questionnaire to them orally on an individual basis.

Questionnaire Development and Instruments

The student questionnaire was developed for three levels based on the grade level: PreK and K, grades 1 and 2, and grades 3 to 8. Items for measuring behavioral intention were created for this study. Most knowledge questions were taken from the established evaluation instruments of the *Risk Watch*® curriculum. However, the evaluation instruments comprised a limited number of questions for each topic, so additional knowledge questions were created based on the content of the *Risk Watch*® curriculum.

A pilot evaluation of the questionnaire was conducted prior to its implementation to identify items that were confusing, ambiguous, or difficult and to ensure that students understood the instructions among five Korean American students not enrolled in the participating schools. Additionally, a validation form was created for content validity of questionnaire items, checking variable constructs, questionnaire items, and their relevance to the variables by each safety topic. Three injury prevention experts rated the extent to which each item was relevant to its variable using a 5 point scale, confirming that the item accurately represented the variables. Most original items were moderately relevant to their assigned constructs for behaviors, behavioral intentions, and knowledge by safety topics.

Safety behaviors were defined as specific behaviors that reduce the risk of unintentional injuries caused by motor vehicle or bicycle crashes. Students were asked how often they wore a seat belt when they rode in a car and how often they wore a bicycle helmet when they rode a bicycle with three responses in term of *never*, *sometimes*, or *always*.

It was not possible to measure self-reported helmet use and fire escapes because some students do not own a bicycle and the actual experience of home fire is rare. Intention is the cognitive representation of a person's readiness to perform a behavior, and it is considered to be the immediate antecedent of behavior (Ajzen, 1991). Therefore, for this study, behavioral intention was used, defined as the perceived likelihood of performing a behavior. Three behavioral intentions were measured: wearing a seat belt when riding in a car, wearing a helmet when riding a bicycle, and escaping a building when a smoke detector sounds.

Knowledge was measured by questions, which varied in number, according to grade level, with higher grades having a few more questions. The range of traffic safety questions was 7 to 8, bicycle and pedestrian 5 to 11, and fire safety, 8 to 12. To obtain total knowledge scores, all correct answers (1 point each) were summed and divided by the total number of questions for each safety topic. If a student did not answer a question or

answered incorrectly, the item was coded as incorrect (0).

Data Management and Statistical Analyses

For the data analysis, SPSS was used with separate analyses conducted by safety topics and grade levels (PreK and K, Grades1 and 2, and Grades 3 to 8). To evaluate significant differences at baseline between students in the control group and those in the intervention group, demographic variables and outcome variables at baseline were compared. A Chi-square test was used to calculate significant differences for categorical variables, and analysis of variance was used to test for mean differences of age between the two groups.

In the quasi-experimental design with a nonequivalent control group, to examine the effectiveness of the intervention, analysis of covariance (ANCOVA) can be used, comparing the intervention and control groups' posttest scores after they have been adjusted for any differences that may exist on their pretest scores (Davison and Sharma, 1994; Johnson and Christensen, 2000; Wildt and Ahtola, 1978). In this study, analysis of covariance (ANCOVA) was conducted to test for posttest differences of safety behaviors, behavioral intentions toward safety behaviors, and safety knowledge between the intervention group and the control group using the pretest as a covariate to examine the intervention effectiveness. Additionally, 95% confidence intervals for all mean differences were calculated. To obtain effect size for the intervention effectiveness, Glass' delta (D), defined as the adjusted posttest mean difference between the intervention group and control group divided by the standard deviation of the control group, was calculated (Glass, McGaw, and Smith, 1981).

III. RESULTS

Baseline Comparisons between Control and Intervention Groups

The control and intervention groups had no statistically significant differences on demographic variables including gender, place of birth, self-identity, and age. In regard to safety behaviors, students were asked how often they wore a seat belt when they rode in a car and how often they wore a bicycle helmet when they rode a bicycle. The students were able to indicate how frequency they practiced these safety behaviors by responding Never (1), Sometimes (2), or Always (3). At baseline, the average of seatbelt use and bicycle helmet use among PreK and K students were 2.57 $\pm$ .73 (SD) and 2.09 $\pm$ .90 (SD), respectively (Table 2). The differences in seatbelt use and helmet use and behavioral intentions toward those safety behaviors in baseline between the control and

the intervention groups were not statistically significant. Of first and second graders, the mean score of wearing a seatbelt and a bicycle helmet were 2.32 ± .63 (SD) and 1.81 ± 75 (SD), respectively. Additionally, of students in grades 3 to 8, the mean score of seatbelt use and a bicycle helmet use were 2.37 ± .56 and 1.86 ± .81, respectively. As PreK and K students, the differences in wearing a seat belt and wearing a helmet were not statistically significant between the control and intervention groups in baseline among first to eight graders. Similarly, the baseline differences between the control and intervention groups of behavioral intentions toward all safety behaviors were not statistically significant.

On the baseline comparisons of safety knowledge, the control and intervention groups did not show statistically significant differences on knowledge scores among students in PreK and K and Grades 3 to 8. However, for first and second graders, the knowledge scores of bicycle and pedestrian safety were statistically higher among control group students than intervention group students at baseline, F (1, 23)= 7.61, p=0.01.

Intervention Impact

The intervention effects are presented in

Table 2. Safety behaviors, behavioral intentions, and knowledge at baseline

	Pre-K & K (n=26) Mean ± SD	Grades 1 & 2 (n=25) Mean ± SD	Grades 3 to 8 (n=51) Mean ± SD
Safety Behaviors [a]			
Seatbelt use	2.57 ± .73	2.32 ± .63	2.37 ± .56
Bicycle helmet use [b]	2.09 ± .90	1.81 ± .75	1.86 ± .81
Behavioral intentions [c]			
Will wear a seat belt	0.80 ± .41	2.48 ± .71	2.62 ± .49
Will wear a helmet	0.79 ± .41	2.33 ± .87	2.30 ± .68
Will get out if smoke detector sounds	0.68 ± .48	2.68 ± .69	2.82 ± .44
Knowledge [d]			
Traffic safety	0.76 ± .11	0.67 ± .11	0.56 ± .16
Bicycle and pedestrian safety	0.60 ± .20	0.71 ± .20	0.71 ± .14
Fire safety	0.57 ± .26	0.63 ± .26	0.67 ± .16

Note: Some variables do not have the same total number of participants due to missing data.
Differences at baseline between intervention and control groups were not statistically significant on all variables.
[a] Mean scores of safety behaviors. Range, 1-3 (Higher means indicate better safety behaviors)
[b] Wearing a bicycle helmet only among students who rode a bicycle.
[c] Mean scores of behavioral intentions toward safety behaviors. Range, 1-3 (Higher numbers indicate better behavioral intention to conduct safety behaviors in future)
[d] Knowledge scores toward safety topics. All correct answers (1 point each) were summed and divided by the total number of questions for each safety topics. Range, 0-1 (Higher scores indicate better knowledge)

Table 3. This table includes adjusted means (means for posttest adjusted for baseline value), mean differences, confidence intervals for the mean differences, F-tests, p-values, and effect sizes.

PreK and K students in the intervention group showed a statistically higher adjusted posttest mean of seat belt use than those in the control group after the intervention, F (1, 19) = 4.63, p=0.02 (effect size (D) = 0.98). Additionally, students in the intervention group showed a marginally significant increase in helmet use after the intervention, compared to the control group, F (1, 18) = 2.73, p=0.06, D = 0.81. Students in the intervention group showed statistically positive changes in behavioral intentions to wear a seat belt and to wear a helmet, compared to those in the control group (F (1, 22) = 5.91, p=0.01, D= 0.91; F (1, 21) = 13.16, p=0.00, D= 0.74, respectively). However, for the behavioral intention to get out of the house when a smoke detector sounds, although intervention group students showed a positive change, it was not statistically significant (Table 3).

For the students in grades 1 and 2, a statistically significant adjusted posttest mean difference between the control group and the intervention group was found on helmet use, F (1, 15) = 3.27, p=0.05, D=0.81. However, no statistically significant intervention effects were found on wearing a seat belt and behavioral intentions toward all safety behaviors.

Among students in grades 3 to 8, the intervention group showed a significantly higher adjusted posttest mean score on wearing a seat belt after the intervention than the control group, F (1, 48) = 4.37, p=0.02, D=0.52. However, no statistically significant differences on the behavior of wearing a helmet nor behavioral intentions for all safety behaviors were detected between the two groups. Figure 1 shows the changes of mean scores on bicycle helmet use among students in grades 1 and 2 and on seatbelt use among those in grades 3 to 8 from the pretest to the posttest between the intervention and control groups.

Regarding to the safety knowledge scores, among PreK and K students, significant improvements of knowledge scores were found in the intervention group while the control group students reported consistent knowledge scores of all topics from pretest to posttest. The effect sizes for adjusted posttest means of knowledge ranged from 0.95 to 1.54. For students in grades 1 and 2, the intervention group had statistically significant increases in knowledge scores for all safety topics after the intervention, compared to the control group. Additionally, for students in grades 3 to 8, the differences in adjusted means of knowledge scores at posttest between the control and intervention groups were statistically significant (Table 3).

Table 3. Intervention effects on safety behaviors, behavioral intentions, and knowledge scores

	Adjusted [a]		Mean	95% CI		F	p	Effect
	M_C	M_I	Difference	Lower	Upper			Size
PreK and K								
Safety behaviors								
Wearing a seat belt	2.26	2.89	0.63	0.02	1.24	4.63	0.04	0.98
Wearing a helmet	2.00	2.64	0.64	-0.17	1.45	2.73	0.12	0.81
Behavioral intentions								
Wearing a seat belt	0.70	1.00	0.30	0.04	0.56	5.91	0.02	0.91
Wearing a helmet	0.49	1.01	0.52	0.22	0.83	13.16	0.00	0.74
Getting out of the house [b]	0.90	1.00	0.10	-0.07	0.27	1.44	0.24	0.50
Knowledge of								
Traffic safety	0.79	0.99	0.20	0.10	0.30	17.40	0.00	1.18
Pedestrian/Bicycle safety	0.69	0.89	0.20	0.03	0.36	6.21	0.02	0.95
Fire safety	0.51	0.88	0.37	0.26	0.49	43.80	0.00	1.54
Grades1 and 2								
Safety behaviors								
Wearing a seat belt	2.50	2.60	0.09	-0.34	0.53	0.20	0.66	0.18
Wearing a helmet	1.96	2.66	0.70	-0.13	1.52	3.27	0.09	0.81
Behavioral intentions								
Wearing a seat belt	2.78	2.88	0.10	-0.22	0.42	0.43	0.52	0.27
Wearing a helmet	2.65	2.61	-0.05	-0.66	0.56	0.03	0.87	-0.07
Getting out of the house [b]	2.85	2.84	-0.01	-0.23	0.20	0.01	0.91	-0.02
Knowledge of								
Traffic safety	0.75	0.93	0.18	0.10	0.27	20.04	0.00	1.38
Pedestrian/Bicycle safety	0.72	0.97	0.25	0.11	0.39	13.46	0.00	1.39
Fire safety	0.70	0.94	0.24	0.09	0.40	10.34	0.00	1.14
Grades 3 to 8								
Safety behaviors								
Wearing a seat belt	2.35	2.63	0.28	0.01	0.56	4.37	0.04	0.52
Wearing a helmet	1.75	2.03	0.28	-0.20	0.76	1.42	0.24	0.34
Behavioral intentions								
Wearing a seat belt	2.59	2.67	0.08	-0.15	0.31	0.47	0.50	0.16
Wearing a helmet	2.35	2.36	0.01	-0.31	0.32	0.00	0.95	0.01
Getting out of the house [b]	2.91	2.94	0.03	-0.14	0.20	0.12	0.73	0.11
Knowledge of								
Traffic safety	0.54	0.85	0.31	0.22	0.40	48.15	0.00	1.35
Pedestrian/Bicycle safety	0.73	0.81	0.08	0.03	0.13	9.14	0.00	0.66
Fire safety	0.63	0.86	0.23	0.16	0.30	43.14	0.00	1.21

Note: [a] 'Adjusted' refers to ANCOVA-adjusted means at posttest using a pretest as a covariate.
Adjusted M_C = adjusted mean for control group students; Adjusted M_I = adjusted mean for intervention group students.

[b] Getting out of the house when a smoke detector sounds.

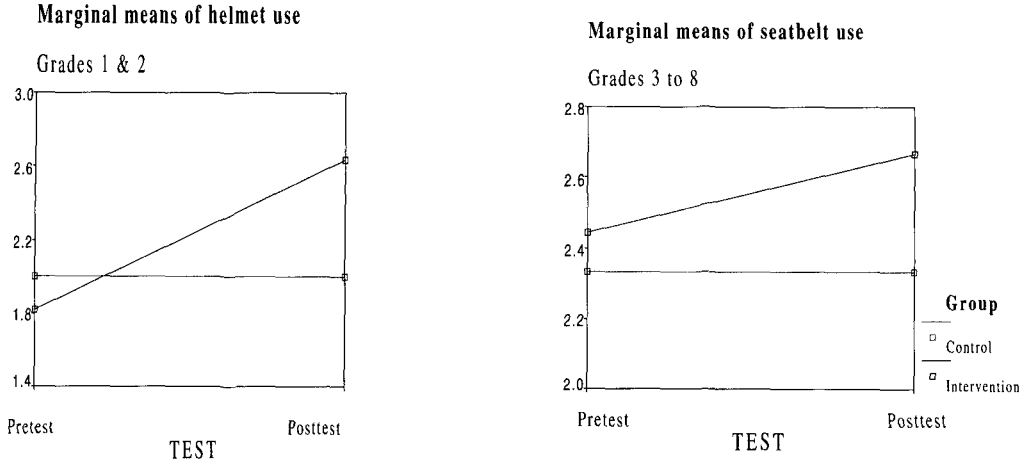

Figure 1. Changes of mean scores on bicycle helmet use for students in grades 1 & 2 and seatbelt use for those in grades 3 to 8 after the intervention by control and intervention groups

Ⅳ. CONCLUSION AND RECOMMENDATIONS

This study evaluated the impact of the *Risk Watch*® curriculum on Korean-American students' knowledge of traffic, pedestrian/bicycle, and fire safety, as well as on their behavioral intentions and safety behaviors related to these areas. To the authors' knowledge, this is the first injury prevention study specifically evaluated among Korean-American children. In this study, significant intervention effect was found on increasing knowledge about all safety topics and among all age groups. In spite of the brevity of the intervention, on average, students in the intervention group increased their knowledge of traffic safety by 42%, pedestrian/bicycle safety by 42%, and fire safety by 46% while those in the control group slightly decreased their knowledge of traffic safety and fire safety and slightly increased their knowledge of pedestrian/bicycle safety. Similarly, other injury prevention interventions have successfully increased children's knowledge (Dodge, 1995; Neuwelt et al., 1989; Wright, Rivara, and Ferse, 1995). This finding supports the value of safety and injury prevention education and, based on this study, the *Risk Watch*® curriculum provided well-developed means for increasing students' knowledge.

The *Risk Watch*® curriculum had significant impact on increasing young children's safety behaviors and behavioral intentions, but was only partially successful among older students. This difference could be explained by several facts. Younger children (aged 4 to 5 years) may be more likely than older

children to establish new routines with a minimum of resistance, perhaps because they tend to like learning new concepts and pleasing adults by following their directions (Miller and Davis, 1984). The 3 week intervention may not have been long enough to change older children's safety behaviors and behavioral intentions. Similarly, other studies with short periods of intervention have failed to impact safety behaviors among middle and high school students (Arneson and Triplett, 1990; Dodge, 1995).

Another possible explanation includes a measurement effect. While the students in grades 1 to 8 answered the questionnaire independently, PreK and K students were assisted on an individual basis by volunteers. Younger children's interest in pleasing adults may have influenced the positive answers they provided to their assisting volunteer. Even if this were true, it does indicate that the children in the intervention group knew the expected correct answer, while the children in the control group did not. Finally, different curricula by grade levels may influence the different changes in safety behaviors and behavioral intentions. The *Risk Watch*® curriculum may be more appropriate for young children. However, the different intervention effects by age group should be further investigated.

This study has several limitations that should be considered. The small sample size may account for the lack of significant intervention effects and low statistical power on several variables. However, the changes in most of those variables were in the right direction, so the intervention effects might have been more significant with a larger sample size. Since the curriculum was implemented by the specific grade levels, evaluating the intervention effects by grade levels was necessary. However, the small sample size among students in higher-grade levels made it impossible to separate them by grade levels for the analyses. Another limitation is the high attrition rate of students in Korean supplemental schools for which administrators have come to expect inconsistent summer attendance rates because of family activities. However, the baseline comparisons between students who failed to complete and those who did complete the posttest showed that students in these two groups did not differ on key variables related to this study. Finally, the use of a non-equivalent control group design also represented a study limitation. Random assignment was not possible because of the limited number of available Korean schools.

Based on the experience and findings of this study, two recommendations are provided to improve the *Risk Watch*® curriculum; evaluation instruments and caregiver letters. The evaluation instruments *in Watch*® curriculum contained few knowledge ques-

tions for each topic, and most questions are so easy that it is difficult to evaluate the impact of the curriculum on knowledge. Therefore, more appropriate questions should be developed and included, and the instruments should include more questions to measure students' safety behaviors and their related constructs, behavioral intention and attitudes.

Performance of safety behaviors by children is largely dependent on parents' help or interest (e.g., purchasing a bicycle helmet; reinforcing the safety behavior of wearing seat belts), so caregiver letters may play an important role on their safety behaviors. Risk Watch curriculum should include several specific templates for the caregivers letter which include the rationale for learning the safety behaviors and encouragement to parents to support the messages in the lessons. Based on the experience in this study, the authors offer recommendations: 1) modify the letters so that one letter is sent for each safety topic; and 2) provide in the letter additional rationale based on prevalence rates of children's' use of seat belt and helmet use; 3) deliver the letters to the caregivers directly. Additionally, the caregiver letters for parents delivered in this intervention were translated into Korean, perhaps providing some parents with this information in an understandable format for the first time. Therefore, the letters should be made in the templates available in a number of languages for parents who are not fluent in English.

In conclusion, injury among children, although it is often predictable and preventable, is a major public health issue that carries devastating consequences. Safety behaviors including seatbelt use and bicycle helmet use can reduce the occurrence of severe injuries and death among children. Our children should be guided to adopt safety behaviors to protect themselves and to promote their well being throughout life. Therefore, identifying successful curricula to reduce unintentional injury, tailoring it for children of a specific culture, delivering this information by a caring teacher, and reinforcing it at home, as much as possible, should be a priority in all schools. Such programs hold hope for reducing unintentional injuries within a learning environment that reflects a philosophy of concern for the welfare of its students.

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ABSTRACT

Childhood injuries are the primary cause of death and disability among children aged 5 to 14. Consistent practice of learned safety behaviors can reduce the occurrence of severe injuries among children. However, safety behavior concern is low among Korean-American children specifically and American children, in general. The objective of the study is to evaluate the impact of an unintentional injury prevention curriculum, *Risk Watch* among Korean-American children.

A quasi-experimental design with a nonequivalent control group was used for the designed of the study. Two intervention and two control Korean schools in Atlanta participated in this study. The intervention consisted of weekly lessons in traffic, bicycle, pedestrian, and fire safety. One hundred and two students completed a pre-test and a post-test. The main outcomes were safety behaviors (seat belt use or helmet use), behavioral intentions, and safety knowledge. Analysis of covariance was used for the statistical analyses.

Strong intervention effects were found for increasing knowledge of all safety topics in the intervention group. Additionally, statistically significant intervention effects were detected for increasing seat belt and helmet use, as well as behavioral intentions of wearing a seat belt and wearing a helmet, among pre-kindergarten and kindergarten students. For students in grades 1 and 2, intervention effects were found for increasing helmet use. Among students in grades 3 to 8, the intervention group showed statistically significant increases for seat belt use. Limitations of the study and recommendations for modifying and supporting unintentional injury prevention programs for school children are discussed.

Key words : Childhood injuries, Intervention, Knowledge