

*DECREASING CHILDREN'S RISK  
TAKING ON THE PLAYGROUND*

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Playground mishaps are some of the most common sources of injury and are the leading killer of children. The present study used a multiple baseline design across three classrooms ( $N = 379$  children). With minimal teaching and rewards, children decreased and maintained decreased risky playground behaviors on slides. Floor effects on climbers prevented the demonstration of similar effects. The decreases seen in risky slide behavior are discussed within the context of preventive safety training for playground injuries.

DESCRIPTORS: playground, injury prevention, children's injuries

Injuries kill and disable more children in this country every year than any other cause. Between 10% and 20% of the 22 million injuries children suffer occur in schools or in transit to and from school (Boyce, Sobolewski, Sprunger, & Shaefer, 1984). To date, however, the few promising preventive interventions (e.g., adding absorbent surfaces, removing swings) have failed to substantially reduce injury (e.g., Waltzman, Shannon, Bowen, & Bailey, 1999). Furthermore,

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the prevention field has neglected to combine behavioral and environmental interventions.

Playground behavior may be inherently risky. Each year, 65,220 injuries (40% of all playground injuries) occur on climbers, and 42,150 injuries (22% of all playground injuries) occur on slides. However, risk of playground injury is much more likely when children use the equipment incorrectly (e.g., going down a slide head first; Ward, 1987). Although the majority of playground injuries are minor, they often have potential to be disabling or fatal. Because younger children have been shown to sustain more injuries than older children (Baker, O'Neill, Ginsburg, & Li, 1992), the present study focused on playground behavior of younger children on climbers and slides.

## METHOD

### *Participants and Observers*

First graders ( $n = 117$ ), second graders ( $n = 122$ ), and kindergarten/third-grade students ( $n = 140$ ) from a suburban school (kindergarten through Grade 5) participated in the study, although the number of children on the playground varied from day to

day.<sup>1</sup> Children present at each 25-min lunchtime recess were observed. Because of the lower number of kindergarten children, their recess was combined with the third-grade children; thus, data are reported for three levels.

Four uninformed college students who were unfamiliar to the children served as playground supervisors. For reliability purposes, two observers independently coded data, without interacting with the children or the uninformed playground supervisors. Baseline, intervention, and follow-up were all observed in the same manner.

### *Measures*

Each observer recorded child behavior independently. Risky slide use was recorded whenever a child went down the slide any way other than feet forward facing downward, or when he or she sat on the bottom of the slide longer than a few seconds. The climbers were built to allow the children to play 2.5 m above the ground in an enclosed area to prevent falls. Thus, risky climber behavior was recorded whenever children were playing outside of the support rails or outside of the stairs of the climbers.

### *Intervention*

A multiple baseline design across randomly determined classes was used. Each class received a 5-day intervention from a woman who was knowledgeable in safety training. She visited all of the classrooms selected for treatment (e.g., all first-grade classrooms) in a single day and used a structured, interactional treatment. She used poster-sized photographs of a boy and a girl in middle childhood as models of safe and unsafe behavior. The safe or unsafe behavior on the slides and

climbers elicited classroom discussion in an interactive (e.g., “What could happen if the boy did this?”) fashion. She described the possibility for the entire class to earn a reward as a group if everyone in the class switched from risky to safer behavior. Every day for the week of training, the woman visited each classroom and told them the total number of risky behaviors seen on the playground. If the rate showed a notable decrease, a reward was given to each child: A plain safety certificate on the 1st day, then a red ribbon, a blue ribbon (the highest level achieved by the first graders), a gold seal, and finally, a colorful poster was placed on the door of the classroom (the highest rate achieved by the second and kindergarten/third-grade groups). In other words, when all students decreased risky behavior as a whole, each student received an individual award.

The sequence of intervention was randomly determined, and resulted in first grade first, then second grade, and kindergarten/third grade last. No feedback beyond their week of treatment was given to any class after intervention, and no follow-up data were available for the kindergarten/third-grade group because school ended directly after treatment.

## RESULTS AND DISCUSSION

Reliability was obtained on 23% of measurement occasions, and an interclass correlation between pairs of observers demonstrated acceptable reliability for risky slide (average  $r = .79$ ; range, .70 to .97) and climber ( $r = .80$ ; range, .63 to .94) behavior.

Figure 1 illustrates changes in risky behavior on slides across baseline, safety training, and maintenance for first and second graders and for baseline and safety training for kindergarten/third graders. The most noticeable changes were the decreases in slide misuse for second and third graders. Second

<sup>1</sup> The children were never identified by name or number and were only observed as a group, so the Human Participants Committee, the local school board, and the principal did not deem individual consent necessary.

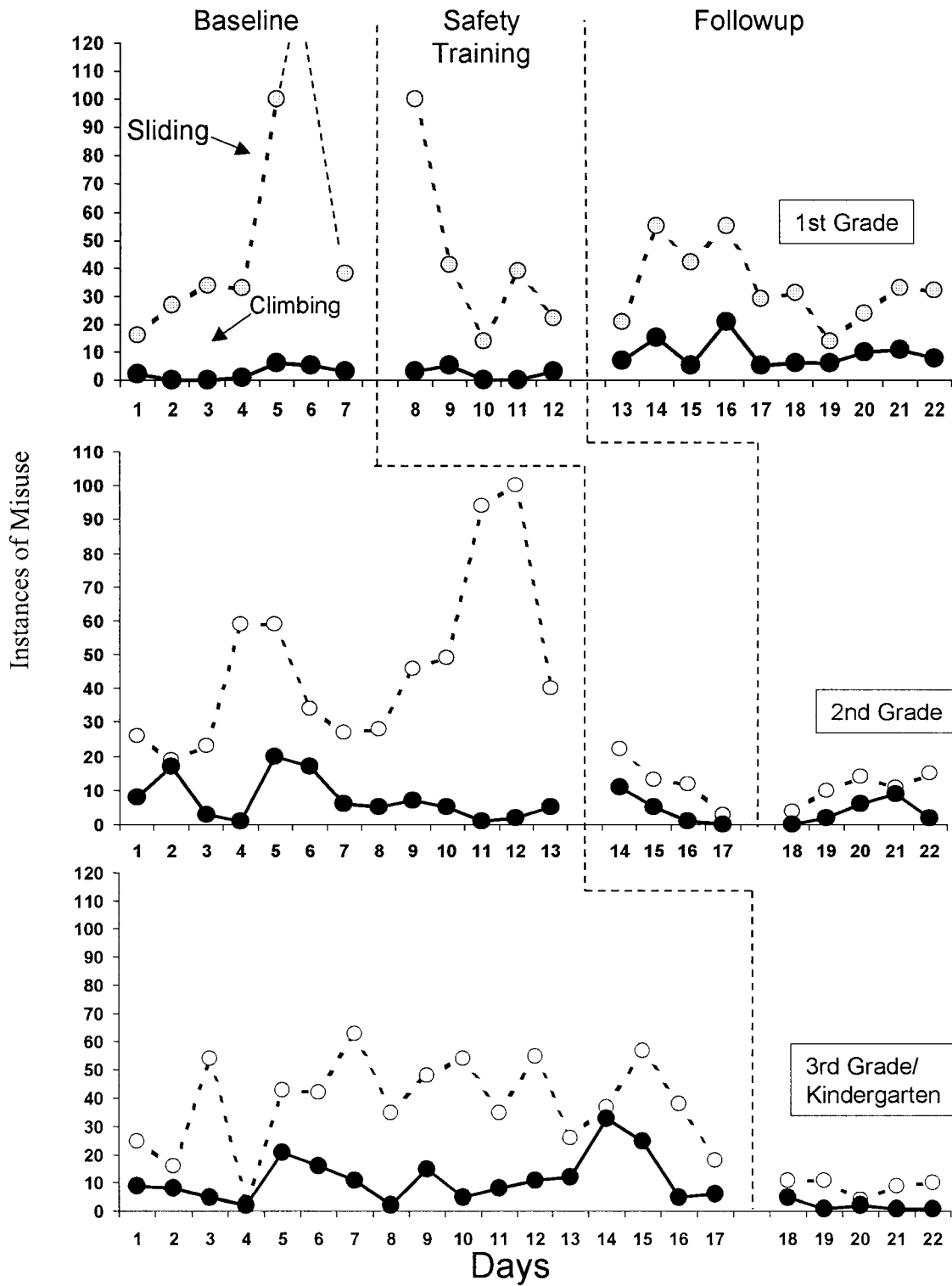


Figure 1. Instances of risky behavior on slides and climbers by grade level; third graders and kindergartners shared a combined recess.

graders had relatively high baseline rates compared to lower intervention and follow-up rates. Similarly, the kindergarten/third graders had a somewhat lower baseline rate, which was further lowered by intervention. Given the low rates at the beginning of baseline, there were no differences in slide misuse in first grade and climbers for all grades.

There are a number of limitations due to the naturalistic nature of the observation. Although the presence of the observers and the new playground supervisors may have caused the children to play more safely, the year-long presence of supervision makes this unlikely. A final difficulty with the study was that although misuse of slides by first graders and misuse of climbers by all grades appeared to be a problem, they occurred at relatively low baseline rates.

There are other questions that remain for future research. Identifying which of the several intervention components used is most effective is one challenge. The impact of such an intervention over a series of weeks

and months in the school year is also of importance, and future research might examine the extent to which continued safe behavior requires continued interventions in the form of booster sessions. Ultimately, a comprehensive and lasting intervention to reduce risky behaviors that result in 10% to 20% of children's injuries (Boyce *et al.*, 1984) is the goal of this research program.

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