

The role of supervision of children in injury prevention

Karin A Mack, PhD,⁽¹⁾ Ellen Sogolow, PhD,⁽¹⁾ Darcy Strouse, PhD,⁽²⁾ Paula Darby Lipman, PhD.⁽²⁾

Background

Unintentional injuries are the leading cause of death to children over age one in the USA. The Centers for Disease Control and Prevention's (CDC) *Injury Research Agenda* has identified supervision as one of five top research priorities [http://www.cdc.gov/ncipc/pub-res/research_agenda/agenda.htm]. Sufficient research is lacking, however, on both methodological and theoretical issues. On August 14-15, 2003, external experts and CDC scientists met to address the role of supervision in injury prevention. The discussion had wide-ranging implications for the field. Below we summarize key elements of the discussions.

Conceptual research issues and priorities

Models of supervision have focused on various components of supervision: the variables related to the need for supervision (e.g., child's developmental stage and temperament, the level of hazards, and the supervisor's ability to select a safe environment); the supervisor's ability to choose the appropriate level of supervision; the appropriateness of the response to hazardous situations; (e.g., such as possessing the parenting skills necessary to influence the child's actions and the presence of competing demands); the physical closeness of the supervisor to the child; the level of interaction the parent engages in with the child; and whether supervision is continuous or intermittent.

The panel considered how a caregiver's knowledge, skills, and physical abilities may relate to effectively preventing an injury from occurring or intervening appropriately if an injury event happens. For example, a parent could be providing otherwise adequate supervision, such as knowing to cut food into small pieces to prevent choking, but not have the skills to engage the Heimlich maneuver if choking occurred. The distinction between life-guarding skills and life-saving skills illustrates the difference between supervising (to prevent) and intervening (to save).

Panelists discussed parents' expectations about when children are ready to moderate their own behavior. While some research has shown a correlation between more safety rules and fewer injuries, the literature also demonstrates that parents may rely too much on rules; parents and children do not agree on what the rules are; parents do not enforce rules; children cannot recall rules; and experts disagree on what rules are appropriate. Current research calls into question the assumption of an overall relationship between rules and injuries.

The challenge for researchers is to define supervision in the context of injury prevention, where multiple injury prevention behaviors or strategies may be needed. While it is known that supervision may range from the one extreme of neglect to the other extreme of high vigilance, it is unclear if there is a 'supervisory style' construct, or how that construct might be similar or different from 'parenting style'. Further, it is important

The findings and conclusions in this commentary are those of the authors and do not necessarily represent the views of CDC.

(1) National Center for Injury Prevention and Control, Division of Unintentional Injury Prevention, Centers for Disease Control and Prevention, USA.

(2) Westat, USA.

Address reprint requests to: Karin Mack. CDC/NCIPC/DUIP/H&R, 4770 Buford Hwy., NE, MS F62, Atlanta, GA 30341.

E-mail: kmack@cdc.gov

to consider which elements of supervision can be generalized across injuries and which are injury specific.

Methodological research issues and priorities

There is a great need for death review and cross-over designs to examine what occurred before an injury. These designs help understand if the behaviors associated with the event are typical, or if something unusual occurred that might predict the injury event. Although findings from small sample studies may not be as generalizable as those from large-scale studies, the depth of analysis of behavior may provide crucial insight into the antecedents of an injury event. Most episodes of low supervision do not result in injury, and because injuries are relatively infrequent events, they are difficult to capture in general population surveys.

The field needs to address specific injury areas as well as considerations of age, ethnicity, gender, type of supervisor, culture, and cognitive/physical abilities or impairments of the caregiver or the child. Valid tools are needed to measure constructs such as attention, continuity, and proximity. Supervision is a behavior and constructs should be measurable, although the field presently lacks consensus on measurement. One difficult area to measure is auditory and visual attention.

Gaps in research methods

Research efforts are needed to identify the hazards or circumstances for which supervision has the strongest relationship to injury outcomes.

- Conduct systematic reviews of the literature pertaining to methods used in the study of supervision and injury. Identify and disseminate the best evidence-based science to the experts in the field.
- Identify higher-risk situations, which may include the presence of hazards in the environment, as well as higher-risk child and supervisor characteristics.

Recommendations

The role of supervision, as one element in injury prevention, needs further scientific scrutiny. The purpose of the workshop was to provide the field with information for developing activities that will support research on the relationship of supervisory behaviors to injury. Despite the perception among the public and many professionals that childhood injury is linked to a lack of supervision,

evidence to support this premise is still lacking. The first research priority, therefore, is to further conceptualize and establish the link between supervision and injury—providing evidence of the role of supervision in injury outcomes. Innovative and varied research methods will be needed to implement such study.

Some of the recommendations of the workshop were:

- Increase the evidence base. Inadequate supervision is often cited as a causative factor in injury and death. More research is needed to better understand and to document this view.
- Contextualize. Injury prevention and supervision need to be considered in the context of normal childhood development and the competing requirements to facilitate the development of capable, independent, well-rounded, and safe individuals.
- Set priorities. Research should be prioritized based on the injury data to focus efforts on the groups of people who are being injured more often and more seriously than others.
- Develop guidelines. Guidelines for appropriate supervision are needed, especially for parents. In general, evidence-based guidelines for parents and other supervisors are lacking. Existing guidelines for parent/caregiver supervision (e.g. from AAP, health plans) must be identified and shared, even while improvements are made as emerging science permits.
- Develop interventions and education programs. Intervention design must address several concerns. One is that providing guidelines may encourage false reassurance regarding safety. For example, although instruction or skills development for children (e.g. swimming, crossing streets) may reduce their injury risk, it may lead to parents' misperception that supervision or monitoring is no longer needed. Interventions may require additional elements to avert such reactions.
- Disseminate strategically. Develop and disseminate materials that will improve knowledge and skills in supervision of parents and caregivers.

The current limitations of the literature on supervision restrain what can be done to prevent unintentional injuries and deaths in children. Further, dissemination and implementation research based on current knowledge should proceed in a parallel track. Clarification of guidelines that are available can help parents and other caregivers to be more aware of what they can do to safely support children's growth and development.

In taking up the challenge of protecting the health of children, researchers need to consider the priorities and gaps presented and proceed along an informed path.

Acknowledgements

Expert Panel: Phyllis Agran, MD, MPH, University of California-Irvine; Carolyn DiGuseppi, MD, MPH, PhD, University of Colorado; Andrea Gielen, PhD, Johns Hopkins University; Carol Pollack-Nelson, PhD, Independent Safety Consulting, Rockville, Maryland; Michael C. Roberts, PhD, University of Kansas; Gitanjali

Saluja, PhD, National Institutes of Health; Alexander Tymchuk, PhD, University of California, Los Angeles. CDC Staff, NCIPC: Victor Balaban, PhD; Michael Ballasteros, PhD; Sandee Coulberson, MPH; Julie Gilchrist, MD; Arlene Greenspan, DrPH, MS, MPH; Mark Jackson, BS; Janice Latoza, MPH, CHES; John Lutzker, PhD; Karin Mack, PhD; Janet Saul, PhD; Ellen Sogolow, PhD; Judy Stevens, PhD. Aspen Systems Staff: Paula Darby Lipman, PhD; Darcy Strouse, PhD; Deborah Ward, MS. A more expansive report of the workshop is available upon request.