Understanding and Preventing Home Injuries to Young Children: Applying a New Approach to Enhance Supervision

Barbara A. Morrongiello
Plan for this Talk

- Provide a brief overview of the scope of the childhood injury problem;
- Discuss research about common ways caregivers manage young children’s injury risk AND parent and child factors that elevate this risk
- Discuss psychological factors that motivate caregivers’ safety practices
- Supervision:
  - *Supervising for Home Safety* program
  - A.L.T.E.R. as a strategy to promote supervision
Focus Limited to

- Unintentional injuries
- Toddlers (1-3 yrs) and Preschoolers (4+5 yrs)
- Home injuries
  
  [The majority of injuries at these young ages occur in the home]
- Evidence based talk
Scope of the Problem in the U.S.
From 2001-2006, there were 9 million nonfatal injuries to children per year. Rate varies with age group: teens and 1-4 year olds are highest.

Figure 40: Nonfatal Unintentional Injury Rates among Children 0 to 19 years, by Age Group, United States, 2001 - 2006
Scope of the Problem

For fatal injuries the average rate is 15 per 100,000. Teens are a very high risk group,
“High Risk” Groups based on ‘rate of injury’ in the population

- **Fatal** Unintentional Injuries:
  - Teens
  - < 1 year

- **Nonfatal** Unintentional Injuries:
  - Teens
  - 1-4 year olds  *** FOCUS IN THIS TALK
Safe?

I look to the left,
I look to the right,
Before I ever
Move my feet.
No cars to the left,
No cars to the right,
I guess it’s “safe”
To cross the street . . .

Shel Silverstein
Injuries are not “accidents” (i.e., random, unpredictable, uncontrollable events)

Most are preventable (i.e., identifiable determinants that can be targeted and changed to prevent injuries)

How we talk about injuries matters!
PART I

What Do Caregivers Do to Manage Injury Risk for Young Children?
To a 2 year old . . .

there are four toys in this picture
What strategies do caregivers use to manage injury risk for their toddlers at home & which ones work the best to prevent injury?
Prospective Research

- **Tracking** home injuries to young children **AND** caregiver safety practices

- **Methods**
  - Home observations
  - Standardized questionnaires
  - Telephone interviews
  - Diary records
Parents Use 3 Practices for Managing Young Children’s Home-Injury Risk

- **Supervision** (watching, listening)

- **Childproofing** (eliminate access to hazards)

- **Teaching** child about safety (safety rules)
What They do Depends on:

Their perception of their child’s risk of injury, AND
This perceived risk varies with room
Risk Management Practices Vary with Perceived Risk of Injury

<table>
<thead>
<tr>
<th>Room</th>
<th>Caregiver Rating Risk of Injury</th>
<th>Caregiver Rating of What They Do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kitchen</td>
<td>High</td>
<td>CP = SP &gt; TE</td>
</tr>
<tr>
<td>Bathroom</td>
<td>High</td>
<td>CP = SP &gt; TE</td>
</tr>
<tr>
<td>Bedroom</td>
<td>Low</td>
<td>TE &gt; CP &gt; SP</td>
</tr>
<tr>
<td>Living room</td>
<td>Low</td>
<td>TE &gt; SP &gt; CP</td>
</tr>
</tbody>
</table>

SP = supervision  
CP = child proofing  
TE = teaching

High risk ratings are associated with more effortful practices (both CP AND SP) by parents.
How Well Do These Practices Work to Prevent Injury?

Relate frequency of injuries that occurred during the study to caregivers' use of the 3 safety practices:

- Supervision
- Child Proofing
- Teaching Safety Rules
**Protective Practice** = *Fewer* injuries in that room

**Risk Practice** = *More* injuries in that room

<table>
<thead>
<tr>
<th>Room</th>
<th>Parent Ranking of What They Do</th>
<th>Protective Practice</th>
<th>Risk Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kitchen</td>
<td>CP = SP &gt; TE</td>
<td>CP &amp; SP</td>
<td></td>
</tr>
<tr>
<td>Bathroom</td>
<td>CP = SP &gt; TE</td>
<td>CP &amp; SP</td>
<td></td>
</tr>
<tr>
<td><strong>CP and SP are protective (fewer injuries)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bedroom</td>
<td>TE &gt; CP &gt; SP</td>
<td>CP</td>
<td>TE</td>
</tr>
<tr>
<td>Living room</td>
<td>TE &gt; SP &gt; CP</td>
<td>SP</td>
<td>TE</td>
</tr>
<tr>
<td><strong>TE is a risk practice if they are using this as the primary strategy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Evidence Confirms: for Toddlers (1-3 years)

- **Supervision** and **childproofing** are both effective ways to reduce young children’s risk of injury.
- **Teaching** about safety rules is NOT if this is the primary or only approach used.
How often are young children (1-3 years) typically left unsupervised or out of view of supervisors when at home?
General Procedure

Mothers completed CONTINUOUS diary recordings about supervision from the time the child awoke until the child went to bed for each of 10 randomly selected days within a 3-week period.
What Has Been Found?

- Children were left completely unsupervised about 4% of their awake time.

(Unsupervised = parent was not listening to or watching the child and was not engaging in any intermittent checking, thus, s/he was uncertain of the child’s activities or whereabouts)
Rooms Where Children Were When Left Unsupervised

<table>
<thead>
<tr>
<th>Room</th>
<th>Percent of time unsupervised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedroom</td>
<td>29 %</td>
</tr>
<tr>
<td>Living/Family Room</td>
<td>51 %</td>
</tr>
<tr>
<td>Kitchen/Dining/Bathroom</td>
<td>11 %</td>
</tr>
<tr>
<td>Play Room</td>
<td>9 %</td>
</tr>
</tbody>
</table>
Additionally, the child was out of view of the supervisor about 20% of the time.

[supervising by listening in from another room]

This is a problem because children engage in MORE risk taking when supervisors are not present!
Level of Supervision When Child is ‘Out of View’?

Check on child every 6-7 minutes

So there are long periods of time when young children are ROUTINELY unsupervised when at home, and children show more risk taking then.
PART II

What Factors Motivate Caregivers to Implement Safety Practices, including supervision?
Psychological Factors

- Vulnerability appraisal
  
  How likely is it my child will be injured?
Psychological Factors

- Injury severity appraisal

  *How hurt will my child likely get?*

  ['concussion' or 'brain injury' versus bump on the head]
Psychological Factors

- Costs and benefits of implementing precautions
  - Parent’s time (safety takes time!)
  - Parent’s stress to implement (e.g., child upset)
  - Parent finances (costs $ for safety devices like a booster seat)
  - Extent of inconvenience to parent (e.g., miss a phone call while child is in bathtub)

['A minute saved, a lifetime lost']
Psychological Factors

- Beliefs about the Benefits of Injury

*Once he gets hurt, he will learn not to do that*
Psychological Factors

- **Optimism Bias belief**
  
  *It will happen to other children, but not mine*

  [SO: first time parent easier to persuade about safety]

- **Locus of Control/Preventability belief**

  *I can have an impact on my child’s risk of injury*

  [Injuries are not ‘accidents’]
Psychological Factors

Self Efficacy belief

I can implement the recommended safety practices

[No one can supervise ‘constantly’ so don’t request it of parents]
Psychological Factors

- Attributions for injury

  It was just bad luck

  .... all kids get hurt
Psychological Factors

- Perceived Social Norms
  (= what they think significant others expect them to do)

  *They expect me to do this.*
  
  *Parents are supposed to do this.*
Some considerations:

1) Not all factors apply to all types of injury
   - Severity: drowning risk situations
   - Vulnerability: fall risk situations

2) Know your audience and what factors apply:
   - mothers versus fathers
   - first time parent or not
PART III

Using this Knowledge to Target Key Determinants:
Can the *Supervising for Home Safety* Program Improve Caregiver Supervision Practices?
Aim

Increase home supervision of 1-5 year olds by caregivers
Video presentation is preferred format by parents

+ aspects: manipulate not only content but emotional tone in how content is communicated
Phase 1 = video presentation

**GOAL**: create readiness for change and commitment to improving supervision
Factors We Targeted in Video to Motivate A Commitment to More Active Supervision

- **Affect**
  - Moves from ‘fear’ to ‘hope’ and ‘yes I can’

- **Cognitions**
  - perceptions of vulnerability
  - severity of injury
  - Locus of Control over child’s health
  - self efficacy to supervise more closely
SHOW VIDEO USED IN PHASE 1
Results showing impact of video on parent appraisals are shown on the next slide AND effects persisted for 1 year!
**NO DIFFERENCES BETWEEN GROUPS IN PRE-INTERVENTION SIGNIFICANT INCREASE POST-INTERVENTION IN INTERVENTION GROUP ONLY**

<table>
<thead>
<tr>
<th>Belief</th>
<th>Pre-Intervention</th>
<th>Post-Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention</td>
<td>Control</td>
</tr>
<tr>
<td><strong>Severity</strong></td>
<td>7.41</td>
<td>7.33</td>
</tr>
<tr>
<td><strong>Vulnerability</strong></td>
<td>7.15</td>
<td>6.90</td>
</tr>
<tr>
<td><strong>Preventability</strong></td>
<td>5.52</td>
<td>5.14</td>
</tr>
<tr>
<td><strong>Value of Supervision</strong></td>
<td>4.78</td>
<td>4.89</td>
</tr>
<tr>
<td><strong>Self-efficacy</strong></td>
<td>5.86</td>
<td>5.62</td>
</tr>
<tr>
<td><strong>Knowledge</strong></td>
<td>6.81</td>
<td>6.98</td>
</tr>
</tbody>
</table>
Phase 2: Problem Solving to Overcome Barriers to Closely Supervising at home

After seeing the video they identify up to 3 barriers to them more closely supervising their child at home.

In collaboration with examiner, they use A.L.T.E.R. to generate potential solutions and list these to bring home, along with magnet outlining A.L.T.E.R. mnemonic.

A.L.T.E.R.

A = *activity* of parent or child is changed
L = *location* of parent or child is changed
T = *timing* of parent’s task is changed
E = *environment* is changed
R = *resources* are used by parent
A.L.T.E.R. is how we ‘tailored’ the intervention to individual parent needs.

Tailoring promotes success in interventions with parents.

Note also that we don’t have to talk about supervision per se, we can talk more generally about reducing injury risk before they let their child out of sight.
Phase 3: Instantiation of Improved Supervisory Behaviors

Sign a 1 month contract agreeing to:

(1) identify barriers to close supervision and their A.L.T.E.R. strategies to overcome these, [help other parents, etc]

(2) track things they say to themselves (“self talk”) to motivate & stay on course
After the month of A.L.T.E.R. practice:

- Then they have another lab visit (we observe their supervision without them knowing this) and they complete supervision diary recording again for multiple days.

- Our goal is to determine the time child is:
  - Unsupervised
  - Supervised: In View
  - Out of View of supervisor (listening in, checking on intermittently)
Results showing the impact of the intervention on **Time Supervising** is shown on the next slide

AND

Effects persisted at least 9 months
NO GROUP DIFFERENCES AT PRE-INTERVENTION FOR % OF TIME ‘IN-VIEW’ AND ‘OUT-OF VIEW’

SIGNIFICANT CHANGE AT POST-INTERVENTION FOR SUPERVISION GROUP ONLY

<table>
<thead>
<tr>
<th>Belief</th>
<th>Pre-Intervention</th>
<th>Post-Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In-View</td>
<td>Out-of-View</td>
</tr>
<tr>
<td>Supervision</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>81.65</td>
<td>18.35</td>
</tr>
<tr>
<td>Control</td>
<td>80.86</td>
<td>19.14</td>
</tr>
</tbody>
</table>
Results regarding the Level of Supervision

- When children were ‘out of view’ the level of supervision increased significantly in the intervention group only
  - more frequent checking
  - more continuous listening

[Effects persisted at least 9 months]
When children were ‘in view’: more watching

**NO GROUP DIFFERENCES AT PRE-INTERVENTION**

**SIGNIFICANT INCREASE POST-INTERVENTION IN SUPERVISION GROUP ONLY**

<table>
<thead>
<tr>
<th>Group</th>
<th>% Of Hazard Approaches With Parent Watching</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-Intervention</td>
</tr>
<tr>
<td>Supervision</td>
<td>45</td>
</tr>
<tr>
<td>Control</td>
<td>42</td>
</tr>
</tbody>
</table>
Evidence Confirms

- Using videos can be an effective way to improve parents’ appraisals of child injury risk (vulnerability, severity, preventability, self efficacy) AND these are the main determinants of their safety practices!
- Using A.L.T.E.R. is an effective strategy for improving their supervision of young children at home.
PART IV

Disseminating the *Supervising for Home Safety* Program in the Community
DEMONSTRATION OF A.L.T.E.R.

SOME VIDEOS FROM PARENTING GROUP SHOWN (Barb as moderator)
PART V

Some Considerations and Issues to Keep in Mind
Of course, we must be reasonable....

"OK, so you’ve lost a few civil liberties but at least you’re safe."
‘Active Supervision’ does NOT have to mean ‘kids are raised in a bubble’
“When” we target parents with our supervision messages may really matter

“Teachable Moment”
(i.e., naturally occurring health event that can motivate individuals to adopt risk-reducing health behaviors)

After child has experienced an injury may result in even more dramatic changes in parent safety practices
Sex Differences in Risk Taking are Well Documented

This has implications for supervision
Boys’ Approach to Risk Taking
Girls’ Approach to Risk Taking
When we do find sex differences in supervision

Supervision of females > males
Generally:
Keeping boys safe is a more effortful task for caregivers than is keeping a girl safe.

Can be helpful to inform parents of this and promote their self efficacy to keep boys safe.
Older Siblings are Not Adequate Supervisors (often they model risk taking)
Questions?

bmorrong@uoguelph.ca