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Influence of Child Injury Risk Perceptions on Adult Supervision Behavior

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Running head: CHILD INJURY RISK PERCEPTIONS ON ADULT SUPERVISION
BEHAVIOR

TITLE: Influence of Child Injury Risk Perceptions on Adult Supervision Behavior

By: Ha Huynh

SUBMITTED TO THE UNIVERSITY OF SAN FRANCISCO IN PARTIAL FULFILLMENT
OF MASTERS OF PUBLIC HEALTH DEGREE

Fieldwork Summary Report: submitted in partial fulfillment of the requirements for the degree of

MASTER OF PUBLIC HEALTH

in

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I. Abstract

Parenting practices play an important role in child safety and injury prevention, and inadequate supervision poses a significant threat to child health. Intervention programs targeting injury beliefs have been shown to positively reduce risky play in children though these efforts vary with age and context. There is a need to further evaluate the influence of social context, environmental characteristics, and parenting practices on supervision behavior. Research has classified supervision characteristics based on dimensions of attention (level of interaction with the child and visual/auditory attentiveness), proximity (physical touch and distance to a child), and continuity (frequency/timing of supervision). Prior studies suggest that appropriate levels of supervision by using balance of these dimensions, can as a protective factor for child injury. An adult's decision to utilize specific supervision strategies depends on their risk perception of child injury. This paper examines the role of child-injury risk perceptions on adult supervisory behavior in a playground setting. Observations of supervision behaviors were conducted at Shane's Inspiration Griffith Park of Los Angeles. Of those supervising children, the prevalence of reported injury at playgrounds among adults using their phones was 3.7 times than of those not using their phones. Future research directions in the context of adult injury prevention behaviors are discussed.

II. Introduction

Unintentional injuries related to playground equipment continue to be a leading cause of pediatric morbidity and mortality. In a 10 year period (1996 – 2005), approximately 2.1 million children in the United States were treated in the ED after sustaining playground-related injuries, 75% of injuries were caused by falls (Vollman, Witsaman, Comstock, & Smith, 2009). A high proportion of injuries are a result from risky play practices or inappropriate use of equipment. Characteristics of playground equipment such as height and impact absorbency material have

been recognized and addressed as a hazard for children. However, modifying playground structure and design is not sufficient to prevent injuries. Injury prevention strategies targeting child characteristics (temperament, activity level, and cognitive abilities) have been shown to positively impact children's behaviors during play (Wells, Morrongiello, & Kane, 2012). The impact of these interventions have reduced injury-risk behavior, but failed to achieve lasting results (Schwebel, 2006). This presents an issue in the level of effectiveness in targeting perceived risks of children and their safety behaviors. Recent research suggest that there is an interplay between child and parent characteristics in reducing the likelihood of injury (Morrongiello, 2005). It is important for children and caregivers to consider safety behavior practices and understand the dangers associated with risky play behaviors in any setting.

Adult supervision has been regarded as one of the primary determinants in child safety and injury risk. Recent studies suggest that the "adequate" supervision could play as a protective factor in child injury (Morrongiello, Corbett, & Brison, 2009). In a study assessing the association between caregiver supervision and acute unintentional injury, being beyond reach from a child was associated with increased odds of injury (Schnitzer, Dowd, Kruse, & Morrongiello, 2014). Proximity, or within arms reach to a child during play activities is shown to reduce injury risk (Schnitzer, Dowd, Kruse, & Morrongiello, 2014). Other dimensions such as attention and continuity of supervision behaviors have been shown to reduce the likelihood of injury as well (Morrongiello, 2005).

The role of adult supervision in preventing child injury is often overlooked. Supervision is defined as an act to see or manage. In the injury prevention field, supervision is an act to see or manage through a combination of characteristics between caregiver, child, and environmental factors. Many characteristics including parenting experiences, beliefs, parenting style, knowledge, and perceptions contribute to supervision practices (Petross, Blitvich, & Finch,

2009). Parents of children who are at a higher risk to experience injury show permissive styles of parenting (Morrongiello 2006), engage in distracted behavior, partake in ineffective supervision practices, and enforce fewer safety rules. The levels of supervision also vary with environment and children's characteristics (age, developmental level) (Saluja et al., 2004). Past studies have examined the relationship between supervision and the likelihood of child injury; however, there is little evidence on the association between adult beliefs regarding supervision and their supervisory behavior collectively (Saluja, et al, 2004). Notably, there is lack of research examining parenting styles and supervision practices as it pertains to child injury. Since children rely on others for their safety, it is important to understand the association between perceived risks of child injury and adult supervision behavior.

III. Description of Agency

Children's Hospital of Los Angeles (CHLA), founded in 1901, is the oldest freestanding children's hospital in California. This facility is the only Level 1 pediatric trauma center in Los Angeles County and has one of the largest pediatric transfer programs in the nation. Aside from being a trauma center, CHLA is unique in having an established pediatric disaster resource and training center. This facility has been named the best children's hospital in the West Coast and among the top five hospitals in the nation for clinical excellence. It's mission and values are focused upon providing the best pediatric care and preparing for future generations. Within the program there are four entities which includes research, education, policy, and data management; these divisions have both distinct and collaborative roles in providing pediatric trauma care. The trauma program is lead under the direction of Dr. Jeffrey Upperman and Dr. Henri Ford who are both passionate in providing better care to children and families across the country and worldwide. The overarching goal of the trauma program is to provide evidence based care and to reduce the number of injuries through education and injury prevention measures.

The pediatric injury prevention scholars (PIPS) program has three service lines: research and evaluation, injury prevention, and disaster preparedness. Each division offers various experiences in public health. Although the trauma program is divided into separate entities, all services lines strive to reduce the number of preventable injuries through hospital and community collaboration. The role of research is imperative to providing education and prevention strategies in the field of injury prevention and disaster preparedness. Rita V. Burke, PhD, MPH plays an integral role in the research and evaluation extension of the trauma program. With a background in public health-related epidemiology, she has authored various articles in the field of pediatric care, injury prevention, and disaster preparedness/training. She is also actively involved in the Los Angeles community. As chairperson of the Los Angeles Children in Disasters Working Group, Dr. Burke and others has garnered national and local support from various agencies to ensure children's well being in the event of a disaster. The intersect of research and public health practice allows this facility to provide the best care and outcome for children.

IV: Fieldwork project

The intention of the field work experience at Children's Hospital of Los Angeles was to explore the field of public-health related research. Research regarding trauma and injury prevention was a major focus in this program. Main objectives of the research program were to apply fundamental public health principles learned from an academic setting into a professional clinical setting, to apply research and analytical methods, and to improve current injury prevention strategies. Prior to starting the fieldwork experience, 5 primary goals and 12 objectives were identified. The 7 goals were as follows:

1. Become knowledgeable to current issues/policies in pediatric injury prevention
2. Identify community issues and propose possible solutions/resources

3. Foster critical thinking and development of new ideas that can improve current programs or areas of research
4. Write professional manuscripts that can be submitted to the organizations and or IRB for review
5. Collaborate with Injury Prevention and Disaster Preparedness/Emergency Management

Throughout the fieldwork experience, learning objectives and activities within each of the seven goals were developed with core public health competencies in mind. The bulk of the fieldwork was primarily focused on gaining knowledge on current issues and policies in pediatric trauma and injury prevention. In support of the goals listed, several activities such as literature research, research project design, and manuscript writing were applied. The remainder of the fieldwork focused on professional development as well as collaborative efforts with fellow PIPS and community partners. As the individual fieldwork project became more refined, a few objectives and activities were removed from the learning contract accordingly.

The goal of this project is to evaluate adult supervision behavior and their perception of child injury risk. While there are a number of child injury prevention approaches, this project will focus specifically on adult *perceived risk for child injury* and their *actual supervisory behavior* in a playground setting.

Methodology:

Study sample and recruitment

An anonymous ten question survey was used for this study. The survey contained content on perceived child injury risk and distracted supervisory behavior. Dimensions of appropriate supervision behavior included level of attention and nearness to a child. Distracted behavior that may cause inadequate supervision was used to measure perceived risk. These include electronic devices, visual and/or auditory distraction, and multitasking. Participants had to be 18 years and

older to be included in this study. After a brief observation period for the behaviors mentioned, they were informed of the study and asked to complete the survey. Those who decline to take the survey will have their observations excluded from the analysis. The goal of administered self reported surveys was to confirm observation measures. The survey was administered at Shane's Inspiration at Griffith Park in Los Angeles. There was a total number of 25 participants; these participants were categorized into "parent" or "caregiver" and analyzed.

Institutional Review Board (IRB) approval was obtained for this study.

V. Findings

The process of designing a research study and submitting an application for the Institutional Review Board proved to be difficult than expected. Collecting surveys from the general public occurred within the first few weeks of school session was also difficult. As a result, 25 surveys were collected. Survey respondents were asked to answer yes or no statements regarding supervisory behavior and perceived risks of child injury. When asked about being in close proximity to the child on the playground and active listening to their child, 84% (21/25) of adults responded yes. Eighty percent (20/25) of adults reported active listening to their child on the playground. Seven out of twenty-five parents reported being temporarily distracted by their phone. More than half of the adults (16/25) reported talking to other adults during child play at the playground.

Next, the participants were asked if their child had been injured at the playground. Twenty-four percent of participants checked "yes." Ninety-two percent of adults thought that the playground is a safe place for their child. Moreover, four percent of adults would leave their child unattended in safe places.

The self-reported exposures were then compared with observed exposures. Compared to

84% of parents who reported being in the play area with their children, only 52% of this behavior was observed. Of the 84% of participants who reported actively listening to the child, 96% were observed. Eighty percent of adults reported having eye contact with their child, but only 52% were observed. Approximately half of the participants were observed to be distracted by their phones with only 28 percent reporting the actual behavior. Sixty-four percent of adults reported talking to other adults at the playground; however a lower amount was observed.

A 2 x 2 table was used to calculate associations between exposure (self-reported behavior) and outcome (risk of child injury). Notably, of those supervising children, the prevalence of reported injury at playgrounds among adults using their phones was 2.6 times than of those not using their phones. For all other self-reported behaviors (being close proximity to a child, listening to child, and having eye contact with a child) have ratios less than 1, indicating a negative association or protective factor to child injury.

To distinguish between parent and caregiver supervision behavior, survey counts were separated for comparison. All caregivers who participated in the survey reported that they never leave their child unattended, even in areas presumed to be safe. Caregivers were more likely to adequately supervise their child during play as well (Table 3). Parents were more likely to engage in other behavior/activities in addition to watching their child (Table 3).

VI. Discussion

This study assessed the relationship between perceived risk of child injury and adult supervision behavior. The results from this pilot study support current evidence that appropriate adult supervision characteristics can play a role in predicting injury risk. Consistent with other studies, proximity, attention, and continuity can reduce child injury risk. Based on the survey analysis, it is unclear if a history of reported injury is associated with increased risk perceptions and supervisory behavior. Past studies have shown that some parents adjust their supervision

behavior based on their perception of injury risk and situational context. Parents routinely leave children unsupervised during certain times of the day and at places that they presume to be “safe.” The majority of adults from this study reported the playground as a safe place for kids. Perhaps the perception of child injury risk is lower when the play area is presumed safe. Further research should examine the effects of parenting distractions relative to ineffective supervision practices.

There were several limitations to this study. Since the survey was administered at only one location in Los Angeles County, survey findings may not be representative of the general population. Moreover, a small sample size of 25 may also under or overestimate results. Because exposures were self reported, recall and/or social desirability biases may exist, impacting odds ratio and relative risk calculations. Despite limitations of this study, the survey responses seem to support the importance of promoting appropriate supervision in playground settings. The design of an appropriate supervision guideline incorporating age, gender, developmental stage, and context should be considered for injury prevention efforts. Further research should investigate child injury risks and supervision behaviors in multiple settings.

Public health significance

Despite the declining trend of childhood injuries over the years, unintentional injuries remain the leading cause of morbidity and mortality. In addition to injury, children suffer from temporary or permanent disability which can affect their growth and development process. Understanding all factors that can influence risk of injury is critical to reduce child injury rates. A number of parental characteristics have been associated with increased risk of injury. Based on the findings presented, it is important to consider all factors that can influence children’s risk of injury. Further evaluation of supervisory behavior and practices based on perception of child injury risk can contribute to more effective parent injury-prevention practices. Because

supervisory behaviors may vary with context and age, it is important for parents and caregivers to understand the relationship between appropriate supervision and the risk of injury.

VII. Competencies Addressed

The fieldwork experience offered a variety of experiences and projects that highlighted core competencies expected from the University of San Francisco Master of Public Health (USF MPH) and Council on Education for Public Health (CEPH). Specifically, the fieldwork experience provided an opportunity to explore critical issues in pediatric care and to design a study based on evidence based research. Other opportunities include utilizing both qualitative and quantitative research methods, providing education and injury prevention strategies to the facility's diverse population and communities, and collaborating with experts in pediatric care. All activities in the trauma program offered opportunities to develop leadership abilities and apply core fundamental health principles. This experience offered many opportunities to interact and collaborate with individuals, community, local, and national organizations. In addition to collaboration, there were many opportunities to build professional relationships and partnerships. For example, attending monthly meetings with the Los Angeles Children in Disasters Working Group allowed the opportunity to foster critical thinking and to expand resource capacity for child health.

The majority of the internship was spent on designing a study and drafting multiple proposals to the research team. After the individual project was designed, an IRB application was drafted and approved to collect primary data within the community. Throughout the whole course of the program, small tasks for multiple projects were performed. Tasks included developing a pre and post evaluation survey on disaster preparedness for child care providers, conducting literature reviews for grant manuscripts, and compiling current articles for the APHA Public Health Management of Disasters book.

The fieldwork experience is unique in providing students with exposures to different aspects of pediatric trauma care. As a part of the research extension of the trauma program, the project involved collaboration with co-interns and research experts. All experiences included the USF MPH program competencies (Appendix B), fundamental public health and research knowledge areas, and development of professional leadership values.

VIII. Conclusion

Overall, the trauma program is a direct reflection of the public health field in action. Unlike traditional programs, this program incorporates a systems approach to improve trauma care and injury prevention strategies. In addition to applying scientific theory to public health related issues, collaboration is significant in all areas of research and evaluation. From the formulation of a research question to the interpretation of results, feedback and direct input from a panel skilled experts in the program proved to be an important factor designing a comprehensive study or proposal. With the expertise of the trauma program and preceptor, the fieldwork at Children's hospital Los Angeles was a valuable learning experience.

Table 1: Observed adult supervision behavior

| Self reported behavior | N | % (yes) | % (no) |
|---------------------------------------|----------|----------------|---------------|
| Obs (in play area) | 25 | 52 (13) | 48 (12) |
| Obs (active listening) | 25 | 96 (24) | 4 (1) |
| Obs (eye contact) | 25 | 52 (13) | 48 (12) |
| Obs (temporarily distracted by phone) | 25 | 52 (13) | 48 (12) |
| Obs (talking to other adults) | 25 | 44 (11) | 56 (14) |
| Obs (reading) | 25 | 8 (2) | 92 (23) |

Table 2: Summary of adult self-reported behavior and perception of child injury

| Self-reported behavior | N | % (yes) | %(no) |
|-------------------------------|----------|----------------|--------------|
| In play area | 25 | 84 (21) | 16 (4) |

| | | | |
|---------------------------------|----|---------|---------|
| Active listening | 25 | 84 (21) | 16 (4) |
| Eye contact | 25 | 80 (20) | 20 (5) |
| Temporarily distracted by phone | 25 | 28 (7) | 72 (18) |
| Talking to others | 25 | 64 (16) | 36 (9) |
| Reading | 25 | 12 (3) | 88 (22) |
| Prior Injury | 25 | 24 (6) | 76 (19) |
| Safe playground | 25 | 92 (23) | 8 (2) |
| Unattended | 25 | 4 (1) | 96 (24) |

Table 3: Comparison of parent and caregiver self-reported behavior and perception of child injury

| Self-reported behavior | Parent | | |
|---------------------------------|-----------|---------|---------|
| | N | % (yes) | %(no) |
| In play area | 17 | 82 (14) | 18 (3) |
| Active listening | 17 | 82 (14) | 18 (3) |
| Eye contact | 17 | 76 (13) | 24 (4) |
| Temporarily distracted by phone | 17 | 36 (6) | 64 (11) |
| Talking to others | 17 | 59 (10) | 41 (7) |
| Reading | 17 | 18 (3) | 82 (14) |
| Prior Injury | 17 | 24 (4) | 76 (13) |
| Safe playground | 17 | 94 (16) | 6 (1) |
| Unattended | 17 | 6 (1) | 94 (16) |
| Self-reported behavior | Caregiver | | |
| | N | % (yes) | %(no) |
| In play area | 8 | 87 (7) | 13 (1) |
| Active listening | 8 | 87 (7) | 13 (1) |
| Eye contact | 8 | 87 (7) | 13 (1) |
| Temporarily distracted by phone | 8 | 12 (1) | 88 (7) |
| Talking to others | 8 | 75 (6) | 25 (2) |
| Reading | 8 | - | 100 (8) |
| Prior Injury | 8 | 25 (2) | 75 (6) |
| Safe playground | 8 | 86 (7) | 14 (1) |
| Unattended | 8 | - | 100 (8) |

Appendix A: Student Preceptor Agreement and Learning contract

| | | | | |
|--|---|--------------------------|---------------------------|---|
| Goal 1: Become knowledgeable to current issues/policies in pediatric injury prevention | | | | |
| Objectives | Activities | Start/End date | Who is responsible | Tracking measures |
| Conduct literature reviews | 1. Obtain previously published studies published by faculty staff in areas of acute care, injury prevention, disaster preparedness, and research & evaluation | 6/10/15 - end of program | Ha Huynh | Keep a bibliography of relevant articles that can be applied to current projects. |

| | | | | |
|---|--|--------------------------|---------------------------|--|
| | 2. Review articles focusing on the general scope of pediatric trauma | 6/10/15 - end of program | Ha Huynh | Endnote/Zotero library |
| | 3. Apply research methods to individual research project | Ongoing | Ha Huynh | Edited research proposals, IRB approval, surveys |
| Goal 2: Identify community issues, propose possible solutions/resources | | | | |
| Objectives | Activities | Start/End date | Who is responsible | Tracking measures |
| Analyze the community (target population) | 1. Conduct community observations, after finding a public health problem | 6/22/15 - 7/1/15 | Ha Huynh | Primary data collection: pictures, images, surveys. Data will be presented in the appendix page. |
| | 2. Collect additional data and draft a methods section for final paper. | 6/22/15 - 7/1/15 | Ha Huynh | |
| | 3. Gather secondary data including demographics, economic/social indicators, neighborhood characteristics, geographical data, statistical data | 6/22/15 - 7/1/15 | Ha Huynh | Compare data to other neighborhoods/county using statistics database (NTDB, OSHPD) |
| Identify community issues and propose possible solutions/resources. | 1. Draft a proposal that includes a plan describing research goal and expected outcomes | 6/10/15 - end of program | Ha Huynh | |
| | 2. Come up with strategies that are research supported/evidence based. | 6/10/15 - end of program | Ha Huynh | |
| | 3. Research current agencies/organizations within the community that | 6/10/15 - end of program | Ha Huynh | |

| | | | | |
|--|---|--------------------------|----------------------------------|--------------------------|
| | address health issue (if applicable). | | | |
| | 4. Identify gaps in providing services (ie, lack of pediatric training awareness in a hospital setting, lack of incentives for agencies to carry out preventative services, etc). | 6/10/15 - end of program | Ha Huynh | |
| Goal 3: Foster critical thinking and development of new ideas that can improve current programs or areas of research | | | | |
| Objectives | Activities | Start/End date | Who is responsible | Tracking measures |
| Develop new ideas for pediatric injury prevention | 1. Develop and analyze measures for existing programs/research projects | 6/10/15 - 9/15/15 | Ha Huynh | Keep a diary of ideas. |
| | 2. Assist and engage in program activities. Attend health fairs and educational workshops provided by CHLA. | 6/10/15 - 9/15/15 | Ha and those who are interested. | |
| | | | | |
| Program review | 1. Discuss injury prevention programs with all staff and interns: Car safety, LA street smarts program, disaster drills. | 6/15/15 - 7/1/15 | Ha Huynh | |
| | 2. Choose Injury prevention topic, come up with education materials, teaching activities to educate children and families. | 8/1/15 - 8/21-15 | Ha Huynh | |

| Goal 4: Write professional manuscripts that can be submitted to organizations and the IRB for review. | | | | |
|---|---|--------------------------|---|--|
| Objectives | Activities | Start/End date | Who is responsible | Tracking measures |
| Gain support from pediatric specialists, community organizations, interagency departments | 1. Develop powerpoint and oral presentations for professionals, community members (parents, children) | 6/10/15 - end of program | Ha, interns | Provide appendix of all participants in the study. |
| | 2. Keep in mind the importance of "cultural" sensitivity when interacting with multiple diverse populatios. | 6/10/15 - end of program | Everyone | |
| | 3. Conduct bedside education to prevent future injuries. | 6/10/15 - end of program | Primary care providers, health professionals, nurses, interns, Ha | |
| Enhance public speaking skills in a professional setting as well as a community setting | 1. Ensure that main objectives of the project are communicated. | 6/10/15 - end of program | Ha, interns | |
| | | | | |
| Understand grant writing process, review and/or participate in grant writing with Trauma program staff. | 1. Assist in writing grants or manuscripts. | 6/10/15 - end of program | Ha, Dr. Burke, Trauma staff | |
| | | | | |
| Goal 5: Collaborate with Injury prevention and Disaster Preparedness/Emergency management | | | | |
| Objectives | Activities | Start/End date | Who is responsible | Tracking measures |

| | | | | |
|---|--|--------------------------|-----------------------------|--------------------------|
| 1. Evaluate established programs | 1. Become knowledgeable about disaster preparedness and know what resources CHLA provides for disaster/emergency readiness | 6/10/15 - end of program | Ha Huynh | |
| | 2. Review published articles from the department | 6/10/15 - end of program | Ha Huynh, interns | |
| | | | | |
| 2. Assess to level of preparedness in health provider/professionals in the event of a disaster. | 1. Conduct a survey that can be completed by HCW and participants who provide child care. | 6/10/15 - end of program | Ha, interns | |
| | | | | |
| Goal 6: Assist with grant proposals | | | | |
| Objectives | Activities | Start/End date | Who is responsible | Tracking measures |
| Understand grant writing process, review and/or participate in grant writing with Trauma program staff. | 1. Assist in writing grants or manuscripts. | 6/10/15 - end of program | Ha, Dr. Burke, Trauma staff | |
| | | | | |

Appendix B: USF MPH and CEPH competencies that were addressed during this project.

1. Assess, monitor and review the health status of populations and their related determinants of health and illness.
2. Demonstrate the ability to utilize the proper statistical and epidemiologic tools to assess community needs and program outcomes.
3. Identify and prioritize the key dimensions of a public health problem by critically assessing public health literature utilizing both quantitative and qualitative sources.
4. Specify approaches for assessing, preventing, and controlling environmental hazards that pose risks to human health and safety.

5. Demonstrate leadership abilities as collaborators and coordinators of evidence based public health projects.
6. Identify and apply ethical, moral, and legal principles in all aspects of public health practice.
7. Develop public health programs and strategies responsive to the diverse cultural values and traditions of the communities being served.
8. Effectively communicate public health messages to a variety of audiences from professionals to the general public.
9. Advance the mission and core values of the University of San Francisco.

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