Parental Awareness of Household Injury Prevention: Adequacy of Anticipatory Guidance for Well Childcare

Sureelak Sutchritpongsa MD*,
Supotchana Sangwisit MD*, Suprapath Sonjaipanich MD*

** Department of Pediatrics, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand*

Objective: *To study parental perception of risk for household injury in children younger than six years in both continuity clinic and outpatient unit.*
Material and Method: *Sixty-six caregivers of children who attended continuity care clinic and outpatient unit were included in the present study. Data was obtained by questionnaire that contained questions regarding injury prevention awareness in four areas in the house. They were the food preparing area, bedroom, play area, and the area surrounding the house. Injuries are categorized as fire, burn, electrical shock, fall, struck injury, poisoning, drowning, strangulation, suffocation, and laceration wound. Frequency of parental awareness in each injury prevention is reported.*
Results: *Most of the participants have awareness of fire, burn, electrical shock, drowning, poisoning, laceration wound, strangulation, and suffocation prevention but only 25 to 38% of them have awareness in struck injury prevention.*
Conclusion: *Tailor-made anticipatory guidance about injury prevention especially household injury prevention should be a major role of pediatrician in addition to health supervision, immunization, and disease detection. Our study shows parents' perception of household injury prevention should be improved.*

Keywords: *Household injury, Prevention, Parental perception*

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Unintentional injury is one of the leading causes of death in children, especially in children aged between 4 and 12 years. Bomeci et al reported that the mean age of unintentional injuries is 8.3 years and 35% of unintentional injuries occurred in or around the house[1]. Incidence of unintentional injury in developing countries varies. In Syria the incidence is 23%[2]. These injuries occurred mostly in or around the house[2-7]. Major contributing factors to injuries are the existence of unsafe home environment, presence and accessibility to hazardous products, chemicals, and medicine, risk-taking activities in children such as aggressiveness, low socioeconomic status, low level of mothers' education, and unrealistic parental attitudes toward injury prevention[3,8]. Bobak et al reported that the risk of death is higher in boys, declining with increasing maternal education, maternal age, birth weight, and gestational age. It increases in infants of unmarried mothers and of mothers with higher parity[9].

Correspondence to:
Sonjaipanich S, Department of Pediatrics, Faculty of Medicine Siriraj Hospital, 2 Prannok Road, Bangkoknoi, Bangkok 10700, Thailand.
Phone: 081-826-8379, Fax: 0-2419-5677
E-mail: suprapath.son@mahidol.ac.th

The parental awareness of household injury risks is important because the realization of risky environments in a house, especially in the common areas for child rearing, such as bedroom or kitchen will prevent and decrease household injuries. Even though parental perception about risky environment is important in injury prevention, there are only a few studies about it[10-12]. Kendrick et al reviewed studies about effectiveness of home safety education. They found that the interventions reduces risks of burn, drug or chemical poisoning, falls, and electrical shock[6]. Generally, injury prevention is one of the most important anticipatory guidance that a pediatrician can give to parents of child clinics in the outpatient department (OPD) and in continuity clinics. However, the variety of guidance varies according to the patient load. The authors are interested in studying parental awareness of household injury prevention in our patients, both in the child clinic in the OPD and in the continuity clinic (COC).

Material and Method

This is a prospective study in 66 caregivers of children aged between 0 and 6-years-old who attend a continuity clinic in which pediatrics residents are in

charge under staff supervision, and baby visits in the Outpatient Unit (n = 39, 59.1%), Department of Pediatrics, Faculty of Medicine, Siriraj Hospital. Children who attended at least two times at a continuity of care clinic are classified to COC children. Others are classified as OPD children. The present study received approval from the Siriraj Hospital Ethics Committee. Each participant answered a questionnaire. The data included were demographic data of the primary caregiver and injury risk preventions in common area of houses, which are food preparing area, bedroom, play area, and home surrounding area. Questions required yes/no answers about the knowledge of household injuries and injury prevention practices. Household injuries are categorized into fire, burn, electrical shock, laceration wound, poisoning, suffocation, strangulation, fall, struck injury, and drowning. The correct score is calculated and categorized as either having knowledge or not having knowledge in terms of frequency and mean.

Statistical analysis

The questionnaire data were entered into SPSS version 11.0 database. Descriptive data was analyzed and described as percentages.

Results

Sixty-six children aged between one month and five years 11 months (mean 2 years 6 months) are included in this study. Twenty-seven (40.9%) are COC children and 39 (59.1%) are OPD children. The number of COC visit varies from two to 15 times (mean = 6.2 times) before participating in this study. Mother and/or father are primary caregivers for 53 children (80.3%). Grandparents are primary caregivers for eight children (12.1%) and only three children have other relatives as primary caregivers. There are missing data for two children.

Educational level of parent

Of the participants, 93.5% (n = 58) earn minimum wage and only four participants (6.1%) receive less than minimum wage in Bangkok.

The number of family members of each participant varies from three to 13 with mean of 5.38. Only four participants lived in condominium or apartment, which is an obstacle to living space separation.

Location risk to pedestrian injury was found in 49 participants, whose houses are on the road, 18 participants (22.7%) live near a water resource, and eight participants (12.3%) has houses that are both on the road and near a water resource.

Twenty-three participants must take care of more than one infant in the same time.

Risk for household unintentional injury is categorized by areas of the house. They are food preparing area, bedroom, play area, and common living area (Table 1).

Food preparing area

The caregivers' perception of risk of injury in the food preparing area includes keeping matches or lighters, knives, or chemical agents in an inaccessible cupboard. The authors found that almost half of the children could access the food preparing area easily. About two third of the participants do not have drawer latch or door latch in this area.

Bedroom

Thirty-four participants (59.1%) reported that they have soft pillows, blankets, or stuffed animals in the children's bed. Thirty-nine of them (59.1%) have crib-railing slats. All of these (59.1% of participants) reported that the space between two slats is less than the diameter of a soda can. Almost three-quarter of them do not have a string or cord, which hangs from the mobile toy over the bed, which children can pull and increase risk for strangulation.

Play area

Most of the participants reported the lack of small balls or balloons or part of balloons in the play area (n = 61, 92.3%), and there is no chipped paint in play area (n = 56, 84.8%). Report of good stable playground equipment and suitable surfaces under the playground are in 69.7% (n = 46) and 65.2% (n = 43).

House surrounding area

Most of participants have the awareness of poisoning prevention, which involves keeping agrichemicals and medicine away from children (92.4% and 87.9%). They use a terrace guard and move chairs or other furniture away from windows to prevent fall (90.9% and 81.8%) but only a bit more than half of them use stair gate (57.6%).

Discussion

All items in the questionnaire are questions about the behavior of the caregiver in term of safety awareness such as "Can your child reach matches and lighters by himself?" or "Do you use stair gate in your

Table 1. Risk perception of household injury categorize according living area

Risk perception of household injury	Number (%)
Food preparing area	
Fire, burn and electrical shock prevention	
Ensure inaccessibility to matches and lighter	59 (89.4)
Has inaccessibility to stove	46 (69.7)
Laceration wound prevention	
Ensure inaccessibility to knife cutter or sharp weapon	57 (86.4)
Poisoning prevention	
Make household chemical agents inaccessible	56 (84.8)
Fall prevention	
Use of safety gate	34 (51.5)
Struck injury prevention	
Installation of drawer latch or door latch	25 (37.9)
Bedroom	
Fall prevention	
Having crib-railing slats	35 (53.0)
Crib-railing slats are no more than a soda can width apart	39 (59.1)
Suffocation and strangulation prevention	
Space-free headboard of beds	50 (75.8)
Ensure no cord or string hangs from mobile toy	48 (72.7)
Use no soft pillow, blanket or stuffed animal in sleeping area	27 (40.9)
Play area	
Suffocation and strangulation prevention	
No small ball or balloon or part of them	61 (92.4)
No cord or string that hang from toy	56 (84.8)
Struck injury prevention	
Good stabilization of playground stuffs such as swings etc.	46 (69.7)
Safe and soft surfaces under playground	43 (65.2)
Home surrounding area	
Poisoning prevention	
Inaccessibility to agrichemical	61 (92.4)
Inaccessibility to medicines	58 (87.9)
Fall prevention	
Terrace guard	60 (90.9)
Move chairs, cribs and other furniture away from windows	54 (81.8)
Use stair gate	38 (57.6)
Animal bite prevention	
Teach child how to have good manners with animals	59 (89.4)
Regular pet immunization	58 (87.9)
Drowning prevention	
Safety gate to water resource	54 (81.8)
Strangulation, suffocation prevention	
No reachable cord or string from curtain	53 (80.3)
Fire, burn and electrical shock prevention	
Cover unused electrical outlet	40 (60.6)
Struck injury	
Secure heavy furniture by using wall-angle braces or anchors	32 (48.5)
Put edge cushion on furniture	27 (40.9)
Install door latch	17 (25.8)

home? etc. Therefore, the caregivers who give the right answers are categorized as having awareness of household injuries too. The authors define that if at least 60% of parents have awareness of each injury risk that means pediatrician's anticipatory guidance for injury prevention is adequate. The present study shows

that most of parents have awareness about injury prevention in all food preparing areas, bedrooms, play area, and the areas surrounding the home. Most of the parents have high perception of obvious risks of injury such as fire or burn from matches or lighters, but only 60% of them have covers to unused electrical outlets. The perception of fire or burn injury prevention supports the study of Mashreky et al, which reported that home modification to prevent accessibility to fire and heat sources is necessary[7].

The present study shows that only half of the participants have the awareness of injury prevention with the use of stair gates and crib-railing slats. The authors think that this may be because the devices that are used to prevent unintentional injuries are not found in general shops. Parents must go to superstores to purchase them. Another reason may be due to the inadequate information about this method of injury prevention.

Struck injury prevention has the least awareness. Only 37.9% of participants know how to prevent this type of injury by installing drawer latches or door latches in food preparing area, and only 25.8% installed door latches in the house or the surrounding area. The authors think this is because they are not widely sold and the parents have received inadequate anticipatory guidance about this type of injury prevention.

Despite that, over 80% of participants know that they must keep chemical agents out of children's reach, and 20% still do not have detailed awareness about it. The authors take this issue seriously because most of the children who came to the hospital with poisoning are due to ingesting a highly toxic and fatal poison. According to the study of Kendrick et al and Mashreky et al, they indicated that storing medicines and cleaning products out of reach and home modification can reduce the risk of poisoning effectively[6,7]. Therefore, we recommend every pediatrician to give anticipatory guidance for poisoning prevention that includes keeping chemical agents out of children's reach or keeping them in a locked cabinet, and do not keep them in a food container.

One of the pediatrician's role in every child health supervision visit, either in a continuity of care clinic or in outpatient unit is, to provide anticipatory guidance about injury prevention to parents. The authors assume that pediatricians in continuity of care clinic have less patients load than in outpatient unit. Therefore, they can give more anticipatory guidance about injury prevention to patients. Anyway, the authors cannot conclude that parental awareness are from anticipatory guidance rather than basic knowledge of parents because all the participants received anticipatory guidance about injury prevention either in continuity of care clinic or outpatient unit.

Conclusion

The pediatrician has an important role in child health supervision. Besides health promotion, immunization, and disease screening, providing anticipatory guidance for parents to provide a safe home environment to prevent home injuries is also a pediatrician's role. Tailor-made guidance is more crucial than general guidance. Even though the pediatricians provide anticipatory guidance about household injury prevention, the parents still lack injury awareness especially about falling and struck injury prevention, such as from having no stair gate, door latch, and drawer latch. The pediatrician must provide injury prevention guidance to parents repeatedly at every child visit.

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Potential conflicts of interest

None.

References

1. Bombaci H, Ulku K, Adiyeke L, Kara S, Gorgec M. Childhood injuries, their etiologies, and preventive measures. Acta Orthop Traumatol Turc 2008; 42: 166-73.
2. Bashour H, Kharouf M. Community-based study of unintentional injuries among preschool children in Damascus. East Mediterr Health J 2008; 14: 398-405.
3. Ariff KM, Schattner P. Domestic accidental injuries to children presenting at a rural general practice. Med J Malaysia 1998; 53: 82-6.
4. Herbert HK, van As AB, Bachani AM, Mtambeka P, Stevens KA, Millar AJ, et al. Patterns of pediatric injury in South Africa: an analysis of hospital data between 1997 and 2006. J Trauma Acute Care Surg 2012; 73: 168-74.
5. Rosenberg L, Blakeney P, Thomas CR, Holzer CE III, Robert RS, Meyer WJ III. The importance of family environment for young adults burned during childhood. Burns 2007; 33: 541-6.
6. Kendrick D, Young B, Mason-Jones AJ, Ilyas N,

Achana FA, Cooper NJ, et al. Home safety education and provision of safety equipment for injury prevention. Cochrane Database Syst Rev 2012; 9: CD005014.
7. Mashreky SR, Rahman A, Chowdhury SM, Svanstrom L, Linnan M, Shafinaz S, et al. Perceptions of rural people about childhood burns and their prevention: a basis for developing a childhood burn prevention programme in Bangladesh. Public Health 2009; 123: 568-72.
8. Ahmed B, Fatmi Z, Siddiqui AR, Sheikh AL. Predictors of unintentional poisoning among children under 5 years of age in Karachi: a matched case-control study. Inj Prev 2011; 17: 27-32.
9. Bobak M, Pikhart H, Koupilova I. Maternal socioeconomic characteristics and infant mortality from injuries in the Czech Republic 1989-92. Inj Prev 2000; 6: 195-8.
10. Sellstrom E, Bremberg S, Garling A, Hornquist JO. Risk of childhood injury: predictors of mothers' perceptions. Scand J Public Health 2000; 28: 188-93.
11. Glik D, Kronenfeld J, Jackson K. Predictors of risk perceptions of childhood injury among parents of preschoolers. Health Educ Q 1991; 18: 285-301.
12. Will KE, Lorek EJ, Sabo CS, Kidd DG. Measuring injury risk perceptions: feasibility of a Risk Estimation Scale. Am J Health Behav 2009; 33: 639-49.

ความตระหนักของพ่อแม่เกี่ยวกับการบาดเจ็บในบ้าน: ผลของการให้คำแนะนำล่วงหน้า

สุรีย์ลักษณ์ สุจริตพงศ์, สุพจนา แสงวิสิทธิ์, สุประพัฒน์ สนใจพาณิชย์

วัตถุประสงค์: *เพื่อศึกษาความตระหนักของพ่อแม่เกี่ยวกับความเสี่ยงต่อการเกิดการบาดเจ็บในบ้าน ในเด็กอายุน้อยกว่า 6 ปี ที่มารับบริการที่คลินิกดูแลสุขภาพต่อเนื่องและหน่วยตรวจโรคทั่วไป*

วัสดุและวิธีการ: *ผู้ปกครองเด็กที่มารับบริการที่คลินิกดูแลสุขภาพต่อเนื่องและหน่วยตรวจโรคทั่วไปจำนวน 66 ราย ตอบแบบสอบถามเกี่ยวกับความตระหนักต่อการป้องกันการบาดเจ็บในบ้าน 4 บริเวณ ได้แก่ บริเวณเตรียมอาหาร ห้องนอน ที่เล่น และบริเวณรอบบ้าน โดยแบ่งประเภทการบาดเจ็บเป็นประเภทต่าง ๆ เช่น ไฟไหม้ น้ำร้อนลวก ไฟฟ้าช็อต การพลัดตกหกล้ม การชนกระแทก การได้รับสารพิษ เป็นต้น รายงานผลความตระหนักต่อการป้องกันการบาดเจ็บเป็นร้อยละ*

ผลการศึกษา: *ผู้เข้าร่วมศึกษาส่วนใหญ่มีความตระหนักดีต่อการป้องกันไฟไหม้ น้ำร้อนลวก ไฟฟ้าช็อต การจมน้ำ การได้รับสารพิษ การเกิดแผลฉีกขาด การสำลักและอุดกั้นทางเดินหายใจ แต่มีเพียงร้อยละ 25-38 เท่านั้น ที่มีความตระหนักถึงการป้องกันการชนกระแทกในบ้าน*

สรุป: *การให้คำแนะนำล่วงหน้ารายบุคคลเพื่อป้องกันการบาดเจ็บในบ้านโดยเฉพาะการชนกระแทก เป็นบทบาทสำคัญของกุมารแพทย์ นอกเหนือจากการกำกับดูแลสุขภาพ การให้ภูมิคุ้มกันโรคและการตรวจคัดกรองโรค*
