Sink or Swim—Clinicians Don't Often Counsel on Drowning Prevention

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Abstract. ***Objective.*** **Drowning is one of the leading causes of injury death for young children in the United States. This study examined primary care providers' knowledge of and counseling on drowning prevention.**

Methods. **A random sample of 465 Los Angeles County pediatricians, family physicians, and pediatric nurse practitioners who serve families with young children received mailed questionnaires; 325 (70%) responded.**

Results. **About two thirds of clinicians did not know that injury deaths attributable to drowning were more common than those attributable to toxic ingestions and firearm injuries in young children. Only one third of clinicians stated they counseled on drowning prevention. Counseling drowning prevention was positively associated with female gender (odds ratio: 1.97; 95% confidence interval: 1.64, 2.30) and negatively associated with an attitude that drowning prevention counseling was less important than other injury prevention topics (odds ratio: .73; 95% confidence interval: .61, .85). Clinician specialty, age, years out from training, proportion of well-child examinations in a typical week, having children, practice setting, and knowledge of drowning injury deaths were not significant in multivariate analysis.**

Conclusion. **The belief of clinicians that it is less important to counsel on drowning prevention than other injury prevention topics poses a substantial challenge to their providing such education to families with young children.** ***Pediatrics*** **1999;104:1217–1219;** ***drowning, counseling, physician's role.***

ABBREVIATIONS. OR, odds ratio; CI, 95% confidence interval.

Drowning is the second most common cause of injury death among children age 5 and younger in the United States.[1] States with the highest rates of drowning include Alaska (8.3/100 000 children), Hawaii (3.46/100 000 children), and California (3.2/100 000 children).[1,2] In California, drowning is the number one cause of injury death for children in this age range[2,3]; in Los Angeles County, it is the number two cause (3.7/100 000 children).[4] One study demonstrated that for every child who drowned in California, 14.6 were either admitted to the hospital or discharged from the emergency department with some kind of morbidity after near-drowning.[5] Children who required hospitalization in California incurred a mean charge of $13 215, while patients who sustained severe injuries exceeded an initial hospitalization charge of $100 000.[6] Forty-two percent of near-drownings occur in swimming pools, and up to 10% of near-drownings occur in the bathtub.[2] Parental factors involved in pediatric drowning and near-drowning include an unsupervised child, a period of parental vulnerability in which the parent is either exhausted or alone, and an unrealistic expectation of the child.[7]

Primary care providers examine young children on numerous occasions in the first 5 years of life, most regularly to administer well-child care such as providing immunizations and education on injury prevention, including drowning prevention.[8] As the health care system changes, clinicians have less time to spend with their patients. Many studies have indicated that shrinking visit times affect a clinician's ability to provide injury prevention counseling.[9–11] Time constraints require the clinician to choose which injury prevention topics they will address.

In this study, we evaluated factors associated with reported drowning prevention counseling during well-child examinations of children ages birth to 5 years by pediatricians, family physicians, and pediatric nurse practitioners in Los Angeles County.

METHODS

Surveys were mailed to 196 pediatricians and 208 family physicians, who were randomly selected from the California Medical Association database. All identified Los Angeles County pediatric nurse practitioners belonging to the Los Angeles Chapter of Nurse Association of Pediatric Nurse Associates and Practitioners were sampled ($N = 61$). Three weeks after the first round of mailing, we conducted a follow-up mailing for nonrespondents.

The 37-item questionnaire used close-ended responses. Most of the survey items were generated through semistructured interviews[12,13] with clinicians, through clinical judgment, and through 4 rounds of pilot testing. The questionnaire took 10 to 12 minutes to complete.

Self-reported drowning prevention counseling was measured on a 4-point scale from "never counsel" to "always counsel." The independent variables included clinician specialty, gender, age, years out from training, whether clinicians had children of their own, and the proportion of time spent doing well-child examinations during a typical week. Also,

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the respondents reported their medical practice setting, ie, private practice solo, single specialty, multiple specialty, university setting, health maintenance organization setting, community clinic, and "other."

Knowledge and attitude were also evaluated as independent variables. To test knowledge, respondents were asked to select the 1 event that was more likely to result in injury death to children age 5 and younger in Los Angeles County from a series of forced choices, dyads. For comparison injury topics, we chose those common causes of injuries that result in significant mortality and morbidity among children age 5 and younger[14–18] and that had a statistically significant difference in their rate of injury death in Los Angeles County.[4] The dyads included drowning versus motor vehicle crash, firearm injury, and toxic ingestion. We compared their answers with the actual ranking of rates of injury death from the Los Angeles Department of Health Services. To gauge the clinicians' attitudes about the relative importance of counseling on drowning prevention, they were asked, "If you only had 2 minutes to talk with the family of a 6-month-old patient, how would you rank order these topics?" They were given the choices above.

Bivariate analyses consisted of the χ^2 test with 2 degrees of freedom to test clinician characteristic differences on drowning prevention counseling among the 3 specialties. Multiple logistic regression analyses were performed to assess the correlates of clinician drowning prevention counseling, such as knowledge, attitude, clinician specialty, gender, and practice setting. The dependent variable of prevention counseling was constructed with "never" or "rarely" counsel considered to be a noncounselor and "sometimes" or "often" considered to be a counselor. The variables that were significant, with a P value of .05 or less, in bivariate analysis were retained in the model. We computed adjusted odds ratios (ORs) with 95% confidence intervals (CIs) and associated P values for each variable included in the model.

RESULTS

Seventy percent of the 465 clinicians returned completed questionnaires. Nonrespondents did not differ from respondents by gender, age, or specialty. Table 1 describes the characteristics of our clinician sample. Pediatric nurse practitioners differed from physicians in several areas: more of them were women, fewer of them had children, they did a greater percentage of well-child care in a typical week, and more worked at school-based clinics (noted as "other" in Table 1).

All 3 specialties surveyed had the same lack of knowledge regarding the fact that drowning is the number two cause of injury death in Los Angeles County for children 5 and younger. Only 20% of clinicians knew that drowning leads to more injury deaths than toxic ingestions, and only 38% knew that drowning leads to more injury deaths than firearm injuries to young children. When clinicians were asked how they would rank order common injury prevention topics during a visit with a 6-month-old child, almost one third of respondents ranked a discussion of drowning prevention as last. These findings did not differ across specialties. Additionally, less than one third of all respondents reported counseling on drowning prevention. Fewer family physicians (25%) counseled "often or always" about drowning than did pediatricians (39%) and pediatric nurse practitioners (31%), $P = .05$.

Female providers were more likely to provide drowning prevention counseling than male providers (OR: 1.97; 95% CI: 1.64, 2.30), and physicians believing that drowning prevention counseling was less important than other injury prevention topics had lower rates of counseling (OR: .73; 95% CI: .61, .85). Clinician specialty, age, years since training, proportion of well-child examinations in a typical week, having children, practice setting, and knowledge of drowning injury deaths were not significant in multivariate analysis.

TABLE 1. Clinician Characteristics by Type of Primary Care Provider

Characteristic	Pediatrician	Family Physician	Pediatric Nurse Practitioner	Total Sample
	% or Mean (SD)* (N = 143)	% or Mean (SD)* (N = 131)	% or Mean (SD)* (N = 51)	% or Mean (SD)* (N = 325)
Demographics				
Age	50 (9)	51 (12)	49 (10)	50 (11)
Gender-female§	36%	20%	98%	27%
Children (yes)§	86%	85%	64%	82%
Professional characteristics				
Years out of training§	25 (9)	24 (12)	16 (9)	24 (11)
Percentage well-child examinations in a typical week§	35% (19%)	7% (9%)	44% (33%)	17% (19%)
Practice setting**				
Private practice (solo)§	43%	43%	8%	38%
Private practice (single specialty)†	17%	22%	6%	18%
Private practice (multiple specialty)	10%	11%	4%	10%
Health maintenance organization/managed care	18%	12%	14%	15%
Medical school/university†	2%	5%	12%	5%
Community clinic§	1%	1%	14%	3%
Other§	7%	7%	57%	13%

* The table provides summary measures for both categorical and numerical variables. For categorical variables, the entry "%" gives the percentage of the sample with the given characteristic. For a numerical variable, the entry "mean" gives the mean value for the variable; the entry "(SD)" gives the standard deviation.
An F test is used to test for significance, comparing across all three clinician types:
† Significant at a $P = .05$.
‡ Significant at a $P = .01$.
§ Significant at a $P = .001$.
** All "practice settings" summed together yielded more than 100% indicating that the categories were not mutually exclusive.

DISCUSSION

Drowning is one of the leading causes of injury death for children age 5 years and younger. Our study found that clinicians in Los Angeles County who treated families with young children did not know that injury deaths due to drowning were such a common public health problem. This was reflected by their attitude that counseling drowning prevention was not so important as counseling for most other injury prevention topics. Furthermore, less than one third of clinician respondents counseled on drowning prevention. A previous study examining only pediatricians, reported that most pediatricians do not routinely provide information to their patients or their patients' parents about drowning.[19]

To understand our findings, we looked at previous studies. One study examined how 25 nationally known pediatricians determined the relative importance of injury prevention topics. These "experts" chose topics based on the severity of the injury, the frequency of the injury, and the availability of an environmental strategy to prevent injury.[11] Not only is drowning injury death common in Los Angeles County, but the sequelae from near-drowning are sometimes severe.[2,5–7] Additionally, fenced pools prevent drowning for young children.[20–22] Yet, Los Angeles County clinicians did not often counsel on drowning prevention. It may be that clinicians believe that counseling on drowning prevention is ineffective. With the exception of counseling regarding the use of flotation devices to prevent boating-related drowning incidents, evidence of the effect of drowning prevention counseling is lacking.[23]

We were surprised that knowledge of drowning injury-related deaths was not associated with counseling on drowning prevention. Instead, it was the clinician's attitude that affected whether the clinician counseled on this topic.

This study has several limitations. Our sample was limited to Los Angeles County and therefore may have limited generalizability to other communities. However, for communities with a high incidence of drowning injuries, the results are compelling. Additionally, as with all self-reported data, respondents' answers might have tended toward a socially desirable bias that may not reflect clinicians' true behaviors. However, a social-desirability bias should increase reports of drowning counseling, and only one third of respondents reported counseling in this study.

CONCLUSION

Knowledge of drowning injury-related deaths was not associated with counseling. Instead, clinicians were influenced by their belief that drowning prevention counseling was less important than other injury prevention topics. This belief poses a substantial challenge to clinicians providing education to families with young children. Further research on how to influence clinicians' attitudes about drowning prevention counseling, including the efficacy of this approach, needs to be explored.

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