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Engaging in secondhand smoke reduction discussions with parents of hospitalized pediatric patients: A national survey of pediatric nurses in the United States

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ABSTRACT

Objective: To identify individual- and system-level predictors and barriers associated with US pediatric nurses' routine counseling about child secondhand smoke exposure for parents of hospitalized children.

Methods: In 2008, members of the Society of Pediatric Nurses completed a questionnaire assessing demographic, hospital systems, and work attitudes related to the following outcomes: *asking* about child secondhand smoke exposure, *informing* about sources of secondhand smoke exposure, *counseling* about the dangers of secondhand smoke exposure, and *advising* a smoke-free home policy.

Results: Of 1475 eligible nurses, 888 completed the survey. We found that 39% *asked*, 43% *informed*, 29% *counseled*, and 25% *advised* parents. Nurses working in hospitals with mandatory prompts in the medical record to assess child secondhand smoke exposure, the availability of written materials for parent smokers, and regular secondhand smoke counseling training for nurses had increased odds of routinely engaging parents in secondhand smoke reduction best practices. Nurses reported parents' resistance to discussions about smoking, short hospital stays, and non-standardized care as the most common barriers to counseling parents.

Conclusion: System supports in hospitals significantly increases the odds of nurses engaging in child secondhand smoke reduction practices. Strengthening existing systems and introducing new policies are critical for nurses' engagement of parents in discussions about reducing child secondhand smoke exposure.

Introduction

Secondhand smoke (SHS) causes excess morbidity and mortality in non-smokers, and there is no safe level of exposure (Office of Smoking and Health, 2006). Children who are exposed to SHS are at increased risk for developing asthma, Sudden Infant Death Syndrome, ear infections, and respiratory infections (Office of Smoking and Health, 2006). Furthermore, children exposed to tobacco smoke are more likely to be hospitalized and absent from school (Stapleton et al., 2011). The American Academy of Pediatrics recommends that pediatricians assess patients' SHS exposure, and the Society of Pediatric Nurses (SPN), the largest organization of pediatric nurses, endorses a comprehensive SHS reduction plan that includes identifying and counseling parent smokers in hospitals that treat children.

A child's hospitalization may represent a "teachable moment" given the parent's enhanced motivation to limit their child's exposure to SHS, helping to improve the health of their sick child (Winickoff et al., 2003). Policies and support systems in hospitals that capitalize on the teachable moment might provide a unique opportunity for parents to learn about the dangerous effects of SHS and receive free or low-cost resources to make a behavioral change that will significantly impact their child's health (Dohnke et al., 2012; McBride et al., 2003; Ralston and Roohi, 2008; Winickoff et al., 2003). Because many hospitals that treat children encourage family-centered care, nurses are in a unique position to offer counseling to parents during the child's hospitalization, which can help to support a child's overall health well after discharge. Based on the more than 6 million pediatric hospitalizations each year and a conservative smoking rate of 20% for at least one smoking parent, changes in hospital systems have the potential to enable the easy identification and rapid triage of hundreds of thousands of parent smokers to SHS counseling services, thus protecting the most vulnerable children from being exposed to tobacco smoke (Charles et al., 2012; Yu et al., 2011).

Earlier, we reported the smoking cessation counseling practices of hospital-based pediatric nurses (Geller et al., 2011). Though cessation

Abbreviations: NAA, nursing admission assessment; SHS, secondhand smoke; SPN, Society of Pediatric Nurses.

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is the ultimate goal, it is likely that many parents are not ready or willing to quit smoking. Implementing SHS reduction policies and other system supports for parents who are not ready to quit smoking can help to prevent children from being unnecessarily exposed to tobacco smoke. Therefore, in this analysis, we report on the first national survey of nurses working in hospitals that treat children to examine the individual- and system-level barriers and predictors associated with their routine assessment of and counseling for parents about child SHS exposure. We hypothesized that nurses working in pediatric hospitals employing system-wide supports to prevent child SHS exposure would have better practices and fewer barriers to SHS exposure reduction when compared to nurses working in hospitals without such supports.

Methods

Design and sample

Our sample consisted of 888 hospital-based staff nurses, clinical nurse specialists, nurse practitioners, administrators, educators, and researchers, all of whom were members of the Society of Pediatric Nurses (SPN), the largest organization of hospital-based pediatric nurses in the United States. A descriptive, cross-sectional pen-to-paper survey was distributed during the 2008 SPN annual meeting, and using Survey Monkey, an electronic version of the survey was emailed to the SPN listserv to encourage participation among SPN members not present at the annual meeting. We also mailed paper copies of the survey to non-respondents immediately following the meeting. Institutional review approval was granted by the Harvard School of Public Health and Boston University.

Measures

Many of the questions were developed using established measures that have been used previously with pediatricians (Hall et al., 2009; Winickoff et al., 2001; Winickoff et al., 2003). Prior to administration, questions were pilot-tested with five hospital-based pediatric nurses to determine logic, sequencing, and readability. Nurses were asked about various attitudes and behaviors that were hypothesized to be mediators to the following outcomes: *asking* about child SHS exposure (Ask), *informing* about sources of SHS exposure (Inform), *counseling* about the dangers of child SHS exposure (Counsel), and *advising* a smoke-free home policy (Advise). A five-point Likert scale (never, rarely, sometimes, often, or always) measured how frequently nurses asked, counseled, or advised smoking parents using the following question: "In the past 10 work days, estimate how often you have spoken with at least one parent and: 1) asked about smoking in the home; 2) counseled about the effects of SHS on children's health, and; 3) advised to set a smoke-free home policy." Responses were defined as "routine practice" when "often" or "always" were selected and subsequently categorized as being either "routine" or "not routine" practice. Similarly, nurses' practice of informing parents of sources of child SHS exposure was assessed via the following question: "Do you inform parents that children are often exposed to the dangers of SHS through any of the following? Riding in a car with a smoker, being near someone wearing the clothes they wore while smoking, or being in a confined space with a smoker." A response was defined as "routine practice" when all three choices were selected.

Demographic measures

Demographic measures included age of the nurse respondent (<40, 40–49, 50+), personal smoking status (current, former, or never), duration at current position (<10 years, 10–19 years, and 20+ years), job title (pediatric staff nurse, education/administrative staff on an inpatient pediatric unit, or both), work setting (community hospital, teaching hospital, free-standing children's hospital, or a combination), estimated percentage of children in the respondents' unit with at least one smoking parent (0–20%, 21%+), number of patients in the respondent's care in the past ten work-days (<10, 10–19, 20+ patients), and their opinion about who should be responsible for talking with patients' parents about eliminating SHS exposure (pediatricians, nurses, or others).

Hospital system measures

Nurses were asked whether their hospitals had nursing admission assessments (NAAs) requiring nurses to ask about household smoking habits and whether other systems were in place to identify parent smokers. Additionally, nurses were asked about the availability of written materials for parent smokers, as well as other hospital-wide counseling services for identified smokers.

Work attitude measures

Attitudinal measures included the following potential nurse-perceived barriers to address child SHS reduction: parent resistance to discussions, short hospital stays, lack of a standard of care, lack of training to discuss smoke-free house/car planning, difficulty finding a time and place to talk with parents, lack of available materials in the appropriate language, difficulties making system changes, and lack of easily accessible information. Each potential barrier was rated as either major, moderate, minor, or not a barrier at all. These responses were then dichotomized into major/moderate and minor/not a barrier.

Analytic strategy

Using a bivariate analysis, we modeled the probability of nurses routinely engaging in the four primary outcome behaviors (asking, informing, counseling, and advising) in simple logistic regression. Independent variables included personal and work environment characteristics, existing hospital systems, and work attitudes. For the multivariable analysis, we used forward stepwise regression to build models for each of the four primary outcomes. Predictor selection for each model was informed by variables in the bivariate analysis having significance of $p < 0.05$ or lower for the given outcome. The results of the Hosmer and Lemeshow goodness-of-fit test (Hosmer and Lemeshow, 2000) show the model fit the data well in all of the four models. Forward selection entry began at $\alpha = 0.10$ and the threshold remained at $\alpha = 0.05$. All analyses were conducted using the statistical software SAS, version 9.1.3 (SAS Institute Inc., Cary, NC) and Stata, version 12.1 (StataCorp LP, College Station, TX).

Results

Of 1475 eligible pediatric nurses, 888 (60%) completed the survey. Thirty-two percent ($n = 284$) completed the pen-to-paper survey at the SPN meeting, 39% ($n = 347$) completed the electronic survey, and 29% ($n = 257$) completed the pen-to-paper survey that was mailed to respondents. Nurses who self-identified as pediatric staff nurses or staff educators/administrators on inpatient pediatric units were included in analyses, and responses from 150 surveys were excluded because they did not meet these criteria. No significant demographic differences existed among respondents across the three methods of survey retrieval.

Fig. 1 displays the self-reported frequency of routine practice of the primary outcome variables. Thirty-nine percent asked parents about child SHS exposure at home, 43% informed parents about sources of child SHS exposure, 29% counseled about the dangerous effects of child SHS exposure, and 25% advised parents on a smoke-free home policy. All personal and work characteristics, work attitudes, and existing hospital systems in relationship to study outcomes are presented in Tables 1, 2, and 3. Almost two-thirds of nurses worked in hospitals with nursing admission assessments (NAAs) requiring them to ask parents about child SHS exposure, and nurses in these hospitals were four