Physician Tobacco Advice to Preteens in a Smoking-Prevention Randomized Trial: Steering Clear

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Objective To examine preadolescent and parental recall of tobacco prevention messages by health care providers. Methods As part of a smoking prevention trial, providers were cued to reinforce the study and advise intervention participants (N = 4,026) not to use tobacco. All parents were surveyed at baseline; children were surveyed at 20 months; and a subsample (504 households) was surveyed at 6 and 12 months to assess discussion of tobacco use prevention and other health behavior topics by providers as well as susceptibility and experimentation with tobacco among children. Results During the 20-month follow-up, less than 25% of children recalled a provider discussing tobacco use prevention. Recall of exposure to tobacco prevention messages at school (68%), from parents (53%), and from mass media (71%) was higher. Conclusions Physician tobacco counseling is occurring at lower rates in preadolescents than it is in adults. A chart reminder to providers was insufficient to create a meaningful effect.

Key words physician advice; preteens; preadolescents; smoking prevention.

The initiation of smoking and the progression to addiction form a complex process that has behavioral and cognitive roots in preteen experiences (U.S. Department of Health and Human Services, 1994). Formation of positive attitudes toward smoking during preadolescence predicts susceptibility to experimentation and regular tobacco use (Flay, 1993). National guidelines recommend that preadolescents receive anticipatory guidance from physicians about the dangers of experimentation with tobacco (American Academy of Pediatrics, 2001; Fiore, Bailey, Cohen, & Dorfman, 2000). There is some evidence that physicians are less likely to ask about smoking experimentation in preadolescents or offer them advice to prevent smoking initiation than they are in adolescents (Makni et al., 2002). Despite the importance of the preadolescent period for the prevention of tobacco initiation, we know of only one study that included preadolescent reports of their experience with physician counseling about tobacco in their analysis. Klein and Wilson found that 59% of preadolescents and adolescents (Grades 5–12) thought that providers should discuss smoking with someone their age; however, only 40.2% of those at risk (i.e., ever smoked) reported that their provider discussed smoking with them (Klein & Wilson, 2002). The authors did not analyze preadolescent experience separately. The present paper adds to the literature by examining parent and child recall of physician tobacco prevention advice in a sample of preteens (ages 10–12) and their parents who enrolled in a clinical trial testing a family-based smoking prevention intervention.
prevention program and correlates of provider advice across different time points.

Methods
Overview of Steering Clear

Steering Clear was a randomized controlled trial examining the effects of a tobacco use prevention intervention that included a parental prevention kit, outreach counseling calls, child materials, medical record cues, and parent newsletter for children aged 10 to 12. The study was conducted at two large nonprofit health maintenance organizations: Group Health Cooperative (GHC) in Seattle, Washington, and Kaiser Permanente Northwest Division (KPNW) in Portland, Oregon. All study procedures, questionnaires, and intervention materials received full review and approval by the human subjects committee at GHC. Randomized trial results are reported in Curry et al. (2003). There were no significant intervention effects on youth susceptibility to smoking, experimentation with smoking, or regular use of tobacco at the 20-month follow-up. The present study is a secondary analysis of child and parent recall of provider smoking prevention messages.

Participant Characteristics and Follow-Up Rates

Using automated membership files at GHC and KPNW, we identified a random sample of 7,337 families with a dependent child aged 10 to 12 who had been enrolled with the health plan for at least 12 months. In all, 4,026 families consented to participation in the randomized trial, completed a baseline parent interview, and were randomized. Of the 3,311 families who did not enroll, 730 failed to meet our eligibility requirements; 1,247 were unreachable; and 1,334 refused participation when contacted. We enrolled 55% of the initial sample of families, representing 75% of families whom we reached by telephone and who were eligible. Of the 4,026 families providing consent, 504 (12.5%) were randomly assigned to the assessment cohort (parent and child interviewed at baseline and at 6, 12, and 20 months) and 3,522 to the regular follow-up cohort (baseline interview of parent only, 20-month follow-up interview of child only). All of the parents in the assessment cohort completed baseline surveys as part of the enrollment process. Within the assessment cohort, adult response rates to the 6-, 12-, and 20-month surveys were 93%, 89%, and 83%, respectively. Among children in the assessment cohort, 98% completed baseline surveys; 91% completed 6-month surveys; and 87% completed 12-month surveys. In sum, 3,553 children (88%) completed the 20-month follow-up survey.

At baseline, the mean age of participating parents was 42 years; 74% were female; 84% were White; 78% attended some college; and most (92%) reported annual income above $30,000. One or more tobacco users were present in 27% of households. At baseline, only 15% of parents thought their child was susceptible to tobacco. Of the 492 children in the assessment cohort who were interviewed at baseline, 51% were female. Experimentation with tobacco was reported by 6% of children; only 1% reported smoking in the past 30 days; and 14% reported ever having a discussion with their provider about tobacco use. Among those recalling a visit at GHC (these data were not available at KPNW), records confirmed a visit in the last 6 months for 69% and during the 12-month period for 92%. Participation bias could not be estimated on the given characteristics because we did not have comparable data on those who declined participation.

Provider Prevention Discussion Messages

Providers were included as a strategy for reminding participating families to review and use program materials during the course of the study and to reinforce the importance of not smoking. During the 20-month study period, participating families in the intervention group who made routine primary care visits could receive brief motivational messages from primary care providers and smoking prevention pamphlets. At KPNW an electronic medical record was used to prompt clinicians to encourage the family to use the Steering Clear videos and handbook and to talk as a family about how to stay smoke-free. Clinicians were able to enter a special procedure code to document delivery of the message, which then disabled its delivery at subsequent visits. At GHC a note was placed on the outside of the medical charts of both the parent and the child that prompted clinicians to deliver the encouraging message and to give the supplementary smoking prevention pamphlets to patients.

Measures

Baseline characteristics were determined during the initial parent interview of all participating households. We examined recall rates of provider discussion from multiple perspectives (parent and child reports at different assessment periods) to compensate for inherent limitations in each source of information as well as for time lapsed between assessments. Reports of provider discussion regarding tobacco use prevention were available for children and parents in the assessment cohort subsample of households at the 6- and 12-month follow-ups. Child reports of provider discussions of tobacco use prevention
were assessed for all children at the 20-month follow-up. Parent reports of provider discussion were assessed at the 20-month follow-up in the assessment cohort only. Data were not available from providers or other sources (e.g., medical records).

Those who reported no smoking in the past 30 days were classified as susceptible or nonsusceptible by their answers to three questions, based on the work of Pierce and colleagues (Pierce, Choi, Gilpin, Farkas, & Merritt, 1996):

1. “Do you think you will try a cigarette soon?”
2. “If one of your best friends were to offer you a cigarette, would you smoke it?” and
3. “Do you think you will be smoking one year from now?”

These children were coded susceptible if they answered yes to the first question or if they did not answer definitely not to the other two questions. The few children who had smoked a cigarette in the past 30 days were also classified as susceptible. Experimentation was defined by a positive response to either “Have you ever smoked a cigarette?” or “Have you ever tried or experimented with cigarette smoking, even a few puffs?”

**Analyses**

Twenty-month follow-up data from the entire study cohort of children were analyzed to

1. determine the overall frequency of provider–child discussions about tobacco use and about participation in the Steering Clear study;
2. compare the frequency of tobacco use discussions between the intervention and control groups to assess the impact of the intervention on provider behavior; and
3. compare the frequency of providers’ discussing tobacco use with exposure to tobacco use prevention messages from school, parental discussions, and mass media.

Furthermore, 6-, 12-, and 20-month follow-up data from the children and parents in the assessment cohort were analyzed to

1. examine the total experience of the control and intervention child assessment cohorts in terms of doctor visits and health discussion recall at any of the three postbaseline contact surveys;
2. compare the frequency of providers’ discussing tobacco use by child’s susceptibility to or experimentation with tobacco; and
3. examine parent’s recall of tobacco use and other health behavior topics discussed with a doctor or nurse during their child’s first doctor visit following enrollment in the study.

Finally, we then compared parental recall of lifestyle advice rates between those recalling that their doctor discussed the study and those who did not. Chi-square tests ($df = 1$) were used to test for differences between the control and the intervention on binary (yes/no) variables, such as the percentage reporting discussions with their provider regarding the use of tobacco. To test the statistical significance of the association between two binary variables—such as provider–child discussions of tobacco use and subsequent susceptibility to using tobacco—we first used chi-square analyses. The same analyses were repeated using logistic regression to control for treatment group and site (GHC vs. KPNW). Since in all cases the results were similar between unadjusted and adjusted analyses, we report only the former.

**Results**

**Recall of Physician Counseling for Smoking and Discussing the Study**

We examined recall of physician counseling from a number of perspectives, including recall by all the children at the end of the study as well as recall by parents and children in the assessment cohort, which was interviewed repeatedly throughout the trial. Table I summarizes the counseling recall of all study children at the end of the study (20 months) for the 3,553 children successfully contacted at that time. Of the children who recall going to the doctor, less than one out of four children recall being counseled about tobacco. Reports of counseling were significantly higher in the intervention group, but the relative increase (Odds Ratio ($OR$) = 1.14, $p = 0.02$) and the absolute increase (3%) were small. Recall of exposure to tobacco prevention messages at school (68%), home (53%), and from mass media (71%) was higher. Only a small percentage of children in the intervention group recalled their doctor discussing this study (15%).

Nearly every child in the assessment cohort (95%) reported going to the doctor at some point during the study. One in five reported discussing smoking at the first reported visit after the baseline. There were no significant differences between control and intervention,
although 23% of intervention children reported discussion of smoking compared to 18% of control children (Table I). For children who recalled being seen for a physician visit, there were no significant associations between recall of a discussion with a provider to prevent smoking and susceptibility (OR = 1.24, p = 0.50) or experimentation with tobacco (OR = 1.19, p = 0.62).

Compared with parents who did not recall a study discussion, parents who did recall a study discussion had a 3.4-fold increase in recall of discussion of smoking (p = 0.001), a 2.7-fold increase in alcohol discussion (p = 0.04), and 1.7-fold increase in diet discussion (p = 0.02).

**Discussion**

This is the first study to examine provider tobacco prevention messages with preadolescents participating in a clinical trial aimed at increasing family tobacco prevention communication. The provider and clinic-system change requirements for delivering messages were minimal and represented approaches that could realistically
be implemented in any health care system. This low-intensity intervention with physician practices revealed that less than one in four children recalled their provider discussing tobacco use during subsequent visits, and less than one in six recalled messages from providers to encourage participation in the study. These rates are half of those for adolescent recall reported by Klein and Wilson (2002) and by Alfano, Zbikowski, Robinson, Klesges, and Scarinci (2002), who surveyed over 5,000 adolescents in a school setting. Parental recall rates were similar to children’s. The intervention did create a statistically significant difference in the recall rate of physician discussion of tobacco, but the relative and absolute differences were small (22% vs. 25%). Recall of physician advice in the assessment cohort did not affect susceptibility or experimentation.

Recall rates for physician tobacco discussion were much lower than recall rates of tobacco discussions in school and home or of exposure to antitobacco media messages. Children spend much more time in school, at home, and in front of the television than they do at the doctor’s office, which might affect this difference. However, parents and children recall higher rates of provider discussion about diet than they do about tobacco use. Given that providers are seen as credible sources of health information (Perry & Silvis, 1987), the findings from this study suggest a missed opportunity. There is considerable room for further clinical trials of more aggressive physician practice-based interventions to prevent initiation of tobacco use. However, the mixed results achieved, translating impressive adult clinician intervention efficacy into broadly adopted effective practice, suggests that other intervention approaches need to be investigated that do not require time-intensive clinician intervention.

Study limitations include the potential for inaccurate recall owing to the time lag between a clinic visit and the survey, as well as recall bias based on study participation. We were unable to obtain data on provider recall of advice. However, given that in other studies adult recall of tobacco advice is in the 70% to 80% range in the GHC and KPNW systems (Hollis, Lichtenstein, Vogt, Stevens & Biglan, 1993; McAfee, Grossman, Dacey & McClure, 2002), it seems unlikely that physicians are providing comparable advice levels to preadolescents. One particular challenge we faced was that the only survey of the entire study population of children occurred 20 months after the beginning of the study, but the provider prompts may have been more likely to occur earlier in the study. To attempt to overcome this, we not only looked at the 20-month data for the entire study population, but we also examined the experiences of parents and children in the assessment cohort, which was repeatedly surveyed throughout the study. However, this group was small and was not powered to detect differences that could be clinically significant. Despite these limitations, our finding that parental and child recalls were similar regarding recall of health care provider discussion of tobacco and that the assessment cohort experience examined over time was also similar to 20-month recall strongly supports that less than one in four children received tobacco prevention messages.

Although our attempt to engage providers in discussing tobacco use with their preteen patients would be easy for health care systems to adopt, the low-intensity approach did not lead to sufficient levels of provider involvement to determine definitively whether clinicians can play an effective role in promoting tobacco prevention activities. Discussions with pediatric providers at these and other institutions suggest that adoption barriers include a lack of evidence for effectiveness, lack of training in brief intervention techniques, lack of clinic system supports, lack of leadership support for these activities, and the pressure of competing demands in busy practices. Future efforts to increase physician effort may benefit from further examination of barriers to physician delivery of tobacco prevention advice and from employment of quality improvement techniques, such as face-to-face education about the importance of tobacco prevention, training in brief counseling techniques, rapid-cycle feedback, and team activation to overcome such barriers.

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