Smoking Cessation During Pregnancy: Strategies Used By Michigan Family Physicians

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Abstract: **This study reports the attitudes and strategies of members of the Michigan Academy of Family Physicians about their antismoking interventions for pregnant smokers. Of the 978 physicians surveyed, 607 (62 percent) returned completed questionnaires. Three hundred twenty-three (53 percent) were not practicing obstetrics. The remaining 284 physicians currently practicing obstetrics constituted the study group. Ninety-four percent of these physicians routinely assessed smoking status at the first prenatal visit. Ninety-eight percent advised pregnant smokers to quit smoking during pregnancy. The most frequently used method of intervention was personal counseling (97 percent), followed by referral to smoking cessation clinics (40 percent), and behavior modification (20 percent). Fifty-seven percent of the physicians reported using antismoking pamphlets, and 30 percent used antismoking posters designed for pregnant women. Only 11 percent of the physicians surveyed were generally satisfied with the effectiveness of their current methods. Nonetheless, 97 percent were convinced that the benefits of smoking cessation during pregnancy merited their efforts. The physicians in this sample consistently have advised their pregnant smokers to quit, but most believe there is a need for more effective smoking cessation methods. (J Am Bd Fam Pract 1990; 3:39-42.)**

Evidence that maternal smoking is hazardous to the health of a developing fetus is well accepted in the medical and lay communities. Increased frequency of spontaneous abortion, abruptio placenta, placenta previa, premature and prolonged rupture of membranes, and low birth weight occurs with maternal smoking.[1] Despite the knowledge of these complications, relatively little has been written about effective smoking interventions for pregnant women, and even less has been reported describing physicians' strategies for helping pregnant smokers quit.

We reviewed a comprehensive annotated bibliography on smoking during pregnancy spanning 1970–1985, which was compiled by the U.S. Public Health Service Office on Smoking and Health. Several intervention trials on smoking during pregnancy were noted.[2-6] A MEDLINE search for 1986 through May 1989 yielded two additional recent studies.[7,8] Only one study was found describing primary physicians' current strategies for smoking cessation during pregnancy.

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Valente, et al. reported attitudes and practices of 1040 obstetricians about behavioral risks and pregnancy outcome.[9] Seventy percent reported they were prepared to counsel pregnant smokers, but only 3 percent described themselves as "very successful," and 52 percent believed they had been "successful."

A study of recently graduated family physicians found that 98 percent of respondents counseled patients who smoked about its hazards, though only 30 percent said they were "quite effective."[10] No specific reference was made to pregnant smokers.

A 1987 unpublished study (Messimer and Hickner, Escanaba, MI) of 26 obstetricians and family physicians in private practice found that obstetricians counseled their pregnant smokers about twice as often as family physicians. All relied on personal counseling by themselves or their staff. Eighty percent removed all ashtrays from their waiting rooms, and 84 percent did not allow staff smoking in view of patients. Approximately 50 percent of the total sample used antismoking posters and pamphlets regularly, though obstetricians were twice as likely as family physicians to use these aids. Seventy-seven percent discussed the adverse effects of nicotine on the unborn child, and 84 percent discussed smoking-related complications of pregnancy.

Clinical trials of several different smoking cessation strategies have been performed.[2-6,9,10] With a few exceptions, these strategies appear to be labor intensive, time-consuming, and expensive, which makes their widespread adoption by primary care physicians unlikely. Before designing and introducing new antismoking strategies into clinical practice, more knowledge about primary care physicians' current strategies to help their pregnant smokers is needed. For this reason, we report a survey of Michigan family physicians' practices and beliefs about smoking cessation in pregnancy. We did not attempt to measure the effectiveness of the interventions.

Methods

In March 1987, a 16-item questionnaire was mailed to all current, active members of the Michigan Academy of Family Physicians (MAFP). In addition to demographic questions, we asked physicians about frequency and type of antismoking interventions, kinds of methods and materials used, specific factual areas addressed in counseling sessions (e.g., effect of nicotine on the fetus), and opinions about the effectiveness of their counseling efforts. A Likert scale with 5 choices ranging from "never" to "always" was used to measure frequencies. Multiple-choice questions were used for the remainder of the data. To test for clarity, 12 local physicians completed the questionnaire in a pilot study. Their suggestions were incorporated to reduce ambiguity and increase accuracy.

The initial mailing included a cover letter explaining the purpose of the study and a letter of endorsement from the president of the MAFP. One week later, members received postcards urging their participation. Two weeks after the initial mailing, a final letter and questionnaire were sent to all who had not responded. The data collection period ended 6 weeks after the initial mailing. To assure the representativeness of our sample, a random sample of 20 percent of the nonresponders was contacted by telephone after the study was completed to detect demographic differences between responders and nonresponders.

Results

Six hundred seven of the 978 physicians returned completed questionnaires, a 62 percent response rate. We analyzed responses only from 284 (47 percent) who were currently practicing obstetrics.

Table 1. Characteristics of Respondents (n = 284).

	n	Percent
Men	244	86
Women	40	14
Mean Age		
Men	40	
Women	39	
Residency trained	232	82
Board certified	261	92
Never smoked	213	75
Exsmoker	58	20
Current smoker	13	5

Demographic characteristics of the respondents are shown in Table 1. Using chi-square and *F*-tests, no significant differences were found among any of the demographic characteristics and the questionnaire results. Seventy-three nonresponders (20 percent), who were contacted by phone, showed no significant differences between responders and nonresponders in age, sex, residency training, board certification, and personal smoking habits. Men nonresponders were older than men responders (45 versus 40 years; $t = 4.13$, $P = 0.001$). Not unexpectedly, a lower percent of nonresponders were currently practicing obstetrics, 33 percent versus 47 percent.

Two hundred sixty-eight (94 percent) of the respondents said they always assessed smoking status at the initial prenatal visit, and 279 (98 percent) always advised pregnant smokers to quit. The mean time spent at the initial obstetric visit persuading pregnant smokers to quit was 3.9 minutes (median = 2.9, SD = 3.9). Eighty-five percent of the physicians inquired about smoking status "at every visit" or "frequently" for pregnant smokers who continued to smoke. Sixty-six percent continued to do so even if the woman reported quitting. Eighty percent continued trying to influence smokers to quit "at every visit" or "frequently," and an additional 17 percent tried "one or two more times." Eleven percent of the physicians said they increased the amount of time spent working with recalcitrant smokers at subsequent visits; 49 percent decreased their time, and 38 percent spent the same amount of time.

Table 2. Methods Michigan Family Physicians Used to Help Pregnant Smokers to Quit (n = 284).

Methods	n	Percent
Personal counseling	274	96
Referral to a smoking cessation clinic	114	40
Behavior modification	58	20
Mail-order smoking cessation program	39	14
Prescribe nicotine gum	35	12
Hypnosis	16	6
None	3	1
Other	2	0.7

Table 4. Interventions Michigan Family Physicians Recommended for Pregnant Smokers (n = 239).*

	n	Percent
"Cold turkey"	140	59
Smoking cessation clinics	48	20
Gradual cessation	30	13
Behavior modification	13	5
Mail-order methods	2	1
Other	6	3

*Not all physicians recommended a specific intervention.

The methods that family physicians use to influence pregnant smokers are reported in Table 2. The materials they use are listed in Table 3. Interestingly, 12 percent of the physicians reported prescribing nicotine gum during pregnancy, which is contraindicated. The specific interventions family physicians recommended for pregnant smokers are shown in Table 4. Of those physicians using personal counseling, 67 percent discussed the effects of nicotine on the fetus, 51 percent talked about the effects of carbon monoxide on the fetus, and 84 percent explained smoking-related complications of pregnancy. Only 2 percent usually avoided commenting about the hazards of smoking in pregnancy for fear of provoking anxiety in patients.

Despite the high percentage of physicians who counseled pregnant smokers to quit, only 11 percent were "generally satisfied" with the effectiveness of their smoking cessation methods. Thirty-eight percent were "somewhat satisfied," and 51 percent were "somewhat dissatisfied" or "generally dissatisfied." Nonetheless, 89 percent of the study group were "generally convinced" and 7 percent "somewhat convinced" that the benefits of smoking cessation during pregnancy merited their efforts.

Table 3. Materials Michigan Family Physicians Used to Influence Pregnant Smokers to Quit (n = 284).

Materials	n	Percent
Antismoking pamphlets	159	56
Antismoking posters for pregnant women	83	29
None of the above	50	18
No response	10	4
Antismoking audiovisual programs	7	2
Other	9	3

Discussion

Other than the men being slightly younger, the physicians responding to this questionnaire were representative of MAFP member physicians in age, sex, residency training, board certification, and personal smoking status. Incredibly, 95 percent of the responders were nonsmokers! Because the response rate was 62 percent and the responders might be more aggressive with smoking cessation counseling than nonresponders, these data must be interpreted with some caution. Also, because the questionnaire depended upon what physicians *estimated* to be their actions, they might have over- or underestimated their efforts. A plausible conclusion is that residency-trained, nonsmoking family physicians believe strongly that smoking during pregnancy is hazardous to the fetus, and their work with pregnant smokers reflects this belief. This study shows that they are persistent in their efforts to help pregnant smokers quit. These physicians believed it was worth their efforts, even though 50 percent were dissatisfied with their effectiveness, and another 37 percent were only somewhat satisfied.

What appears to be lacking, both from the perspective of the physicians in this study and from the literature review, is a highly effective, practical method for motivating pregnant smokers to quit. Of all the published trials on smoking cessation during pregnancy, only three used methods that we judged to be simple enough for private practitioners to use routinely in their offices.[5,9,10]

With a combination of an information booklet, a 10-minute counseling session, and a self-help manual that used a 7-day, self-directed quit plan, Windsor, et al. were able to achieve a 14 percent quit rate in pregnant patients.[5] Though these re-

sults were obtained in a public health clinic setting and better results might be obtained in other populations, this quit rate is far from acceptable. Ershoff tested an intervention consisting predominately of printed materials received through the mail.[10] In a randomized controlled trial, all patients were given a 2-page pamphlet on the hazards of smoking and a 2-minute discussion with a health educator at initial contact. The experimental group also received a series of eight weekly self-help booklets through the mail, preceded by a 3-minute discussion of the program. The control and experimental groups received routine prenatal care from their providers who were blinded to group assignment. Twenty-two percent of the experimental group and 8.6 percent of the control group quit during pregnancy.

The American Lung Association (ALA) developed a special packet for health-care providers to use with pregnant smokers. This packet was tested by Messimer and Hickner in private practitioners' offices and appeared to be somewhat more effective than family physicians' and obstetricians' usual methods of counseling.[9] The quit rate at 36 weeks' gestation with the ALA program was 28 percent compared with 16 percent with a community-standard approach. A new self-help manual designed specifically for pregnant smokers is now available from the American Lung Association. The effectiveness of this manual has not been tested to our knowledge.

Our study shows that the overwhelming majority of MAFP family physicians practicing obstetrics in Michigan have made a major issue of smoking during pregnancy, but they are not satisfied with their efforts. More effective practical methods for smoking cessation in pregnancy must be developed and tested. Physicians and their office staffs providing prenatal care must be trained to use these new materials and to incorporate them into the usual office routine of prenatal care. Until better programs are available, we suggest using the American Lung Association's "Because You Love Your Baby" smoking cessation packet for pregnant smokers.[11]

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