

# The Avoidance Practice and Its Association with Self-Efficacy, Knowledge and Attitude among Mothers with Children under 6 Years Old on Environmental Tobacco Smoke Exposure to Their Children in Selangor

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## ABSTRACT

**INTRODUCTION:** Environmental tobacco smoke (ETS) poses significant health risks globally, particularly for children. This study aimed to determine levels of self-efficacy, knowledge, attitude, and avoidance practices regarding ETS exposure among mothers with children under six and identify factors associated with avoidance practices.

**MATERIALS AND METHODS:** A cross-sectional study was conducted using the validated Malay SE-KAP-ETS questionnaire among 321 mothers. Higher scores indicated better self-efficacy, knowledge, attitude, and avoidance practices. Multiple linear regression (MLR) analysis was performed to determine associations. **RESULTS:** Participants had a mean age of 33.4(±5.57), and 67.9% had tertiary education. Mean scores were: self-efficacy 36.41(±9.7), knowledge 38.26(±3.76), attitude 48.58(±3.75), and avoidance practices 28.33(±3.27). MLR revealed that no smokers at home [B=0.700, 95%CI: 0.304, 1.462; p=0.003], higher self-efficacy [B=0.058, 95% CI: 0.028, 0.088; p<0.001], and positive attitudes [B=0.414, 95%CI: 0.336, 0.491; p<0.001] were positively associated with avoidance practices. Conversely, primary and secondary education [B=-0.750, 95% CI: -1.449, -0.051; p<0.035] and self-employment [B=-1.517, 95%CI: -2.584, -0.450; p=0.005] were negative predictors. **CONCLUSION:** Findings indicate that although ETS knowledge is high among mothers of young children in Selangor, it does not predict avoidance practices. Instead; self-efficacy, attitude, and smoke-free homes are critical determinants, underscoring the need for empowerment-focused interventions, particularly for mothers with primary and secondary education.

## Keywords

Environmental tobacco smoke (ETS), self-efficacy, attitude, avoidance practice, mother of young children.

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## INTRODUCTION

Environmental tobacco smoke (ETS), or second-hand smoke, is a toxic byproduct of tobacco use, comprising both exhaled mainstream smoke and side stream smoke from burning tobacco. ETS contains over 4,000 harmful compounds, including oxidizing agents, heavy metals, cyanide, and at least 50 carcinogens.<sup>1</sup> Exposure to ETS is hazardous at any level, increasing risks of respiratory diseases and other health issues, especially for children, who are often more vulnerable due to their developing systems and higher respiratory rates.<sup>2</sup> Therefore, creating completely smoke-free environments is the most effective strategy to protect children from these hazardous chemicals.<sup>3</sup> This can be achieved through comprehensive

measures such as legislation and, crucially at the household level, through the active avoidance practices implemented by caregivers.

Tobacco use leads to approximately 8 million deaths globally each year, with 1.2 million attributed to ETS exposure. Children are particularly vulnerable, with high ETS prevalence reported across Southeast Asia.<sup>1</sup> In Malaysia, the problem is severe, with over 10,000 deaths annually linked to smoking-related illnesses.<sup>4</sup> Crucially, this risk extends to the nation's youngest, as a national survey revealed that 52.8% of children under the age of six are exposed to ETS at home.<sup>4</sup> This alarming statistic

highlights a critical public health gap and forms the primary justification for the present study.

ETS exposure in children is primarily due to smoking within the home. Studies have linked ETS to various health issues, such as respiratory infections, asthma, middle ear infections, and even sudden infant death syndrome. Additionally, ETS exposure has been associated with developmental and cognitive issues, including high blood pressure, behavioral problems, and increased hospitalization rates for respiratory conditions.<sup>7-9</sup>

To combat ETS exposure, the WHO's Framework Convention on Tobacco Control (FCTC) recommends implementing smoke-free legislation (SFL) in public spaces. Malaysia has made efforts to restrict smoking in eateries, schools, and other public areas and has launched educational programs to promote smoke-free homes. However, these measures have had limited impact on reducing ETS exposure within homes, where children face the greatest risk. Studies show that children in lower socioeconomic households and those with parents who smoke face increased ETS exposure risks.<sup>2, 10</sup>

Mothers, as primary caregivers, play a crucial role in shaping household behaviors, including ETS avoidance practices. Mothers' knowledge, attitude, and self-efficacy significantly influence their practices in avoiding ETS exposure, with higher self-efficacy linked to better avoidance behaviours.<sup>11</sup> Research indicates that mothers with higher knowledge about ETS risks are better able to implement effective avoidance strategies.<sup>12</sup> Nonetheless, despite high levels of knowledge, attitudes and behaviours often remain poor, highlighting the complexity of ETS avoidance practices among mothers in Malaysia.<sup>13</sup>

This study fills the gap by focusing on Malaysian mothers with children under six, aiming to explore their self-efficacy, knowledge, and avoidance practices. The findings align with Malaysia's public health goals, highlighting the need for targeted interventions, particularly towards mothers, to improve ETS avoidance and protect children from its harms.

## **MATERIALS AND METHODS**

### **Study Design and Population**

This cross-sectional study was conducted from January to March 2024 across six government health clinics in Hulu Langat, Selangor, targeting Malaysian mothers aged 18 and above with children under six years old. Exclusions included mothers who were unable to read Malay or those with psychiatric conditions affecting questionnaire responses.

### **Sample Size Calculation**

Using a sample size calculator, with a power of 80% and significance level of 0.05, we calculated a sample size of 337 participants, accounting for 20% attrition based on standard deviations reported.<sup>3</sup>

### **Sampling and Data Collection**

Participants were selected using multistage sampling to ensure district representation, followed by convenience sampling at each clinic. Targeted quotas per clinic were based on annual maternal-child health visit data. Eligible mothers received study details and consent forms before completing questionnaires with researcher assistance available as needed.

### **Study Instrument**

The SE-KAP-ETS questionnaire was used, containing 17 items across four domains: self-efficacy (5 items), knowledge (4 items), attitude (5 items), and avoidance practice (3 items), scored on a 10-point interval scale.<sup>14</sup> Higher scores indicate stronger self-efficacy, knowledge, positive attitude, and avoidance practices. The development of this questionnaire involved a comprehensive validation process, including content validation by experts, face validation with mothers, and confirmatory factor analysis (CFA).<sup>14</sup> The instrument has demonstrated strong psychometric properties, showing excellent internal consistency (Cronbach's alpha ranging from 0.755 to 0.887).<sup>14</sup> The CFA confirmed its construct validity with a good model fit, achieving a root mean square error of approximation (RMSEA) of 0.053, a goodness-of-fit index (GFI) of 0.932, and a comparative fit index (CFI) of 0.968.<sup>14</sup>

## Statistical Analysis

Data were analysed using SPSS version 28. Simple linear regression (SLR) assessed associations between independent variables and avoidance practice. Variables with p-value <0.25 were included in multiple linear regression (MLR) with stepwise selection. Multicollinearity was assessed with variance inflation factors (VIF).

## RESULTS

A total of 321 mothers participated in the study. Table I presents the descriptive analysis of the sociodemographic characteristics and smoking history of mothers with young children among the study participants. Participants had a mean age of 33.4 years, with the majority being Malay (89.1%) and most having a tertiary education (67.9%). Occupations varied, with 33% in the government sector, 30.5% in the private sector, and 28.3% as housewives. Most households (61.1%) were in the B40 income group, and nearly all mothers were non-smokers (99.7%). In terms of household smoking, 43.3% reported a smoking spouse, and 48.4% had no smokers at home. Indoor smoking restrictions were common, with 64.8% reporting total restrictions, 24.6% partial, and 10.6% none.

**Table I:** Sociodemographic Characteristic and Smoking History of Mothers with Young Children on Environmental Tobacco Smoke (ETS) Exposure to Their Children in Hulu Langat (N=321).

Sociodemographic characteristic	Mean (±SD)	n (%)
Age (year)	33.4 (5.57)	
Race		
Malay		286 (89.1)
Non-Malay		35 (10.9)
Education level		103 (32.1)
Primary & Secondary		218 (67.9)
Occupation		
Government sector		106 (33)
Private sector		98 (30.5)
Self-employed		25 (7.8)
Housewife		92 (28.7)
Household income		
RM4849 and below (B40)		196 (61.1)
RM4850 - RM10959 (M40)		87 (27.1)
RM10960 and above (T20)		38 (11.8)
Smoking status		
Current/daily smoker		1 (0.3)
Non-smoker		320 (99.7)
Household smoking history*		
Self		1 (0.3)
Husband		145 (43.3)
Child's older siblings		5 (1.5)
Babysitter		10 (3)
Others		12 (3.6)
No smoker in the house		162 (48.4)
House smoking restriction		
Total		208 (64.8)
Partial		79 (24.6)
None		34 (10.6)

\*Multiple responses analysis

**Table II:** Mean scores of Self-efficacy, Knowledge, Attitude and Avoidance Practice of Mothers with Young Children on Environmental Tobacco Smoke (ETS) Exposure to Their Children in Hulu Langat (N=321).

Domains	Score in Mean (±SD)	Participant's Score		Score Interpretation
		Lowest	Highest	
Self-efficacy	36.41 (9.70)	5	50	Min: 5, Max:50
Knowledge	38.26 (3.76)	17	40	Min: 4, Max: 40
Attitude	48.58 (3.75)	5	50	Min: 5, Max: 50
Avoidance practice	28.33 (3.27)	11	30	Min 3, Max: 30

±SD: standard deviation

Mothers generally demonstrated high levels of self-efficacy, knowledge, positive attitudes, and ETS avoidance practices, with mean scores of 36.41/50 (±9.70), 38.26/40 (±3.76), 48.58/50 (±3.75), and 28.33/30 (±3.27), respectively (Table II). Differences in avoidance practice scores were observed across education, occupation, and household smoking history (Table III). Mothers with tertiary education scored higher in avoidance practices than those with only primary and secondary education. Self-employed mothers scored lower in avoidance practices than other occupational groups. Households

**Table III:** Avoidance Practice Mean Scores Comparison of Sociodemographic Characteristics and Smoking Status of Mothers with Young Children on Environmental Tobacco Smoke (ETS) Exposure to Their Children in Hulu Langat.

Characteristic	n	Mean (±SD)	F(df)	p-value
Race			1.512 (1,319)	0.220
Malay	286	28.25 (3.254)		
Non-Malay	35	28.97 (3.382)		
Education level			4.203 (1,319)	0.041
Primary & Secondary	103	27.89 (3.722)		
Occupation			3.486 (3,317)	0.016
Government sector	106	28.41 (3.309)		
Private sector	98	28.66 (2.536)		
Self-employed	25	26.36 (4.462)		
Housewife	92	28.42 (3.417)		
Household income			0.326 (2,318)	0.722
RM4849 and below (B40)	196	28.39 (3.182)		
RM4850-RM10959 (M40)	87	28.10 (3.606)		
RM10960 and above (T20)	38	28.55 (2.956)		
Smoking status				
Current/daily smoker	1	30(-)	-	-
Non-smoker	320	28.36 (3.202)		
Household smoking history*				
Self				
Yes	1	30 (-)	-	-
No	130	28.33(3.274)		
Husband				
Yes	145	27.54 (4.047)	16.259(1,319)	<0.001
No	176	28.98 (2.266)		
Child's older sibling				
Yes	5	25.60 (6.387)	3.568 (1,319)	0.060
No	316	28.37 (3.198)		
Babysitter				
Yes	10	28.90 (2.807)	0.313 (1,319)	0.576
No	311	28.31 (3.287)		
Others				
Yes	12	27.50 (3.920)	0.803 (1,319)	0.371
No	309	28.36 (3.246)		
No smoker				
Yes	162	29.13 (1.822)	20.745(1,319)	<0.001
No	159	27.52 (4.118)		
House smoking restriction			8.361 (2, 318)	<0.001
Total	208	28.85 (2.497)		
Partial	79	27.15 (3.926)		
None	34	27.91 (4.795)		

One-way ANOVA

\*Separate analysis of each parameter

with no smokers and those with total smoking restrictions at home also reported higher avoidance practice scores.

In the multivariate analysis (Table IV), five factors were significantly associated with ETS avoidance practices. Positive associations included having no smokers in the home (B=0.700, 95% CI: 0.304, 1.462; p=0.003), mothers with higher self-efficacy (B=0.058, 95% CI: 0.028, 0.088; p<0.001), and mothers with more positive attitude toward ETS avoidance (B=0.414, 95% CI: 0.336, 0.491; p<0.001). In contrast, mothers with primary and secondary education level (B=-0.750, 95% CI:-1.449,-0.051; p<0.035), and self-employment (B=-1.517, 95% CI: -2.584, -0.450; p=0.005) were negatively associated with avoidance scores. The model explained 37.7% of the variance in ETS avoidance practices, with 62.3% likely due to other factors.

## DISCUSSION

This study found that the majority of mothers in the sample were of Malay ethnicity, with only 0.3% reporting

ever smoking, a much lower figure compared to the 1.5% prevalence of smoking among adult Malaysian females as reported by the Global Adult Tobacco Survey of 2023. This lower prevalence is likely a reflection of the specific characteristics of our study sample, which is composed of mothers with a high level of educational attainment (67.9% had tertiary education). This finding is consistent with established evidence showing a strong inverse relationship between education level and smoking rates. Furthermore, as participants were recruited from government health clinics during child health visits, the sample may also represent a subgroup of mothers who are more engaged with the healthcare system and potentially more health-conscious.

Sociodemographic factors significantly influence ETS exposure in children, including living with smokers, family socioeconomic status, parents' education and occupation, as well as household smoking restrictions. Our study, revealed that the absence of smokers in the household was associated with higher avoidance practices, which is consistent with other studies.<sup>12,15,16</sup> It

**Table IV:** Simple Linear Regression and Multiple Linear Regression Analysis of the Factors Associated with Avoidance Practice.

Variables	Univariate analyses		Multivariate analyses	
	B (95% CI)	p-value	B (95% CI)	p-value
Age (year)	0.018 (-0.046, 0.083)	0.575	-	-
Race				
Malay	Ref.	Ref.	Ref.	Ref.
Non-Malay	-0.720 (-1.871, 0.432)	<b>0.220</b>	0.090 (-0.857, 1.036)	0.852
Educational level				
Tertiary	Ref.	Ref.	Ref.	Ref.
Primary & Secondary	-0.650 (-1.285, -0.015)	<b>&lt;0.041</b>	-0.750 (-1.449, -0.051)	<b>&lt;0.035</b>
Occupation				
Government sector	Ref.	Ref.	Ref.	Ref.
Private sector	0.258 (-0.634, 1.149)	0.571	0.196 (-0.543, 0.935)	0.602
Self-employed	-2.046 (-3.460, -0.631)	<b>0.005</b>	-1.517 (-2.584, -0.450)	<b>0.005</b>
Housewife	0.018 (-0.888, 0.925)	0.968	0.220 (-0.602, 1.042)	0.598
Household income				
RM4849 and below (B40)	-	Ref.	-	-
RM4850-RM10959 (M40)	-0.284 (-1.115, 0.546)	0.501	-	-
RM10960 and above (T20)	0.165 (-0.978, 1.308)	0.777	-	-
Smoking status				
Current/daily smoker	Ref.	Ref.	Ref.	Ref.
Non-smoker	2.360 (-0.873, 5.592)	<b>0.152</b>	0.975 (-2.047, 3.998)	0.526
Smoking history *				
Self	2.347 (-4.240, 8.935)	0.484	-	-
Husband	-0.141 (-2.187, 1.905)	0.892	-	-
Child's older sibling	-1.996 (-5.079, 1.086)	<b>0.204</b>	1.437 (-0.964, 3.838)	0.240
Babysitter	1.170 (-1.011, 3.351)	0.292	-	-
Others	-0.499 (-2.693, 1.694)	0.655	-	-
No smoker in the house	1.481 (0.596, 3.558)	<b>0.162</b>	0.700 (0.304, 1.462)	<b>0.003</b>
House smoking restriction				
Total	Ref.	Ref.	Ref.	Ref.
Partial	-1.694 (-2.526, -0.863)	<b>&lt;0.001</b>	-0.543 (-1.326, 0.241)	0.174
None	-0.934 (-2.098, 0.229)	<b>0.115</b>	-0.363 (-1.360, 0.634)	0.474
Self-Efficacy	0.272 (0.056, 0.127)	<b>&lt;0.001</b>	0.058 (0.028, 0.088)	<b>&lt;0.001</b>
Knowledge	0.498 (0.350, 0.516)	<b>&lt;0.001</b>	0.107 (-0.014, 0.229)	0.084
Attitude	0.524 (0.375, 0.539)	<b>&lt;0.001</b>	0.414 (0.336, 0.491)	<b>&lt;0.001</b>

There were no interactions and multicollinearity between independent variables. VIF ≤ 1.054.

\*Separate analysis of each parameter.

demonstrated that mothers living in smoke-free households have more proactive behaviours in shielding their children from ETS exposure. In our study, nearly half of the women had smoking husbands (43.3%). Even though it was not a significant predictor for avoidance practice, but the comparison of avoidance practice mean scores between smoking and non-smoking husband group were significant. Fathers were identified as the primary source of ETS exposure within households, underscoring the influence of family members who smoke on children's health outcomes.<sup>12</sup> Similarly, previous studies observed higher ETS exposure among children whose primary caregivers smoke and reside in homes with multiple smokers.<sup>15, 16</sup> As a consequence, living with smokers has a negative impact on a non-smoker's ability to avoid exposure to ETS. Additionally, our study found that mothers with older children who smoke had the lowest avoidance practices mean score, although this was not statistically significant. This trend suggests that maintaining a smoke-free environment is more challenging for these mothers when living with smokers. This highlights a need for smoking prevention strategies that also target adolescents to protect younger siblings within the same household. Despite knowing the risks, mothers find it difficult to stop their spouses or household members from smoking indoors due to feelings of powerlessness and fear of causing family conflict.<sup>17</sup> Cultural gender norms lead women to accept male smokers and prioritize family harmony over personal beliefs.<sup>13</sup> To address this, it is crucial that fathers, as the typical family leaders, play a more important role by setting a positive example and enforcing a smoke-free household rule. Therefore, interventions could be more effective by promoting smoking cessation programs specifically for men who are about to get married or have young children. If the family leader smokes indoors, it becomes harder to prevent ETS exposure from other household and visitors.<sup>18</sup>

Based on our study, the participants generally demonstrated high mean scores for self-efficacy, knowledge, attitude, and avoidance practice, all of which were above average, indicating good self-efficacy, knowledge, attitude, and avoidance practice concerning

ETS exposure. However, only self-efficacy and attitude were found to be significantly positive association with the mothers' avoidance practices. These results align with previous research, which has consistently shown that mothers who exhibit higher self-efficacy and maintain positive attitudes are more likely to adopt behaviours that protect their children from ETS exposure.<sup>11</sup> Self-efficacy has been found to be the strongest predictor of ETS avoidance behavior.<sup>11</sup> A key finding from our regression analysis is that while mothers in our sample had high knowledge scores, knowledge itself was not a significant predictor of avoidance practices. Instead, a mother's self-efficacy was the crucial factor. This suggests that even with full knowledge of the risks, mothers who lack self-efficacy struggle to translate that knowledge into protective actions, especially when facing a smoking spouse. Even though knowledge was not a significant predictor in our study, but several studies reported that nonsmoking parents have more knowledge about ETS, and parents with greater understanding regarding ETS have more effective avoidance practices.<sup>12, 19, 20</sup> Previous studies support our findings, showing that non-smoker parents and those who practice completely smoke-free homes have higher self-efficacy than parents who smoke or have only partial restrictions.<sup>19, 21</sup> Similarly, a positive attitude is crucial for effective avoidance.<sup>11</sup> Because mothers with high self-efficacy and positive attitudes demonstrate better avoidance behaviours,<sup>22</sup> it is clear that promoting strict, smoke-free home rules is a vital public health strategy to empower mothers and protect children from ETS exposure.

Numerous studies have established a strong link between educational attainment and health behaviours. Higher education levels are often associated with better health literacy, leading to more effective health practices and behaviours. Our study found that mothers with only primary and secondary school education were significantly less likely to engage in avoidance practices compared to those with higher educational attainment. A study found that, individuals with higher levels of education generally enjoy better health outcomes, demonstrated by greater self-reported health, and lower rates of illness, disability, and mortality. Conversely, lower

educational attainment is linked to poorer self-reported health, reduced life expectancy, and shorter survival rates when facing illness.<sup>23</sup> Align with our findings, a study revealed that parents with lower educational attainment are more likely to have children who are heavily exposed to ETS.<sup>7</sup> This is because individuals with lower education levels tend to engage in fewer health-promoting behaviours and have higher smoking rates compared to those with higher education levels.<sup>24</sup> This indicated that mothers with lower education levels often have gaps in knowledge regarding the health impacts of ETS on children.<sup>19</sup> Less educated mothers may have limited access to health information and resources, which can affect their awareness of the dangers of ETS and the importance of avoidance practices. Additionally, educational attainment is closely linked with socioeconomic status.<sup>7</sup> Mothers with lower educational attainment often belong to lower socioeconomic backgrounds, which may limit their ability to create smoke-free environments. A study reported that 31.9% of individuals with less than high school education attainment had a complete no-smoking policy at home, compared to 45.6% of college graduates.<sup>21</sup> Factors such as housing conditions, cohabitation with smokers, and economic constraints can hinder the implementation of avoidance practices.

In addition, our study revealed that self-employment was a significant negative predictor of ETS avoidance practices. Many self-employed women work in informal or less-regulated environments where smoking restrictions are often not enforced. This contrasts with government and private sector workplaces, where anti-smoking measures have created a culture that encourages non-smoking, which employees may extend to their personal lives.<sup>25</sup> Furthermore, self-employed mothers may face economic pressures, such as a perceived need to refrain from asking clients or business partners to smoke elsewhere in order to maintain professional relationships.<sup>25</sup>

## RESEARCH IMPLICATIONS

Our findings call for a significant shift in the approach to protecting children from ETS. Given that our study demonstrated that knowledge alone is not a significant

predictor of avoidance, future interventions must move beyond general awareness campaigns and instead focus on building mothers' self-efficacy. This can be achieved through practical, skill-based training where mothers learn and practice assertive communication to negotiate smoke-free spaces. Healthcare providers can use motivational interviewing not just to convey information, but to specifically bolster a mother's confidence in her ability to enforce these boundaries. Additionally, establishing peer support groups can provide a powerful platform for mothers to share successful strategies and reinforce their resolve. Crucially, our results indicate that the burden of protection cannot fall on mothers alone. Interventions must actively engage the primary sources of household ETS: fathers and older siblings. Public health programs should reframe fathers as essential partners and role models in maintaining a smoke-free home. This includes creating targeted smoking cessation initiatives for men at key life stages, such as during pre-marital counselling or when they become expectant or new fathers. To address the risk from older siblings, school-based smoking prevention programs are vital to stop them from introducing tobacco into the home. Finally, policymakers and stakeholders should align their efforts with this evidence. Support should be directed towards funding family-centred cessation programs and implementing comprehensive smoking bans that create an environment supportive of a mother's efforts. By focusing on empowerment and a whole-family approach, we can translate these findings into a real impact for mothers and children.

## LIMITATIONS AND RECOMMENDATIONS

The study's reliance on self-reported data introduces the possibility of recall bias. Additionally, the study's geographic limitation to the Hulu Langat district may have restricted the generalizability to other regions with different sociodemographic profiles. To address these limitations, future research should incorporate objective measures of ETS exposure to minimize recall bias and enhance data accuracy. Expanding the study to include multiple regions with diverse sociodemographic profiles would improve the generalizability of the findings. Besides that, including both parents in future research

would allow for a comparative analysis of fathers' and mothers' behaviours. High smoking prevalence among fathers highlights the importance of including fathers in future research on ETS avoidance practices. This could explore how fathers' behaviours influence household exposure and how targeted interventions for smoking cessation and behaviour change among fathers might reduce ETS risks for children. Understanding these dynamics will enable the development of more targeted and effective interventions to reduce ETS exposure. Additionally, employing a longitudinal design could provide a deeper understanding of the causal relationships between self-efficacy, knowledge, attitude, and avoidance practices regarding ETS exposure.

## CONCLUSION

The study found that mothers with no smokers in the household, higher levels of self-efficacy, and positive attitudes towards ETS avoidance were more likely to engage in avoidance practices to protect their children from ETS exposure. In contrast, self-employed mothers and those with lower education levels were associated with lower avoidance practices. Based on these findings, interventions should move beyond traditional education and focus on empowering mothers, particularly those who are self-employed or have lower education levels. This can be achieved through practical sessions like role-playing to build assertive communication skills, alongside counselling and support group activities designed to boost their self-efficacy. Furthermore, to be truly effective, these clinic-based interventions must expand to include the entire family by engaging fathers as role models for a smoke-free home and addressing the risk posed by other smoking household members.

## CONFLICT OF INTEREST

The authors report there are no competing interests to declare.

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