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Exploration of Parental Smokers' Experience, Perceptions, and Family's Influences on Their Smoking in the Presence of Children

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The purpose of this study was to explore parents' experience and perceptions of smoking in the presence of children. Findings regarding patterns of parents' smoking in the presence of children were situation specific. When thinking of smoking with children around, parents engaged in a process of weighing the importance of the need to smoke and adverse effects from exposure to environmental tobacco smoke, a consideration based mostly on their experience. A pattern of correspondence was identified between family's level of concern and promoting change among smokers. Many strategies participants used to prevent children's environmental tobacco smoke exposure were relatively ineffective and needed to be addressed.
Key words: *children*, *environmental tobacco smoke*, *parental smoking*, *perceptions*

EXPOSURE to environmental tobacco smoke (ETS) has been established as a major risk factor for many chronic diseases. Previous studies have shown harmful effects on infants and children, who are particularly vulnerable to ETS, including respiratory illnesses,[1–3] asthma,[4] allergic disorders,[5] decreased lung function,[5] ear infections, and behavioral or attitude changes such as learning to smoke,[6,7] more favorable attitudes toward smoking,[7] and becoming smokers in adulthood.[8]

Although there are other sources of tobacco smoke exposure, family is still the primary source of exposure to ETS among children.[9,10] More than 40% of children worldwide are exposed to tobacco smoke pollution in their homes; and 700 million children—almost half of all children worldwide—live in a home with a smoker.[11] In Taiwan GYTS (Global Youth Tobacco Survey) findings, 52.04% of senior/junior high school students and 48.37% of vocational high school students were exposed to environmental tobacco smoke at home.[12] Also, the rate of adolescents who have tried smoking is higher among those whose parents are smokers, and

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the current smoking rate in this group is 2 to 3 times higher than teens whose parents are not smokers; therefore, parents' smoking behavior seems to be a factor that influences children's decisions about smoking.

Tobacco control regulation has been highly effective for reducing tobacco smoke in public. However, evidence shows that tobacco control regulations have little effect at home, and many children are still exposed to ETS in their homes.[13,14] Parents' attitudes and perceptions are crucial for preventing children's exposure to ETS. Prior studies show that lower levels of awareness of the health risks among parents are positively correlated with greater exposure of children to ETS, less effort to prevent children's exposure, and more indoor smoking at home.[15-18] However, some studies have revealed that parents may be ambivalent about health risks and smoking behavior, on the one hand, believing ETS exposure constitutes a health threat to children, yet, on the another hand, failing to prevent smoking in the presence of children.[16,19] Prior studies have identified barriers to prevent children's ETS exposure, such as viewing smoking as a cultural and social norm, valuing hospitality toward visitors rather than asking visitors not to smoke, addiction to smoking, lacking the willpower to stop smoking, seeing smoking as a way of coping with stress, and having an optimistic bias.[9,16,19-21] *Optimistic bias* refers to self-exempting beliefs among smokers, such as depersonalizing their acceptance that exposure to ETS is harmful, or denial or minimizing its harmful effects,[16] being unconvinced by the scientific "proof" linking children's illnesses to parental smoking, and believing that information about the hazards of smoking is exaggerated.[9] Optimistic biases have become important barriers to effective prevention of ETS exposure. All these barriers provide an explanation of how smokers live with inconsistency between their beliefs, attitudes, and smoking behaviors.

Various interventions among parents to reduce or prevent children's exposure to ETS have been developed and evaluated in Western countries. Two review articles, in particular, have shown that the effectiveness of such interventions was less than 50%.[10,22] Exploring parents' attitudes and perceptions toward their smoking behavior in the presence of children is becoming an important factor in developing effective interventions. No prior study in Taiwan has focused on this issue. Therefore, our purpose was to explore parents' smoking behavior, their attitudes and perceptions regarding smoking in the presence of their children, and how families respond to their smoking in the presence of children, as well as parents' reaction to their families' responses.

METHODS

Study design and participants

A qualitative study was conducted to explore parents' experience, attitudes, and perceptions of their smoking behavior in the presence of their children. Semistructured individual interviews were used to collect data from parents who smoke in the presence of children aged 7 to 12 years. All collected data were then analyzed by content analysis. Interview guidelines were developed according to the theory of reasoned action[23] in order to explore parents' attitudes, subjective norms, and behavior regarding smoking with children around. The interview guidelines were then modified on the basis of the results of a pilot study and opinions of experts, school nurses, and scholars specializing in qualitative study methods. The importance of the interview guidelines was to instruct participants to explore the issues in depth and to train interviewers' to respond nonjudgmentally to the content of the interviews. Participants were recruited from a primary school in northern Taiwan.

Considering the focus of the study was the experience and perspectives of smoking parents, purposive sampling was applied first with the following inclusion criteria: (1) smoking currently, (2) living with children aged 7 to 12 years who perceive parents' smoking around them, (3) being able to communicate in Mandarin and Taiwanese,

willing to share their perspectives, and agreeing to audio-recording. The school nurse of this primary school accessed students' families through her routine telephone calls reporting on students' health assessments and invited parents who met the inclusion criteria to participate our study. Twelve parents agreed to participate and were interviewed at their homes. To achieve transferability, we used theoretical sampling to recruit 2 female participants and 2 indigenous people in order to achieve greater diversity in gender and ethnic backgrounds among our participants.

All interviews were conducted by 2 well-trained interviewers between September 2008 and June 2009. One interviewer was a school nurse of a participating school and also a master's student in nursing who has experience in communicating with parents. The other interviewer was a university instructor who specialized in psychiatric nursing and therefore was expert on building rapport and communication skills. We employed standard interview procedures and interview guidelines to achieve consistency between the 2 interviewers. After recruiting parents, the researchers set up a home-based interview and obtained written consent. A gift certificate worth NT$1000 (about US$34) was given in recognition of the time they contributed. Interviews were started by debriefing parents on their feelings about talking about their smoking experience with children around; the interviewer then gave support and assured parents of the value of their contribution in providing their point of view. A substantive interview about smoking followed. In consideration of parents' feelings about being stigmatized when talking about smoking in the presence of children, the researchers demonstrated a nonjudgmental and accepting attitude so that parents would feel free to talk. Interviewers were not to interrupt participants' responses during interviews, using only clarification, confirmation, restating, and probing to get more detailed information relevant to the study. Interviews were tape-recorded with parents' consent to ensure the comprehensiveness of the record produced and to avoid the distraction of recording responses manually. Each interview lasted from 40 minutes to 1 hour, although time was initially not limited. For participants' convenience, comfort, and privacy, interviews were performed in their homes unless participants asked for another place outside their home.

Data analysis

Recorded interviews were transcribed into manuscripts by interviewers for analysis 72 hours after each interview, and content analysis was used to identify themes in the manuscripts immediately. Data were freely coded, first as a basis and then were categorized systematically to find commonalities and distinctions. After it was confirmed, each category was named, operationally defined, and compared with the data from the content of the next interview. To arrive at appropriate categories, we employed the constant comparative method of analysis,[24] which is used in grounded theory, and consists of constantly comparing coded themes or categories from new data with old data in detail. Data interpreting, coding, comparing, and categorizing were an ongoing process throughout the period of data collection, and categories and their operational definitions were modified if needed. To achieve credibility and confirmability, a strategy of peer debriefing was employed through constant discussion by interviewers and researchers during data analysis to ensure that data were interpreted, coded, and categorized appropriately and to detect if some points were overemphasized or neglected. One reason for employing peer debriefing instead of member checking was the fact that individual participants may have difficulty using their individual experience to verify interpreted data synthesized from overall results.[25] Another concern is to minimize bias in participants' responses from social desirability[26] since our primary focus on their smoking in the presence of children might be perceived as rejected or unacceptable behavior. Interviews were continued until data saturation was achieved in terms of recurrent themes.

To protect participants' confidentiality, participants were coded as "cases" plus a number and interviewers were coded as "I" in the narrative data following description in the manuscripts.

RESULTS

A total of 16 parents, either fathers or mothers, participated in individual interviews, with ages ranging from 30 to 58 and an average age of 41.7. Seven of 16 participants were female (men, 56%; women, 44%) and 4 (25%) were Taiwan indigenous people. The educational levels of most of the participants were junior college (43.75%) and high school (43.75%) (junior high, 18.75%; senior high, 25%). Eleven parents (69%) had been smoking for 20+ years, and 11 parents (69%) smoked more than 20 cigarettes per day on average. Six of 7 mothers (85.7%) reported their husbands smoked, whereas only 1 father (11.1%) reported his wife smoked.

Patterns of smoking behavior in the presence of children were identified first. Findings showed that those who absolutely restricted smoking around children and those who had absolutely no restrictions constituted only a small part of all smoking patterns. Factors influencing parents' decisions whether or not to smoke in the presence of children in a variety of situations were identified, including parents' perceptions of their smoking behavior in the presence of their children, their evaluation of the consequences when smoking in the presence of children, family responses and strategies for dealing with smoking in the presence of children, and smokers' reaction to such family responses and strategies.

Parents' smoking behavior in the presence of children

Patterns of smoking behavior in the presence of children were formulated as a continuous line, where patterns of absolute restriction and absolutely no restriction were 2 distinct poles on a continuum. The other patterns along this line included partial restriction on smoking around children according to situation or with certain considerations.

Four participants (25%) who were categorized as having a pattern of absolute restriction stated that they never smoked in the area or room where children were present. Two of 4 participants asked children to leave when they intended to smoke (eg, case 16: "Every time my husband and I smoke on the balcony and chat, I always ask my children to stay away if they come near, because it is stinky . . . "). When children actively approached their parents' smoking area, 3 participants said that they would put out the cigarette. Interestingly, although these participants avoided smoking in the presence of children, none of the participants restricted their smoking behavior in the home regardless of whether children were at home or not.

In contrast, 25% (4/16) of participants smoked anywhere without any consideration. For example, case 13 stated: "I smoke in the living room; it doesn't matter if the children are around or not." And case 2 remarked: "I smoke whenever I want, unless I am cooking."

For those who partially restricted their smoking behavior in the presence of children (8/16), the most common situations where participants failed to prevent smoking in the presence of children were having visitors over who smoked, and when their children proactively came near while they were smoking and when outdoors. For example, case 1 stated, "I don't smoke (in the presence of children), but I smoke with children around when outdoors." Case 3 stated: "I have a rule, I smoke in my own place, and it's your choice if you come into my place." Two of them had their own smoking area at home, but when there were visitors smoking together, they stayed in the living room and smoked with the children around. Another participant stopped smoking when children came into his smoking area but continued to let the tobacco burn.

For participants either totally restricting or partially restricting their smoking behavior at home, strategies they thought useful to decrease adverse health effects on their children

were common, although some of the strategies seemed less than effective. These strategies included blowing the smoke away from the children, fanning away tobacco smoke with their hands, and decreasing the frequency of children's presence in the smoking area.

We found that none of the participants absolutely restricted smoking in the home, whether their children were at home or not, and they used questionably effective strategies to protect children from ETS exposure.

Parents' perceptions of their smoking behavior in the presence of their children

Four domains were formulated from the ways participants perceived their smoking behavior with children around, including negative perceptions of smoking behaviors in the presence of children, viewing the smoking in the presence of children as not a serious problem, viewing the smoking as an important need in daily life, and viewing smoking as a cultural custom.

Negative perceptions of smoking in the presence of children

Half of participants considered smoking around children to be providing a negative role model; they devalued their smoking behavior with the children around, as when case 4 said:

> She (the child) would argue, "Why can't I smoke if you (parent) allow yourself to smoke?" I believe in her mind, mother is more or less the one that she adores, right? She probably thinks that Mom takes care of me, raises me and nothing happens to Mom even though she smokes, right? Of course we shouldn't behave like this.

Four participants (25%) felt guilty about it when seeing children's reaction or thinking of the bad impact on children. Case 6 said: "When you smoke more, you have a feeling of guilt; especially when they (children) see you smoking."

Viewing smoking as an important need in daily life

Smoking meets some need for many participants, such as bringing emotional relief, which was the most commonly cited need, keeping them company, and relieving the sensation of craving cigarettes, and may thus be seen as a necessary life habit. Case 7 claimed he needed cigarettes for company: "When no one (family members) keeps me company, cigarettes never leave me, they are always with me, unless I have no money to buy them." For some participants, craving cigarettes was a key factor influencing their decisions about smoking. For example, case 2 stated: "My daughter invited me to her school's sports day; I never want to go at all, because it's not allowed to smoke at school. She argued 'which is more important to you, me or smoking?' I said, 'smoking.'"

Viewing smoking as not a serious problem

Three participants declared their smoking behavior did not have any impact on others, or smoking was not a problem for them (case 2: "I don't mind if people know I smoke or see me smoking, since I don't offend others." "Smoking is smoking. I don't think it is a problem."). One participant has used other kinds of tobacco and minimized the impact by using tobacco pipes and water pipes: "I guess a tobacco pipe is less pungent, children won't feel its as bad as smelling a cigarette . . . a water pipe is acceptable, too." One participant believed that a sick child's health was affected by tobacco smoke whereas a healthy child's health was not.

Viewing smoking as a cultural custom

Smoking was also a cultural identity for participants who were indigenous peoples, and they regarded it as a ritual of daily life. Case 7: "I never thought of quitting smoking. We aboriginal people smoke. Who (among us) doesn't?"

Parents' evaluation of the consequences of smoking in the presence of children

Participants' views of the consequences of smoking in the presence of children included children's imitation of parents' smoking behavior, adverse effects on children's health, influence on air quality in the home, and influence on children's social interactions if there is cigarette smell on the children's clothes. However, there was obvious variation in how these parents evaluated consequences. Some parents worried about the negative impact of smoking, some acknowledged that they were not sure what impact it might have, and others did not believe or doubted whether their smoking was the only factor of consequence.

Children's imitation of parents' smoking behavior

Seven participants were concerned that children might imitate their parents' smoking behavior. They worried their children would be labeled behaviorally deviant if they learned to smoke. Case 4 said:

> I worry more about (children) being perceived as deviant, even though lots of girls do smoke in public, and they are not defined as deviant nowadays. Actually our perspective on children has not changed from the past, in spite of the greater value put on openness now. We still hope our children won't touch it (tobacco).

Those who did not agree with this point of view (25%) offered themselves as an example of being the only one smoking in their family of origin. Four participants believed that peer pressure was a more important factor in children taking up smoking: "I believe that smoking behavior results more from peer influence, especially in adolescence. The influence of parents smoking is not as great as that of peers or friends" (case 10).

Adverse effects on children's health

Almost 69% of participants (11/16) agreed about the adverse health effects of secondhand smoke exposure. However, 2 of them doubted the severity of the effect or even thought media reports overstated the matter: "I think most statistics are not able to tell us the truth, such as exactly how many cigarettes we must smoke or how much secondhand smoke they (children) must inhale before it will definitely cause physical damage" (case 8). "I don't see any effect; my child is in good health ... and I believe those reports from the media are overstated" (case 2). Tobacco smoke was also not seen as the only kind of smoke causing physical harm. One participant believed that smoke from stir-frying and incense also had as much or more adverse effect on health:

> It is the same when we stir-fry food, right? Don't public reports say that housewives get lung cancer more easily than smokers?
>
> Like my family, we use incense; it does more damage than nicotine to physical health—what are you going to do about it? Are you going to prohibit worshipping at temples? (Case 4)

Influence on air quality in the home

Seven participants (44%) agreed that tobacco smoke reduces air quality in the home, especially in a stuffy room, or that cigarette smell permeates everything, such as cloth. However, one participant believed that her child was already used to the smell and it was not something to be worried about. That the air was already polluted by other things was also a reason to minimize the impact of tobacco smoke pollution:

> It is not the main issue, whether tobacco is harmful or not; the air around us is already polluted, and there is smoke in the kitchen, too. You can't tell what kind of smoke is the main source of damage. (Case 2)

Negative social impact on children

Three participants were concerned about the possible social impact on children of their clothings smelling like cigarettes. For example, case 4 said: "No matter how much you crave a cigarette, you should not make your child smell of cigarettes. Especially for a girl, people will think, 'this child smokes.'"

Families' responses to smokers' behavior in the presence of children

Family's response to smokers when they smoke with children around was described and can also be considered a form of informal or invisible restrictions on smokers. Responses were mainly from children and spouses, with only 4 participants additionally mentioning responses from parents or parents-in-law. Families' responses fell into 4 categories, including *expressing negative feelings*, *actively opposing smoking behaviors*, *self-coping*, and *acceptance.*

Expressing negative feelings

Thirteen participants experienced *families expressing unpleasant feelings about their smoking*. These families showed their dislike of the smell from smokers and refused to let participants come near them. Five participants experienced verbal or nonverbal blame from their spouse and children. For example, case 3: "They blame me and ask me not to smoke." Case 1 also said of his wife: "Seeing me smoking . . . her reaction is that 'you are putting your child's health in danger' . . . ."

Actively opposing smoking behaviors

Some families responded more actively with the intention of changing participants' smoking behavior. These responses consisted of either verbal persuasion or direct intervention. In terms of verbal persuasion, 13 participants were advised by their families not to smoke, 7 participants were educated by family members about adverse health effects on children, and 1 participant's child raised hands in a gesture of "no secondhand smoke." For example, case 10 said: "She (daughter) sat next to me, and told me: 'Dad, it is stinky, please don't smoke.'" Children demonstrated a wider range of active behaviors intended to force participants to stop smoking such as threatening to talk to their parents' parents or threatening to behave the same way themselves (case 4: "They would not allow me to smoke, and threatened to tell my parents if I smoked"); hiding cigarettes; monitoring smoking behaviors (case 4: "You know, when they are at home, the smell cannot be hidden. They come out and stare at you as soon as they smell it"); and complaining about the bad impact on their social relationships (case 2: "My daughter complained that the school teacher noticed the tobacco smell on her . . . and her classmate also mentioned it once . . . ").

Self-coping response to smoking

When families failed to influence participants' smoking behavior, they had no choice but to *change themselves to adapt to the situation*. Two major responses were identified, including giving up and leaving. Case 8 said: "You know, boys, they tell you once or twice, and if I don't change, they just give up." Case 11 explained: "If my daughter can't stand the smell, she just goes away, and says nothing." In addition, 1 participant's wife showed willingness to compromise in certain situations: "My wife won't say anything to me if I smoke on the balcony when my kid is around."

Acceptance

Despite the aforementioned antismoking responses, 2 participants also received acceptance of their smoking behavior from some members of their families. For example, case 11 said: "They never say anything about my smoking behavior; they already got used to it." One participant (case 7) even experienced children actively giving her cigarettes: "Most of the time they are OK (regarding smoking behavior) at home . . . sometimes my daughter hands me cigarettes when she sees me sitting over there and feeling bad. She actively hands me a cigarette and says, 'Mom, have a cigarette.'"

Smokers' reactions to families' antismoking responses

Families' responses can be regarded as creating an atmosphere associated with changes in smoking behaviors, and the changes could be either anti- or prosmoking in the presence

of their children. Therefore, when analyzing the effectiveness of families' attempts to change participants' smoking behavior, how participants perceive and react to these responses becomes a key issue. Participants' reactions to families' antismoking behavior were analyzed in terms of behavioral changes (changed or unchanged smoking behavior), feelings expressed (guilt or discomfort), and self-interpretation of family's behavior.

Behavioral changes

Overall, 6 participants (37.5%) changed their smoking behavior in accordance with families' expectation that they not smoke in the presence of children. Six participants (37.5%) behaved the same as before, and 4 participants (25%) conditionally complied or failed to comply depending on the situation.

Of those whose behavior changed, 4 participants respected their families' right not to be exposed to secondhand smoke. For example, case 3 said: "I never smoke when I assist them with their homework; this is a gesture of respect and self-restraint we have toward each other." Sometimes participants (12.5%) complied with family pressure to avoid conflict.

Six participants ignored families' expectations and kept the same smoking pattern. They pretended not to hear or just nodded their heads and agreed, but they behaved the same way as before. For example, case 2 said:

> My daughter has complained that her teacher notices the cigarette smell on her clothes. (I: What's your reaction?) I told her, "Tell your teacher the truth that I smoke" . . . I don't care . . . . I told her, if her classmates complain about the smell on her clothes, she can use perfume to cover it up, but I'm not going to change.

Using strategies to eliminate tobacco smoke was also a substitute for stopping smoking, such as turning on an air purifier or the hood over the kitchen stove. Three participants chose to continue smoking but asked their children to leave the smoking area.

Four participants (25%) conditionally complied with families' request to stop smoking. Two failed to comply when there had smoking companions (visitors or relatives). For example, case 6: "I rarely smoke in front of my children, unless visitors come over to my house, then I can't help myself . . . ." And case 12 thought the Chinese culture of hospitality makes it embarrassing to restrict visitors from their ordinary behavior. The other 2 participants chose to comply only under 2 conditions: when families were strongly against or constantly admonished them and when children's classmates came over to visit. Case 1: "I don't feel upset if my family is angry at my smoking behavior, I still smoke anyway; but I change my behavior when they are strongly against it." Case 14: "Sometimes I will (put out the cigarette), when my son's classmates visit our home. I know people who don't smoke are sensitive to the smell, they will figure out that you smoke . . . ."

The results showing that 62.5% of participants (10/16) failed to consistently stop smoking in the presence of children in response to family pressure indicate it is not easy to give up smoking, although there is social pressure on them. Nevertheless, some participants did respond to the pressure and made an effort to reduce the impact, whether or not it was effective.

Negative feelings expressed

Being blamed and actively persuaded about their smoking behavior often triggered participants' feelings of guilt, and such guilt became a source of motivation for participants to change (case 9: "My wife asked me to smoke somewhere else or not to smoke at all . . . and I feel guilty about it"). On the contrary, some (25%) felt defensive about the negative feedback, finding it unpleasant and feeling that their needs or rights were ignored (case 3: "My son has taken my cigarettes away in order to stop me smoking . . . . I told him to give them back. How could he do that? It's not right. No one has a right to violate others' rights, no matter how close they are").

Self-interpreting of families' responses

Although families expressed their concern about participants' smoking behavior in the

presence of children, participants had their own explanations of their families' reactions. One group of participants valued the family's attitude when they expressed concerned about health, emphasizing the harmful effects of ETS exposure, as opposed to saying they disliked the smell. For example, case 4 took account of families' concern about their health, especially the children's concern: "I am really touched, so I stop smoking. It's a kind of feeling that, it is not that they dislike the smell, but rather that they are worried about your health, and so you say, OK, then I'll put out the cigarette." Three participants expressed that they didn't want their children to start smoking, especially when their children declared that they too might decide to smoke; however, only case 4 behaved as her children wished: "My child told me, 'You stop smoking, and then I won't smoke' ... so I never smoke in front of my child." For case 3, public antismoking propaganda is also a key element supporting his motivation to comply: "I will put out a cigarette if they (the children) ask ... I feel that the guidance from school against smoking is effective." Another group of participants *questioned their family members' motivation in asking them to quit and devalued their families' efforts* to help them, such as case 8:

> I believe we can talk. She has to make me believe that she is really concerned about my health, deeply from her heart. But I never feel that from her.
>
> If she really wants me to quit, she has to be patient, and be really concerned about me.

Two participants *objected to families' perspectives*, especially when they felt accused. For example, case 5: "She is harsher on me. There are people smoking in her work place, and her own family smokes too, but she never says anything to them."

DISCUSSION

The results of the study revealed parental smoking patterns in Taiwan and factors that influence parents' smoking behavior in the presence of children. These factors determined parents' smoking behavior and impact the home environment and children's health.

In looking at this continuum of smoking patterns, we observed that participants weighed the importance of several things when deciding whether or not to smoke in front of the children. Although these participants considered the harmful effects on children of ETS exposure, they also valued showing hospitality to visitors and were concerned about people violating their need to smoke in their private space. These competing priorities mean that they show ambivalence when considering the need to smoke against the desire to protect children from ETS exposure. Eventually, these parents found a balance to guide their smoking behavior in various situations. This concept is similar to the notion of decisional balance, one of the concepts of the transtheoretical model, which consists of a process of considering pros and cons associated with a behavior's consequences.[27] The participants in our study did not neglect negative consequences of ETS exposure, but the need to smoke and valuing it as a cultural custom to them needed emphasis. Besides promoting behavioral changes among parents as in previous intervention studies,[10,22] helping parents who smoke to reevaluate the pro and cons of smoking by emphasizing the harmful effects of ETS exposure, while recognizing smokers' needs and developing other methods for coping with stress instead of smoking, should all be considered in an effort to reduce parents' smoking in the presence of children. Interventions aimed at reforming social customs related to smoking also need attention in order to establish an antismoking climate in a community. This may involve substituting other rituals for smoking and then practicing these repeatedly in social relationships.

The participants' evaluation of the consequences for children exposed to ETS included a wider range of concerns than health alone. This finding offers a more comprehensive perspective for providing information to parents. Parents who smoke in the presence

of children with little or no restriction relied mostly on their daily experience to evaluate the consequences of ETS exposure and also regarded their kids as no less healthy than other kids. They were unconvinced by public health guidance against smoking and doubted there is any scientific proof of the health effects resulting from ETS exposure. These findings are consistent with previous studies showing that mothers who smoke used their own experience to interpret the effect on their children's health,[20] and that they doubted scientific proof about consequences of ETS exposure.[9] Therefore, educating parents about the adverse effects of children's exposure to ETS was recommended. Previous interventions to provide parents with health education or information on the harmful effects of ETS exposure have not all of been effective. Several characteristics of previous intervention studies that have been ineffective for preventing children's exposure to ETS include information provided by brochures or booklets only, possibly in combination with brief advice, information provided through telephone interviews only, one-way communication to provide health information, and education provided to nonsmokers who live with smokers.[28–30] Health care providers need to pay attention to these identified factors so that such educational programs can be designed that more effectively provide comprehensive knowledge of the harmful effects of ETS exposure, tailoring scientific evidence to address the perceptions of parents who smoke, offering counseling or discussion based on their feedback, and providing more time or additional sessions to make sure information is fully understood.

In our study, families' responses to smoking in the presence of children either positively or negatively influenced smokers' behavior. First, children responded more actively, and in a variety of ways, against their parents' smoking behavior; parents willing to comply mostly did so in response to children's actions. However, children who failed to influence their parents' smoking behavior demonstrated self-coping, responded with passive acceptance, allowed themselves to be exposed to ETS, or even actively handed cigarettes to their parents. Woods et al[31] observed that children lack the ability to confront smokers to stop them from smoking. These findings raised the possibility that children may be discouraged by learned helplessness. Among youth, a sense of self-efficacy and attitudes toward avoiding ETS was positively correlated with ETS avoidant behavior.[32–34] Children therefore need to be empowered by increasing their sense of self-efficacy, and instructing them to refuse ETS exposure, so that they can protect themselves from harm.

Second, a family's caring and nonblaming attitude promoted smokers to change their behavior. Considering how study participants' reacted to their families' efforts to stop them from smoking, participants refused to change their behavior if they received negative feelings from their family and fought back against families' accusations, complaining about not being supported by their family. In contrast, they felt guilty and changed smoking behavior if they perceived the family's attitude as true concern about their health, and when families, especially kids, provided them with detailed information on the effects of ETS exposure. Carson[35] identified interpersonal complementarity as a pattern between 2 people, based on 2 patterns of social interaction in human relationships: reciprocity as the control dimension, and correspondence as the affiliation dimension (e.g., friendliness pulls for friendliness). *Correspondence* refers to a pattern of relationships demonstrating an attitude of equality in interactions between family members, which includes behavior related to love and hatred. In other words, a family member who shows love toward another receives equal love back. The same pattern has been found among family members in Taiwan regarding caring and hostile interactions.[36,37] The results of our study also support this view and indicate that blaming and simply rejecting smokers' smoking behavior might be seen as creating a hostile climate toward the smokers. On the contrary, smokers feel secure when been encouraged and cared by family members, and this induced

them to actually change or quit smoking. Family interaction and relationships need to be further examined if family antismoking attitudes are to be applied as a normative force influencing smokers' behavior at home.

Finally, our study intended to see whether parents who smoke have demonstrated strategies to prevent children's ETS exposure. The results of the study reveal parental smoking patterns and factors that influence their smoking behavior in the presence of children. These factors determined parents' smoking behavior and further impacted the home environment and children's health. Smoking indoors after opening a window or turning on a ventilator, and smoking in another room or in the kitchen, has been identified as relatively ineffective strategies for preventing ETS exposure.[38,39] Only total restriction of smoking in the area of the home can effectively provide children with a smoke-free environment.[39,40] Parents' poor understanding of smoking patterns that lead to ETS exposure and effective strategies to prevent it deserve greater attention.[9,20] Therefore, providing accurate information on how smoking behavior leads to ETS exposure and effective strategies to prevent exposure are needed.

One limitation of this study is that one of the interviewers was a school nurse, raising the possibility of a preexisting relationship with the parents. When an interviewer is also a health care provider, there is some risk that participants may feel pressure, confusion, and loss of control of self-identity. These risks could pose harm to participants or produce misleading narrative data. However, in our study, the participants and the school nurse had not previously met each other, minimizing the impact on participating parents of the relationship. Nevertheless, a neutral relationship between researchers and participants is recommended for future studies.

CONCLUSION

By looking at the lived experience of parents who smoke, the results of our study provide a useful perspective for researchers developing interventions to protect children from tobacco smoke exposure in the home. It is specific to parents with school-aged children, who have reached an age at which their parents may think children can tolerate or avoid smoke.[41] We found no prior study using a qualitative approach to explore smokers' perceptions of their smoking in the presence of children and the influence of family members' antismoking attitudes in Asia, where smoking is highly prevalent among adults. Interventions based on these results are expected to be more comprehensive and effective for health care professionals, making an effort to prevent children's home ETS exposure. First, this study has identified a pattern of decision balancing in parents' considerations of when and where to smoke and explored their interpretations of the effect of ETS exposure. Second, educating smokers, as well as teaching them how to change their behavior, is no longer the only approach to reducing children's ETS exposure; instead, the normative power of the family can also be used to establish smoking restrictions in the home. However, cultural issues related to family relationships and family values need to be considered. On the basis of findings of this study, we suggest developing interventions that include (1) improving parents' risk awareness by clarifying their misunderstandings about the impact on children of exposure to ETS; (2) amplifying their negative feelings about their smoking behavior in front of the children; and (3) involving family, especially children themselves, in the prevention program, effectively using their influence on parental smokers, and eventually setting up rules for restricting smoking at home. Further development of study methods and instrument based on these results, and quantitative surveys with larger samples to further explore the relationships between parental smokers' perceptions, normative regulation from family, and smoking behavior in the presence of children, is suggested in the future.

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