



## Implementation of Smoke Free-homes Rules in the Homes of Smokers with Low Socioeconomic Status

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## Abstract

**Introduction:** Private places such as homes are common places of exposure to secondhand smoke. Currently, more and more attention is being paid to reducing general and residential exposure to ETS (environmental tobacco smoke). The voluntary introduction of smoke-free homes (SFH) is a promising preventive measure in this regard. Most smoking households don't implement comprehensive anti-smoking policies, and exposure to secondhand smoke (SHS) is still common among low socioeconomic populations and children.

**Aim:** The aim of the study was to assess exposure to passive smoking and to assess compliance with the rules of a smoke-free home in the homes of smokers with low socioeconomic status.

**Material and methods:** 117 smokers in Piotrków County were examined in 2015. The research tool was a questionnaire. The study received a positive opinion from the Bioethics Committee of the Medical University of Lodz (RNN/243/15/KE).

**Results:** People who respect the implementation of smoke free-homes rules in their homes accounted for 48.7% of the total number of respondents, of which 58% were women and 42% were men.

They were mostly people aged 50 and more (54.3%), married (60%), with secondary education (33.3%), employed persons (70.2%), living at home with one adult (43.8%). 68.4% of the respondents advocating smoke-free homes have ever tried to quit, usually 1-2 times (38.6%). Fear of the disease (36.8%) and the wish of the family (29.8%) were the most frequently mentioned reasons that prompted the respondents to quit smoking in tobacco-free homes. In smoke-free homes, 82.5% of the guests complied with the accepted rules for smoking.

**Conclusions:** There is a need for interventions to encourage a smoking ban in homes. Primary care interventions, public health programs, and media campaigns should promote the health benefits of having a smoke-free home.

**Key words:** smoke free-homes, smoking tobacco, passive smoking.

## Introduction

Private places such as homes are common places of exposure to second-hand smoke. Although there are laws prohibiting smoking in public places, the issue of passive exposure to tobacco smoke in homes still remains unresolved [1]. Many countries (including Poland) have implemented anti-smoking policies in workplaces and public places to reduce the impact of exposure to SHS (second-hand smoke) on the health of non-smokers; which resulted in a reduction of exposure to SHS after their implementation [2, 3].

More and more attention is now also being paid to reducing general and residential exposure to the ETS (environmental tobacco smoke). The voluntary introduction of smoke-free homes (SFH) is a promising preventive measure in this regard. Owning SFH (smoke-free homes) means that both family members and visitors are not allowed to smoke anywhere in the home [4]. Although the prevalence of smoke-free homes has increased in the past two decades, nearly half of all smokers still allow smoking in the home [5, 6, 7, 8, 9].

Smoke-free homes can reduce exposure to second-hand smoke (SHS), encourage smoking cessation among active smokers, and discourage teenagers from taking up smoking [5, 10].

Households remain the main source of children's exposure to SHS [11, 12]. Children exposed to passive smoking in homes have an increased risk of lower respiratory tract infections, asthma, and are at increased risk of sudden infant death syndrome [13]. Households with children use the regulations banning smoking at home more often, while households, where adults are older have lower income, have a lower education or smoke, use these regulations less frequently [14, 15].

Most smoking households do not implement comprehensive anti-smoking policies, and exposure to second-hand smoke (SHS) is still common among low socioeconomic status (SES) populations and children [16].

Few studies have assessed smoke-free home (SFH) rules outside the context of protecting young children from SHS, and none have focused on families [17, 18].

Smokers are the people with the lowest incidence of completely bans on smoking at home.

The aim of the study was to assess exposure to passive smoking and to assess compliance with the rules of a smoke-free home in the homes of smokers with low socioeconomic status.

## Materials and methods

The study was approved by the Bioethics Committee of the Medical University of Lodz (RNN/243/15/KE). A detailed description of the study has been published elsewhere [19, 20]. A cross-sectional study was conducted in 2015 and included smokers from the Piotrków district who gave their written consent to participate in the study. The subjects were referred to a doctor to encourage them to quit smoking.

The research tool was a questionnaire. The questions included in the survey concerned: socio-demographic data, smoking, intentions regarding smoking, exposure to passive smoking.

The no-smoking policy in homes was measured by the following questions: „Does your home have policies that restrict smoking in the home? If so, please specify these rules”. People with smoking restriction policies in their homes were included in the group representing smoke free-homes. People who have no rules limiting smoking in their homes to the group representing a home without a smoking ban.

## Results

The study involved 117 people smoking cigarettes in the Piotrków district, 44% were men and 56% women. 90.6% of all respondents are daily smokers. A detailed description of the respondents is presented in Table 1. Smokers were most often people in the age group 50–59 (32.5%), married (47.9%), with secondary education (38.5%), employed (60.7%), and with a monthly net income per person in the family above PLN 1000 to PLN 1500 (25.6%).

Among smokers, the most frequently used cigarettes were filtered cigarettes (68.4%) and slim cigarettes (32.9%). Every second test person smoked more than 10 to 20 cigarettes a day. The number of years of regular daily smoking (after subtracting any abstinence breaks) for 31.6% of the subjects was 10–20 years, and for 25.6% it was 21–30 years. 58.1% of respondents have ever tried to quit smoking, most often 3–4 and 5–6 times (31.6% and 27.3%). 70.1% of the respondents have not tried to quit smoking in the last 12 months. Every fifth respondent (20.5%) tried to quit smoking within the last 12 months, most often 1–2 times (41.9%).

When asked which of the statements best describes your intentions to quit smoking, 65.8% of respondents replied that they intend to quit smoking within the next month. 37.6% of respondents are currently definitely convinced of the success of quitting smoking, while 47.0% are rather convinced of success. When asked what prompted you to try to quit smoking, the most important reason for 25.6% of respondents was the fear of illness, and for 19.6% the current health problems.

Smokers most often lived in a home with one adult (18 and over) (47.0%) and one child (under 18) 15.4%. To the question of whether tenants at home smoke, 48.0% answered that none of the tenants smoked, and 36.3% that at least one person smoked.

48.7% of respondents indicated that there are rules in force in their home that limit smoking. For 25.6%, smoking was forbidden in any closed room, 30.8% smoking was allowed in some rooms, and for 23.9% smoking was allowed everywhere (Table 2).

In the event that smoking was forbidden in every enclosed space in 37.6%, this rule was strictly followed. 47.0% of respondents indicated that guests comply with the rules of smoking at home.

70.1% of people currently work outside the home, most often indoors (60.7%), only 4.3% work outside. In more than half of the respondents (53.8%) smoking is prohibited in all rooms in the workplace, and 20.5% of respondents only in some rooms. 70.1% of the respondents stated that in the last 30 days no one smoked indoors in the workplace where the respondent worked.

For this study, two groups were distinguished: people who promote the principles of a smoke-free home and people who represent houses without a smoking ban.

People who respect the principles of a smoke-free home in their homes accounted for 48.7% of the total number of respondents, of which 58% were women and 42% were men. They were mostly people aged 50 and more (54.3%), married (60%), with secondary education (33.3%), employed persons (70.2%), living at home with one adult (43.8%).

People with no smoking ban in their homes accounted for 47.8% of the respondents, 55.4% were women, and 44.6% were men. The most numerous group were people aged over 50 (57.2%). They were mostly married (39.3%), with secondary education (44.6%), employed persons (53.6%), living at home with one adult (50.0%).

Table 3 presents a detailed description of the respondents with the rules of a smoke-free home in their homes and the respondents with no smoking ban in their homes, taking into account socio-demographic features.

68.4% of the respondents propagating smoke-free homes have ever tried to quit, usually 1–2 times (38.6%). In the group of respondents who do not have a smoking ban in their homes, 48.2% have tried to quit smoking, usually 1–2 times (26.8%).

In both analyzed groups, the majority of respondents (66%) intend to quit smoking within the next month and their current approach to quitting smoking is equated with the belief that it will rather be a success (45.6% of respondents promoting smoke-free homes and 50.0% in homes without a smoking ban). The fear of illness (36.8%) and the wish of the family (29.8%) were the most common reasons that prompted the respondents to quit smoking in tobacco-free homes; in the group of respondents in homes without a smoking ban, current health problems (28.6%) and financial considerations (23.2%) were the most frequently mentioned. The majority of respondents in both groups (over 70%) did not live with children under 18 (Table 3). In smoke-free homes, 82.5% of the guests complied with the accepted rules for smoking.

In the group of respondents in homes without a smoking ban, 33.9% of guests did not follow the rules of household smoking.

Implementation of smoke free-homes rules in the homes of smokers with low socioeconomic status.

Table 1. Characteristics of the studied population (N = 117)

Variable	N	%
<b>Sex</b>		
• female	65	56.0
• man	52	44.0
<b>Age (years)</b>		
• < 30	14	12.0
• 30–39	28	23.9
• 40–49	10	8.5
• 50–59	38	32.5
• ≥ 60	27	23.1
<b>Marital status</b>		
• bachelor/miss	28	23.9
• married	56	47.9
• divorced	18	15.4
• widower/widow	15	12.8
<b>Education</b>		
• basic	2	1.7
• basic vocational	21	17.9
• average	45	38.5
• post-secondary	14	12.0
• higher (bachelor's degree)	10	8.5
• higher (master's)	25	21.4
<b>Professional status in the last 12 months</b>		
• salaried employee	71	60.7
• self-employed person	11	9.4
• pupil/student	3	2.6
• housewife	2	1.7
• annuitant	15	12.8
• pensioner	8	6.8
• unemployed	7	6.0
<b>Monthly net family income per person</b>		
• up to 500 PLN	11	9.4
• over 500 to 700 PLN	9	7.7
• over 700 to 1000 PLN	18	15.4
• above 1000 to 1500 PLN	30	25.6
• above 1500 to 2000 PLN	26	22.2
• above 2000 to 2500 PLN	13	11.1
• above 2500 PLN	10	8.6

<b>Do you currently smoke tobacco every day, less often than every day or does not smoke at all?</b> <ul style="list-style-type: none"> <li>• every day</li> <li>• less often than every day</li> <li>• he doesn't smoke at all</li> </ul>	106 8 3	90.6 6.8 2.6
<b>What kind of cigarettes do you smoke most often?</b> <ul style="list-style-type: none"> <li>• with filter</li> <li>• unfiltered</li> <li>• slim</li> <li>• menthol</li> <li>• other</li> </ul>	80 1 28 6 2	68.4 0.9 23.9 5.1 1.7
<b>How many cigarettes do you smoke in total during the day? (pieces)</b> <ul style="list-style-type: none"> <li>• &lt; 1</li> <li>• 1-5</li> <li>• above 5 do 10</li> <li>• above 10 do 20</li> <li>• above 20 do 30</li> <li>• above 30</li> </ul>	4 6 27 61 18 1	3.4 5.1 23.1 52.1 15.4 0.9
<b>Number of years of regular daily smoking? (after deducting any interruptions for abstinence)</b> <ul style="list-style-type: none"> <li>• &lt; 10</li> <li>• 10-20</li> <li>• 21-30</li> <li>• 31-40</li> <li>• &gt; 40</li> </ul>	19 37 30 20 11	16.2 31.6 25.6 17.2 9.4
<b>Have you ever tried to quit smoking?</b> <ul style="list-style-type: none"> <li>• No</li> <li>• Yes</li> </ul>	49 68	41.9 58.1
<b>If you have ever tried to quit smoking it how many times?</b> <ul style="list-style-type: none"> <li>• 0</li> <li>• 1-2</li> <li>• 3-4</li> <li>• 5-6</li> <li>• 6+</li> <li>• No data</li> </ul>	2 37 32 7 3 36	1.7 31.6 27.3 6.0 2.6 30.8
<b>In the last 12 months, have you tried to quit smoking?</b> <ul style="list-style-type: none"> <li>• No</li> <li>• Yes</li> <li>• No data</li> </ul>	82 24 11	70.1 20.5 9.4



<b>If he has tried in the last 12 months quit smoking, how many times?</b>		
• 0	7	6.0
• 1-2	49	41.9
• 3-4	6	5.1
• 5-6	4	3.4
• 6+	2	1.7
• No data	49	41.9
<b>Which of the following best describes your intention to quit smoking?</b>		
• I'm going to quit smoking within the next month	77	65.8
• I'm considering quitting in the next 12 months	27	23.1
• I'll quit smoking, but not in the next few months	5	4.2
• I'm not going to quit, I don't know	1	0.9
• I don't know	6	5.1
• No data	1	0.9
<b>Which of the following best describes your current approach to quitting smoking?</b>		
• I'm definitely convinced of your success	44	37.6
• I'm rather convinced of success	55	47.0
• I'm not convinced of success	18	15.4
<b>What prompted you to now try to quit smoking? (please indicate only one, most important reason):</b>		
• current health problems	23	19.6
• fear of disease	31	26.5
• doctor's recommendations	7	6.0
• family wishes	22	18.8
• belief in the harmful effects of smoking	11	9.4
• financial considerations	20	17.1
• no smoking in the workplace	2	1.7
• other reason, what?	1	0.9

Table 2. Rules limiting smoking in homes in smokers

Variable	N	%
<b>Number of adults (18 and over) with whom the smoker lives</b> <ul style="list-style-type: none"> <li>• 0</li> <li>• 1</li> <li>• 2</li> <li>• 3</li> <li>• 4</li> <li>• 5</li> </ul>	34 55 21 3 2 2	29.1 47.0 17.9 2.6 1.7 1.7
<b>Number of children (under 18) she lives with a smoker at home</b> <ul style="list-style-type: none"> <li>• 0</li> <li>• 1</li> <li>• 2</li> <li>• 3</li> </ul>	85 18 14 0	72.6 15.4 12.0 0
<b>Do tenants smoke?</b> <ul style="list-style-type: none"> <li>• Yes, at least one is smoking</li> <li>• No, none of them smoke</li> <li>• I don't know</li> <li>• No data</li> </ul>	43 56 17 1	36.3 48.0 14.5 0.9
<b>Total number of smoking tenants</b> <ul style="list-style-type: none"> <li>• 0</li> <li>• 1</li> <li>• 2</li> <li>• 3</li> </ul>	70 28 17 2	59.0 24.0 14.5 1.7
<b>Are there any policies in your home that restrict smoking in the home?</b> <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• I don't know</li> <li>• No data</li> </ul>	57 56 3 1	48.7 47.8 2.6 0.9
<b>If so, please specify these rules:</b> <ul style="list-style-type: none"> <li>• Smoking is not allowed in any closed room</li> <li>• Smoking is allowed in some rooms</li> <li>• Smoking allowed everywhere</li> <li>• No data</li> </ul>	30 36 28 23	25.6 30.8 23.9 19.7
<b>If smoking is prohibited in all enclosed spaces, is this rule strictly followed?</b> <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• I don't know</li> <li>• No data</li> </ul>	44 36 12 25	37.6 30.7 10.3 21.4

<p><b>Do guests follow the smoking policy in your home?</b></p> <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• I don't know</li> <li>• No data</li> </ul>	<p>55</p> <p>26</p> <p>11</p> <p>25</p>	<p>47.0</p> <p>22.2</p> <p>9.4</p> <p>21.4</p>
<p><b>If smoking is prohibited in any enclosed space in your home, how long does this rule apply?</b></p> <ul style="list-style-type: none"> <li>• Up to 1 year</li> <li>• 2-5</li> <li>• 6-10</li> <li>• &gt; 10</li> <li>• No data</li> </ul>	<p>2</p> <p>6</p> <p>11</p> <p>1</p> <p>10</p>	<p>6.7</p> <p>20.0</p> <p>36.7</p> <p>3.3</p> <p>33.3</p>
<p><b>How often does someone (anyone) smoke in your home? Whether it is daily, weekly, or once in a while a month or less than once a month?</b></p> <ul style="list-style-type: none"> <li>• Every day</li> <li>• Once a week</li> <li>• Once a month</li> <li>• Less often than once a month</li> <li>• No data</li> </ul>	<p>82</p> <p>3</p> <p>6</p> <p>22</p> <p>4</p>	<p>70.1</p> <p>2.6</p> <p>5.1</p> <p>18.8</p> <p>3.4</p>
<p><b>Do you currently work outside the home?</b></p> <ul style="list-style-type: none"> <li>• Yes</li> <li>• No, I don't work</li> </ul>	<p>82</p> <p>35</p>	<p>70.1</p> <p>29.9</p>
<p><b>Do you usually work inside (indoors) or outdoors?</b></p> <ul style="list-style-type: none"> <li>• Inside</li> <li>• Outside</li> <li>• Both</li> <li>• No data</li> </ul>	<p>71</p> <p>5</p> <p>17</p> <p>24</p>	<p>60.7</p> <p>4.3</p> <p>14.5</p> <p>20.5</p>
<p><b>Are there closed rooms in your workplace?</b></p> <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• No data</li> </ul>	<p>74</p> <p>16</p> <p>27</p>	<p>63.2</p> <p>13.7</p> <p>23.1</p>
<p><b>Which of the following statements best describes approach to smoking indoors at your workplace:</b></p> <p>Allowed everywhere</p> <p>Only allowed in certain rooms</p> <p>Prohibited in all rooms</p> <p>I don't know</p> <p>No data</p>	<p>2</p> <p>24</p> <p>63</p> <p>5</p> <p>23</p>	<p>1.7</p> <p>20.5</p> <p>53.8</p> <p>4.3</p> <p>19.7</p>
<p><b>In the past 30 days, has anyone smoked in closed rooms in which you works?</b></p> <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• No data</li> </ul>	<p>12</p> <p>82</p> <p>23</p>	<p>10.3</p> <p>70.1</p> <p>19.6</p>

Table 3. Characteristics of respondents in smoke-free homes and in home without smoking ban

Variable	Smoke-free home (rules to limit smoking at home) N (%)	Home without smoking ban (no rules to limit smoking at home) N (%)
<b>Sex</b>		
• female	33 (58%)	31 (55.4%)
• man	24 (42%)	25 (44.6%)
<b>Age (years)</b>		
• < 30	7 (12.3%)	7 (12.5%)
• 30–39	14 (24.6%)	12 (21.4%)
• 40–49	5 (8.8%)	5 (8.9%)
• 50–59	16 (28.0%)	20 (35.7%)
• ≥ 60	15 (26.3%)	12 (21.5%)
<b>Marital status</b>		
• bachelor/miss	12 (21%)	13 (23.2%)
• married	34 (60%)	22 (39.3%)
• divorced	5 (9%)	12 (21.4%)
• widower/widow	6 (10%)	9 (16.1%)
<b>Education</b>		
• basic	2 (3.5%)	-
• basic vocational	6 (10.5%)	13 (23.2%)
• average	19 (33.3%)	25 (44.6%)
• post-secondary	5 (8.8%)	8 (14.3%)
• higher (bachelor's degree)	7 (12.3%)	3 (5.4%)
• higher (master's)	18 (31.6%)	7 (12.5%)
<b>Professional status in the last 12 months</b>		
• salaried employee	40 (70.2%)	30 (53.6%)
• self-employed person	4 (7%)	7 (12.5%)
• pupil/student	2 (3.5%)	1 (1.8%)
• housewife	-	2 (3.6%)
• annuitant	7 (12.3%)	8 (14.3%)
• pensioner	3 (5.3%)	4 (7.1%)
• unemployed	1 (1.7%)	4 (7.1%)
<b>Monthly net family income per person</b>		
• up to 500 PLN	2 (3.5%)	8 (14.3%)
• over 500 to 700 PLN	6 (10.5%)	3 (5.35%)
• over 700 to 1000 PLN	8 (14.0%)	9 (16.1%)
• above 1000 to 1500 PLN	16 (28.1%)	12 (21.4%)
• above 1500 to 2000 PLN	11 (19.3%)	15 (26.8%)
• above 2000 to 2500 PLN	7 (12.3%)	6 (10.7%)
• above 2500 PLN	7 (12.3%)	3 (5.35%)

<b>How many cigarettes do you smoke in total during the day? (pieces)</b> <ul style="list-style-type: none"> <li>• &lt; 1</li> <li>• 1-5</li> <li>• above 5 do 10</li> <li>• above 10 do 20</li> <li>• above 20 do 30</li> <li>• above 3</li> </ul>	3 (5.3%) 4 (7.0%) 14 (24.6%) 30 (52.6%) 6 (10.5%) -	1 (1.8%) 2 (3.6%) 11 (19.6%) 28 (50.0%) 13 (23.2%) 1 (1.8%)
<b>Have you ever tried to quit smoking?</b> <ul style="list-style-type: none"> <li>• No</li> <li>• Yes</li> </ul>	18 (31.6%) 39 (68.4%)	29 (51.8%) 27 (48.2%)
<b>If you have ever tried to quit smoking it how many times?</b> <ul style="list-style-type: none"> <li>• 1-2</li> <li>• 3-4</li> <li>• 5-6</li> <li>• 6+</li> <li>• No data</li> </ul>	22 (38.6%) 17 (29.8%) 6 (10.5%) - 12 (21.1%)	15 (26.8%) 13 (23.2%) 1 (1.8%) 3 (5.4%) 24 (42.8%)
<b>In the last 12 months, have you tried to quit smoking?</b> <ul style="list-style-type: none"> <li>• No</li> <li>• Yes</li> <li>• No data</li> </ul>	40 (70.2%) 12 (21.0%) 5 (8.8%)	39 (69.7%) 12 (21.4%) 5 (8.9%)
<b>Which of the following best describes your intention to quit smoking?</b> <ul style="list-style-type: none"> <li>• I'm going to quit smoking within the next month</li> <li>• I'm considering quitting in the next 12 months</li> <li>• I'll quit smoking, but not in the next few months</li> <li>• I'm not going to quit, I don't know</li> <li>• I don't know</li> <li>• No data</li> </ul>	38 (66.7%) 13 (22.8%) 2 (3.5%) 1 (1.75%) 2 (3.5%) 1 (1.75%)	37 (66.1%) 13 (23.2%) 3 (5.35%) - 3 (5.35%) -
<b>Which of the following best describes your current approach to quitting smoking?</b> <ul style="list-style-type: none"> <li>• I'm definitely convinced of your success</li> <li>• I'm rather convinced of success</li> <li>• I'm not convinced of success</li> </ul>	24 (42.1%) 26 (45.6%) 7 (12.3%)	18 (32.1%) 28 (50.0%) 10 (17.9%)
<b>What prompted you to now try to quit smoking? (please indicate only one, most important reason):</b> <ul style="list-style-type: none"> <li>• current health problems</li> <li>• fear of disease</li> <li>• doctor's recommendations</li> <li>• family wishes</li> <li>• belief in the harmful effects of smoking</li> <li>• financial considerations</li> <li>• no smoking in the workplace</li> <li>• other reason, what?</li> </ul>	7 (12.3%) 21 (36.8%) 2 (3.5%) 17 (29.8%) 4 (7.0%) 5 (8.8%) 1 (1.8%) -	16 (28.6%) 9 (16.1%) 5 (8.9%) 5 (8.9%) 6 (10.7%) 13 (23.2%) 1 (1.8%) 1 (1.8%)

<b>Number of adults (18 and over) with whom the smoker lives</b> <ul style="list-style-type: none"> <li>• 0</li> <li>• 1</li> <li>• 2</li> <li>• 3</li> <li>• 4</li> <li>• 5</li> </ul>	16 (28.1%) 25 (43.8%) 14 (24.6%) 2 (3.5%) - -	17 (30.3%) 28 (50.0%) 6 (10.7%) 1 (1.8%) 2 (3.6%) 2 (3.6%)
<b>Number of children (under 18) she lives with a smoker at home</b> <ul style="list-style-type: none"> <li>• 0</li> <li>• 1</li> <li>• 2</li> <li>• 3</li> </ul>	40 (70.2%) 10 (17.5%) 7 (12.3%) -	42 (75.0%) 7 (12.5%) 7 (12.5%) -
<b>Do guests follow the smoking policy in your home?</b> <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• I don't know</li> <li>• No data</li> </ul>	47 (82.5%) 6 (10.5%) 4 (7.0%) -	6 (10.7%) 19 (33.9%) 7 (12.5%) 24 (42.9%)

## Discussion

Our study complements the literature on voluntary smoke-free housing rules. In our study, the prevalence of tobacco-free homes was 48.7%. The results obtained are lower than in other countries such as Scotland (51.8%) or the USA, where the percentage was 53% in states with loose tobacco control regulations and higher in states with comprehensive policies [11, 7]. In the USA, 83.7% of households are smoke-free nationally, and smoke-free homes are much more common among non-smokers (90.8%) than among smokers (53.7%) [21]. Our survey results are higher than those of the Eurobarometer, where the incidence was 44% [22].

The Eurobarometer considers completely smoke-free homes to be households where smoking is prohibited, without distinguishing between indoor and outdoor areas [22]. The incidence of smoke-free home admission among non-smoking households was 23.5% in the United Kingdom, 39.2% in the USA, 39.1% in Canada and, 44.3% in Australia [23]. Another study found that 28.4% of smokers used a total ban on smoking indoors [24]. The prevalence of a total smoking ban in the home observed among

smokers in other European countries was 16% in Ireland, 25% in France, 38% in Germany, 17% in the Netherlands, and 25% in the UK [25].

In the Parks et al. study, the majority of adult smokers have implemented no smoking policy in the home only (43%) and 31% have not implemented any no smoking policy [15]. In our study, for 25.6%, smoking was forbidden in any closed room, for 30.8%, smoking was allowed in some rooms, and for 23.9%, smoking was allowed everywhere. The results of our study show that smoke-free homes are more often promoted by people with low socioeconomic status, married, living with one adult.

In the Parks et al. study, comprehensive anti-smoking policies were more common among people of high socioeconomic status (SES), married people who did not live with a smoker; people with a child at home more often introduced smoke-free homes [15]. Low-income and low-educated people were less likely to implement comprehensive smoke-free laws [15].

In a cross-sectional study in Barcelona, 57.4% of households used a total smoking ban. The frequency of households with total indoor bans was higher among non-smokers, women, married people, and in households where minors lived [24].

Other studies have also shown that voluntary adoption of total anti-smoking rules at home was more frequent among people who agree that inhaling tobacco smoke from smokers is dangerous for non-smokers [24]. In the study by Helgertz et al., current smokers less frequently than non-smokers declared compliance with the rules of the smoking ban (70.0%; vs. 96.2%) [26]. The percentage of smokers who declared that their home was non-smoking was higher among those who lived with children (82.0%). In our study, 70.2% of smokers promoting smoke-free rules did not live with children under the age of 18.

In our study in smoke-free homes, 68.4% of respondents have ever tried to quit smoking. The respondents cited fear of illness (36.8%) and family wish (29.8%) as the reason that made them stop smoking. Other studies support the finding that the habit of smoking at home is hard to break [27, 28, 29]. In a study by van Wijk et al., smoking parents struggled or still struggled with changing the habit of smoking indoors to smo-

king outdoors. In the absence of adequate outdoor space, the study found that parents could quit smoking, rather than setting stricter home smoking policies [30]. Smokers with lower SES find it very difficult to quit [31], and SFH interventions should always be accompanied by an offer to quit smoking attempt [30].

Heck et al. demonstrated that the introduction of a complete ban on smoking at home is correlated with the smoking status of household members and with the demographic characteristics of respondents [32]. In Poland, Kaleta et al. showed a nearly two-fold higher risk of not introducing a complete smoking ban in a home inhabited by smokers in relation to non-smokers [3].

Our analysis has strengths that have been described elsewhere [19]. For the first time, the study was conducted among the socially disadvantaged adult rural population. The limitation of the study is a small group of the population. The study also used a cross-sectional design that tends to be observable at one point in time, making it impossible to observe changes over longer periods of time.

Our results demonstrate the need for increased interventions to encourage tobacco-free homes and increased awareness of the health risks associated with SHS in private settings, especially among smokers.

## Conclusions

There is a need for interventions to encourage a smoking ban in homes. Primary care interventions, public health programs, and media campaigns should promote the health benefits of having a smoke-free home. Also, measures should be taken to reduce the social acceptance of smoking in homes in the presence of children, pregnant women, and non-smokers.



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