

Frequency of secondhand smoke exposure and determination of influential social factors among children living in the Northeastern Anatolia region

 Gizem Tükenmez,¹  Hilal Karahan,²  Mehmet Fatih Yılmaz,²  Hayrünnisa Bekis Bozkurt³

¹Department of Pediatrics, Kafkas University Faculty of Medicine, Kars, Türkiye

²Department of Public Health, Kafkas University Faculty of Medicine, Kars, Türkiye

³Department of Pediatric Allergy and Immunology, Health Sciences University, Ümraniye Training and Research Hospital, İstanbul, Türkiye

ABSTRACT

Objective: Secondhand smoke exposure is defined as the inhalation of smoke by non-smokers from burning tobacco products. Children are particularly vulnerable to the harmful effects of secondhand smoke exposure due to their physiological characteristics and developmental status. This study aimed to determine the frequency of passive cigarette smoke exposure among children under five years of age attending a pediatric outpatient clinic and to identify the social factors influencing this exposure.

Material and Methods: This hospital-based cross-sectional study included 343 children under the age of five and their parents who presented to the pediatric outpatient clinic of a university hospital for any reason between July 1 and November 1, 2024. Data were collected using a structured questionnaire administered to parents. Secondhand smoke exposure was defined as smoking at least one cigarette in the vicinity of the child. Descriptive statistics, chi-square tests, and logistic regression analyses were performed using SPSS v20.0.

Results: The frequency of secondhand smoke exposure among children under five was 22.2%, while 49.3% of parents reported smoking at home. Secondhand smoke exposure was significantly associated with residential area, father's years of education, household income sufficiency, and maternal exposure to smoking during pregnancy. Children living in rural areas and those with fathers who had five or fewer years of education or with insufficient household income were at higher risk of exposure. Maternal exposure to smoking during pregnancy increased the child's risk of passive exposure 13.69-fold (95% CI: 6.561–28.577).

Conclusion: Secondhand smoke exposure to cigarette smoke in young children remains a significant public health problem strongly linked to socioeconomic and sociocultural factors. Legal bans on indoor smoking alone have not sufficiently reduced exposure; targeted public health interventions and parental education are urgently needed to protect children's health.

Keywords: Children; passive smoking; second-hand smoke exposure.

Cite this article as: Tükenmez G, Karahan H, Yılmaz MF, Bekis Bozkurt H. Frequency of secondhand smoke exposure and determination of influential social factors among children living in the Northeastern Anatolia region. Jour Umraniye Pediatr 2025;5(2):65–72.

Received (Başvuru): 27.04.2025 **Revised (Revizyon):** 26.08.2025 **Accepted (Kabul):** 01.09.2025 **Online (Online yayınlanma):** 00.10.2025

Correspondence (İletişim): Dr. Gizem Tükenmez. Sağlık Bilimleri Üniversitesi, Ümraniye Eğitim ve Araştırma Hastanesi, Çocuk Sağlığı ve Hastalıkları Kliniği, İstanbul, Türkiye.

Phone (Tel): +90 535 426 62 88 **e-mail (e-posta):** gizem.tukenmez@hotmail.com

© Copyright 2025 by Istanbul Provincial Directorate of Health - Available online at www.umraniyepediatrici.com

Kuzeydoğu Anadolu bölgesinde yaşayan çocuklarda ikinci el sigara dumanına maruz kalma sıklığı ve etkili sosyal faktörlerin belirlenmesi

ÖZET

Amaç: Pasif sigara dumanı maruziyeti, sigara içmeyenlerin tütün ürünlerinin yanmasından kaynaklanan dumanı soluması olarak tanımlanır. Çocuklar, fizyolojik özellikleri ve gelişimsel durumları nedeniyle pasif maruziyetin zararlı etkilerine karşı özellikle hassastır. Bu çalışma, bir üniversite hastanesinin pediatri polikliniğine başvuran beş yaş altı çocuklarda pasif sigara dumanı maruziyet sıklığını ve bu maruziyeti etkileyen sosyal faktörleri belirlemeyi amaçlamaktadır.

Gereç ve Yöntemler: Bu hastane temelli kesitsel çalışma, 1 Temmuz–1 Kasım 2024 tarihleri arasında herhangi bir nedenle üniversite hastanesinin pediatri polikliniğine başvuran beş yaş altı 343 çocuk ve ebeveynlerini kapsamaktadır. Veriler, ebeveynlere uygulanan yapılandırılmış bir anket aracılığıyla toplanmıştır. Pasif maruziyet, çocuğun bulunduğu ortamda en az bir sigara içilmesi olarak tanımlanmıştır. Tanımlayıcı istatistikler, ki-kare testi ve lojistik regresyon analizleri SPSS v20.0 kullanılarak yapılmıştır.

Bulgular: Beş yaş altındaki çocuklarda pasif maruziyet sıklığı %22,2, ebeveynlerin evde sigara içme sıklığı ise %49,3 olarak bulunmuştur. Pasif maruziyet; yerleşim alanı, babanın eğitim yılı, hane gelirinin yeterliliği ve gebelik döneminde annenin sigaraya maruziyeti ile anlamlı ilişki göstermiştir. Kırsal bölgede yaşayan çocuklar, babası beş yıl ve daha az eğitim almış olanlar veya gelir düzeyi yetersiz olanlar daha yüksek risk altındadır. Gebelikte annenin sigaraya maruz kalması, çocuğun pasif maruziyet riskini 13,69 kat artırmıştır (%95 GA: 6,561–28,577).

Tartışma: Küçük çocuklarda pasif sigara dumanı maruziyeti, sosyoekonomik ve sosyokültürel faktörlerle yakından ilişkili önemli bir halk sağlığı sorunu olmaya devam etmektedir. Kapalı alanlarda sigara içmeyi yasaklayan yasal düzenlemeler tek başına yeterli olmamış; çocukların sağlığını korumak için hedeflenmiş halk sağlığı müdahaleleri ve ebeveyn eğitim programlarına acil ihtiyaç vardır.

Anahtar Kelimeler: Çocuklar; pasif içicilik; ikinci el sigara maruziyeti.

ORCID ID

GT: 0000-0002-0802-9890; HK: 0000-0003-1910-2309; MFY: 0009-0004-1778-8380; HBB: 0000-0001-8642-4872

¹Kafkas Üniversitesi Tıp Fakültesi, Çocuk Sağlığı ve Hastalıkları Kliniği, Kars, Türkiye

²Kafkas Üniversitesi Tıp Fakültesi, Halk Sağlığı Kliniği, Kars, Türkiye

³Sağlık Bilimleri Üniversitesi, Ümraniye Eğitim ve Araştırma Hastanesi, Pediatrik Alerji ve İmmünoloji Kliniği, İstanbul, Türkiye

INTRODUCTION

Tobacco use is a major global health crisis, causing the death of more than 8 million people every year. While more than 7 million of these deaths result directly from tobacco use, approximately 1.3 million are due to exposure of nonsmokers to secondhand smoke (1). Secondhand smoke exposure is defined as the inhalation of smoke emitted by others who smoke or from burning tobacco products by individuals who do not smoke themselves (2). Even 30 minutes of exposure to others' tobacco smoke can induce physical effects identical to those observed in long-term active smokers. While secondhand smoke exposure leads to various health problems in both adults and children, children are more severely affected (3). Children's ability to metabolize hazardous chemicals is not fully developed during the early stages of life, rendering them more vulnerable compared to adults (4). Indeed, studies have shown that children of smoking parents are more likely to develop respiratory diseases than those of nonsmoking parents. Furthermore, secondhand smoke exposure has been found to increase the risk of sudden infant death, exacerbate asthma attacks, and elevate the likelihood of neurobehavioral disorders and cardiovascular diseases in adulthood (3, 5–7).

Secondhand smoke is also classified as a carcinogen, and exposing children to it is increasingly viewed as a form of child abuse (8). Children are most commonly exposed to secondhand smoke in their own homes (9). Therefore, the behavior of parents or family members with regard to smoking becomes important. The aim of this study was to determine the frequency of secondhand smoke exposure among patients presenting to a pediatric outpatient clinic and identify the social factors influencing this exposure.

MATERIAL AND METHODS

The study population consisted of children under five years of age who presented to the pediatric outpatient clinic of a university hospital. Based on hospital records, a total of 4,957 visits were recorded in 2023. Assuming a comparable number of patient visits in 2024, the study population was estimated and defined as 4,957 children for the purpose of this research. The sample size, calculated using the Epi-Info program with a 50% prevalence, 95% confidence interval, and 5% margin of error, was determined to be 357 children (10). The dependent variable was the passive exposure status of children aged 0-5

years to secondhand smoke. Independent variables included sociodemographic characteristics related to the family, mother, and child (family's residence, mother's education and occupation, mother's health insurance, father's education and occupation, number of persons per room, family income, number of children in the family, presence of a smoker in the household, smoking inside the home, mother's exposure to smoke during pregnancy, and presence of a child's room).

The data collection form was developed based on a literature review and the Türkiye Demographic and Health Survey (2, 11). Prior to the study, ethical approval (No: 478/17) was obtained from the Clinical Research Ethics Committee of Kafkas University Faculty of Medicine. The study was conducted in accordance with the Declaration of Helsinki. Informed consent was obtained from all participants. Data were collected via face-to-face interviews with parents of children presenting to the pediatric outpatient clinic who volunteered to participate. After reaching 357 parents, 14 were excluded from the study due to poor data quality. Parents of 343 pediatric patients participated in the study.

Statistical Analysis

SPSS v20.0 (IBM SPSS Statistics for Windows, Version 20.0; Armonk, NY, USA) package program was used for the analyses. Descriptive statistics were presented using frequency and percentage. Chi-square analysis was used for pairwise comparisons and Backward LR logistic regression analysis was used to determine causal effects.

RESULTS

The study was conducted with 343 parents of children under five years of age. The frequency of smoking in the presence of a child under five was 22.2%. Table 1 shows the effect of independent variables on secondhand smoke exposure. There were statistically significant associations between secondhand smoke exposure and place of residence ($p=0.002$), mother's education status ($p<0.001$), mother's employment status ($p=0.004$), father's employment status ($p=0.022$), father's years of education ($p<0.001$), persons per room ($p=0.001$), family income status ($p<0.001$), number of children ($p<0.001$), presence of smokers in the household ($p<0.001$), smoking inside the home ($p<0.001$), mother's exposure to smoking during pregnancy ($p<0.001$), and presence of a children's room ($p=0.008$).

Independent variables that were statistically significant in bivariate analyses were included in the logistic regression analysis. Compared with reference categories, the odds of smoking in the presence of the child were 2.28 times higher among those living in rural areas (95% CI: 1.061–4.895), 2.90 times higher when the father had ≤ 5 years of education (95% CI: 1.355–6.188), 3.61 times higher when family income was insufficient (95% CI: 1.277–10.208), 8.98 times higher in households with smoking inside the home (95% CI: 3.654–22.064), and 13.69 times higher when mothers were exposed to smoking during pregnancy (95% CI: 6.561–28.577) (Table 2).

DISCUSSION

In this study, exposure to secondhand cigarette smoke—estimated by the World Health Organization (WHO) to cause approximately 600,000 premature deaths annually—was addressed (12). The aim of the study was to determine the frequency of secondhand smoke exposure and the social factors affecting this frequency in children under five years of age. Among children under five years of age presenting to the pediatric outpatient clinic, the frequency of secondhand smoke exposure was found to be 22.2%, and the frequency of parents smoking at home was 49.3%. Hajizadeh and Nandi reported a 32% prevalence of secondhand smoke exposure among children aged 0–5 years (13). The WHO has stated that 38% of students aged 13–15 years in the Eastern Mediterranean Region are exposed to secondhand smoke at home, and in many countries, only one-fourth of homes are identified as smoke-free (14).

In a study by Mbulo et al. (15) covering 21 countries, exposure to secondhand smoke at home among children under 15 years ranged from 4.5% to 79%. In studies conducted with children aged five years and younger, exposure to secondhand smoke at home was reported at rates of 9.9%–22% in the United States; 4.7% in Norway; 71.8% in Spain; 55.4% in Iran; 37.5% in Germany; and 45.9% in a study involving primary school children in 11 countries of the European Union (16–22). In a study conducted with primary school children in Türkiye, the frequency of secondhand smoke exposure was found to be 59.9%, and a study conducted with newborns reported a 64% frequency of secondhand smoke exposure (2, 23). In the study by Akçay and Özcebeci, it was found that 47.3% of parents smoked at home, 30.1% smoked in the car with children present, and the prevalence of secondhand smoke exposure was found to be 70.6% (24). Although these rates are similar to those reported in Turkish studies, they are higher than those reported in international publications. In order to prevent secondhand and thirdhand smoke exposure, Türkiye has prohibited the consumption of tobacco products in public and private spaces since 2008 (25). This regulation aims to prevent smokers from threatening the health of others. However, the high prevalence of secondhand smoke exposure among children suggests a lack of public awareness regarding the purpose of the ban and insufficient parental understanding of this issue.

In the present study, when urban residence was used as the reference, children living in rural areas had 2.28 times higher exposure to secondhand smoke (CI: 1.061–4.895). A study analyzing data from 26 low- and middle-income countries reported higher secondhand smoke exposure among children in rural areas compared to urban areas in most of these countries (13). A U.S. study on middle and high school students found that children in rural areas had higher exposure to secondhand smoke at home (OR: 1.26; 95% CI: 1.15–1.38) and in vehicles (OR: 1.50; 95% CI: 1.35–1.65) compared to urban youth (26). Similarly, a study in India reported higher rates of secondhand smoke exposure at home in rural versus urban areas (27). Consistent with the literature, this finding may be attributed to

Table 1. The effect of social factors on exposure to secondhand smoke (Kars, 2024)

Independent variables	Exposure to secondhand smoke		Total n (%)**	χ^2	P
	No n (%)*	Yes n (%)*			
Place of residence				10.078	0.002
Rural	66 (66.7)	33 (33.3)	99 (28.9)		
Urban	201 (82.4)	43 (17.6)	244 (71.1)		
Mother's education (years)				14.937	0.000
5 years	145 (70.7)	60 (29.3)	205 (59.8)		
8 years	122 (88.4)	16 (11.6)	138 (40.2)		
Mother's occupation				10.973	0.004
Formal employment	64 (91.4)	6 (8.6)	70 (20.4)		
Informal employment	26 (66.7)	13 (33.3)	39 (11.4)		
Unemployed	177 (75.6)	57 (24.4)	234 (68.2)		
Mother's health insurance				3.424	0.069
Green card	119 (73.5)	43 (26.5)	162 (47.2)		
Social security institution	148 (81.8)	33 (18.2)	181 (52.8)		
Father's occupation				7.622	0.022
Formal employment	132 (84.6)	24 (15.4)	156 (45.5)		
Self-employed	53 (72.6)	20 (27.4)	73 (21.3)		
Unemployed/ Occasional worker	82 (71.9)	32 (28.1)	114 (33.2)		
Father's education (years)				14.051	0.000
≤5 years	64 (64.6)	35 (35.4)	99 (28.9)		
≥6 years	203 (83.2)	41 (16.8)	244 (71.1)		
Number of people per room				10.356	0.001
≥2 persons	153 (72.2)	59 (27.8)	212 (61.8)		
≤1 person	114 (87.0)	17 (13.0)	131 (38.2)		
Income level				12.699	0.000
Insufficient/ Barely sufficient	189 (73.3)	69 (26.7)	258 (75.2)		
Good enough	78 (91.8)	7 (8.2)	85 (24.8)		
Number of children				12.631	0.000
≤2 children	146 (85.9)	24 (14.1)	170 (49.6)		
≥3 children	121 (69.9)	52 (30.1)	173 (50.4)		
Household smokers				48.943	0.000
Parents	111 (66.1)	57 (33.9)	168 (49.0)		
Other members	20 (58.8)	14 (41.2)	34 (9.9)		
None	133 (84.2)	25 (15.8)	158 (44.3)		
Smoking at home				63.133	0.000
Yes	101 (59.8)	68 (40.2)	169 (49.3)		
No	166 (95.4)	8 (4.6)	174 (50.7)		
Mother's exposure to smoking during pregnancy				123.506	0.000
Yes	28 (33.7)	55 (66.3)	83 (24.2)		
No	239 (91.9)	21 (8.1)	260 (75.8)		
Children's room				7.506	0.008
Present	163 (83.2)	33 (16.8)	196 (57.1)		
Absent	104 (70.7)	43 (29.3)	147 (42.9)		
Total	267 (77.8)	76 (22.2)	343 (100.0)		

n: Number; *: Row percentage; **: Column percentage.

Table 2. Logistic regression analysis of factors associated with secondhand smoke exposure among children under five (Kars, 2024)

Dependent variable: Smoking in the presence of the child (Passive exposure to cigarette smoke)						
Independent Variables	B	SE	Wald	p	Odds ratio	%95 CI (Min-Max)
Residence						
Rural	0.824	0.390	4.463	0.035	2.28	1.061–4.895
Urban (reference)					1	
Father's education						
≤5 years	1.063	0.387	7.529	0.006	2.90	1.355–6.188
≥6 years (reference)					1	
Household income						
Insufficient	1.284	0.530	5.860	0.015	3.61	1.277–10.208
Sufficient (reference)					1	
Smoking at home						
Yes	2.195	0.459	22.895	0.000	8.98	3.654–22.064
No (reference)					1	
Mother's exposure to smoking during pregnancy						
Yes	2.617	0.375	48.603	0.000	13.69	6.561–28.577
No (reference)					1	

B: Regression coefficient; SE: Standard Error; CI: Confidence Interval; Min: Minimum; Max: Maximum.

rural residents' lower socioeconomic status, lower education levels, and inadequate health literacy compared to urban populations.

In the present study, when fathers with 6 or more years of education were used as the reference, the rate of secondhand smoke exposure at home was 2.90 times higher among children of fathers with 5 or fewer years of education (CI: 1.355–6.188). Parents' educational level and smoking behavior are associated with children's exposure to secondhand smoke (28). Similar to our findings, a study in Spain found that higher paternal education was associated with lower secondhand smoke exposure in children (29). Children of parents with low education levels were reported to have up to tenfold higher risk of secondhand smoke exposure (OR: 1.08–10.4) (30). Another study on Portuguese children revealed that children of fathers and mothers with low education levels had 1.57 times ($p=0.032$; CI=[1.04; 2.37]) and 1.80 times ($p=0.003$; CI=[1.23; 2.64]) higher likelihood of secondhand smoke exposure at home, respectively, compared to children of parents with the highest education levels (31).

Among the social determinants of health, poverty has a negative impact on health, while higher income and social status are linked to better health outcomes (31). A father's unemployment or lack of a professional occupation reduces household income. In the present study, children faced a higher risk of secondhand smoke exposure when household income was insufficient or when the father was unemployed or not working in the public/private sector. The literature supports the association between low income, fathers working low-status

jobs or being unemployed, and secondhand smoke exposure among children (20, 21, 32–36). It has been reported that children from poorer households are more frequently exposed to secondhand smoke (13). In a German study of families with children aged three years and younger, households with at least one of the parents unemployed had a 2.38-fold increase in home smoking compared to households without any of the parents unemployed (95% CI: 1.54–3.68) (21). Not only at the family level but also nationally, low socioeconomic status has been shown to increase the risk of tobacco smoke exposure (22). Employment in low-paying jobs poses a risk for secondhand smoke exposure, as with other health parameters. Approximately 80% of the world's 1.3 billion tobacco users reside in low- and middle-income countries (1). In the present study, households with lower incomes also demonstrated higher rates of tobacco use and secondhand smoke exposure. Financial hardship, along with social and psychosocial stressors, may trigger smoking in low-income individuals. Limited access to smoking cessation services in this group may further impede quitting. Employment in low-paying jobs poses a risk for secondhand smoke exposure, as with other health parameters. Moreover, those employed in the public or private sector are obliged to comply with workplace tobacco bans, which may increase their awareness and reduce smoking at home.

In the present study, compared to smoke-free homes, households with smoking exhibited an 8.98-fold increased risk of secondhand smoke exposure (CI: 3.654–22.064), and the prevalence of parental smoking at home was 49.3%. A Spanish study reported that 39.0% of children aged 4–5 were exposed

to secondhand smoke at home (37). Another study found that maternal current smoking increased a child's secondhand smoke exposure risk by 3.31 times (vs. nonsmoking mothers), though the presence of other adult smokers in the home showed no significant association with exposure in the child's room (38).

A German study noted smoking in 35.1% of homes, where maternal smoking significantly elevated children's urinary cotinine/creatinine ratios, while paternal smoking only had a significant effect if the mother did not smoke. Children with only smoking mothers had urinary cotinine/creatinine ratios similar to or higher than those with two smoking parents (39). A systematic review identified a strong association between parental/household smoking and children's secondhand smoke exposure. Children of smoking mothers had a 7-fold higher risk (OR: 2.1–6.9), while those with two smoking parents had a 13.5-fold higher risk (OR: 2.9–13.5) of exposure to secondhand smoke at home. These findings underscore the critical need to enhance maternal awareness to reduce children's exposure to secondhand smoke.

The higher frequency of smoking at home and secondhand smoke exposure observed in the present study compared to others may stem from the study region being among Türkiye's socioeconomically lowest provinces, coupled with subzero winter temperatures that increase time spent at home.

In the present study, it was found that 24.2% of the mothers were exposed to tobacco smoke during pregnancy. Furthermore, compared with mothers not exposed to tobacco smoke during pregnancy, children of mothers who were exposed had a 13.69-fold increased risk of secondhand smoke exposure (95% CI: 6.561–28.577). Among pregnant women, the prevalence of secondhand smoke exposure ranges from 24% to 92%. Contributing factors include lack of knowledge, absence of comprehensive smoking bans, and low social status of women (40). Consistent with our findings, in a study involving Iranian pregnant women, the rate of secondhand smoke exposure was 23.1%. Women exposed to secondhand smoke had lower knowledge and perception scores about such exposure compared with unexposed women (41).

In a study conducted in China, Mao et al. (42) reported that smoking was culturally embedded not only in social interactions but also in familial relationships. Women expressed concern that actively confronting male relatives who smoke—especially fathers-in-law—would harm family harmony, and thus non-smoking women were reluctant to challenge smoking family members. Patriarchal norms and women's inability to oppose their husbands' smoking habits were identified as factors related to prenatal secondhand smoke exposure. Various barriers to maintaining a smoke-free home during pregnancy include low self-efficacy, lack of awareness, and cultural and social obstacles. Moreover, the presence of smokers around the mother during pregnancy suggests that postnatally these individuals will continue to be around her, perpetuating the child's secondhand smoke exposure. Thus, prenatal secondhand tobacco smoke exposure is a key indicator of the child's subsequent exposure.

The primary risk factors for high childhood exposure to secondhand smoke are closely linked to low socioeconomic and developmental conditions. Eliminating these health risks requires broader societal advancement and development.

Türkiye, an early signatory to the WHO Framework Convention on Tobacco Control and a pioneer in adopting MPOWER (Monitor, Protect, Offer, Warn, Enforce, Raise) measures, has banned tobacco use in enclosed public spaces since July 2009. However, current and prior field studies indicate no reduction in infants' secondhand smoke exposure despite legal restrictions (2, 23). A public health approach prioritizing community engagement in healthcare services is essential to combat tobacco use and secondhand smoke exposure. Legal measures alone, unless internalized by society, fail to become lifestyle norms or achieve the desired outcomes. There is a need for public education that clarifies the rationale behind indoor smoking bans and fosters awareness of the risks associated with secondhand smoke exposure. Studies show that moderate knowledge about the consequences of secondhand smoke exposure has protective effects (35).

CONCLUSION

Childhood secondhand smoke exposure remains a significant, unresolved, and neglected public health issue. Exposure to secondhand tobacco smoke is entirely preventable yet poses serious risks to children's health, well-being, and development. Following public smoking bans, healthcare professionals must emphasize to parents the importance of controlling exposure in private spaces. Prenatal care providers should educate both parents and extended family members during maternal check-ups. The results obtained in the present study may aid in designing and implementing future educational interventions.

Ethics Committee Approval: The Kafkas University Faculty of Medicine Ethics Committee granted approval for this study (date: 26.06.2024, number: No: 478/17).

Informed Consent: Written informed consent was obtained from the families of the patients who participated in this study.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study has received no financial support.

Use of AI for Writing Assistance: Not declared.

Authorship Contributions: Concept – GT; Design – GT; Supervision – GT, HK, HBB; Resources – GT; Materials – GT; Data Collection and/or Processing – GT, MFY; Analysis and/or Interpretation – GT, MFY; Literature Search – GT, HK; Writing – GT, HK; Critical Reviews – GT, HK, HBB.

Peer-review: Externally peer-reviewed.

Etik Kurul Onayı: Kafkas Üniversitesi Tıp Fakültesi Etik Kurulu'ndan bu çalışma için onay alınmıştır (tarih: 26.06.2024, sayı: No: 478/17).

Hasta Onamı: Yazılı hasta onamı bu çalışmaya katılan hastaların ailelerinden alınmıştır.

Çıkar Çatışması: Yazarlar çıkar çatışması bildirmemişlerdir.

Mali Destek: Yazarlar bu çalışma için mali destek almadıklarını beyan

etmişlerdir.

Yazma Yardımı için Yapay Zeka Kullanımı: Beyan edilmedi.

Yazarlık Katkıları: Fikir – GT; Tasarım – GT; Denetlemeler – GT, HK, HBB; Kaynaklar – GT; Malzemeler – GT; Veri Toplama ve/veya İşleme – GT, MFY; Analiz ve/veya Yorumlama – GT, MFY; Literatür Araştırması – GT, HK; Yazım – GT, HK; Eleştirel İncelemeler – GT, HK, HBB.

Hakemli inceleme: Harici olarak hakemli.

REFERENCES

- World Health Organization. Tobacco. 2025. Available at: <https://www.who.int/news-room/fact-sheets/detail/tobacco>. Accessed Jan 18, 2025.
- Catak B, Oner C, Sutlu S. Secondhand tobacco smoke exposure of infants at home: a population-based cross-sectional study. *Clin Epidemiol Glob Health* 2020;8:271–4.
- Hahn D, Schmied-Tobies M, Rucic E, Pluym N, Scherer M, Debiak M, et al. Urinary cotinine and exposure to passive smoke in children and adolescents in Germany - Human biomonitoring results of the German Environmental Survey 2014-2017 (GerES V). *Environ Res* 2023;216:114320.
- Leith Sly J, Carpenter DO. Special vulnerability of children to environmental exposures. *Rev Environ Health* 2012;27:151–7.
- Sismanlar Eyuboglu T, Aslan AT, Kose M, Pekcan S, Hangul M, Gulbahar O, et al. Passive smoking and disease severity in childhood pneumonia under 5 years of age. *J Trop Pediatr* 2020;66:412–8.
- Ou XX, Wang X, Zhan XL, Shen SL, Karatela S, Jing J, et al. The associations of secondhand smoke exposure with neurodevelopmental disorders and critical time window identification: A systematic review and meta-analysis. *Sci Total Environ* 2024;913:169649.
- Reifenberg J, Gecili E, Pestian T, Andrinopoulou ER, Ryan PH, Brokamp C, et al. Lung function and secondhand smoke exposure among children with cystic fibrosis: A Bayesian meta-analysis. *J Cyst Fibros* 2023;22:694–701.
- T.C. Sağlık Bakanlığı Halk Sağlığı Genel Müdürlüğü. Çocuk ihmal ve istismarı. Available at: <https://hsgm.saglik.gov.tr/tr/ihmal-istismar.html>. Accessed Jan 18, 2025. [Article in Turkish]
- Intarut N, Pukdeesamai P. The prevalence of secondhand smoke exposure and related factors among schoolchildren in Northeast Thailand. *F1000Res* 2020;9:1158.
- Centers for Disease Control and Prevention. Epi Info™. Available at: <https://www.cdc.gov/epiinfo/index.html>. Accessed Jan 18, 2025.
- Hacettepe Üniversitesi Nüfus Etütleri Enstitüsü (HÜNEE). Türkiye Nüfus ve Sağlık Araştırması 2018. Ankara: Elma Teknik Basım ve Matbaacılık; 2019.
- World Health Organization. Secondhand smoke impacts health. Available at: <https://www.emro.who.int/tfi/quit-now/secondhand-smoke-impacts-health.html>. Accessed Jan 11, 2025.
- Hajizadeh M, Nandi A. The socioeconomic gradient of secondhand smoke exposure in children: evidence from 26 low-income and middle-income countries. *Tob Control* 2016;25:e146–55.
- World Health Organization. Fact Sheet TFI 2014. Available at: https://iris.who.int/bitstream/handle/10665/204196/Fact_Sheet_TFI_2014_EN_15307.pdf. Accessed Jan 11, 2025.
- Mbulu L, Palipudi KM, Andes L, Morton J, Bashir R, Fouad H, et al. Secondhand smoke exposure at home among one billion children in 21 countries: findings from the Global Adult Tobacco Survey (GATS). *Tob Control* 2016;25:e95–100.
- Hawkins SS, Berkman L. Identifying infants at high-risk for second-hand smoke exposure. *Child Care Health Dev* 2014;40:441–5.
- Gergen PJ, Fowler JA, Maurer KR, Davis WW, Overpeck MD. The burden of environmental tobacco smoke exposure on the respiratory health of children 2 months through 5 years of age in the United States: Third National Health and Nutrition Examination Survey, 1988 to 1994. *Pediatrics* 1998;101:E8.
- Rise J, Lund KE. Predicting children's level of exposure to environmental tobacco smoke based on two national surveys in Norway in 1995 and 2001. *Addict Behav* 2005;30:1267–71.
- López MJ, Arechavala T, Continente X, Schiaffino A, Pérez-Ríos M, Fernández E. Social inequalities in secondhand smoke exposure in children in Spain. *Tob Induc Dis* 2018;16:14.
- Baheiraei A, Kharaghani R, Mohsenifar A, Kazemnejad A, Mota A, Milani HS, et al. Factors associated with secondhand smoke exposure in infants. *Tanaffos* 2010;9:43–9.
- Ulbricht S, Holdys J, Meyer C, Kastirke N, Haug S, John U. Predictors of indoor smoking at young children's homes—a cross-sectional study. *Eur J Pediatr* 2014;173:1187–91.
- Henderson E, Continente X, Fernández E, Tigova O, Cortés-Francisco N, Gallus S, et al. Secondhand smoke exposure and other signs of tobacco consumption at outdoor entrances of primary schools in 11 European countries. *Sci Total Environ* 2020;743:140743.
- Ekerbicer HC, Celik M, Guler E, Davutoglu M, Kilinc M. Evaluating environmental tobacco smoke exposure in a group of Turkish primary school students and developing intervention methods for prevention. *BMC Public Health* 2007;7:202.
- Akçay D, Özcebe H. Çocukların özel araçlarda sigara dumanından pasif etkilendirme durumlarının incelenmesi. *J Pediatr Dis* 2018;12:86–93. [Article in Turkish]
- Resmi Gazete. 19.01.2008 tarihli, 5727 sayılı, Tütün ve tütün mamullerinin zararlarının önlenmesine dair kanunda değişiklik yapılması hakkında kanun. Available at: <http://www.resmigazete.gov.tr/eskiler/2008/01/20080119-1.htm>. Accessed Jan 11, 2025. [Article in Turkish]
- Mantey DS, Omega-Njemnobi O, Barroso CS. Secondhand smoke exposure at home and/or in a vehicle: differences between urban and non-urban adolescents in the United States, From 2015 to 2018. *Nicotine Tob Res* 2021;23:1327–33.
- Singh A, Sahoo N. Urban-rural differentials in the factors associated with exposure to second-hand smoke in India. *BMJ Open* 2013;3:e003542.
- Soliman S, Pollack HA, Warner KE. Decrease in the prevalence of environmental tobacco smoke exposure in the home during the 1990s in families with children. *Am J Public Health* 2004;94:314–20.
- Jurado D, Muñoz C, Luna Jde D, Fernández-Crehuet M. Environmental tobacco smoke exposure in children: parental perception of smokiness at home and other factors associated with urinary cotinine in preschool children. *J Expo Anal Environ Epidemiol* 2004;14:330–6.
- Orton S, Jones LL, Cooper S, Lewis S, Coleman T. Predictors of children's secondhand smoke exposure at home: a systematic review and narrative synthesis of the evidence. *PLoS One* 2014;9:e112690.

31. Vitória PD, Nunes C, Precioso J. Parents' educational level and second-hand tobacco smoke exposure at home in a sample of Portuguese children. *Rev Port Pneumol* (2006) 2017;23:221–4.
32. Aswathy S, Syama S, Georgy S, Mathew MM, Mohandas S, Menon VB, et al. Tobacco use and exposure to second-hand smoke among high school students in Ernakulum district, Kerala: A cross-sectional study. *Public Health Pract (Oxf)* 2021;2:100213.
33. Shiva F, Padyab M. Smoking practices and risk awareness in parents regarding passive smoke exposure of their preschool children: a cross-sectional study in Tehran. *Indian J Med Sci* 2008;62:228–35.
34. Kuntz B, Lampert T. Social disparities in parental smoking and young children's exposure to secondhand smoke at home: a time-trend analysis of repeated cross-sectional data from the German KiGGS study between 2003-2006 and 2009-2012. *BMC Public Health* 2016;16:485.
35. Robin RC, Noosorn N, Alif SM. Secondhand smoking among children in rural households: a community based cross-sectional study in Bangladesh. *Osong Public Health Res Perspect* 2020;11:201–8.
36. Dai S, Chan KCC. Household environmental tobacco smoke exposure in healthy young children in Hong Kong: Prevalence and risk factors. *PLoS One* 2020;15:e0227733.
37. Fernández MF, Artacho-Cordón F, Freire C, Pérez-Lobato R, Calvente I, Ramos R, et al. Trends in children's exposure to second-hand smoke in the INMA-Granada cohort: an evaluation of the Spanish anti-smoking law. *Environ Res* 2015;138:461–8.
38. Gonzales M, Malcoe LH, Kegler MC, Espinoza J. Prevalence and predictors of home and automobile smoking bans and child environmental tobacco smoke exposure: a cross-sectional study of U.S.- and Mexico-born Hispanic women with young children. *BMC Public Health* 2006;6:265.
39. Scherer G, Krämer U, Meger-Kossien I, Riedel K, Heller WD, Link E, et al. Determinants of children's exposure to environmental tobacco smoke (ETS): a study in Southern Germany. *J Expo Anal Environ Epidemiol* 2004;14:284–92.
40. Sharma T, Khapre M. Exposure of second hand smoke in women and children: A narrative review. *J Family Med Prim Care* 2021;10:1804–7.
41. Mahmoodabad SSM, Karimiankakolaki Z, Kazemi A, Mohammadi NK, Fallahzadeh H. Exposure to secondhand smoke in Iranian pregnant women at home and the related factors. *Tob Prev Cessat* 2019;5:7.
42. Mao A. Getting over the patriarchal barriers: women's management of men's smoking in Chinese families. *Health Educ Res* 2015;30:13–23.