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995 - SECONDHAND SMOKE EXPOSURE IN OUTDOOR SETTINGS ASSESSED BY AIRBORNE AND BIOMARKERS OF TOBACCO: A SYSTEMATIC REVIEW

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Resumen

Background/Objectives: Exposure to secondhand smoke (SHS) is associated with cardiovascular and respiratory diseases and certain types of cancer. The World Health Organization recommends extending smoke-free policies to outdoor public places and invites countries to take necessary and more effective measures to protect people from exposure to SHS. This study aimed to conduct a systematic review to summarize SHS exposure in outdoor settings assessed by airborne and biomarkers of tobacco.

Methods: Studies with original data and measuring airborne and biological markers of tobacco to assess exposure to SHS in outdoor spaces were screened. A search for open-access articles was carried out in the PubMed, Scopus, and Ovid-Medline databases between the years 2000 and 2025. Articles in English and Spanish were included. The search strategy included the following MeSH terms and keywords: (Secondhand smoke OR environmental tobacco smoke OR passive smoking OR secondhand smoke OR Tobacco Smoke Pollution) AND (outdoor* OR outdoor setting OR outdoor place OR terraces).

Results: The search retrieved 1,034 articles after duplicates were removed. Subsequently, authors screened title and abstract. Of these, 93 required full-text evaluation, with 35 meeting inclusion criteria. A total of 27 studies used PM2.5 concentration, 6 used airborne nicotine, and 2 salivary cotinine as SHS markers. 19 studies out of 35 studies assessed SHS in outdoor hospitality venues; 4 measured SHS in building entrances, and 3 measured SHS in hospital campuses. Other outdoor

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settings included were outdoor smoking facilities (n = 2); beaches (n = 1); music festivals (n = 1); children’s playgrounds (n = 1); university campuses (n = 1); entrances of primary schools (n = 1); airport terminals (n = 1); and bus stops (n = 1). Mean PM2.5 concentration ranged from 4.1 to 101.5 μg/m^3 when smokers were not present and from 17.9 to 233.6 μg/m^3 when smokers were present. Most studies indicated a significant association between SHS measures and the presence of smoking bans, walls, humidity, season temperature, wind, and the number of smokers present.

Conclusions/Recommendations: We found high SHS levels in some outdoor areas. In some cases, these levels were comparable to those obtained indoors when smoking was allowed. Health authorities should consider extending smoke-free policies to outdoor settings.

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