

## GUIDELINES AND REGULATIONS FOR SMOKING IN MULTI-UNIT HOUSING IN ASIA - A SCOPING REVIEW

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### ABSTRACT

Among all deaths due to smoking, seven million are the result of direct tobacco use while approximately 1.2 million results from exposure to second-hand smoke in non-smokers. In recent years, third-hand smoke, which is residual smoke gases and particles that settle on surfaces has emerged as another exposure route adding to the cumulative burden of tobacco. Home can represent a significant source of second-hand and third-hand smoke, especially for individuals who live in multiunit housing. This review is intended to provide evidence on the existing regulations and guidelines available in the literature pertaining to this matter in Asia. A scoping review was conducted for published and unpublished literature in the following databases: OVID Medline, PubMed, Scopus, Web of Science, and Cochrane Library. From the databases, 5 articles and 5 regulations or guidelines were finally included in this review. Only five countries in Asia have existing regulations or guidelines related to smoking in multi-unit housing; they are Singapore, Hong Kong, the Republic of Korea, Japan, and Brunei. The regulations in Singapore, Hong Kong, and Brunei have outlined the prohibition of indoor and outdoor smoking in common areas within the residential building while for the Republic of Korea and Japan, it is stated that responsibility lies within state and territory governments, non-government organizations as well as housing providers to establish policies in multi-unit housing. No retrievable guideline or regulation was found with regards to smoking in multi-unit housing in other Asian countries.

**Keywords;** Regulations, Guidelines, Smoking, Multi-unit housing, Asia

## 1.0 Introduction

Globally, smoking, whether it is cigarette smoking or electronic cigarette smoking, has been one of the biggest public health threats which are responsible for the deaths of millions of people each year (WHO, 2021). Among all these deaths, seven million are the result of direct tobacco use while approximately 1.2 million results from exposure to second-hand smoke in non-smokers (WHO, 2021). Smoking has been widely known as a major risk factor for numerous debilitating health conditions particularly cardiovascular and respiratory diseases, and over 20 different types or subtypes of cancer, (American Lung Association, 2022; CDC, 2020a; WHO, 2021). According to the Global Burden of Disease Study in 2019, about 1.14 billion people were current smokers worldwide. While smoking prevalence has decreased significantly since 1990, population growth has led to a significant increase in the total number of smokers compared to 0.99 billion in the year 1990 (Reitsma et al., 2021). In Malaysia, data from the National Health and Morbidity Survey (NHMS) 2015 showed that the overall prevalence of smoking was 22.8%, with a higher prevalence in males (43.0%) compared to 1.4% in females (Lim et al., 2018). Research has shown that smoking prevalence differs across various demographic backgrounds including ethnicities, age groups, and educational levels (Hum et al., 2016; Lim et al., 2018).

Second-hand smoke is defined as the combination of smoke from the burning end of a cigarette and the smoke breathed out by smokers. It contains more than 7,000 chemicals, of which hundreds are toxic and about 70 can cause cancer. As mentioned above, tobacco smoking can also be deadly for non-smokers which were reflected in various adverse health effects and millions of deaths suffered by non-smokers particularly children due to second-hand smoke (CDC, 2020b). It is estimated that almost half of all children are affected by second-hand smoke and about 65 000 children die annually from illnesses related to second-hand smoke (CDC, 2020b). In recent years, third-hand smoke has emerged as another exposure route adding into the cumulative burden of tobacco exposure. Third-hand smoke refers to residual smoke gases and particles that settle on surfaces and dust, and the evidence on the specific health consequences of this exposure is still limited (Acuff et al., 2016). However, the effects of third-hand smoke are not to be undermined. It is thought that the detrimental effects of third-hand smoke are possible due to known consequences of its compounds mainly nicotine (Ferrante et al., 2013). Research has recommended policies and laws on tobacco smoking to be reviewed considering the threat from this third-hand smoke (Acuff et al., 2016).

Home can represent a significant source of second-hand and third-hand smoke, especially for individuals who live in close proximity to one another such as in multi-unit housing (Delgado-Rendon et al., 2017; King et al., 2010). Rapid urbanization has led to a substantial increase in the development of multi-unit housing in many countries worldwide including Malaysia. The term “multi-unit housing” is interchangeable as it is also known as multi-dwelling units, multi-unit dwellings, multi-family residential, or multi-story housing. Multi-unit housing refers to the type of housing where multiple separate housing units for residential inhabitants are contained within one building or several buildings within one complex (Library of Congress, 2022). This includes flats, apartment buildings, and condominiums or townhouses. In comparison to single detached homes, residents in multi-unit housing experienced higher exposure to second-hand smoke with over 40% of residents were found exposed to second-hand smoke (Delgado-Rendon et al., 2017). There is a growing body of evidence in the literature showing that residents in multi-unit housing may be exposed to second-hand smoke incursions which is the seeping of

tobacco smoke from other indoor areas (Hood et al., 2013). Furthermore, second-hand smoke can enter the resident's unit through various pathways including shared air spaces, ventilation systems, windows, elevator shafts, hallways, holes in walls, pipes, and electrical outlets (Kraev et al., 2009).

Exposure to second-hand smoke varies between each multi-unit housing facility depending on the age of the building, its structure, and its smoking policies (CDC, 2022). Families in multi-unit housing facilities are still exposed to second-hand smoke and third-hand smoke through the smoke incursions although they adopt smoke-free home rules as the tobacco smoke can enter their units from other units and common shared areas where smoking is not prohibited (CDC, 2022). Presently, no mechanical or engineering approaches such as ventilation or air cleaning can eliminate the risk of second-hand smoke exposure in multi-unit housing (CDC, 2022). This highlights the importance of guidelines or policies related to smoking in multi-unit housing to ensure the health of its residents and reduce their risks of exposure to second-hand and third-hand smoke. Due to the lack of guidelines or policies, confusion may arise among the residents on common shared areas in the multi-unit housing that are prohibited for smoking such as the swimming pool, stairways, lifts, and balconies.

Internationally, there are growing calls for smoke-free multi-unit housing policies, regulations, and guidelines to curb the risk of exposure to second and third-hand smoke. However, to date, Malaysia has yet to publish its guidelines on smoking in multi-unit housing which may hinder the public health efforts in advocating quitting smoking and smoke-free homes for the betterment of public health in this community in general. Thus, this review is deemed timely, to provide evidence on the existing regulations or guidelines available in the literature pertaining to this matter in Asia, which eventually can be adopted and adapted in Malaysia.

## 2.0 Methodology

A scoping review method was selected, aiming to gather relevant guidelines available in this area of interest and identify the gaps for further research. This review was guided by the methodological framework proposed by Arksey & O'Malley, 2005 (Arksey & O'Malley, 2005). The following five steps were followed in this scoping review: (i) identifying the research question, (ii) identifying relevant articles or guidelines, (iii) selection of eligible articles, (iv) charting the data, and (v) collating and summarising the results. Quality appraisal was not done as this review aims to map all research activities in this field.

### 2.1 Identifying research question

The main research question is "What are the available guidelines/regulations on smoking in multi-unit housing?"

This study used the PICO format (Table 1) to align the study selection with the research question.

**Table 1. PICO framework for eligibility of studies**

Criteria	Determinants
P- Population	Multiunit housing, condominium, apartment, flat, strata housing, high-rise apartment
I – Intervention/ Exposure	Smoking guideline/regulations/ laws
C- Comparator	No comparator
O- Outcome	Effects / Impacts on health

## 2.2 Identifying relevant studies

A search has been conducted for published and unpublished literature on the research area in the following databases: OVID Medline, PubMed, Scopus, Web of Science, and Cochrane Library. Studies published before April 2022 that have the keywords or Medical Subject Headings (MeSH) terms “smoking” or “multi-unit housing”, “apartment” or “condominium” or “flat” or “strata housing” or “high rise apartment”, “guideline” and “regulation” were identified. The search strategy was piloted to check the appropriateness of keywords and databases. A hand search was also conducted of the references of the included studies and websites such as the World Health Organization (WHO), government websites, and general search engines including Google Scholar to identify potentially relevant literature.

## 2.3 Selection of eligible studies

Title and abstract screening were guided by the PICO framework (Table 1). Further eligibility criteria will ensure that the content of the included studies is relevant to the research question.

## 2.4 Inclusion criteria

For articles to be included, they must meet the following criteria:

- articles focused on smoking guidelines in multiunit housing including condominiums, apartments, high-rise apartments, strata housing, and flat

## 2.5 Exclusion criteria

Studies will be excluded if they have any of the following characteristics:

- articles published other than in the English language
- proceedings, abstract with no full text available

All eligible articles were uploaded into Mendeley software, and duplicates were identified and removed. Title and abstract screening of all eligible articles were conducted to determine whether the study should be included in the review or not. All attempts were made to obtain

full texts of selected articles, by searching the web, engaging with the librarian, or contacting the author when necessary. Two authors conducted the full-text screening of the selected studies. A third reviewer was employed when there are significant discrepancies that cannot be resolved by discussion and consensus. The selection process followed the recommendations in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) checklist [18] and mapped using the PRISMA-P chart [19].

## 2.6 Data charting

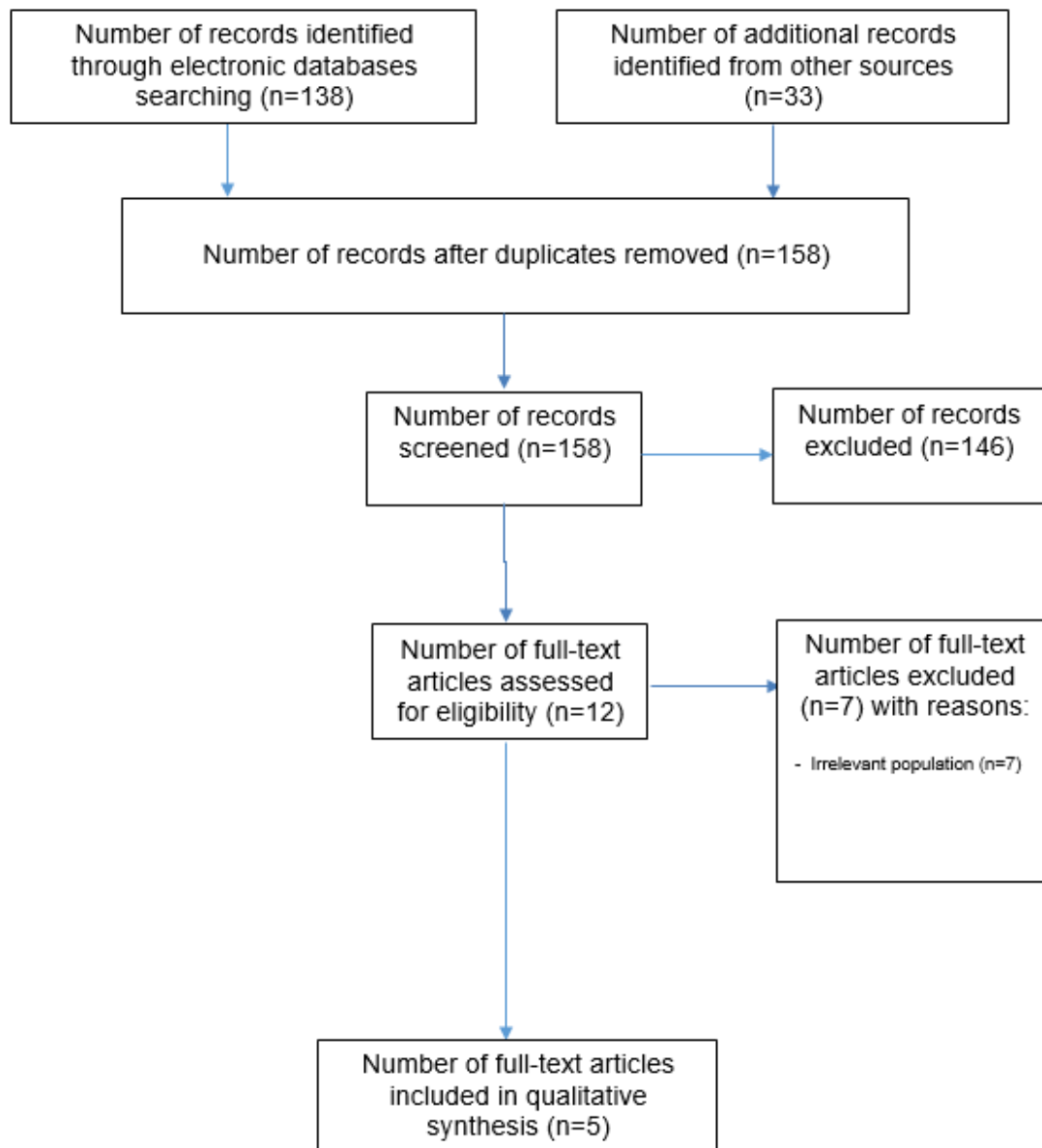
Data was charted from the qualified articles, by reading and extracting the following information: (i) the methodology used; (ii) the characteristics of the population covered in the guideline; (iii) the purpose/focus of the guideline; and (iv) content of the guideline

## 2.7 Collating, summarizing, and reporting the results

The results were summarized in a narrative format. These results were described in relation to the research question and in the context of the overall study aim. Gaps were identified if there is a paucity of data related to the smoking guidelines for multi-unit housing.

## 3.0 Results

The online searches have yielded 158 relevant titles of which 35 were eligible for the title and abstract review. Of these, a total of 12 articles were retrieved for full-text screening. After reviewing the full-text articles, five articles met the inclusion criteria (illustrated in Figure 1). Only five regulations related to smoking in multi-unit housing in Singapore, Hong Kong, the Republic of Korea, Japan, and Brunei. The regulations in Singapore, Hong Kong, and Brunei have outlined the prohibition of indoor and outdoor smoking in common areas within the residential building while for the Republic of Korea and Japan, it is stated that responsibility lies within state and territory governments, non-government organizations as well as housing providers to establish policies in multi-unit housing. These policies can be stricter or lax depending on different prefectures like in Japan. No retrievable guideline was found with regards to smoking in multi-unit housing in Malaysia, Indonesia, Thailand, China, India, Bangladesh, Philippines, United Arab Emirates (UAE), and other Asian countries.



**Figure 1: Flow chart of retrieval of articles used in the results**

The description of included guidelines/regulations on multi-unit housing is presented in Table 2.

**Table 2. Description of included guidelines/ regulations on multi-unit housing in Asia**

Country	Guidelines/ Regulations
Singapore	<p>According to the “Smoking (Prohibition in Certain Places) Act” Regulation:</p> <p><b>Indoors:</b></p> <p>-Prohibited to smoke in a building which includes any common properties within any residential building, atrium, courtyard, standard corridor, lifts, lobby, void deck, and stairwell.</p> <p><b>Outdoors:</b></p> <p>-Prohibited to smoke at:</p> <ul style="list-style-type: none"> <li>● parks in public housing estates,</li> <li>● playgrounds,</li> <li>● exercise areas,</li> <li>● swimming pools, including changing and shower rooms or areas for users of the swimming pool and areas within five meters of the swimming pool,</li> <li>● pavilions within any residential premises or building meant to hold functions,</li> <li>● any area within five meters of ventilation intakes, external windows, openings, entrances, and exits to buildings for commercial, industrial, or recreational purposes or publicly accessible where smoking is prohibited (NEA, 2021).</li> </ul>
Hong Kong	<p>-Guideline from the “Tobacco and Alcohol Control Office, Department of Health,” where it is stated that by the Smoking (Public Health) Ordinance 2006, some areas are designated as “Statutory No Smoking Areas.”</p> <p>-No person shall smoke or carry any lighted cigarette, cigar, or pipe in a statutory no-smoking area such as indoor public areas, lift, and lobbies of a private building, sidewalk immediately adjacent to the swimming pool and pool area, back stairs, playground, sports ground, etc. or else will be liable to a fixed penalty of \$1500 (Hong Kong Department of Health, 2021).</p>
Republic of Korea	<p>National Health Promotion Act (newly inserted by Act No. 14057, Mar. 2, 2016)</p> <p>-If at least half of the households residing in a multi-family housing request the head of a-Si/Gun/Gu to designate entire or part of the hallway, stairway, elevator, and underground parking lot of the multi-unit dwelling as a non-smoking area, the head of a-Si/Gun/Gu shall designate the requested area as a non-smoking area and install a guide sign indicating that the designated area is a non-smoking area (Korea Law Research Institute, 2017).</p>

	<p>-In such cases, the procedure for designating a non-smoking area and the method, etc. of installing the aforementioned guide sign shall be prescribed by the Ordinance of the Ministry of Health and Welfare (Korea Law Research Institute, 2017).</p> <p>-When deemed necessary for preventing damage from smoking, and for improving the health of residents, local governments may designate a certain area as a non-smoking area within their respective jurisdiction where many people gather or pass by, as prescribed by their municipal ordinance (Korea Law Research Institute, 2017).</p>
Japan	<p>-In April 2020, a new smoking law, which prohibits indoor smoking, fully came into effect. The exceptions are private homes, hotel rooms, cigar bars, and some small-sized restaurants and bars.</p> <p>-Local governments in Japan have the power to enact stricter smoking bylaws and differ between prefectures.</p> <p>-Some prefectures have rules for smoking in apartments prohibiting indoor smoking, smoking on the balcony, and in communal spaces such as corridors, lifts, and entrance halls (Wagaya Japan, 2021).</p>
Brunei	<p>-Under the Tobacco Order 2005, smoking is prohibited on any common property of any residential premises or building. This includes corridors, lobbies, common areas, staircase, lifts, and swimming pools (Constitution of Brunei Darussalam, 2005).</p>

#### 4.0 Discussion

Based on the review, only five countries in Asia have published their guidelines or regulations on smoking in multi-unit housing or residential, highlighting the scarcity of regulations, guidelines, or evidence in this region albeit the significant rise in the development of multi-unit housing in Asian countries especially Southeast Asian countries due to rapid urbanization. In general, smoking in indoor or outdoor common areas in multi-unit housing is prohibited as stated in the regulations in Singapore, Hong Kong, and Brunei (Constitution of Brunei Darussalam, 2005; Hong Kong Department of Health, 2021; NEA, 2021). In Japan, however, the regulations for smoking in multi-unit housing such as apartments differ between administrative districts as the local governments are given the power to impose stricter or relaxed rules in their territories (Wagaya Japan, 2021). Few prefectures in Japan have regulations that prohibited smoking in common areas within any residential premises or buildings while other prefectures do not have (Wagaya Japan, 2021). In some countries, these



regulations can vary between states or territories such as in the United States of America (USA), Australia, Canada, and New Zealand (Community and Public Health, 2016; Greenhalgh et al., 2022; Health Canada, 2015; Smoke-free Housing Canada, 2007; Tobacco Control Legal Consortium, 2015; Tobacco Free Florida, 2019). Most countries stated that responsibility lies within state and territory governments, non-government organizations as well as housing providers to establish policies for smoking in multi-unit housing. In the recently amended National Health Promotion Act in 2016, the Republic of Korea has implemented a measure that allows residents of apartment buildings to self-designate non-smoking areas to curb their exposure to second-hand smoke to the residents. According to the revised law, if more than half of the households in an apartment building are in favour of designating all or part of the common areas including hallways, stairways, elevators, and underground parking lots as non-smoking spaces, the apartment building's director can submit a request to the mayor, or the county or district head office of the apartment complex, regarding the designation of non-smoking areas; the mayor or county or district head office is then required to designate them as such (Korea Law Research Institute, 2017).

This measure is found quite practice in countries like the USA, Canada, New Zealand, and Australia (Community and Public Health, 2016; Greenhalgh et al., 2022; Health Canada, 2015; Smoke-free Housing Canada, 2007). In developed western countries particularly the United States of America (USA), smoke-free laws, regulations, and policies addressing smoking in multi-unit housing are becoming more prevalent among the states and local governments (Department of Housing and Urban Development, 2016; Tobacco Control Legal Consortium, 2015; Tobacco Free Florida, 2019). For example, since 2009, the US Department of Housing and Urban Development has been strongly encouraging public housing authorities to adopt smoke-free policies. On 30 November 2016, the Department issued a final rule requiring Public Housing Authorities to adopt and implement a smoke-free policy for all their public housing properties by July 31, 2018 (Department of Housing and Urban Development, 2016). Policy guidance entitled "Smoke-Free Policies in Multi-Unit Housing" has outlined smoking prohibition in all indoor areas of public housing, including but not limited to individual living units, indoor common areas, electrical closets, storage units, and administrative office buildings, and in all outdoor areas within 25 feet of the housing and administrative office buildings. Public housing authorities may, but are not required to, further restrict smoking to outdoor dedicated smoking areas outside the restricted areas, create additional restricted areas in which smoking is prohibited, or, make their entire grounds smoke-free (Department of Housing and Urban Development, 2016). The response to the call to adopt these smoke-free policies in multi-unit housing has been positive in the USA as various states have published guidelines, rules, and regulations related to this. For instance, the state of Florida has published a guidance called "A Florida Guide for Smoke-Free Condominium," which includes a step-by-step guide for condominium and cooperative associations on establishing a smoke-free policy (Tobacco Free Florida, 2019). In addition, The Tobacco Control Legal Consortium in the USA has created a series of legal technical assistance guides to serve as a starting point for organizations interested in implementing certain tobacco control measures or smoke-free policies in multi-unit housing (Tobacco Control Legal Consortium, 2015). Several Californian local governments have enacted local laws prohibiting smoking in both private and common areas of multi-unit residences (Tobacco Control Legal Consortium, 2015). The state of Oregon and Maine mandate that rules or absence of rules about smoking must be disclosed to potential renters (Greenhalgh et al., 2022).

These initiatives reflect the level of commitment of each state to protecting the health of its residents in multi-unit housing from second-and third-hand smoke that has been shown to jeopardize the health of many. It is noted that the moves in making multi-unit housing smoke-free are more pronounced in developed western countries possibly driven by heightened awareness of the consequences of second-hand and third-hand smoke particularly for the multi-unit housing residents due to the exponential growth of this housing type following urbanization in these regions. Problems that arise from second-hand smoke incursion are also recognized as the driving factors in supporting the initiatives for smoke-free multi-unit housing. A study conducted by Driezen P et al. (2020), reported across the USA, Canada, and the UK, approximately only 27.8% of smokers in multi-unit housing stated that smoking was completely prohibited in their buildings, and second-hand smoke incursions are reported by about 29.9%, 38.4% and 24.7% smokers who banned smoking in their home but lived in non-smoke-free buildings in the USA, Canada, and the UK, respectively (Driezen et al., 2020). A significantly greater percentage of smokers in multi-unit housing in the USA (48.8%) and Canada (44.7%) reported completely banning smoking in their homes than in the United Kingdom (35.8%) (Driezen et al., 2020). In addition, about 36.1% of smokers in multi-unit housing across all three countries reported their preference for a complete smoking ban in the building. Smoke infiltration in multi-unit housing has also been recognized in key public health policy documents in Australia, hence initiating its move toward this issue (Bell et al., 2018).

Nonetheless, regulations or guidelines on smoking in multi-unit housing in Asia are scarce. As previously described, only regulations from five Asian countries are retrievable from the literature. There was no retrievable guideline or regulation related to smoking in multi-unit housing in Malaysia, Indonesia, Thailand, China, India, Philippines, United Arab Emirates (UAE), or other Asian countries was found. It is understandable for underdeveloped countries to not yet possess regulations or guidelines on smoking in multi-unit housing as the urbanization in those countries is at a much slower pace, however, numerous developing countries with much rapid urbanization have yet to join the bandwagon in establishing regulations or smoke-free policies for multi-unit housing. In Malaysia and neighboring countries including Indonesia, Thailand as well as the Philippines, the smoking laws mentioned mostly general smoking prohibition indoors and outdoor but lack specific regulations or guidelines outlining the smoking prohibition in common areas as well as smoke-free policies in multi-unit housing (ASEAN, 2012; Government of Malaysia, 2004). Low awareness, economic factors, lack of community empowerment and policy actors as well as lack of resources and political factors can be the possible underlying reasons which may explain the slower movement of creating smoke-free policies in multi-unit housing in Asia. Nonetheless, support for a total ban in air-conditioned venues was found similarly high in Malaysia (Rashid et al., 2014; Yong et al., 2010) and Thailand (Yong et al., 2010), and reported compliance with existing smoking bans was considerably higher in Thailand possibly due to earlier introduction of the bans compared to Malaysia (Yong et al., 2010). Respondents who worked in workplaces with total or partial smoking restrictions were more likely to support a smoke-free policy (Hock et al., 2019). However, there is still quite a proportion of the public that remains nonchalant about the smoke-free policies (Johar et al., 2018). In Malaysia, support for the existing smoke-free policies was reported lowest among the owners and residents/tenants, higher age groups, the Chinese, men, respondents who had poor knowledge of the places gazetted as smoke-free, and respondents with poor knowledge of the health effects on smokers and on passive smokers (Rashid et al., 2014). Despite that, it is noted that those who work in smoke-free workplaces more often stay in smoke-free homes, suggesting a positive impact of the implementation of smoke-free policies (Lim et al., 2019).

There have been growing calls particularly noted in the media in numerous countries from healthcare professionals for the establishment of smoke-free policies or regulations for multi-unit housing due to the imminent risks brought upon by second-and third-hand smoke to the residents, particularly the children. In Asia, particularly Malaysia, this initiative is deemed timely to protect the health of the residents in multi-unit housing most importantly the vulnerable groups from second-and third-hand smoke that are more prevalent in this type of housing compared to others. Therefore, tremendous efforts from the government agencies, multiple organizations, societies as well as the community are needed to initiate this movement toward smoke-free policies or regulations in multi-unit housing in parallel to the vision of leading the Generation End Game in the future for Asia.

## 5.0 Conclusion

The regulations or guidelines with regards to smoking in multi-unit housing in Asia were limited. Much effort is needed from various stakeholders to establish this initiative in ensuring protection and reducing the risks of second-and third-hand smoke from jeopardizing the health of its residents.

## References

- Acuff, L., Fristoe, K., Hamblen, J., Smith, M., & Chen, J. (2016). Third-Hand Smoke: Old Smoke, New Concerns. *Journal of Community Health*, 41(3), 680–687. <https://doi.org/10.1007/s10900-015-0114-1>
- American Lung Association. (2022). *10 of the Worst Diseases Smoking Causes | State of Tobacco Control | American Lung Association*. <https://www.lung.org/research/sotc/by-the-numbers/10-worst-diseases-smoking-causes>
- CDC. (2020a). *Health Effects | Smoking & Tobacco Use | CDC*. [https://www.cdc.gov/tobacco/basic\\_information/health\\_effects/index.htm](https://www.cdc.gov/tobacco/basic_information/health_effects/index.htm)
- CDC. (2020b). *Health Effects of Secondhand Smoke | CDC*. [https://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/secondhand\\_smoke/health\\_effects/index.htm](https://www.cdc.gov/tobacco/data_statistics/fact_sheets/secondhand_smoke/health_effects/index.htm)
- CDC. (2022). *State Tobacco Activities Tracking and Evaluation (STATE) System Multiunit Housing Fact*. <https://www.cdc.gov/statesystem/factsheets/multiunithousing/MultiUnitHousing.html>
- Delgado-Rendon, A., Cruz, T. B., Soto, D., Baezconde-Garbanati, L., & Unger, J. B. (2017). Second and Thirdhand Smoke Exposure, Attitudes and Protective Practices: Results from a Survey of Hispanic Residents in Multi-unit Housing. *Journal of Immigrant and Minority Health*, 19(5), 1148–1155. <https://doi.org/10.1007/s10903-016-0540-x>
- Ferrante, G., Simoni, M., Cibella, F., Ferrara, F., Liotta, G., Malizia, V., Corsello, G., Viegi, G., & La Grutta, S. (2013). Third-hand smoke exposure and health hazards in children. *Monaldi Archives for Chest Disease - Pulmonary Series*, 79(1), 38–43. <https://doi.org/10.4081/monaldi.2013.108>
- Hood, N. E., Ferketich, A. K., Klein, E. G., Wewers, M. E., & Pirie, P. (2013). *Individual, Social, and Environmental Factors Associated With Support for Smoke-Free Housing*

- Policies Among Subsidized Multiunit Housing Tenants.* 15(6), 1075–1083. <https://doi.org/10.1093/ntr/nts246>
- Hum, W. L., Hsien, C. C. M., & Nantha, Y. S. (2016). A review of smoking research in Malaysia. *Medical Journal of Malaysia*, 71(June), 29–41.
- King, B. A., Travers, M. J., Cummings, K. M., Mahoney, M. C., & Hyland, A. J. (2010). Secondhand smoke transfer in multiunit housing. *Nicotine and Tobacco Research*, 12(11), 1133–1141. <https://doi.org/10.1093/ntr/ntq162>
- Kraev, T. A., Adamkiewicz, G., Hammond, S. K., & Spengler, J. D. (2009). *Indoor concentrations of nicotine in low-income , multi-unit housing : associations with smoking behaviours and housing characteristics.* 438–444. <https://doi.org/10.1136/tc.2009.029728>
- Library of Congress. (2022). *Multifamily Real Estate - Real Estate Industry: A Resource Guide - Research Guides at Library of Congress.* <https://guides.loc.gov/real-estate-industry-sources/residential/multifamily>
- Lim, K. H., Teh, C. H., Pan, S., Ling, M. Y., Yusoff, M. F. M., Ghazali, S. M., Kee, C. C., Lim, K. K., Chong, K. H., & Lim, H. L. (2018). Prevalence and factors associated with smoking among adults in Malaysia: Findings from the National Health and Morbidity Survey (NHMS) 2015. *Tobacco Induced Diseases*, 16(January), 1–11. <https://doi.org/10.18332/tid/82190>
- Reitsma, M. B., Kendrick, P. J., Ababneh, E., Abbafati, C., Abbasi-Kangevari, M., Abdoli, A., Abedi, A., Abhilash, E. S., Abila, D. B., Aboyans, V., Abu-Rmeileh, N. M., Adebayo, O. M., Advani, S. M., Aghaali, M., Ahinkorah, B. O., Ahmad, S., Ahmadi, K., Ahmed, H., Aji, B., ... Zuniga, Y. H. (2021). Spatial, temporal, and demographic patterns in prevalence of smoking tobacco use and attributable disease burden in 204 countries and territories, 1990–2019: a systematic analysis from the Global Burden of Disease Study 2019. *The Lancet*, 397(10292), 2337–2360. [https://doi.org/10.1016/S0140-6736\(21\)01169-7](https://doi.org/10.1016/S0140-6736(21)01169-7)
- WHO. (2021). *Tobacco.* <https://www.who.int/news-room/fact-sheets/detail/tobacco>
- Community and Public Health. (2016). *Smokefree Social Housing Toolkit.* www.cph.co.nz
- Constitution of Brunei Darussalam. (2005). *Tobacco Order 2005* (Vol. 83, Issue 3).
- Department of Housing and Urban Development. (2016). *Instituting Smoke-Free Public Housing.* <https://www.govinfo.gov/content/pkg/FR-2016-12-05/pdf/2016-28986.pdf>
- Greenhalgh, E., Scollo, M., & Winstanley, M. (2022). *Tobacco in Australia: Facts and issues.* <https://www.tobaccoinaustralia.org.au/chapter-15-smokefree-environment/15-6-domestic-environments>
- Hong Kong Department of Health. (2021). *What locations are “Statutory No Smoking Areas”?* - 1823. <https://www.1823.gov.hk/en/faq/what-locations-are-statutory-no-smoking-areas>
- NEA. (2021). *NEA | Overview.* <https://www.nea.gov.sg/our-services/smoking-prohibition/overview>
- Smoke-free Housing Canada. (2007). *Smoke-Free Housing Canada.* [http://www.smokefreehousing.ca/about\\_us.html](http://www.smokefreehousing.ca/about_us.html)
- The Association of Residential Managing Agents. (2015). *ADVICE NOTE SMOKE FREE REGULATIONS.*
- Tobacco Control Legal Consortium. (2015). *Regulating Smoking in Multi-Unit Housing.* 1–7.
- Tobacco Free Florida. (2019). *A FLORIDA GUIDE FOR SMOKEFREE CONDOMINIUMS.*
- Wagaya Japan. (2021). *Rules for Smoking in Japanese Apartments/wagaya Journal.* [https://wagaya-japan.com/en/journal\\_detail.php?id=6796](https://wagaya-japan.com/en/journal_detail.php?id=6796)
- ASEAN. (2012). *The ASEAN Tobacco Control Report.* [https://www.who.int/health-topics/tobacco#tab=tab\\_1](https://www.who.int/health-topics/tobacco#tab=tab_1)
- Bell, J., Dale, B., Kameron, C., & Havill, M. (2018). Sharing the air: The need for strata law

- reform to reduce second-hand smoke exposure in multiunit housing in Australia. *Journal of Law and Medicine*, 25(2), 465–488.
- Community and Public Health. (2016). *Smokefree Social Housing Toolkit*. www.cph.co.nz
- Driezen, P., Fong, G. T., Hyland, A., Craig, L. V., Sansone, G., Hitchman, S. C., & Cummings, K. M. (2020). Self-Reported Exposure to Secondhand Smoke and Support for Complete Smoking Bans in Multiunit Housing Among Smokers in the United States, Canada, and the United Kingdom. *Preventing Chronic Disease*, 17, E147. <https://doi.org/10.5888/pcd17.200201>
- Government of Malaysia. (2004). *The Control of Tobacco Product Regulations 200*.
- Greenhalgh, E., Scollo, M., & Winstanley, M. (2022). *Tobacco in Australia: Facts and issues*. <https://www.tobaccoinaustralia.org.au/chapter-15-smokefree-environment/15-6-domestic-environments>
- Health Canada. (2015). *Make Your Home Smoke-free in a Multi-Unit Residence*. 150108.
- Hock, L. K., Li, L. H., Huey, T. C., Yuvaneswary, V., Sayan, P., Fadhli, M., Yusoff, M., Kuay, L. K., Yn, L. M., Chee, C. K., Mohd, G. S., Li, L., & T, C. H. (2019). *Support for smoke-free policy among Malaysian adults: findings from a population-based study*. 7–11. <https://doi.org/10.1136/bmjopen-2017-020304>
- Johar, M., Kaundan, M. K., A. Rahim, S., & Hamzah, N. F. (2018). *Public Inputs and Behaviour on Smoke-Free Initiatives in Malaysia*. 8(7), 346–353. <https://doi.org/10.18488/journal.1.2018.87.346.353>
- Lim, K. H., Lim, H. L., Teh, C. H., Ghazali, S. M., Kee, C. C., & Heng, P. P. (2019). *Is the implementation of smoke-free policies at workplaces associated with living in a smoke-free home?: Findings from a national population-based study in Malaysia*. 1–8.
- Rashid, A., Manan, A. A., Yahya, N., & Ibrahim, L. (2014). *The Support for Smoke Free Policy and How It Is Influenced by Tolerance to Smoking – Experience of a Developing Country*. 9(10), 1–7. <https://doi.org/10.1371/journal.pone.0109429>
- Smoke-free Housing Canada. (2007). *Smoke-Free Housing Canada*. [http://www.smokefreehousing.ca/about\\_us.html](http://www.smokefreehousing.ca/about_us.html)
- Yong, H., Foong, K., Borland, R., Omar, M., Fotuhi, O., & Hyland, A. (2010). *Hua-Hie Yong, PhD, Kin Foong, PhD, Ron Borland, PhD, Maizurah Omar, PhD, Stephen Hamann, EdD, Buppha Sirirassamee, PhD, Geoffrey T. Fong, PhD, Omid Fotuhi, MASc, and Andrew Hyland, PhD*. 98–109.