



# Smoking Behaviour in the Home and Incidence ARI symptoms in Cambodia, Timor Leste and the Philippines

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## Abstract

*The belief that smoking reduces stress, which causes stressed smokers to increase their intensity of smoking, also influences the maintenance of smoking behaviour. This study aimed to determine indoor smoking behavior and ARI symptoms in Cambodia, Timor Leste, and the Philippines. This research uses secondary data, especially DHS data from 2015–2020, in Cambodia, Timor Leste, and the Philippines. This study uses household data with the variables of women's smoking behavior in the home and ARI symptoms in toddlers. The number of times a person smokes per day, week, or month will be given to urban and rural households and recorded. The researcher will compare the number of times a mother smoked in the home with the number of times a child under five had symptoms of ARI. Data analysis was conducted using JAPS software version 16 by conducting frequency distribution and percentage on each variable. Daily smoking at home is highest in Timor Leste (47.5%) compared to daily smoking behavior in the Philippines (47.5%) in urban households. Weekly smoking at home was highest in Timor Leste (11.2%) compared to weekly indoor smoking behavior in the Philippines (7%) in urban households. Mothers who smoked in the home had a higher number of children under five with ARI symptoms (Philippines 2.2%, Cambodia 10%) than mothers who did not smoke had a higher number of children under five with ARI symptoms (Philippines 1.5%, Cambodia 5.4%). Mothers' daily smoking behavior in the home is still high in Cambodia, Timor Leste, and the Philippines, especially in rural areas compared to urban areas. Households with mothers who smoke in the home are likelier to have toddlers who experience ARI symptoms than households without mothers who smoke. Cambodia is a country that has a high number of mothers who smoke at home and toddlers who experience ARI symptoms.*

**Keyword:** *ARI Symptoms, Home, Households, Smoking Behaviour*

## INTRODUCTION

The belief that smoking reduces stress, which causes stressed smokers to increase their intensity of smoking, also influences the maintenance of smoking behaviour (Loyola, 2020); (Lima, 2020). In some nations, smokers increased their frequency or quantity of smoking (18.9% in the Netherlands, 32.1% in Japan, 40.0% in the United States, and 45.2% in Poland) (Kawachi, 2020); (Bommel , 2020); (Nguyen, 2020); (Koyama, 2021); (Kowitt, 2020).

In the United States, respiratory disorders are the major causes of morbidity and mortality (Murphy, 2018); (WHO, 2020). Cigarette smoking is a key contributor to lung

cancer. E-cigarettes, like traditional tobacco products, expose users to nicotine, ultrafine particles, and other toxins (Glantz, 2018); (WHO, 2021). E-cigarette aerosol has higher quantities of certain lung toxicants than combusted cigarettes, including propylene glycol, diacetyl (butter taste), cinnamaldehyde (cinnamon), benzaldehyde (cherry), and metals (Olmedo, 2018); (Nurhayati, 2022). Exposure to acrolein produced by heating propylene glycol and glycerin in e-liquids causes chronic pulmonary inflammation, reduction of host defense, neutrophil recruitment and activation, mucus hypersecretion, and protease-mediated lung tissue damage, all of which are associated with the development of chronic obstructive pulmonary disease (COPD) (Bhatta, 2019).

Smoking behavior is still a problem that occurs in many parts of the world, especially in adolescents (Nasution, 2020). Prior study on asthma has established a link between e-cigarette usage and asthma, mainly among adolescents. A study of high school students in Hawaii, for instance, identified a link between e-cigarette usage and asthma that was independent of cigarette smoking, marijuana use, and other demographic characteristics (Schweitzer, 2017). This is consistent with data from Asian teens Cho (2016) and Wang (2016) and the state of Florida in the United States (Choi, 2019). Theoretically, these conclusions are congruent with the physiological effects reported in laboratory research. While asthma may emerge at a younger age, the hypothesis that e-cigarettes may maintain or exacerbate asthma led us to predict a relationship between e-cigarette usage and asthma in adults (Clapp, 2017). In Timor-Leste, tobacco smoke exposure is prevalent. In 51% of residences, someone smokes cigarettes every day. In 15% of households, someone smokes at least once per week, 2% smoke at least once per month, and 2% smoke less than once, 31% of homes never have a smoker present.

Overall, 6 percent of Cambodian women use any tobacco, a minor reduction from 2010 CDHS self-reported tobacco use among women. Two percent of the population smokes cigarettes, and four percent uses tobacco in a form other than cigarettes or a pipe (some women use more than one form of tobacco). Only 2% of pregnant women and 5% of lactating women use tobacco products. 32% of Cambodian men report smoking cigarettes, while 5% report using other tobacco. ARI continues to be one of the top causes of illness and mortality among Cambodian children, particularly those under the age of five. In 2000, 2005, 2010 and 2014, we examined the socio-demographic, behavioral and environmental factors linked with ARI symptoms in Cambodian children aged 0 to 59 months (Um, 2022).

Smoking cessation is the single most effective and cost-effective way to reduce the risk of developing chronic obstructive pulmonary disease (COPD) and slow or stop its

progression (Hagens, 2017). It has been shown that smoking cessation reduces the accelerated decline in lung function caused by continued smoking, and decreases the risk of exacerbations and mortality in patients with COPD. Nonetheless, a large proportion (up to 77%) of COPD patients continue to smoke (Blankers, 2015). These limits did not apply to visits to medical facilities, shopping for food and other daily essentials, important workers going to work, outdoor exercise, and walking. Due to the availability of tobacco at grocery shops, drugstores, and convenience stores, smokers could purchase cigarettes and tobacco products, including heated tobacco products (HTPs) (Yamamoto, 2022).

## **METHODS**

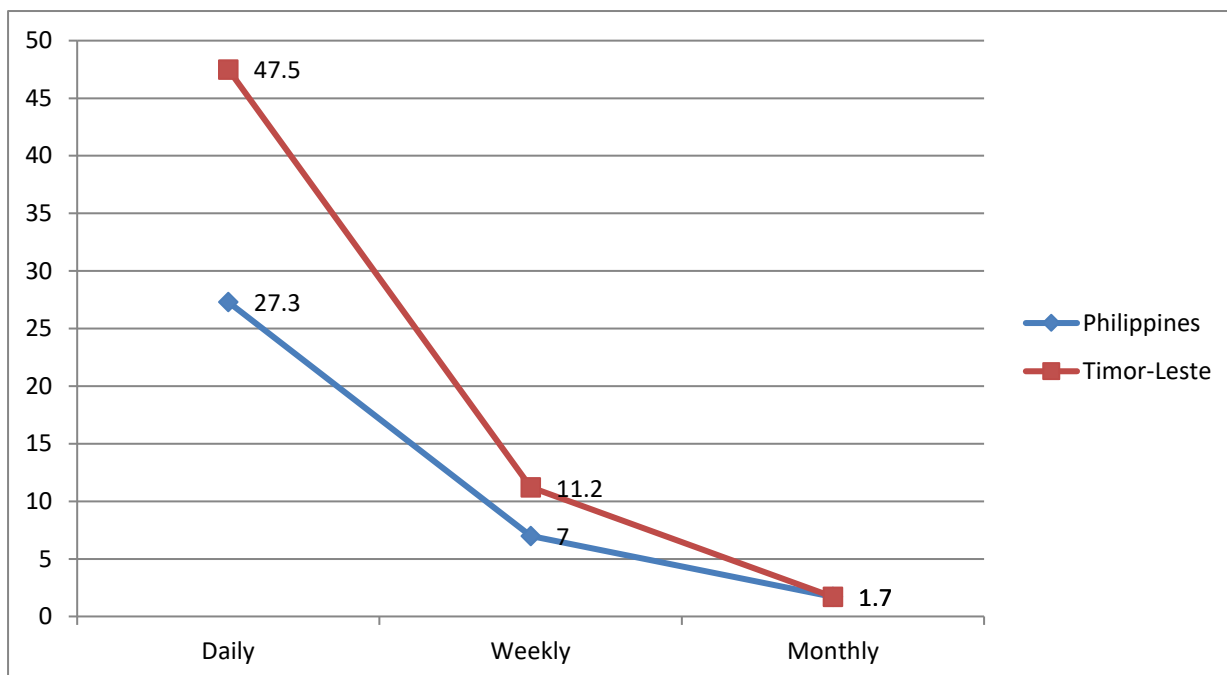
This research uses secondary data, especially DHS data from 2015–2020, in Cambodia, Timor Leste, and the Philippines. This study uses household data with the variables of women's smoking behavior in the home and ARI symptoms in toddlers. This study will compare smoking behavior in the home and ARI symptoms in children under five. In Cambodia, Timor-Leste, and the Philippines, the sample of homes was distributed to the sampling domains so that precise estimates of indicators could be obtained at the national level, as well as individually for urban and rural portions of the country.

Any women between the ages of 15 and 49 who were either permanent residents of the selected households or guests the night before the survey were eligible to be questioned. In addition, all men aged 15 to 49 were eligible for interviews in a subsample of one-third of the households selected for the study (if they were either usual residents of the selected households or visitors present in the household on the night before the survey).

The number of times a person smokes per day, week, or month will be given to urban and rural households and recorded. The researcher will compare the number of times a mother smoked in the home with the number of times a child under five had symptoms of ARI. The data collection procedure was carried out by submitting a request letter to the DHS via the web and then conducting data analysis on the data provided by the DHS. Data analysis was conducted using JAPS software version 16 by conducting frequency distribution and percentage on each variable.

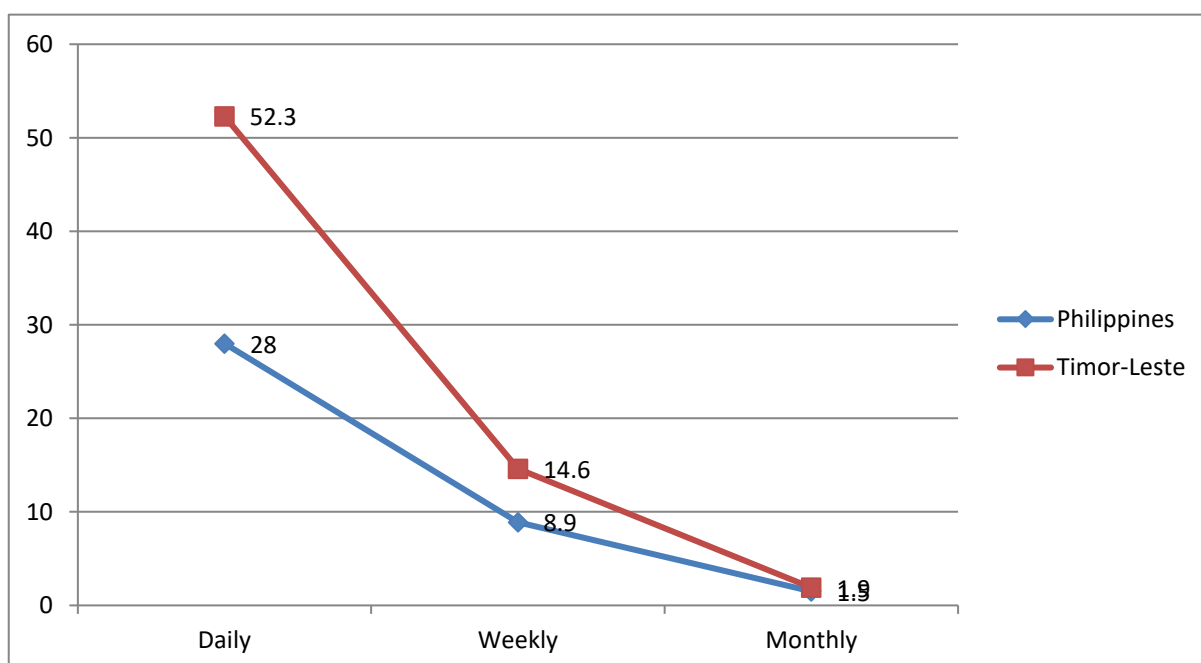
## **RESULTS**

This research will describe the frequency of smoking in the home in Timor Leste and the Philippines in both urban households and rural households.



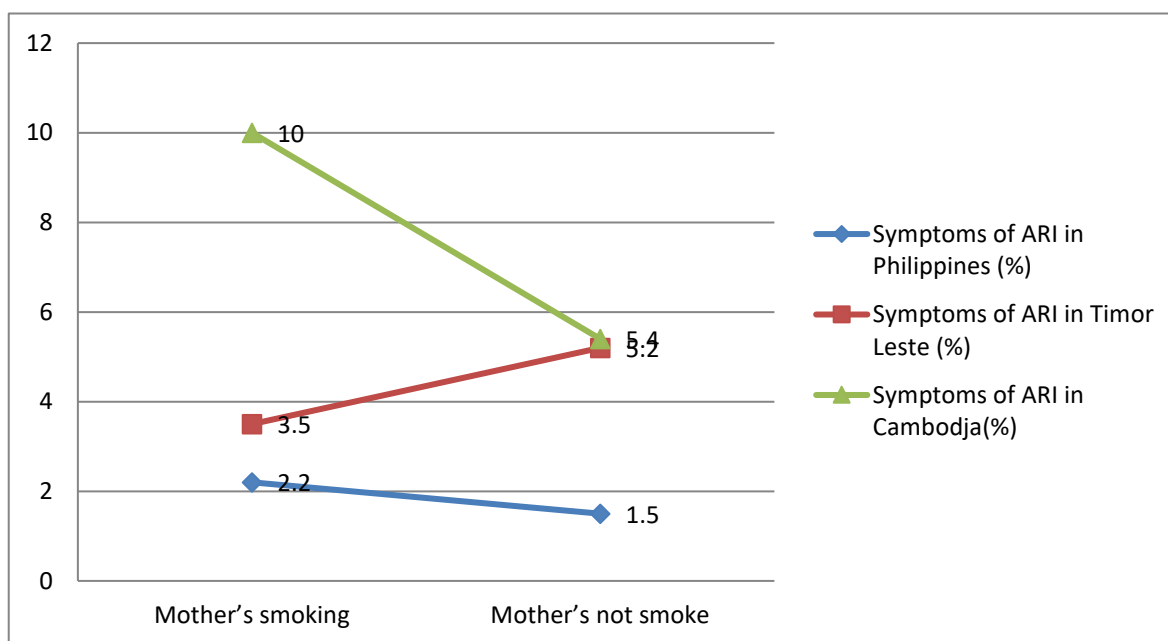
**Graphic 1.** Frequency of smoking at home in urban households in Timor Leste and the Philippines

The graph in this study shows that daily smoking at home is highest in Timor Leste (47.5%) compared to daily smoking behavior in the Philippines (27.3%) in urban households. Weekly smoking at home was highest in Timor Leste (11.2%) compared to weekly indoor smoking behavior in the Philippines (7%) in urban households.



**Graphic 2.** Frequency of smoking at home in Rural households in Timor Leste and the Philippines

The graph in this study shows that daily smoking at home is highest in Timor Leste (52.3%) compared to daily smoking behavior in the Philippines (28%) in urban households. Weekly smoking at home was highest in Timor Leste (14.6%) compared to weekly indoor smoking behavior in the Philippines (8.9%) in urban households.



**Graphic 3.** Mothers' smoking in the home and symptoms of ARI in children under five years old

The graph in this study shows that mothers who smoked in the home had a higher number of children under five with ARI symptoms (Philippines 2.2%, Cambodia 10%) than mothers who did not smoke had a higher number of children under five with ARI symptoms (Philippines 1.5%, Cambodia 5.4%).

## DISCUSSION

Those who smoke at home without restrictions may have raised their smoking intensity (Nasution, 2020). By asking, "Which of the following best defines your rules for smoking in your house (indoors)?" data was gathered regarding self-imposed smoking rules at home. (Notice that apartment complex common areas are not included in the concept of home. HTPs include IQOS, glo, and Ploom Tech, among others). The options were separated into four categories: both cigarettes and HTPs were prohibited at home, both cigarettes and HTPs were permitted at home, HTPs were the only substance permitted at home, and the respondent did not know (Yamamoto, 2022).

Daily smoking at home is highest in Timor Leste (47.5%) compared to daily smoking behavior in the Philippines (47.5%) in urban households. Weekly smoking at home was highest in Timor Leste (11.2%) compared to weekly indoor smoking behavior in the Philippines (7%) in urban households.

We distinguished three types of tobacco use: cigarettes only, HTPs exclusively, and both cigarettes and HTPs (dual use). On the basis of earlier research, the kind of tobacco use at baseline was identified (Tabuchi, 2016); (Nasution, 2022). The longitudinal survey identified HTPs that were available in Japan at the time of the study (Ploom Tech, Ploom Tech+, Ploom S, IQOS, glo, glo sens, and Pulze) (Matsuyama, 2022). Participants picked one of four replies for each type of tobacco product use: never, quit, occasionally but not daily, and almost daily. These four replies were merged to form a binary variable containing the categories of do not use (never use, quit) and use (use occasionally but not every day, and use almost every day). According to the type of tobacco use, we defined two variables: cigarette and HTP usage histories. Lastly, the combination of these two variables was used to determine the kind of tobacco usage (Yamamoto, 2022).

The majority of research in the first review revealed that SFPs in hospitality settings are associated with a reduction in youth smoking behavior (Garritsen, 2022). Malaysia has a very high adult smoking prevalence compared to other South Asian nations, with nearly a quarter (21%) of Malaysian adults being smokers. 43% of men aged 15 and older are reported smokers, whereas only 1.4% of women are smokers (Ellis-Suriani, 2021). In accordance with the Framework Convention on Tobacco Control (FCTC), which was ratified by the Malaysian government in December 2005, the Malaysian government has adopted a number of measures to reduce the risks of secondhand smoke (SHS) exposure, including prohibiting smoking in a variety of public places and workplaces (Lim, 2018).

## CONCLUSIONS

Mothers' daily smoking behavior in the home is still high in Cambodia, Timor Leste, and the Philippines, especially in rural areas compared to urban areas. Households with mothers who smoke in the home are likelier to have toddlers who experience ARI symptoms than households without mothers who smoke. Cambodia is a country that has a high number of mothers who smoke at home and toddlers who experience ARI symptoms.

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