



INNOVATIVE GRILL LADDER AS AN ESCAPE DEVICE FOR TERRACE HOUSES

Prof Adlina S., Nadiah R., Nurnabihah M., Zunnabhan Z., Nazmi M., Y. Ren.

INTRODUCTION

In Malaysia, it is common to fit grills to the windows and doors of houses. The use of these grills (Doors and Windows) popularly known as burglary proof grills in housing often serves as a strong barrier to effective rescue operation in emergency situation such as fire, therefore the security protection it offers against intruders has been an issue of great concern to the scholars as well as professionals in the built environment.¹

M. Saharul reported that the Fire and Rescue Department of Malaysia (FRDM) attended to 33,640 fires in 2013 over the country or an average of 92 cases per day. This figure was the highest annual figure recorded, continuing the generally upward trend since 2007. A sharp increase of fire incidents in 2012 had killed 72 civilians but this was the lowest number of fatalities for the last seven years. This death statistics refers to instant death at the place of occurrence, therefore the actual number of death as a result of fire is actually higher.²

A grill ladder was invented in April 2019 as an escape device for installation in terrace houses and had guidelines of usage in both English and Bahasa Malaysia. The installation of this device is on the grill itself, the house owner will have the grill refastened with special hinges and can be opened in the event of a fire.

A technology acceptance survey has to be conducted to determine the acceptance of this new invention. Therefore the rationale for this study is to determine whether house owners would install this device in their home and would use it in the event of a fire

OBJECTIVE

To determine the acceptance of usage of innovative grill ladder by terrace house owners at Taman Subang with reference to ease of use, clear instructions on usage, affordability, space usage, aesthetics, safety, life saving feature, escape time, efficiency of escape, attitude and acceptance as a way of escaping fire.

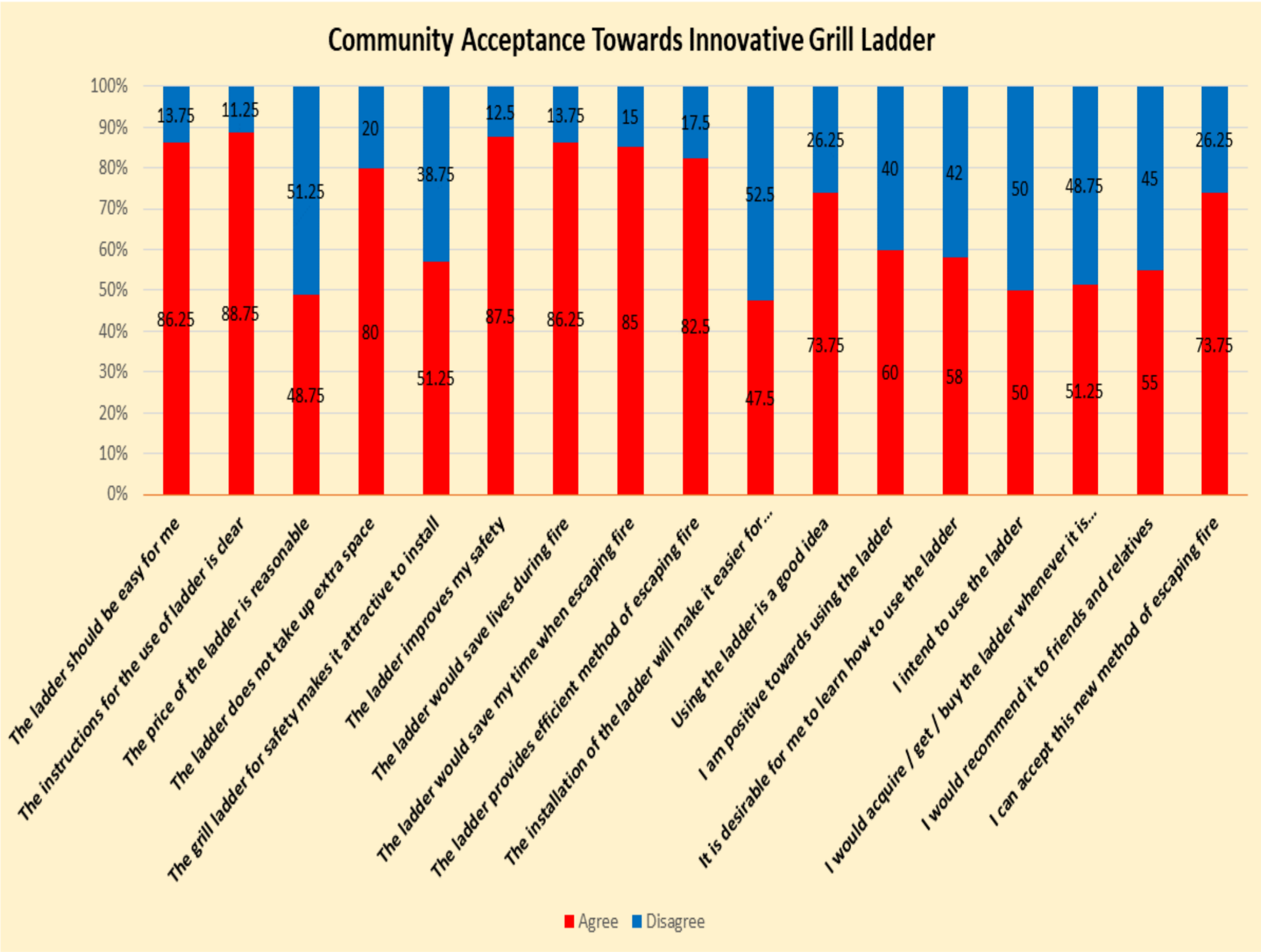
METHODOLOGY

Sample size calculation using sample calculator at <https://www.surveysystem.com/sscalc.htm> at confidence level of 95% and confidence interval of 15 of a population size of 400 revealed a sample of 39 required for this study. 40 house owners were chosen using systematic sampling. The data was collected using an interviewer based questionnaire uploaded top google form which had a Cronbach Alpha value of 0.89 which meant that it was reliable. Data was analyzed using SPSS version 20.

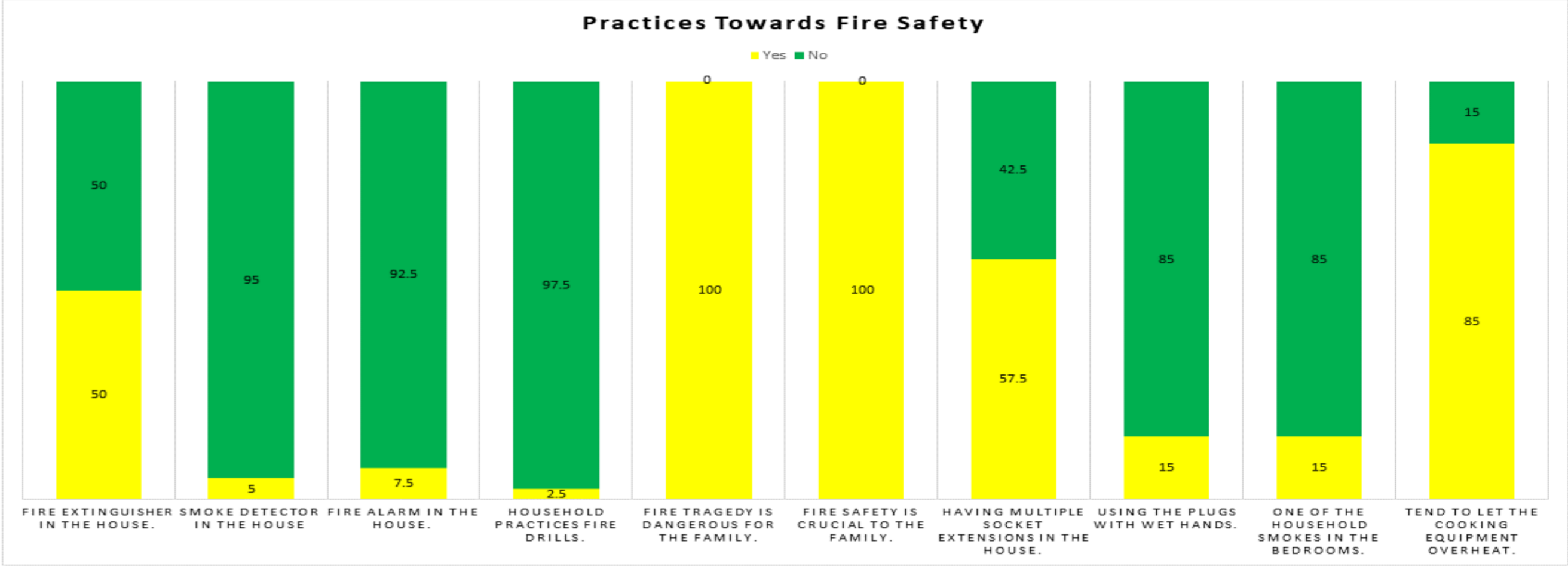
RESULTS

Table 1: Socio-demographic description of respondents

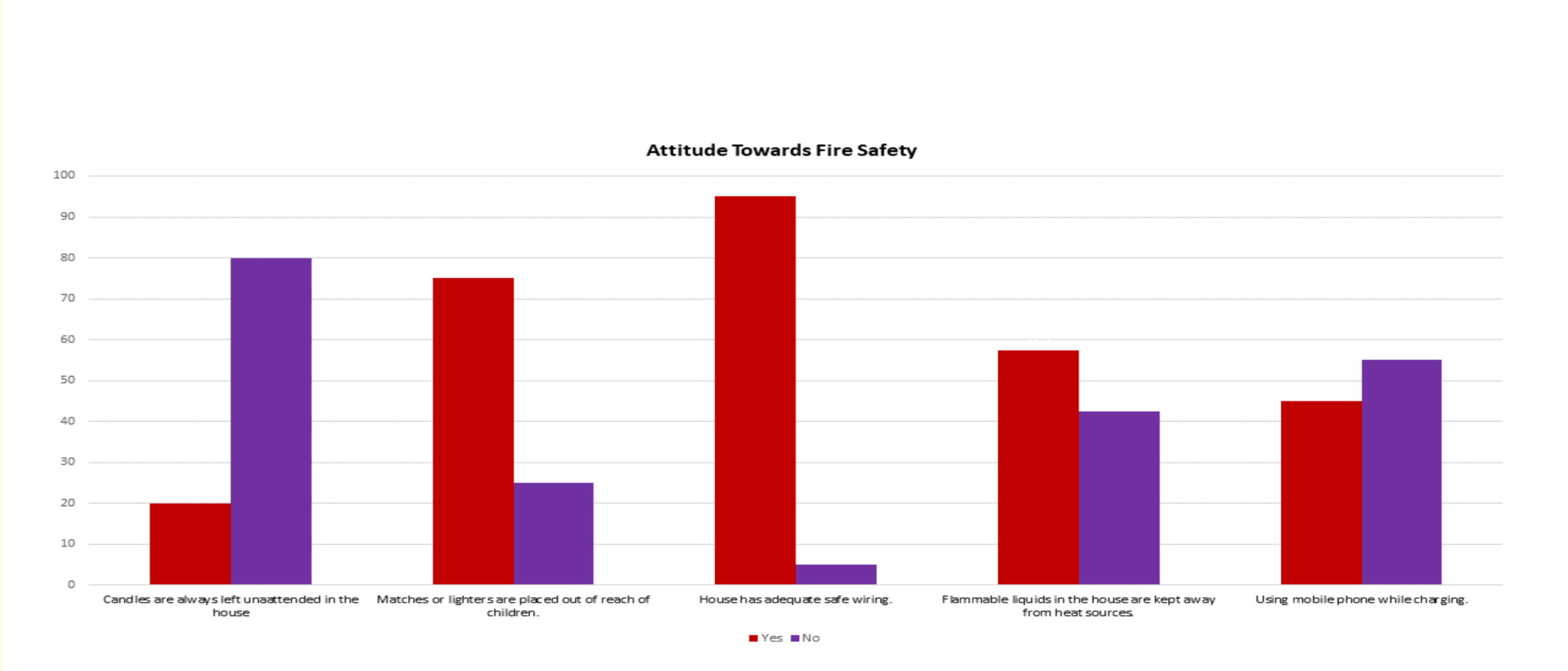
Social-demogrphahic description of respondents			
Description		Count(n)	Percentage(%)
Gender	Male	22	55
	Female	18	45
Race	Malay	23	57.5
	Chinese	10	25
	Indian	6	15
	Other	1	2.5
Age ($\mu \pm \sigma$:56.58±14.55)	18-37	3	7.5
	38-57	15	37.5
	58-77	21	52.5
	>77	1	2.5
Occupation	Professional	4	10
	Managerial	5	12.5
	Technical	2	5
	Housewives	7	17.5
	Retired	16	40
	None	2	5
	Others	4	10
Education level	Tertiary	27	67.5
	Secondary	11	27.5
	Vocational	2	5



Generally, most of the participants in terrace houses of Taman Subang agreed towards the usage of the innovative grill ladder. However, the respondents did not agree to the commercialised price of the grill ladder, which is RM1,500. They suggested that the price will be affordable if it lies below RM1,000.



Majority of the residents were lacking safety measures and devices at their house where only 50% of them had fire extinguisher in their house, and a total of more than 90% of them did not install their house with smoke detector and fire alarm. 97.5% of the people who were staying in Taman Subang said that they never had any fire drill practice at their house.



While on the bright side, most of the respondents have positive attitudes towards fire safety.

CONCLUSION

Fatalities can occur anytime and anywhere. It is amazing that many people have little or no idea about the importance of emergency response plan in the event of any emergency, how to deal with them and how to escape safely from the scene should an emergency occur.³

According to Ferecenzi, the readers in US gave out a lot of comments asking how to pick the best fire escape ladder for their homes which depicts that people are starting to realise the importance of safety against fire incidence using the fire escape ladder.⁴ It is found that majority of Taman Subang residents agreed to purchase and use the ladder. They also agreed to the note that the grill ladder was easy and safe to use. About 73% of them accepted that the grill ladder served as the new method of escaping fire.

REFERENCE

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