

**EFFECT OF POSTER AND VIDEO INTERVENTION ON THE KNOWLEDGE,
ATTITUDE AND PRACTICE (KAP) LEVEL OF PERSONAL HYGIENE AMONG
FOOD HANDLERS IN 24 HOURS MAMAK RESTAURANTS IN SUNGAI PETANI,
KEDAH**

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ABSTRACT

This study assesses the knowledge, attitude and practice on personal hygiene among food handlers at 24 hours Mamak operation restaurants before and after poster and video intervention. A survey and observation checklist was conducted among 100 food handlers selected from Mamak restaurants. 77% of respondents were aware on personal hygiene during the pre-intervention and the percentage has slightly escalated to 100% after intervention. Similarly, the percentage of good personal hygiene practice was increase after the intervention (42% to 73% respectively). It was observed that there was no significant correlation between knowledge and practice ($r = -0.082$, $p = 0.415$), similarly there was no significant correlation observed between knowledge and attitude ($r = -0.009$, $p = 0.930$).

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The finding adds to the growing body of evidence on the effectiveness of poster and video intervention.

Keywords: KAP; poster and video intervention; personal hygiene; food handlers; 24 hours Mamak restaurants.

1. INTRODUCTION

Mamak culture or “frequenting a Mamak restaurant” has evolved and become a phenomenon in Malaysia. It is also believed that the Mamak culture inculcates values of national unity with providing a place where Malaysians and foreigners can come to relax, while enjoying great food and great conversation in a laid back environment. Consequently, this phenomenon has led to the increase operational hours of Mamak restaurants [1-3]. Having known on the culture of Mamak frequenting restaurants in Malaysia, several issue has risen in relation to the hygiene of food premise and food handling. Recently, one Mamak restaurant in Klang was ordered to close for failing to comply with hygiene requirements [4]. On the previous year, three Mamak restaurants in Selayang were ordered to close due to three major errors committed: the unused apron and hat, raw food on the floor and the food wastes stream down the drain [5]. Similarly, in all cases reported, the Mamak restaurants were found failed to control pests, especially cockroaches and rats [4-5].

The incidence raised a public concern on the operation of food handling in the Mamak restaurants. The mishandling of food during food preparation and serving may cause foodborne illness and this accounts 50% of the cases reported [6]. As part of the initiative, Ministry of Health, Malaysia has enforced all food handlers are required to undergo Food Handler trainings that are recognized by the Ministry of Health. The training comprised of the elements of food safety which include foodborne illness, food contamination, personal hygiene, food storage, cleaning and disposal practices and pest control [7]. Although the initiatives were taken by the MOH, the incidence rate of foodborne illness has increased 3% from the year 2012 to 2012 (44.79% and 47.79% respectively). The increase of foodborne illness indicates the food safety negligence among the food handlers [8]. In addition, the limited benefits derived from the food safety training were linked to the absence of disseminating knowledge and skill due to the lack of effective follow up monitoring and

mentoring when trainees return to the workplace. In [9] also discussed that the training should not only prepare workers to perform appropriate safety behaviours, but also to identify and address barriers that prevent them from exhibiting these behaviours.

Previous research have shown that obtaining food safety certification is correlated with higher food safety knowledge among foodservice workers or managers [10-12], however those managers with little to no knowledge of national language or English or limited reading comprehension had trouble to understand the food safety concept [13]. Therefore, the usage of visual-based tools was considered as useful in addressing language and cultural differences [14]. Thus, this study aim to assess the food handlers' knowledge, attitude and practices on personal hygiene in Mamak restaurants before and after poster and video intervention.

2. EXPERIMENTAL

2.1. Study Design and Sample

This study employed quasi-experimental design of one group pre test-post test. This design allow minimal control of the respondents with assessment being done before and after intervention. 100 food handlers (calculated from the sample size formula [15]) were conveniently selected from six 24 hour operated Mamak restaurants in Sungai Petani, Kedah. Respondents must at least have 6 months of working experience in handling food (which may include food and beverage preparation and serving, cooking, washing and cleaning dishes) in the respective restaurants.

2.2. Assessment Tools

A set of bi language questionnaire (Bahasa Malaysia and English) was prepared based on the modified questions from previous studies [16-18]. The questionnaire was pre-tested on 10 food handlers in Mamak restaurants in Kajang in order to ensure the consistency of the words and construction. The questionnaire consisted socio demographic variables, knowledge and attitude in relation to personal hygiene.

A standard checklist on personal hygiene constructed by [19] was utilized in order to observe the personal hygiene status of the food handlers.

2.3. Intervention Tools

A poster was designed for the purpose of the intervention. The poster illustrated simple

pictures of a person wearing proper attire for food handling and vice versa. The illustration was accompanied by written and illustration instruction of dos and don'ts during food handling (Fig. 1).

In addition to the poster intervention, an educational video on personal hygiene developed by Ministry of Health was projected to the respondents in order to increase educational experience and level of personal hygiene practices [20]. The video duration was five minutes.



Fig.1. Design of poster for the intervention

2.4. Study Administration

The study was collaborated with Sungai Petani Municipal Council. Researcher with the assistance from the environmental health officer entered the premises. At least, four respondents from a premise were selected to answer the questionnaire. The questionnaire was self-administered. An interview session was conducted for respondent who unable to comprehend the languages.

Prior to personal hygiene practices, an observation was done using the standard checklist from [19]. The respondents later were briefed on the personal hygiene, assisted by the educational video adapted from Ministry of Health. Additionally, posters on personal hygiene were placed in the restaurants at designated areas such as food or beverage preparation area, washroom, kitchen and front counter.

A post evaluation was conducted on the same respondents after four weeks using the similar questionnaire and observation checklist.

2.5. Data Analysis

Data were expressed as n (percentage) for descriptive analysis. Wilcoxon signed ranked was employed in order to compare the Knowledge, Attitude and Practice (KAP) scores at baseline and post intervention. This analysis was expressed as median (interquartile range). A Spearman correlation test was assigned to determine the association within knowledge, attitude and practice on personal hygiene. $p < 0.05$ was considered as statistically significant. All data were analyzed using SPSS version 20.

3. RESULTS AND DISCUSSION

Table 1 exhibits the characteristic of the respondents. Most of the respondents were males with age range 20-40 year old and working experience more than a year. 84% of the respondents reported have attended food safety training.

In relation to level of personal hygiene during baseline and post intervention, the scores obtained for knowledge, attitude and practice (KAP) were categorized into poor and excellent according to the midpoint score calculated. Those who scored above midpoint score were defined as 'Good' whilst below midpoint score indicated as 'Poor'. Table 2 exhibit the percentage of 'Good' and 'Poor' for knowledge, attitude and practice between pre and post intervention. There was an increase of percentage on knowledge and practice during the baseline and post intervention. A slight increase on attitude was observed between pre and post intervention (77% to 100%). The difference between pre and post intervention scores of KAP was determined using Wilcoxon ranked test (Normality test shown that data were not normally distributed). The result was consistent with the percentage reported whereby there were significant differences in knowledge and practice scores between baseline and post intervention (see Table 2). The finding is concordant with previous studies [21-22]. This suggests that such training or initiatives are necessary in order to promote appropriate knowledge and practice on food handling [22]. Moreover, the visual-based intervention utilized in this study might be helpful in improving food safety knowledge among the non-natives food handlers [14]. It is also suggested that by incorporating the importance of

food safety with science-based information may assist the food handlers to understand better and help the health inspectors from being perceived as the ‘trouble makers’ [14].

In addition to determine any correlation between knowledge on food safety with attitude and knowledge, the result showed insignificant negative weak correlation within the variables ($p>0.05$) (Table 3). The result was contradicted with [21, 23] who observed positive correlation between knowledge, attitude and practice. However, the finding demonstrated that knowledge alone does not always result in safe food handling behaviour and this is agreed by [24-25].

Table 1. Respondent socio demographic characteristic (N=100)

Variables	n (%)
Gender	
Male	89 (89%)
Female	11(11%)
Age	
20-30	61(61%)
30-40	35(35%)
40-60	4(4%)
Year of Working Experience	
6 Month	9 (9%)
1 Years	16(16%)
2 Years	18(18%)
3 Years	17(17%)
> 3 Years	40(40%)
Training	
No	16 (16%)
Yes	84(84%)

Data was presented as n (%) for categorical variables.

Table 2. Level of personal hygiene (N= 100)

Variable	Level of Personal Hygiene, n (%)			
	Pre Intervention		Post Intervention	
Knowledge	Poor	: 49 (49%)	Poor	: 20 (20%)
	Good	: 51 (51%)	Good	: 80 (80%)
Attitude	Poor	: 23 (23%)	Poor	: 0 (0%)
	Good	: 77 (77%)	Good	: 100 (100%)
Practice	Poor	: 58 (58%)	Poor	: 27 (27%)
	Good	: 42 (42%)	Good	: 73 (73%)

Data was presented as n (%) for categorical variables.

Table 3. Median scores for knowledge, attitude and practice on personal hygiene during pre and post intervention

Variables	Median (IQR)		p-Value
	Pre Intervention	Post Intervention	
Knowledge	7.00 (7.00)	8.00 (7.50)	< 0.001*
Attitude	7.00 (7.00)	7.00 (7.00)	0.965
Practice	4.0 (4.50)	6.00 (5.50)	< 0.001*

Wilcoxon ranked is used to compare continuous variable. Data is presented as median (IQR).

*indicates significant ($p < 0.05$). IQR: Interquartile range.

Table 4. Correlation between knowledge and attitude; knowledge and practice

Variable		r	p-Value
Knowledge	Attitude	-0.009	0.93
	Practice	-0.082	0.415

Spearman rho is used to correlate continuous data. Data is presented as r coefficient.

4. CONCLUSION

Finding from this study indicated that the usage of visual-based intervention was helpful in

educating the food safety component of personal hygiene among the non-native speaker food handlers, which in this study were the Mamak food handlers. Nevertheless, the incorporation of knowledge, attitude and element in this study predict limited effectiveness of food hygiene intervention. An intervention that imparts health-related behaviours framework such as theory-planned behaviour (TPB) should be warranted for future study. In addition, the employment of one group quasi experimental design was noted to be lacked in internal validity due to the respondent's maturity and selection-history threats. Therefore, a randomized controlled trial designed is proposed in order for the population of participating individuals are clearly identified.

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