

Assessing the Knowledge, Attitude and Practice among Food Handler towards Effective Waste Management System in Bandar Puncak Alam, Selangor, Malaysia

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Abstract: A survey by using closed ended questionnaire was conducted to capture the knowledge, attitude, and practices (KAPs) on waste management system from a total of 210 food handlers at Puncak Alam, Selangor. Food handler had average mean of 3.79 for knowledge and attitude (3.66) on waste management matter and mean score of 3.29 for practice. The results showed that food handler strongly aware to properly throw waste in the restaurant even though not many of them attended talk or seminar on handling proper waste management. Food handlers also strongly agree that conducting proper waste disposal is a responsibility of every workers and disagree that when there is not much waste generated by restaurant, there is no need to frequently throw the waste. In practice, food handler always washed their hands after handling waste before continue to do work and did not composed waste from restaurants in the river as showed by the lowest mean score obtained. Thus it can be conclude that food handler not only knowledgeable in term of proper way to dispose but also showed positive attitude towards its as depicted by proper waste management system implemented.

Keywords: Knowledge, Attitude, Practice, Food Handler, Waste Management System

1. Introduction

Increase in the population numbers and rapidly industrialization growth has caused the continuing global problems for improper wastes disposable with main concerning on wastes management system especially ineffective waste collection and disposable strategies among food handler [1]. This is important element need to be consider particularly for those involved in foodservice sectors since improper waste management will affect health, environment as well as economical problem which indirectly will give bad impact to the community [2]. Waste which include solid waste may generated from restaurant, drinking establishment, hospitals, school canteen as well as household. If the food wastes are improperly disposed, they are the favourable breeding places for insect and source of food for rats which may increase the health problems.

However, proper waste management system are often neglected at the individual level [3]. Although many food handlers are aware the impacts of mismanaged wastes on the environment and health, yet the bad attitude and insufficient environmental knowledge leads to poor practices towards proper waste management system. Food handler is anyone who involved in the food production from the receiving to delivering of food to customers. Not only that, food handler also responsible in ensuring proper waste disposable system being implemented. Proper waste management system is the process of collecting, transporting, disposing, managing, monitoring of waste [4] or utilization of waste in a sanitary, aesthetically, acceptable and economic manner [5] which mainly to provide a healthy environment for human. The need for proper waste management system to reduce environmental pollution and decrease number of waste in food establishment is crucial issue need to be addressed. The proper waste management system only can be successful implemented if elements of

knowledge, attitude and practices among food handler were incorporated throughout food production. Several communities' surveys have been pursued to capture the level of knowledge, attitude and practices (KAP) regarding the waste management system among household and student [6, 7]. The knowledge level towards proper waste management system include familiarity of what is waste management system, how waste management can boost the hygienic and quality of food and understanding of its impact on consumer safety and health. The consequences of ineffective and effective waste management towards human and environmental health are different where the ineffectiveness will lead to harm which vice versa to effective that will give benefits to both human and environmental health [4]. Poor knowledge and awareness regarding solid waste management lead to the continuation of waste management problem [8]. By educate and motivate people particularly food handlers, hoping can improve the waste management system and beneficial to the society. This is due to the fact that without knowledge on proper manage of waste, peoples are unethically dispose the waste material into the river or drain that give negative impact on health. The knowledge on properly manage the waste material can be gained through education and training since both are the important elements that can increase the awareness and knowledge towards proper waste management system [9].

Aspects such as awareness, attitudes and behaviours of people in the community are important element towards proper management of waste as well [6]. Development of attitude that helps in solving the problem regarding environmental issues is crucial among individuals. Attitudes of food handler toward the effectiveness of waste management reported to be related with the level of knowledge [6]. This is because without attitude, food handlers cannot practice effective waste management system in the restaurants. Attitudes of people are not change or increase to desirable attitudes if the education is fail to strengthen the knowledge level. It is important to ensure that people particularly food handler not only aware but must understand the important of proper waste management that motivate them to practice it. Understanding the problem that may rise due to improper waste management system, will assist for more awareness on the waste management issues. Attitudes that are based on knowledge and awareness, would be lasted long where good attitudes will affect the improvement in the waste management practice [10].

Practice is an action taken by people parallel with the increase of knowledge and attitudes. Therefore, practice of waste management can be improved with improvement in the knowledge and attitude regards to proper waste management. Ample knowledge of the negative impact of poor refuse disposal can encourage people to apply the positive waste management practice which beneficial for environmental and human health [11]. The knowledge of food handler on the need for wash their hand after handling any waste material before continue his work is one of the example that shows the relation between knowledge and practice. The food handler that already had an experience in the food service sector can contribute to a better knowledge, attitude and practice among workers [12]. Usually the experienced food handlers know that they only can dispose waste at the dump place provided by the government.

Thus it can be suggested that knowledge, attitude and practices may be the important attributes value to be study that may affect proper waste management among food handlers.

Assessment of knowledge, attitude and level of practices towards proper waste management system among food handler in Malaysia is scanty in the literature. Therefore, this study was conducted to capture the level of knowledge, attitude, and practices of food handler on proper waste management system with the aims to elucidate the roots of continuing problems on wastes management for environmental and health improvement.

2. Research Methodology

2.1 Research design and Sampling

The cross-sectional study design by using structured questionnaire was adopted in conducting the KAP survey as a form educational diagnosis for targeted communities. The survey was conducted by giving questionnaire to the respondents around Puncak Alam restaurant. Our respondents consist of food handlers from diverse background. Questionnaire for this research project were distributed in the month of Mei 2016. The questionnaire survey was conducted for about 3 weeks by distributing the questionnaire personally to the food handler of restaurant. Even though, it is being suggested that 136 sample sizes is adequate to represent the population [13], however for the purpose for this study, 210 questionnaires were distributed. From 210 questionnaires distributed we successfully collected 136 to be used for data collection.

The first step in data collection process is by getting approval from UiTM in order to gain trust from the respondents by stating that the questionnaire were meant for research study. Before the actual survey was conducted, a pilot test has been done to identify the reliability of questions asked in the research instrument. A total of 60 respondents were asked to answer the questionnaire for pilot study purposes. Only question with Cronbach alpha of equal or more than 0.70 was considered to be used in the questionnaire for actual survey. The purpose of pilot study is to make sure the questionnaire that will be distribute to a hundred of respondents are easy to understand without any typing error or repeated questions. According to Worlanyo (2013) this helps

the researchers to identify the arguable, unrealistic and incorrect question from responses and do the correction before proceed to the actual fieldwork.

The survey was conducted during non-peak hour by introducing and briefing on the questionnaire to the food handlers before handing the questionnaire. Finally, by the end of the time frame, the questionnaires were collected for the purpose of data analysis.

2.2 Research Instrument

A self-administered structured questionnaire was used to gather the data on level of knowledge, attitude and practice of food handlers towards proper waste management system. The questionnaire was consisted of four distinct parts; demographic characteristics of the participants, food handlers' knowledge in relation to proper waste management, food handlers' attitude toward proper waste management and actual practices related to proper waste management system among food handlers. The 5-points Likert scale was used to interpret items in the questionnaire that indicate strongly disagree (1), disagree (2), neither agree or disagree (3), agree (4) and strongly agree (5).

2.3 Statistical Analysis

All data were organized in a spread sheet and subsequent separate cross-checking was done. All categorical measurements were coded numerically to facilitate data transfer and analyses. All statistical procedures were performed in SPSS Statistics version 22.0. Actual counts, relative frequencies, and mean scores were used in the descriptive analysis to describe the characteristics of the sample population studied and the effect of knowledge, attitude and practice among food handlers towards effective waste management systems. Data were presented in the form of mean and \pm standard deviation. All inferential statistics were performed at 95% confidence level.

3. Results and discussion

3.1 Demographic profile of respondents

A total of 136 respondents were participated in this study with ratio of 1:1 for male and female which represent 68 person respectively. Of all, 47.8% of the respondents are in the age group of 16-34 years old, followed by age group of 35 – 49 (35%) while only 18.4% from age group of 50. In term of nationality, 86.8% respondents are Malaysian while the remaining of 13.2% are foreigners food handlers. Among all, 109 respondents are the one with secondary level certificate (SPM, STPM), whereas, 23 and 4 respondents are Diploma and Degree holders respectively. Most of the respondents (42.6%) are the food handlers with 1-5 years of working experiences and 14.7 % are the group of food handlers with working experience of more than 10 years.

3.2 Food handlers' knowledge towards proper waste management system

The effect of knowledge towards proper waste management system among respondents depicted in the Table 4.1 below.

Table 1: Knowledge of Food Handlers' towards Effective Waste Management System

No	Items	Means	Std
	I aware on how to proper throw waste of food in restaurant	4.35	0.62
	It is important to separate the waste in restaurant	3.68	0.59
	Food hygiene training is important to ensure food handler know how to handle waste properly	3.67	0.56
	I have attend talk or seminar on handling proper waste management	2.81	0.96
	Knowledge on proper waste management help in reducing daily wastage	3.43	0.72
	I realize the effect of poor waste management	4.27	0.63
	I aware that hygiene aspect in restaurant related to waste management	4.29	0.79

Generally, the study found out that respondents had satisfactory knowledge towards proper waste management when they rated in the range of 2.81 to 4.35 with average mean of 3.79 ± 0.69 . Mean score is used to show the degree of agreement of the variables. From the data the highest mean score are 4.35 with standard deviation score of 0.62 was obtained by question K1 ('I aware on how the proper throw waste of food in restaurant'), followed by 'I aware that hygiene aspect in restaurant related to waste management' (4.29 ± 0.77) and they also realize that effect of improper waste management system (4.27 ± 0.63). From the answers, it shows that food handler do have the knowledge on proper way to handle the wastes and understands the effect

of it. The study shows that most respondents know how to properly throw the wastes and agreed that this practice can contribute to effective waste management. The results obtained was in line with [14]when he reported that 96.2% of respondents from Conakry were aware of the significant effect of reckless handling of waste to the human health, but somehow about 63.7% were unaware of the possible contamination of surface, ground, and piped water due to poor waste management.

While contradict results reported by [15] where low knowledge towards proper solid waste management among householders in area of Abedan when only 1% showed knowledge towards solid waste reduction, while 10.3% and 5.5% having knowledge on SW source separation and recycling respectively. Slightly low level of knowledge toward waste management also observed among community in Martapura River Bank with mean value of 3.87 where they only know the right place for waste disposal [16].

Meanwhile, the results obtained in this study revealed that the food handlers are seldom attended any seminar or talk on proper handling of waste as depicted by relatively low mean score obtained (2.81) that represent question K4 ('I have attended talk or seminar on handling proper waste management'). It give some indicator that somehow it is very hard to find any seminar that educate the food handler on the proper waste management system. Hence, it can be a challenge to the respective authorities to organize any talk or seminar on proper waste management in order to prevent any related problem from occur. However, this cannot be a concrete reason of not implementing the correct way of waste dispose since local authority did supplied stationary containers in the main and submain streets to support the mechanisms of proper waste management system.

The level of knowledge reported to be interrelated with educational level. In the study by [14], he found out that the respondents that having no education, primary education and secondary education wereless likely to know the implication of improper waste management on health related diseases. It is in agreement with [15]where they also confirmed that education level is one of the significant factors affecting residents' way of disposable waste.

3.3 Food handlers' attitude towards proper waste management system

Table 3.2 shows the effect of attitude among food handlers towards proper waste management system.

Table 2: Attitude of Food Handlers' towards Effective Waste Management System

No	Items	Means	Std
	Safe disposal is of utmost important to prevent contamination	4.29	0.61
	Safe waste disposal should be priority at the restaurant	4.24	0.66
	Conducting waste disposal is the responsibility of every worker	4.32	0.69
	When there is not much waste generated, there is no need to frequently throw the rubbish	2.28	0.45
	Practice of waste disposal such as close the rubbish bin after use is important to me	3.21	0.87
	Wearing personal protective equipment such as gloves decreases the risk of food contamination	3.63	0.58
	Back of the house worker should be responsible for the waste disposal	3.13	0.71

Overall, food handlers showed significantly positive attitude towards proper waste management system as depicted by relatively high average mean score for attitude (3.66 ± 0.65). From the results gained, most of the respondents have positive attitude when they agreed that safe disposable of waste is not something that can be compromise. It can be proven by relatively high mean score rated (4.32 ± 0.69) for statement of 'Conducting waste disposal is responsibility of every worker'. Thus it shows that food handler is agreeing that the responsibility of conducting waste disposal is not specialized to certain workers but it is responsibility of all. In addition, respondent also agreed that contamination can be prevent through safe disposal system (4.29 ± 0.61), in fact the safe waste disposable system is a priority at the restaurant (4.24 ± 0.66). In addition, the lowest mean score of 2.28 ± 0.45 was rated for statement of 'When there is not much waste generated by restaurant, there is no need to frequently throw the waste'. Thus it proved that respondents did not agree with the attitude of not throwing a waste frequently even though there is small amount of waste is produce. The similar positive attitude towards proper disposable waste also demonstrated among undergraduate student [17], as well as among Addis and KometaKebele Community[2]whenthey revealed that 76.9% respondents have shown positive attitude while the rest 23.1% showed negative attitude towards proper waste management procedure.

In contrast, nearly three third of first year students have showed negative attitudes towards proper solid waste management system (65.9%) as reported by [18] and suggested that the need of education to play role in developing people's attitudes towards the environment. Moreover, the negative attitudes towards proper waste

management may also contributed by lack of social enforcement to prevent littering, absence of realistic penalties, and lack of knowledge of the environmental effects of littering[19].However, some of the respondent claimed that they don't have time for proper waste management and in fact the dust bins are inadequate for proper waste management purposes which proved the negative attitude among tested respondents[20].

3.4 Food handlers' actual practice towards proper waste management system

The actual practice among food handler also being measured to investigate the effect of knowledge and attribute towards actual practices of proper waste management system. The results obtained was tabulated in the Table 4.3 below.

Table 3: Actual practice of food handler towards effective waste management system

No	Items	Means	Std
1	I not composed waste by open burning	3.51	0.49
2	I used waste bin provided very well	4.63	0.63
3	I disposed waste from restaurant in drains or gutters at the back of the restaurant	2.57	0.66
4	I disposed waste at the dump provided by government	3.96	0.64
5	I wash my hand after handling waste before I continue to do my work	3.56	0.71
6	I use personal protective equipment such as gloves when handling waste	2.32	0.64
7	I separated food waste with other waste before throw it in rubbish bin	4.74	0.44

Overall, the mean scores obtained for actual practice towards proper waste management were in the range of 2.32 to 4.74 which disagree to strongly agree. The results showed that food handler really practice proper waste management system when they strongly agree (mean score of 4.74 ± 0.44) that 'I separated food waste with other waste before throw it in rubbish bin' followed by 'I used waste bin provided very well' (4.63 ± 0.63). Besides that, food handlers also showed proper waste management practice when they disposes waste at the dump provided by government and they do wash their hand after handling waste before continue to do their work with mean score of 3.96 and 3.56 respectively. The positive practice towards waste management also proven when the food handlers disagree with activity of disposing restaurant waste in drains, river or gutters at the back of the restaurant. However, wearing personal protective equipment such as gloves when handling waste not a common practice for them.

Thus the results obtained showed that food handlers not only know how to properly manage the restaurant waste, depicted positive attitude towards this matter but also portrayed it in the form of proper waste management practices. This may be as a results of enforcement by local authorities and penalty given to the food premises that do not comply with rules and regulations. In Malaysia, some mandatory regards to proper waste management being developed which include Mandatory Waste Separation Program and Mandatory Recycling with Fines for Compliance. This indirectly educate food handler on the important of proper disposing of waste.

4. Conclusion

The results obtained show that food handlers have knowledge on properly dispose the restaurant food waste even though there were infrequently attended any talk or seminar regards to proper waste management system. Besides that, food handlers also aware and well understand that conducting waste disposal is a responsibility of each worker in the restaurants and frequently throw the waste regardless the waste's amount that demonstrate the good attitude towards proper waste management among the food handler. In practice, food handler always wash their hand after handling any waste before continue to do my work. Moreover, they also properly disposed the restaurant food waste when they only disposed them at the dump place that provided by government. Thus it can be suggested that the food handlers at PuncakAlam, Selangor area have knowledge and positive attitude that lead to proper waste management system implementation.

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