

Food Safety and Waste Management Practices Among Canteen Operators of Schools and Colleges: Cauayan City, Isabela

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Abstract

College and university food service operations are great contributors of food waste, and such a suggestions of food recycling such as composting, donation of food to local food banks, or sale of food waste to farmers for animal feedings to minimize food expenditures (Ju, S., et. al. (2016). Hence, this study aimed to examine the foodservice administrators' food waste management practices among canteen operators of educational institutions of Cauayan City, Isabela. In this study, the research method used was the descriptive method. Survey Questionnaire was used to gather data needed to assess the present condition of canteen operators in terms of food safety and how they manage their solid wastes. Some statistical tools were applied to interpret and analyzed data collected. It was found out that canteen operators have their own design of protecting foods and ways of maintaining the cleanliness and sanitation of their surroundings.

Key Words: canteen operators, food safety, waste management, sanitation

I. Introduction

Food sanitation and safety has become a problem that cannot be ignored by anyone. Industrialized countries have been engaged with the local companies and the food industries to implement food safety measures as mandated by World Health Organization (WHO) and World Trade Organization (WTO) regulations.

College and university food service operations are great contributors of food waste, and such a suggestions of food recycling such as composting, donation of food to local food banks, or sale of food waste to farmers for animal feedings to minimize food expenditures (Ju, S., et. al. (2016). The awareness of the food service administrators of its effect will improve the environmental sustainability and the public image of operations. Sending food waste to composting sites and recycling frying oil for biodiesel fuel to manage food waste from food service operations are effective food waste management in college and university food service operations (Buchtal, 2006; Miller, 2007). A current innovative concept on food service operations in the college and university is the tray less

dining, which showed a decrease of food waste at the same time savings in water and energy (Meltzer and Stumpf, 2008).

On the other hand, in the higher education setting, campus foodservices should be more responsive to their consumers' higher expectations and improve their campus foodservice operations (Gramling et al., 2005; Kwun (2011); June, 2006).

The proper food waste management in college and university foodservice operations should be implemented. Though, not all colleges and university foodservice operations have been contributed in food waste management programs. Hence, the study aimed to examine the foodservice administrators' food waste management practices among canteen operators of educational institutions of Cauayan City, Isabela.

II. Objectives of the Study

1. To assess the current food safety practices of canteen owners of schools and colleges of Cauayan City.
2. To determine the waste management practices of canteen owners of schools and colleges of Cauayan City.
3. To recommend additional information on food safety measures and proper waste management to canteen owners of schools and colleges of Cauayan City?
4. To awaken the awareness of students, school officials, faculty members, canteen owners and canteen employees of the significance of food safety measures and proper food waste management.

III. Methodology

The research method used in this study was descriptive. It described what actually exists such as current conditions, practices, problems in food safety and waste management of canteen operators of schools and colleges of Cauayan City. Survey questionnaire was used to gather data necessary for the study. It was also supplemented by informal interview as well as observation of actual data. Data gathered was treated with the aid of statistical tool using simple frequency count and weighted mean for interpretation and analysis.

Conceptual Framework

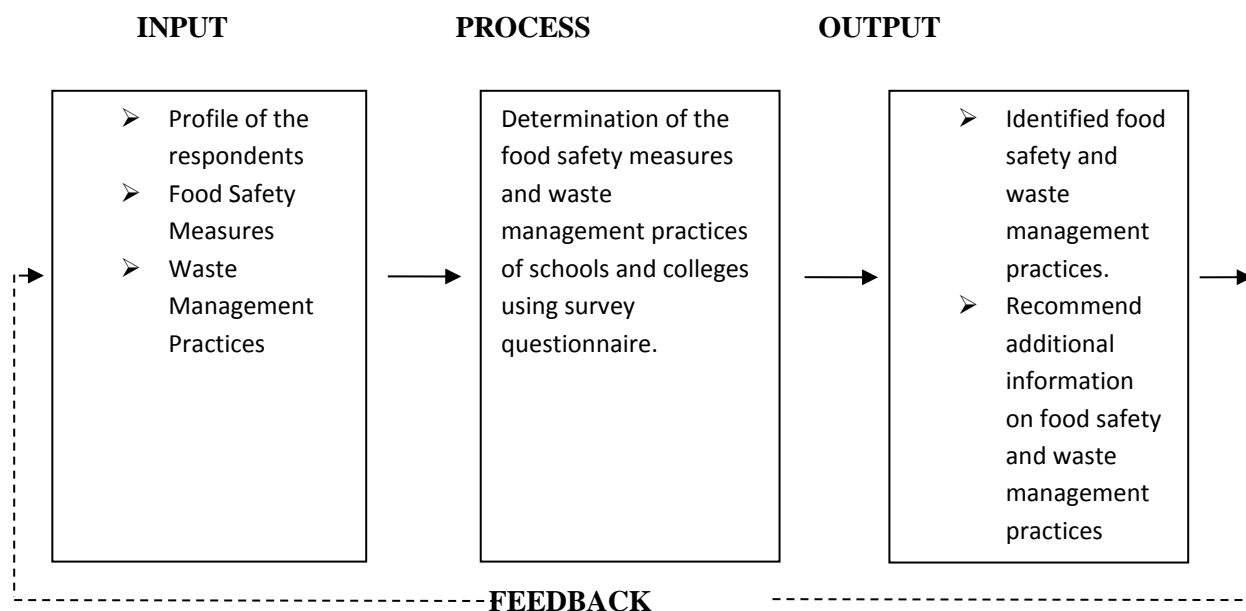


Figure 1. Paradigm showing the flow of the study.

The paradigm presents the process on how the study was conducted. The input phase shows the variables needed to be assessed. Process phase shows the procedures made in determining schools and colleges’ food safety measures and waste management practices. The output phase shows the current food safety measures and waste management practices of schools and colleges of Cauayan City, Isabela. It also provides some information in addition with the current situation for improvement. The feedback served as new input for further study.

IV. Results and Discussion

Table 1. Type of Canteen

Type of Canteen	Frequency	Percentage (18%)
Snack House	6	15
Carinderia	28	70
Fast Food	6	15
Total	40	100

The table shows the frequency distribution of the type of canteen operated. Out of forty canteens, 6 or 15% were snack houses, 28 or 70% were carinderia and 6 or 15% were fast food. It indicates that most canteen of schools and colleges are serving meals to cater students who are staying in the school/college the whole day. Most streets in the Philippines where schools and offices located with exception to highly developed areas and private properties have carinderias surrounding them. The carinderia is the forerunner of the fast food concept in the Philippines (Philippine Daily Inquirer, 2011).

Table 2. Number of Years Operating the Canteen

Number of Years	Frequency	Percentage (%)
Below 5 Years	18	45
5 – 10 years	22	55
Total	40	100

The table shows the frequency distribution of the number of years operating the canteen. It can be seen that 18 or 45% were operating the canteen for less than five years and 22 or 55% were operating for 5-10 years. This implies further that canteen operators are mostly experienced in food safety practices. Canteen must be clean and have safe environment. Implementation of safe personal sanitation, being aware about storing and keeping of food at the right condition, and maintaining neatness to ensure safe consumption of food (Food Safety, 2016).

Table 3.1 Mean Responses of Respondents as to Food Safety Measures in Terms of Food

Food Safety Measure	Weighted Mean	Descriptive Interpretation
1. Raw foods are of good quality.	5.00	Always
2. Supplied by legitimate suppliers.	3.60	Sometimes
3. Keep food separately according to type.	4.80	Always
4. Ingredients conform with BFAD requirements.	4.95	Always
5. Prepare/serve foods with proper hygiene.	5.00	Always
6. Stored in place protected from insects/pests.	5.00	Always
7. Stored at temperature necessary to avoid spoilage.	5.00	Always
8. Display foods with covers.	4.80	Always
9. Reheat leftover foods.	1.80	Not at All
10. Serve healthy and nutritious foods.	5.00	Always
GWM =	4.50	Always

The table shows the food safety practices in terms of food. It can be seen that all indicated food safety measures, 5.00, 4.80, 4.95, 5.00, 5.00, 4.80, 5.00 are the weighted mean or always practices except that food are sometimes supplied by legitimate suppliers, 3.60 is the weighted mean or sometimes the descriptive interpretation, and it is not a practice to reheat leftover foods, 1.80 is weighted mean or not at all is the descriptive interpretation. This indicates further that food service administrators are expected to provide nutritious, culturally acceptable and affordable food, safeguarding food hygiene, promoting healthy dietary habits, child friendly service provision, and improving facilities of school canteens in college and university. Mitchella, et.al. (2007) stressed that the unsafe handling practices of food contributes to food-borne diseases. Proper hand washing, avoiding cross contamination and working while sick and proper storage (e.g. heating, cooling) practices were important methods for safe food handling practices.

Table 3.2 Mean Responses of Respondents as to Food Safety Measures in Terms of Equipment and Utensils

Food Safety Measure	Weighted Mean	Descriptive Interpretation
1. Containers are free from pests/insects.	5.00	Always
2. Containers are clean and free from dust.	5.00	Always
3. Wide and proper wash area is provided.	4.95	Always
4. Wash area is separated from comfort room.	5.00	Always
5. Cooking utensils are made of stainless.	3.95	Always
6. Eating utensils are disposable, (plastics, styrofoams)	1.50	Not at all
7. Storage like cabinets are free from insects/pests.	5.00	Always
8. Uses clean dishwashing materials.	5.00	Always
GWM = 4.425		Always

The table above shows the food safety practices in terms of equipment and utensils, 5.00, 5.00, 4.95, 5.00, 3.95, 5.00, 5.00 are the weighted mean, eating utensils are disposable, 1.50 is the weighted mean or not at all. It implies that canteen operators always use equipments and utensils that are free from factors causing food contamination. Mitchella, et.al.(2007) suggested that using proper equipment improves safe food handling practices, and it can also improve by keeping a proper physical design of the operations. In addition, Akonor (2013) pointed out that inappropriate food handling practices and food safety will lead to public health problem which is associated with consumption of food and water.

Table 3.3 Mean Responses of Respondents as to Food Safety Measures in Terms of Food Handling

Food Safety Measure	Weighted Mean	Descriptive Interpretation
1. Wears uniform / appropriate clothe for food preparation.	4.95	Always
2. Wears uniform / appropriate clothe for food serving.	5.00	Always
3. Wears hairnet, gloves.	5.00	Always
4. Nails are clean not coated.	5.00	Always
5. Uses forceps or ladles to pick foods.	5.00	Always
6. Washes hands properly before handling foods.	5.00	Always
7. Healthy and doesn't have communicable disease.	5.00	Always
8. Undergone medical check-up and secured work permit.	5.00	Always
GWM = 4.99		Always

The table shows the food safety practices in terms of food handling. As seen in table, 4.95, 5.00, 5.00, 5.00, 5.00, 5.00, 5.00, 5.00 are the weighted mean or always are the descriptive interpretation, canteen operators always observed proper food handling. This suggests that food handler's practices cannot be ignored because they play a big role in food establishments. Douglas (2011) suggests that institutions should set up a compulsory training on for all persons in food service outlets and monitor strictly the implementation of the food and safety management systems.

Table 4. Mean Responses of Respondents as to Waste Management Practices

Waste Management Practices	Weighted Mean	Descriptive Interpretation
1. Waste containers are available properly labeled in conformity with RA 9003.	4.95	Always
2. Waste containers are clean, with cover and no leak.	5.00	Always
3. Food waste is separated from other solid waste.	5.00	Always
4. Solid wastes are separated according to type.	5.00	Always
5. Waste containers are placed away from foods.	5.00	Always
6. Have effective screening and grease trap before drain.	5.00	Always
7. Wastes are disposed properly.	5.00	Always
8. Drainage is clean, covered and free from clogs.	5.00	Always
9. Canteen environment is clean free from dust, pests and foul odor.	5.00	Always
10. Abide with the SWM policies of the school.	5.00	Always
GWM =		Always
4.99		

The table shows the waste management practices of canteen operators. It shows that, 4.95, 5.00, 5.00, 5.00, 5.00, 5.00, 5.00, 5.00, 5.00, 5.00 are the weighted mean or all indicators mentioned are always practiced. Further analysis reveals that canteen operators always managed their solid waste so as not affect their quality food service. The stakeholders and the people have the rights and responsibilities in the implementation of the Ecological solid Waste Management as stated in R.A. 9003 Rule I Section 3.

V. Conclusion

Canteen operators have their own design of protecting foods and ways of maintaining the cleanliness and sanitation of their surroundings. They are responsible of managing their solid waste in accordance to the policies of the respective school/college especially in dealing with waste segregation and disposal. They always maintained food safety procedures to ensure the welfare of the students. Solid waste management is always given attention to protect their environment from contaminating foods.

VI. Recommendation

The commitment of the canteen owners to maintain food safety measures and waste management practices is very much recommended. New canteen staff should be given proper orientation and procedures to follow. Coordination with the school/college authorities should be maintained. Canteen operators are encouraged to participate more actively to related activities the Local Government Unit and the respective school/college are conducting. Conduct of regular evaluation on food safety awareness and proper waste management practices may boost the canteen operators to find ways of continuously improving and advancing the current food safety measures and waste management practices, and finally, to always achieve food safety in the daily routine of the canteen operation foods must always clean because germs can spread from one food to another. Foods serve should be cook, need to get hot and stay hot. And put fresh foods in the refrigerator immediately.

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The Researchers

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