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Research Article

School and Industrial Kitchen Sanitation and Hygiene Practices among HRM Graduates

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ABSTRACT

Kitchen practices such as sanitation and hygiene are crucial precautionary methods in preventing untoward accidents due to carelessness in the kitchen. This study aimed to determine the Hotel and Restaurant Management (HRM) graduates' kitchen sanitation and hygiene practices in school to their practices in the industry. There were sixty-seven HRM graduates of the College in Cagayan de Oro City employed in the different hotels, restaurants, and chains who participated as the participants of the study. A snowball sampling technique was used. Both descriptive and inferential statistics were used to generate the findings. Generally, results show that school kitchen practices have a minimal implication on HRM graduates' real-life practices in the industry. Among the kitchen practices, only storage is significantly having an impact on HRM graduates' practices in both school and industry. Thus, the findings of the study call for the need to intensify school kitchen teaching practices in actualizing real concepts and practices of the kitchen industry.

Keywords: *HRM Graduates, Hygiene Practices, Sanitation, School and Industrial Kitchen*

Introduction

Kitchen sanitation and hygiene practices are among the most necessary processes in ensuring the safety of food from production to consumption. As for the kitchen sanitation practices, it encompasses the in-depth protection of food from the risk of contamination from harmful bacteria and foreign bodies which would result in consumer illness. Hygiene practices in the kitchen among the food handlers are highly imperative.

According to Somoray (2018), the primary tenet of kitchen sanitation among food handlers is absolute cleanliness. It begins with personal hygiene, the safe handling of food during preparation, and clean utensils, equipment, appliances, storage facilities, kitchen, and dining room. Given this, the Hospitality Management

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Program in one of the Colleges in Cagayan de Oro City ensures that kitchen sanitation and hygiene practices are well demonstrated by students. Food and hygiene practices are included in the curriculum of the said program to let their students increase competitiveness in the growing demands of a globalized village of hotel and restaurant industries.

Hooked on this assumption, Macatagay (2013) upheld that schools should emphasize students' development, making certain that they grow with the distinct characteristics and attributes of competent professionals. Felicen and Ylagan (2017) further reinforced that the Hotel and Restaurant Management curriculum involves the study of the professional application of practical knowledge and other functions like hotel and food services, culinary arts, revenue management, etc. As a proactive response to these delineations, the College in Cagayan de Oro City fully embraced the challenge of internationalization. The College, therefore, offers internationalization approaches such as international practicum, the inclusion of kitchen sanitation and hygiene practices, and languages and international practices to mention a few. Though such responses are emphasized in the program, not all students are performing well. These confirmed by the researchers that the reasons students on not to perform well the hygiene practices in the industrial kitchen might be due to personal reasons, the inclination of skills toward the different areas of competencies, resources pressures, and kitchen practices at home are different from school's practices. These observations are also in consonance with what Lugosi and Jameson (2017) found in their study.

Given these realities, the specific approach to kitchen sanitation and hygiene practices among Hotel and Restaurant Management (HRM) graduates is nevertheless ascertained. A deep understanding of the graduates' knowledge of kitchen sanitation and hygiene practices is, therefore, essential in determining the impact of school teaching on their industrial practices. Akabandam, Hlortsi, and Kwarteng (2017) delineated that such an investigation of graduates' knowledge of the previously mentioned practices will provide a better understanding of the interactions of prevailing food and kitchen safety measures.

In this study, the HRM graduates' knowledge of kitchen sanitation is assessed concerning their actual practices in the industry. This study is hoped to be of great help in providing academic players in the Hotel Management Program with the information necessary in designing school activities that promote students' mastery of kitchen practices. Thus, this study was conceptualized.

Theoretical Framework

This study assumed that HRM graduates knowledge of the industrial kitchen's sanitation and hygiene practices is an outcome of the HRM program's academic player.

This assumption is supported by Marzano's Teacher Effectiveness theory. This theory asserts that teachers who set goals primarily affect students' academic growth. Marzano avowed that the more the teachers engaged their students in activities, the more likely the students performed ("*Overview of Robert Marzano's Model of Teaching Effectiveness*," 2010). In this study, the more effective are the HRM teachers in terms of teaching personal hygiene, food preparation, storage, cleaning and sanitizing, garbage disposal, and pest control to students, the higher the tendency for students to apply what they learned in preparation for their future endeavours in the field of Hospitality and Management. Accordingly, Weimer (2013) espoused that teachers are effective if they can support students' thinking skills, stimulate their interest in the subject, motivate them to initiate their learning, present learning materials well, challenge students intellectually, set high standards, and have good elocutionary skills. In this regard, the Hotel and Restaurant Management Curriculum is imperative in the preparation of students to assume significant roles as restaurateurs and hoteliers in the workplace.

In the study conducted by Chavez *et al.* (2016), they affirmed that the primary task of the teacher is to design engaging tasks and activities for students to succeed in the completion of these tasks. Hence, myriad of studies was proven that teachers' effectiveness in terms of crafting engaging tasks is generally

considered one of the predictors of learning (Sharma, Jain, Mittal, 2014; Lam *et al.* 2014; Darling-Hammond, 2010; Kuh, Cruce, Shoup & Kinzie 2008). Along with this contention, teachers' facilitation of learning activities such as handwashing, wearing of clean proper uniform, removal of unsecured jewelry, single-use of gloves or tongs, cleaning the sink, mise-en-place, FIFO (First-in-first-out) method of inventory, sanitation of cutting boards and knives between uses are some of the tasks that are practically supportive to students' real-life work experiences in the hotel and restaurant industries.

Moreover, Maddox & Prinz (2003) explicated that when students feel fulfilled based on the engaging tasks of their teachers, they will likely able to infer their sense of belongingness to the school. This entails further that students will then able to see the connections of activities being cascaded in the school's rudimentary thrusts.

Towards this end, the literature and related studies on teachers' effectiveness are linked to being having a direct inclination to students' future undertaking. Thus, the study is conducted.

Objectives of the study

This study assessed the graduates of Hotel and Restaurant Management's school and industrial kitchen sanitation and hygiene practices. Specifically, the study delved into the following:

1. the assessment of HRM graduates in school kitchen sanitation and hygiene practices in terms of personal hygiene, food preparation, storage, cleaning and sanitizing, garbage disposal, and pest control;
2. the assessment of HRM graduates in industrial kitchen sanitation and hygiene practices; and
3. the significant difference in the extent of participants' assessment of the sanitation and hygiene practices in the school and industrial kitchen.

Methods

The study used the descriptive quantitative research design to determine the differences in the HRM participants' assessment of the school kitchen sanitation and hygiene practices toward their industrial practices. Sixty-seven HRM graduate who are currently employed in the hotel and restaurant industry were taken as participants of this study. A snowball sampling technique was used for their selection. A snowball sampling technique is used when the participants of the study provide referrals to recruit samples required for a research study.

A researcher-made instrument, subjected to both content validity and reliability test, was used to establish the internal consistency of the items. The participants' school and industry sanitation and hygiene practices were determined using the following scale: 3.51 - 4.00 Great Extent (GE); 2.51 - 3.50 Some Extent (SE); 1.51 - 2.50 Little Extent (LE); 1.0-1.50 No Extent (NE). The instrument used in the study garnered the following results of Cronbach's alpha coefficient: personal hygiene (.858); food preparation (.890); storage (.862); cleaning and sanitizing (.920); and garbage disposal (.724). This indicates that the instrument used in this study is reliable.

Descriptive statistics such as frequency, mean, and percentage were used to generate the participants' assessment of the school and industrial kitchen, and T-test to test the significant difference in the participants' sanitation and hygiene practices in the school and industrial kitchen.

Results and Discussion

Table 1 shows the frequency, percentage, and mean distribution of the participants' assessment of Sanitation and Hygiene Practices in the School Kitchen. Generally, the findings of the study show that participants had a great extent of assessment of the sanitation and hygiene practices in the school kitchen. The highest among the practices was on personal hygiene (M=3.69); followed by storage and garbage disposal (M=3.66). The lowest among the sanitation and hygiene practices was on pest control (M=3.45). This result is understandable considering that hotel and restaurant establishments are having their regular schedule of pest control by a licensed pest control operator. The general finding would possibly indicate that participants were able to practice and

abide by the wearing of clean and proper uniforms including shoes, caps, and hairnets. Also, participants were reminded by their teachers of the proper handwashing and removal of all unsecured jewelry while they are working in the kitchen.

According to Omemu, and Bankole (cited by Ismail, 2015), when kitchen staff does not have personal hygiene during food preparation, they may become vehicles for microorganism for example through their hand, mouth, and skin (Lazarević et al. 2013). Nevertheless, participants of the study are as well ensured that all food surfaces are clean and protected from contamination. Participants are also practicing the First In, First Out (FIFO) method of inventory management of food. The World Health Organization (WHO, 2006) identified several factors associated with foodborne illness such as poor food safety knowledge, poor personal hygiene, cross-contamination as well time and temperature abuse during storage and preparation of food by mobile food handlers (Osaili et al. 2011). As regards the participants' assessment of the garbage disposal, they are to a great extent of cleaning and emptying the garbage as necessary. The result of this study singularly points to Onyeneho & Hedberg's (2013) findings which state that personal hygiene, proper food storage, and garbage disposal are important to prevent illness outbreaks caused by food mishandling.

Table 1. Participants' Assessment on the Sanitation and Hygiene Practices in the School Kitchen

Sanitation and Hygiene Practices	Mean	SD	Description
1. Personal Hygiene	3.69	0.39	**GE**
2. Food Preparation	3.63	0.45	**GE**
3. Storage	3.66	0.41	**GE**
4. Cleaning & Sanitizing	3.60	0.41	**GE**
5. Garbage Disposal	3.66	0.45	**GE**
6. Pest Control	3.45	0.59	**SE**
Overall	3.62	0.45	**GE**

Table 2 shows the frequency, percentage, and mean distribution of the participants' assessment on the Sanitation and Hygiene Practices in the Industrial Kitchen. Overall, the findings of the study indicate that participants had a great extent of assessment of the sanitation and hygiene practices in the industrial kitchen. The highest among the practices was on storage (M=3.80); followed by personal hygiene (M=3.74) and food preparation (M=3.73). The lowest among the sanitation and hygiene practices was on pest control (M=3.45). The findings of the study would imply that participants' extent of assessment in the industrial kitchen's storage was a great extent. This means that participants are likely to label chemicals clearly and store them away from food and related supplies.

Further, it is worth mentioning that participants under study are practicing the FIFO method which they learned in school and was then applied to their designated workplace. The FIFO method of inventory ensures participants to store and prepare food from its approved sources. Participants are also ensuring that food equipment, utensils, and food contact surfaces are properly washed, rinsed, and sanitized before these can be used by consumers. Bas *et al.* (2006), in agreement with Kendall and Dimond (2018), acknowledged that proper food equipment helps reduce food contamination and the hazards of improper food handling. The lowest among the areas that are being assessed was still on pest control. As participants are having a homogeneity of answers in both the school and industrial kitchen in terms of pest control, this entails that both the school and industrial kitchen were having a licensed pest control operator.

These findings in the industrial kitchen are related to Boyer & McKinney's (2013) study stating that hotel and restaurants are likely storing their food well to help reduce the loss of moisture and, thus, extend shelf-life. They ex-

plicated that refrigerator storage slows bacterial growth, but eventually the stored product will spoil. Moreover, food hygiene and food preparation, as most of the studies assert, are crucial in the prevention of most types of foodborne illness and may also reduce one of the risks of establishments (Gibson *et al.* 2002; Djekic *et al.* 2014; Takanashi *et al.* 2009).

Table 2. Participants' Assessment on the Sanitation and Hygiene Practices in the Industrial Kitchen

Sanitation and Hygiene Practices	Mean	SD	Description
1. Personal Hygiene	3.74	0.30	**GE**
2. Food Preparation	3.73	0.33	**GE**
3. Storage	3.80	0.28	**GE**
4. Cleaning & Sanitizing	3.65	0.42	**GE**
5. Garbage Disposal	3.72	0.48	**GE**
6. Pest Control	3.61	0.50	**GE**
Overall	3.71	0.39	**GE**

Table 3 shows the T-test of Difference in the Participants' Assessment of the Sanitation and Hygiene Practices in the School Kitchen and Industrial Kitchen. Comparing the increments of their mean scores of the two groups concerning the different sanitation and hygiene practices, results reveal that only storage (t=2.292, p=.023) is significantly having a difference in participants' assessment in the school kitchen and industrial kitchen.

The increment of participants' assessment in the school kitchen and industrial kitchen did not significantly differ in their hygiene (t=.714, p=.477), food preparation (t=1.416, p=.159), cleaning and sanitizing (t=.716, p=.475), garbage disposal (t=.683, p=.496), and pest control (t=1.229, p=.221). This entails that participants under study are not likely able to apply the sanitation and hygiene practices they learned in school. Lyon *et al.* (2013) opined that practices taught in school are rarely based on evidence of effectiveness and are typically disconnected from industrial practices. This is because the school practices are graded and students are likely to perform best to get a good score. Another host of reasons for this is that facilities used in school are limited compared to the ones that are used in the industry.

Table 3. T-test of Difference in the Participants' Assessment of the Sanitation and Hygiene Practices in the School Kitchen and Industrial Kitchen

Sanitation and Hygiene Practices	School Kitchen		Industrial Kitchen		T	P
	M	SD	M	SD		
1. Personal Hygiene	3.69	0.39	3.74	0.30	.714	.477
2. Food Preparation	3.63	0.45	3.73	0.33	1.416	.159
3. Storage	3.66	0.41	3.80	0.28	2.292*	.023
4. Cleaning & Sanitizing	3.60	0.41	3.65	0.42	.716	.475
5. Garbage Disposal	3.66	0.45	3.72	0.48	.683	.496
6. Pest Control	3.48	0.66	3.61	0.50	1.229	.221
Overall	3.62	0.46	3.71	0.39	0.95	0.31

*Significant at 0.05 level

Conclusion and Recommendations

Findings under study inferred that school-based practices in the kitchen have minimal implication to the HRM graduates' industrial kitchen real-life practices. The study debunked Marzano's Teacher Effectiveness theory's contention saying that the more the teachers engaged their students in activities, the more likely students perform best in industry practices.

The findings, therefore, suggest the need to intensify school kitchen teaching practices in actualizing real-life concepts and practices of the kitchen industry.

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