



A STUDY ON FOOD SANITATION AND HYGIENE PRACTICE AMONG FOOD HANDLERS OF PRIVATE AND GOVERNMENT SCHOOL

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Abstract: The food hygiene and sanitation and personal hygiene of the food handlers is important in any food sectors specially in school providing mid-day meal and canteen snacks as negligence in hygiene and sanitation leads to food borne diseases in children. The study aims to observe and study the hygiene and sanitation practice among food handlers in private and government school providing mid-day meal and canteen snacks. A descriptive study was carried out in different private and government school of Hyderabad. The 50 sample was taken which is divided into 25 of private school and 25 of government school. A specially designed questionnaire was developed and information was collected through interview. The collected data was tabulated and graph were design by comparing private and government school. The collected data was statistically analysed using paired t-test. the results showed that p value ($p < 0.100$) was significant at 0.100 proving the alternate hypothesis .It is concluded that both government and private school food handlers are good at personal hygiene and food hygiene and sanitation and the government school food handlers have better food hygiene and sanitation practices compared to private school food handlers More training of food handlers is needed to improve their personal hygiene and sanitation for a safe and better food handling ,to lower the risk of food borne diseases.

Index term: food hygiene, personal hygiene, food handlers, private school, government school, food borne diseases.

I.INTRODUCTION

1.1 FOOD HYGIENE AND SANITATION:

Food hygiene is defined as 'the measures and conditions necessary to control hazards and to ensure fitness for human consumption of a foodstuff taking into account its intended use'. It begins with personal hygiene, the safe handling of foods during preparation, and clean utensils, equipment, appliances, storage facilities, kitchen and dining

Man holds bacteria in the mouth, nose, hands and intestines and can contaminate food while handling, coughing or sneezing over it. Although food contamination can result from different sources, from the field to the consumer, one of the main causes for foodborne dissemination is inadequate food handling during processing and distribution.

That is why it is of extreme importance for the handler to correctly sanitize everything that is going to come into contact with the food, the handler must also be found in good health condition to avoid any kind of contamination. Microorganisms can easily pass to food and reach the consumer if the handler comes into contact with any pathogenic microorganism by their clothes, hands, hair, nails, rings and then sets out to prepare food.

As so, the personal hygiene of whoever contacts with food, as well as behaviors they assume during its processing, constitute an important preoccupation in the food business. The set of rules, conditions and practices that assure adequate personal hygiene make up the good practices for personal hygiene

1.2 PERSONAL HYGIENE:

Personal hygiene is an essential part of food safety compliance adherence. Proper handling practices are required to ensure a safe working environment. Management has the opportunity to promote personal hygiene tips by serving as a good role model and reiterating how

important it is to adhere to food safety compliance protocol. Continually emphasize how important personal hygiene is, reassuring employees they will not lose their jobs for reporting an illness or communicable disease. Provide employees with clear instructions and the necessary sanitary equipment for them to properly sustain their personal hygiene. Effective supervision and reoccurring training will help employees to follow protocol and business to continue running safely and smoothly

Personal hygiene of food handlers include:

Good personal hygiene is essential for any food handler and minimizes the risk of food contamination. Most people carry harmful bacteria on their bodies and transport them to food. Touching your mouth, nose, hair or even your clothing can spread bacteria and cause contamination. Even healthy people are not immune and must practice good personal hygiene to minimize this risk.

Hand washing

Even if hands look clean, they can still harbor harmful germs and bacteria so correct hand washing is absolutely paramount when working with food. Improper handwashing is one of the leading causes of food contamination and is responsible for the spread of deadly bacteria such as Salmonella, E. coli, and NoVo virus, as well as dangerous respiratory infections such as Adenovirus and Hand-Foot-Mouth disease. In fact, The CDC estimates that throughout the world over 2.2 million children under the age of 5 die each year from diarrhea and respiratory infections caused by improper food preparation.

Hands should be thoroughly washed after starting work, handling money, handling raw meat, sneezing or touching the face, and of course, visiting the toilet. One gram of feces can contain as many as one trillion bacterial microbes! That is why it is so important to wash your hands thoroughly after visiting the toilet and handling animal product such as fresh meats and free-range eggs. This sounds easy enough, but many food handlers do not understand the correct process for hand washing

Health of food handlers:

You should never prepare food for others if you even suspect that you may be ill. Food handlers are prohibited from working with food when they are ill as there is a high chance of contamination. Some viruses can be transmitted through food just as bacteria can, and may be able to survive on food for long periods of time. That is why it is so important that any food handlers who may be sick stop working with food immediately.

Illnesses that would prevent you from working with food include, typhoid, cholera, hepatitis A, tuberculosis and gastroenteritis. You should not work with food when experiencing symptoms such as diarrhea, vomiting, stomach cramps, sore throat or a fever.

If you suspect that you may be ill, then you must inform your supervisor right away and stop working with food immediately. If you do have to miss work due to illness, then you may need a medical certificate from a doctor to confirm when you are able to return safely. It's not just illnesses that may stop you working with food. Any food handlers suffering from cuts, sores or boils must ensure their wounds are covered using clean, good quality dressings and bandages, and ensure that they are changed regularly.

1.3 PERSONAL BEHAVIOUR

During work hours, food handlers must avoid certain behaviors that may contaminate food:

- No smoking during food handling, or inside the production facilities, since the cigarette (with saliva) may contaminate surfaces, as well as cause mal being to non-smokers and even to smokers.
- No spitting or expectorating inside facilities, no blowing nose, coughing or sneezing beside food; when it is not possible to avoid, wipes should be used and hands and face should be washed immediately.
- No chewing or eating while carrying out the job; Avoid touching nose, mouth, ears, eyes and hair; Do not use jewelry, watches, and other objects that may cause threat to food.
- Wedding bands may be allowed as long as they are simple and do not constitute danger to the food handler; In case of persons that use medical ID tags (jewelry) (for example, diabetics), these are permitted as long as they are resistant, regularly washed and used under the clothes.
- It is not recommended to use make-up products that may pass to foods; It is not recommended to use beards/moustaches. In these cases, it is advised to use proper protection.

1.4 CHECK LIST FOR FOOD HANDLERS:

- Uniforms, aprons (or clothes) should be clean at the beginning of a work shift
- Wear a hair restraint (hat or hairnet)
- Keep fingernails short and clean
- Avoid touching nose, mouth, hair and skin during food preparation
- Do not smoke in food premises
- Do not cough or sneeze directly onto food. Wash hands after coughing or sneezing
- Wash your hands after blowing your nose
- Avoid wearing jewelry while handling and preparing food
- Avoid using strong perfumes/after shaves
- Do not wear uniforms or aprons outside the food preparation area
- Cover all wounds or cuts on hands or arms completely with bright-colored waterproof wound strip
- Wear disposable gloves if there is a wound on the hand. Change both gloves and wound strip regularly
- Food handlers to be free from any illnesses such as gastro or the flu
- Cease work and report to the manager while ill

1.5 hygiene and sanitation of food handlers providing mid-day meal:The Mid-Day Meal (MDM) program is the world's biggest supplementary school lunch program and is being implemented all over India for primary and upper primary school students. To continue a healthy program, personal hygiene of food handlers and beneficiaries should be well maintained

II. AIM AND OBJECTIVES

2.1 AIM: To observe and study the hygiene and sanitation practice followed by food handlers in private and government school providing mid-day meal and canteen services.

2.2 OBJECTIVES:

- To evaluate the food hygiene and sanitation practice of the food handlers of Government and private schools providing Midday meals and canteen services.
- To check the personal hygiene of these food handlers.
- To know the awareness of food handlers regarding food borne diseases.
- To assess the impact of education of the food handlers on his personal hygiene and sanitation.

III. REVIEW OF LITERATURE:

3.1 Food Sanitation and Hygiene Practices among Food Handlers in Food Joints in Hyderabad.

Abstract: Meena Kumari | Mrs. Nasreen Begum | Sarah Jameel | Suroor unnisa | Sahina Parvin on "Food Sanitation and Hygiene Practices among Food Handlers in Food Joints in Hyderabad" Published in International Journal of Trend in Scientific Research and development during august - October in the year 2018. the survey was administrated orally responses were recorded on questionnaires by the handlers. The survey included 35 questions that had information on restaurant and food handler demographics, food safety knowledge, behaviors, and personal hygiene. The knowledge questions were in true-false, multiple-choice, and open-ended format. The primary subject areas in this study included appropriate temperatures for cooking, heating, and cooling foods, cross contamination, and behavioral question. we learn that most of the food service establishment in Hyderabad are aware of basic personal hygiene. Conclusion: the study suggested that even though the knowledge, attitude and practice level of the food handlers was satisfactory, some of the aspects related to hygiene, time and temperature control need to be stressed continue education and training should be organized to strengthen food handlers' knowledge in area which seem to be lacking

3.2 The sanitary conditions of food service establishment and food safety knowledge and practice of food handlers in Bahir Dar town.

Abstract: The sanitary conditions of food service establishment and food safety knowledge and practice of food handlers in Bahir Dar town by Mulugeta Kibret, Bayeh Aber. The aims of this study were to investigate the food safety knowledge and practices of food handlers and to assess the sanitary conditions of food service establishments in Bahir Dar town. A cross-sectional study was conducted in Bahir Dar in May 2011 and data were collected using questionnaire and observation checklist on employees' knowledge of food hygiene and their practices as well on sanitary conditions of the food service establishments. The median age of the food handlers was 22 years and among the 455 subjects 99 (21.8%) have had food hygiene training. Sixty six percent of the establishments had flush toilets whereas 5.9% of the establishment had no toilet. Only 149 (33.6%) of the establishments had a proper solid waste collection receptacle and there was statistically significant association between the sanitary conditions and license status of the establishments ($p=0.01$). Most of all, knowledge gap in food hygiene and handling practice was observed. In addition, there was statistically significant difference between trained (professional) handlers and non-trained handlers with regard to food hygiene practices ($p<0.05$). While more than 50% of the handlers prepare meals ahead of the peak selling time, more than 50% of the left over was poorly managed. This study revealed poor sanitary conditions and poor food hygiene practices of handlers. Educational programs targeted at improving the attitude of food handlers and licensing and regular inspections have been recommended.

3.3 food hygiene practices and determinants among food handlers in Ethiopia:

Abstract: A systematic review and meta-analysis by Demisu Zenbaba¹, Biniyam Sahiledengle¹, Fikadu Nugusu¹, Girma Beressa, Fikreab Desta¹, Daniel Atlaw and Vijay Kumar Chattu. Background Food-borne diseases are a major public health concern worldwide, particularly in low and middle-income countries (LMICs), such as Ethiopia. Poor food hygiene practices primarily exacerbate food-borne illness transmission. Prior studies on the food hygiene practices among food handlers in Ethiopia were inconsistent. Therefore, this meta-analysis and systematic review aimed to estimate the pooled proportion of good food hygiene practices and identify the determinants in Ethiopia. Methods The preferred reporting items for systematic review and meta-analysis (PRISMA) instruments were used, and a systematic search was performed in the PubMed/MEDLINE, POPLINE, HINARI, Science Direct, Cochrane Library databases, and Google Scholar were systematically last searched on the 24th February 2022 for relevant articles. Only the observational studies that reported the proportion of good food hygiene practices and their associated factors among food handlers were included. The quality of the included studies was assessed by two independent authors. Articles with unclear methodologies and did not report the overall proportions of good food hygiene practice were excluded. The effect estimates for pooled proportion and pooled odds ratio (POR) along with a 95% confidence interval (CI) were determined conducting using Der Simonian–Laird's random effect model. Results Among 817 retrieved studies, 23 eligible articles with a total sample size of 7153 study participants were included in the meta-analysis. The pooled proportion of good food hygiene practices among food handlers was 50.5% [95% CI: (41.6, 59.4%); $I^2 = 98.7%$, p value = 0.001]. Food handlers with formal education (POR = 4.60, 95% CI: 3.05, 6.93), good knowledge (POR = 1.98, 95% CI: 1.26, 3.11), training (POR = 3.52, 95% CI: 2.35, 5.28), and a positive attitude (POR = 3.41, 95% CI: 2.52, 4.61) about food hygiene components, as well as regular medical checkups (POR = 6.75, 95% CI: 4.49) were significantly associated with good food hygiene practice.

Conclusions Only half of Ethiopia's food handlers had good food hygiene practice. Implication of the study the key elements of effective food hygiene practice that will aid in the development of feasible interventions to increase food handler compliance with food hygiene components have been identified.

3.4. study on sanitation, hygiene practices and food safety knowledge among food vendors in different sectors of Chandigarh, India.

Abstract: study on sanitation, hygiene practices and food safety knowledge among food vendors in different sectors of Chandigarh, India by Aradhana thakur, Uttara Singh in year 2017 august. The present study were carried out to assess the hygiene practices and food safety among street food vendors in the city of Chandigarh. It includes 100 samples of vendors. Fifty vendors were mobile and other 50 was fixed vendors. A self-planned questionnaire was used for data collection for the vendors. The questionnaire included questions about demographic information, hygiene practices and food safety. Thirty eight percent of vendors used stalls, but did not uphold their stalls well. Eighty-three per cent of the vendors had thrown garbage in the open vessel and 14.0% used dustbin for dispose garbage. Personal hygiene was also observed which indicated that the vendors never wear the head covers, handled food with bare hand and they did not wear overcoats/aprons as well. Street food vendors were not aware of hygienic and sanitary practice.

3.5. Food safety knowledge of food handlers working in hotel kitchens in Turkey:

Abstract :Food safety knowledge of food handlers working in hotel kitchens in Turkey by Taner Tuncer and Aylin Akoğlu is study was aimed to examine the food safety knowledge of food handlers in hotels' kitchen, to determine existing knowledge gaps in food safety, and to examine relationship between food safety knowledge and some sample characteristics such as gender, age, education level, professional experience, and past attendance to food safety training course. A total of 378 food handlers working in hotel kitchens, located at six different cities in Turkey, participated in the cross-sectional study. The food safety knowledge score of participants was average with 53.70%. Knowledge scores related the different food safety aspects including personal hygiene (53.60%), food hygiene (53.91%), cross contamination (61.13%), health problems that would affect food safety (52.14%), symptoms of foodborne illnesses (52.00%), HACCP (51.00%) and food allergy (50.89%) were found average level. The most striking result of this study is that although the number of employees receiving food safety training is considerably high (82.3%), the food safety knowledge score was found less than expected. When viewed from this aspect, this work is re-markable about examining into content and adequacy of food safety training in Turkey.

IV. METHODOLOGY:

RESEARCH APPROACH: Descriptive study

SELECTION OF AREA: A descriptive study performed on food hygiene and sanitation practice of food handlers of private and government school in different zones of Hyderabad.

SELECTION OF SAMPLE: food handlers working in government and private school of Hyderabad.

DURATION OF STUDY: The Study has been carried for a period of 2 months.

COLLECTION OF DATA:

Questionnaire: The questionnaire contains general information, educational information, questions regarding information on food hygiene and sanitation, information on personal hygiene of the food handlers and awareness of the food handlers. Including a observational inventory list for food handlers based on their personal hygiene and sanitation practice. The questionnaire contains both open ended and close ended question

DATA ANALYSIS: The collected was tabulated and statistically analyses by using paired t-test formula. $t = \frac{\sum d}{\sqrt{\frac{n(\sum d^2) - (\sum d)^2}{n-1}}}$

V. RESULTS AND DISCUSSION:

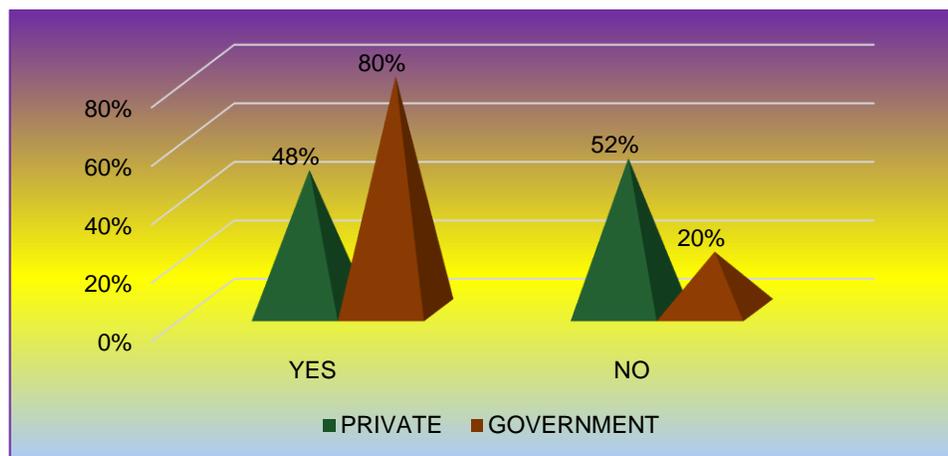


Figure5.1: The above figure shows percentages of food handlers received food hygiene and sanitation training.

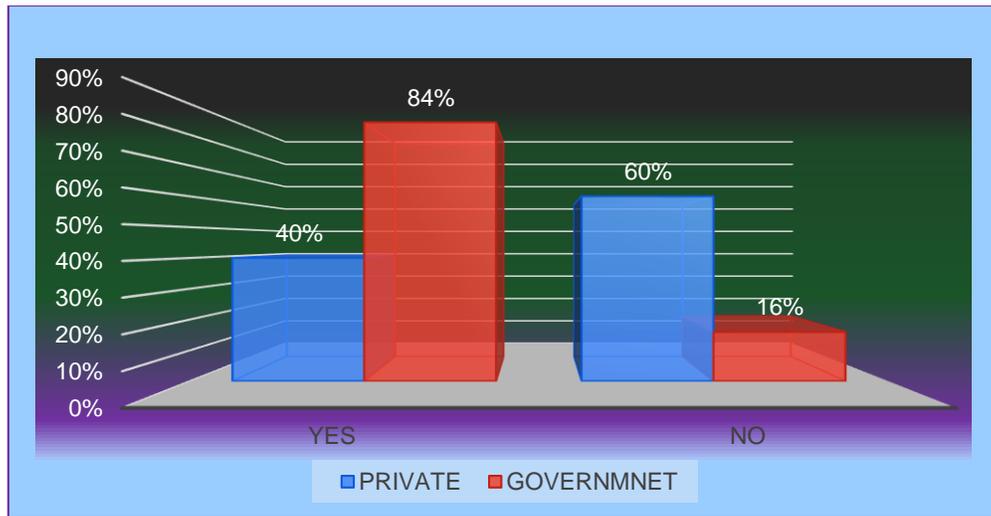


Figure5.2: The above figure shows percentages of food handlers wearing head caps, apron and gloves while cooking.

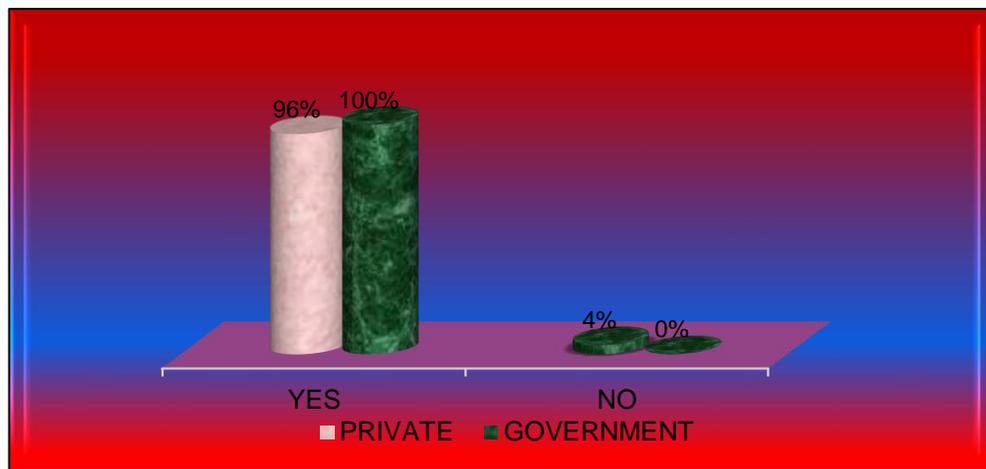


Figure5.3: The above figure shows percentages of food handlers do they clean the kitchen appliance and equipment

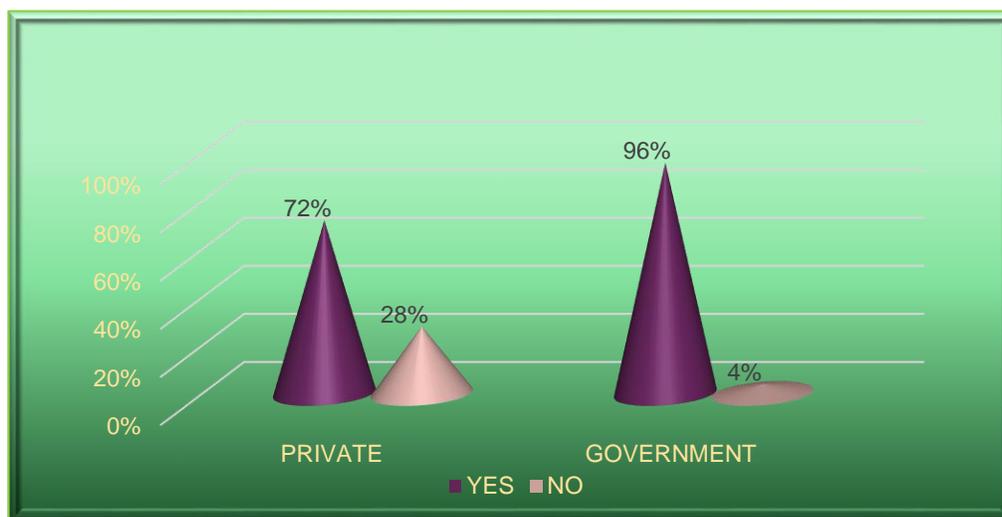


Figure5.4: The above figure shows percentages of food handlers finger nails are clean, trimmed and washed.



Figure 5.5: The above figure shows percentages of food handlers about what is expiry date.

Table5.6: distribution of subject based on knowing what is food born diseases

Category	Private school		Government school	
	Frequency	Percentages	Frequency	Percentages
Yes	16	64%	23	92%
No	9	36%	2	8%

Table5.7: Distribution of subject based on does they avoid touching nose, hair and skin etc.

Category	Private school		Government school	
	Frequency	Percentages	Frequency	Percentages
Yes	13	52%	14	56%
No	12	48%	11	44%

Table5.8: Distribution of subject based on does they smoke in food premises.

Category	Private school		Government school	
	Frequency	Percentages	Frequency	Percentages
Yes	2	8%	1	4%
No	23	92%	24	96%

Table5.9: Distribution of subject based on does they cough or sneeze directly on the food.

Category	Private school		Government school	
	Frequency	Percentages	Frequency	Percentages
Yes	2	8%	0	0%
No	23	92%	25	100%

Table5.10: Distribution of subject based on do they wash their hands at the start of the day and whenever required.

Category	Private school		Government school	
	Frequency	Percentages	Frequency	Percentages
Yes	20	80%	25	100%
No	5	20%	0	0%

VI. SUMMARY AND CONCLUSION

Food hygiene and sanitation practice among food handlers is important to avoid food borne diseases and various contamination etc. The personal hygiene of the food handlers play an important role in food quality. The maintenance of hygiene and sanitation and personal hygiene of food handlers give the safe food in any food sector and lower the risk of food borne diseases. Educating the food handlers to improve their knowledge and personal hygiene practice. The study was aimed to assess the food sanitation and hygiene practice among food handlers of private and government school providing midday meal and canteen snacks to the children. A descriptive study was carried out on 50 samples. 25 samples of private school food handlers and 25 samples of government school food handlers. A well-structured questionnaire was prepared used to gather information from food handlers and observational inventory list is also added to check the food handlers. Information collected by giving them a questionnaire question related to education, training received information on food hygiene and sanitation, information related to personal hygiene and their awareness about food hygiene and sanitation, food borne diseases and lastly a check list was also added. The collected data depict the following results.

The first objective of the study was to evaluate the food hygiene and sanitation practice of the food handlers of private and government school providing mid-day meal and canteen snacks: The results reveals that 84% of government and 40% of private school food handlers wear gloves, head cap, apron while cooking.52% daily , 32% alternative and 16% weekly of private school and 84% daily ,12% alternative and 4% weekly of government school food handlers clean the counter. 96% private and 100% of government school food handlers clean the kitchen appliance equipment's. 80% of private school 72% of government school food handlers does not used same spoon for stirring and serving. 76% of private school and 92% of government school clean the kitchen area daily. 100% of both private and government school food handlers was the fruits and vegetables before food preparation. 100% of both the schools have dustbins. 80% of private and 96% of government school disposed waste properly. 56% of private and 24% of government taste the food they prepare 32% monthly, 16% quarterly, 16% half yearly and 36% once in year in private school and 60% monthly, 28% quarterly, 12% half yearly in government school get the pest control done.

The second objectives is to check the personal hygiene of the food handlers: The result reveals that 80% of private school and 100% of government school food handlers wash their hands at the start of day and whenever required. 96% of food handlers of private school and 100% of government school food handlers does not have any cracks on hands. 72% of private school food handlers and 96% of government school food handlers finger nails are trimmed, clean and washed. 36% of daily, 32% of alternative, 20% of weekly twice and 12% of weekly once of private school and 52% of daily, 44% of alternate, 14% of weekly twice of government school food handlers take bath. 68% of private school food handlers and 88% of government school food handlers does not come to work during illness. 100% of both the school food handlers does not smoke in the food premises.

The third objectives is to know the awareness of food handlers regarding food borne diseases: The results reveals that 76% of private school food handlers and 92% of government school food handlers have the knowledge of hygiene and sanitation in food

handling. 76% of private school and 92% of government school food handlers believe that personal hygiene is important for save food production. 72% of private school and 84% of government school food handlers think that education of personal hygiene and sanitation give the best and save food. 64% of private school and 92% of government school food handlers know food borne diseases. 100% of both private and government school food handlers keep raw, cooked and ready to eat food in the storage separately and covered. 100% of private school and 96% of government school food handlers know the expiry date and its importance to avoid food borne diseases. 100% private school food handlers and 96% government school food handlers check the expiry date before using it. 92% of both private and government school food handlers check whether the ingredient stored in a good condition before using them for a preparation to avoid food borne diseases. 88% of private school food handlers and 92% of government school food handlers think that a bad hygiene and sanitation practice leads to food borne diseases. 88% of private school and 92% of government school food handlers think that washing hands, wearing apron, head cap, gloves will prevent food borne diseases.

The forth objectives is to assess the impact of education of the food handlers on his personal hygiene and sanitation: the result reveals that 48% of private school food handlers and 80% of government school food handlers receive training for hygiene and sanitation practice.

Inventory list: The observed Personal hygiene inventory list result reveals that 40% of private and 72% of government school food handlers wear apron and uniform. 48% of private school food handlers and 84% of government school food handlers wear hair cap. 52% of private school and 56% of government school avoid touching nose, hairs, skin. 8% of private school and 4% of government school food handlers smoke in food premises and 92% of private and 96% of government school food handlers does not smoke in food premises. 92% of private school and 100% of government school food handlers dos not cough or sneeze directly on the food. 80% of private and 84% of government school food handlers wash after coughing and sneezing. 52% of private school food handlers and 52% of government school food handlers wear jewelry while handling the food. 48% of private and 16% government school food handlers used strong perfumes. 24% of private and 52% of government school food handlers wear the apron outside the preparation area. 40% of private and 48% government school food handlers wear disposable gloves. 92% of private and 96% of government school food handlers are free from any illness. 56% of private and 96% of government school food handlers wash hand before working. 100% of both the private and government school food handlers wash hands after using toilets. 68% of private and 84% of government school food handlers wash their hands after using raw food. 100% of private and 96% of government school food handlers wash hands after handling waste. 72% of private and government school food handlers does not have any unhygienic practice. 80% of private and 96% of government school food handlers does not smoke or eat in food premises. 92% of private and 92% of government school food handlers does not chew gums or take snuff at preparation area. 64% of private and 56% of private and government school food handlers wash their hands in sink used in food preparation. 40% of private and 28% of government school food handlers used the same dish cloth to wipe preparation area.

CONCLUSION: The collected data is statistically analyses by using paired t-test by using the formula The results shows that p value is ($p < 0.100$) it is significant at 0.100 and hence alternate hypothesis is proved. Thus we concluded that both private and government school food handlers maintain food hygiene and sanitation and personal hygiene.

VII. BIBLIOGRAPHY:

•Meena kumari, Nasreen begum, sara Jameel, suroor unnisa, sahina parvin. Food Sanitation and Hygiene Practices among Food Handlers in Food Joints in Hyderabad ,2019, st Anns college for womens, vol-3, issue:4.

<https://www.researchgate.net/publication/334123573> Food Sanitation and Hygiene Practices among Food Handlers in Food Joints in Hyderabad

•Mulugeta Kibret 1, Bayeh Abera The sanitary conditions of food service establishments and food safety knowledge and practices of food handlers in bahir dar town, 2012, vol-22(1), issue-27-35 <https://pubmed.ncbi.nlm.nih.gov/22984329/>

•Ardhana thakur , Uttara singh on A study on sanitation, hygiene practices and food safety knowledge among food vendors in different sectors of Chandigarh, India, 2018, Journal of Applied and Natural Science, vol- 10(3), issue-931-934. <https://www.researchgate.net/publication/327480147> A study on sanitation hygiene practices and food safety knowledge among food vendors in different sectors of Chandigarh India

•Taner tuncer, alin akoglu, Food safety knowledge of food handlers working in hotel kitchens in Turkey, 2020, food and health, vol-6(2), 77-89.

<https://www.researchgate.net/publication/339950925> Food safety knowledge of food handlers working in hotel kitchens in Turkey

•Demisu Zenbaba, 1 Biniyam Sahiledengle, 1 Fikadu Nugusu, 1 Girma Beressa, 1 Fikreab Desta, 1 Daniel Atlaw, 2 and Vijay Kumar Chattu Food hygiene practices and determinants among food handlers in Ethiopia: a systematic review and meta-analysis ,2020, PMC journal list, vol-50, issue-34. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9118835/>

<https://ziphaccp.com/en/food-handling/personal-hygiene-practices-when-handling-food.html>

<https://ziphaccp.com/en/food-handling/personal-hygiene-practices-when-handling-food.html>

[https://gcw.gandhinagar.com/econtent/document/1587967382.Personal Hygiene% 20and% 20role% 20of% 20education% 20in% 20food % 20handling.pdf](https://gcw.gandhinagar.com/econtent/document/1587967382.Personal%20Hygiene%20and%20role%20of%20education%20in%20food%20handling.pdf)

https://www.cfs.gov.hk/english/programme/programme_haccp/programme_haccp_basics_link1.html.