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Background of Study

- The spread of disease through food by handlers has become a persistent problem in the world. different diseases are caused by organisms that enter the body through food.
- Infection by staphylococcus aureus, salmonella have been reported as a result of food poisoning which exist on the food handlers skin from which it is transmitted to the food they serve. likewise disease like diarrhea is one of the leading causes of deaths and illness in developing and underdeveloped countries.
- However, it is expected that large number of illnesses caused by foodborne disease are under-reported as only the serious cases are investigated. Food-handlers with poor personal hygiene working in food-serving establishments could be potential sources of infections of many intestinal helminths, protozoa, and enteropathogenic bacteria.
- This study was aimed at assessing the prevalence of intestinal and bacteria parasites among the food handlers in four higher institutions in Calabar municipal.

Methodology

- The study was conducted in Calabar Municipality. Four higher institutions namely University of Calabar, Cross River State University of Technology, Arthur Jarvis University, and School of Health Science and Technology, all in Calabar municipality, were selected. A total of 419 (188 males and 231 females) food handlers, whose ages ranged from 20 to 60 years with an average of 30 years, were selected randomly and divided into three groups: restaurant workers (n = 119), store-keepers (n= 195), edible food hawkers of all kinds (n= 105).
- A structured questionnaire was used for collecting information on age, sex, and educational level.

Discussion

Food handlers have potential of carrying a wide range of pathogens and have been implicated in the transmission of many infections to the public in the school community.

Reports globally has emphasized the significance of food handlers with poor personal hygiene as a risk of transmission of parasitic and bacterial diseases

There are currently 58 restaurants, 99 provision shops , and 105 hawkers in these four higher institutions in Calabar municipal. These catering establishments are not only visited by the staff and students but also attract high numbers of visitors that visit the schools.

This study is among the first report on the prevalence of biological contaminants and distribution of pathogens among food handlers within tertiary institutions in Calabar municipal

The prevalence of bacterial and intestinal parasite infections were fingernail bacteria 52.51%, urine bacteria 58.47%, nose bacteria 53.22%, and stool parasites 69.21%.

The high prevalence of infections in this study among food handlers was in agreement with the findings of other studies conducted like in Federal Capital Territory Abuja Nigeria (38.1% and 62.6%)(7) respectively, University of Nigeria teaching hospital Enugu, (41.2%) (8), Addis Ababa, Ethiopia (45.3%) (10), Southeast Anatoha (52.2%) (12). High rate in this study may be attributed to improper hygiene of food handlers, lack of supply of safe water, poverty, ignorance of health-promotion practices, and impoverished health services.

CONCLUSION

This study suggested that the poor hygiene practice might have been confounded by the fact that most food handlers were individuals from the lower socioeconomic class with low levels of education. In addition, none of the food handlers had been appropriately trained in safe food-handling practices. In fact, a prerequisite for the control and prevention of intestinal parasitosis require clear understanding of their epidemiology. The study also showed staphylococcus species (28.88% & 3.34%) as the most prevalence in nose bacteria, this was in line with study done in Porto, Portugal that has Staphylococcus as the leading bacteria in nose. In this study, Hawkers has the most rate of infection

Results

Table 1. Prevalence of infection among groups

GROUP	FREQUENCY	%FREQUENCY
Restaurant	319	32.62%
Shop	269	27.51%
Hawkers	390	39.88%
Total	978	100%

Table 2. Prevalence and type of bacteria isolated from the nose of food handlers in Four higher institutions in Calabar municipal

Nasal bacteria	Frequency	%frequency
s. aureus	14	03.34%
s. Epidermis	121	28.88%
Diphtheroids	88	21.00%
Total Infection	223	53.22%

Table 3. Parameter, frequency and percentage of the studied systems.

PARAMETERS	FREQUENCIES	PERCENTAGE
SEX		
male	188	44.87%
female	231	55.13%
MARRITAL STATUS.		
married		
unmarried	250	59.67%
divorced	167	39.86%
	2	00.48%
EDUCATIONAL STATUS		
no formal education.		
primary		
secondary	21	05.01%
tertiary	59	14.08%
	250	59.67%
	89	21.24%
AGE		
< 20	67	15.99%
21 - 30	86	20.53%
31 - 40	131	31.26%
41 - 50	97	23.15%
51 - 60	28	06.68%
> 60	10	02.39%