



Daffodil
International
University

**KNOWLEDGE, ATTITUDE AND PRACTICE ABOUT FOOD
HYGIENE AMONG ORPHANAGE IN SATKHIRA DISTRICT**

A PROJECT REPORT

BY

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Submitted to the Department of Nutrition and Food Engineering in the partial fulfillment
of B.Sc. in Nutrition and Food Engineering

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APPROVAL

This Project titled “Knowledge, Attitude and Practice About Food Hygiene Among Orphanage in Satkhira District”, submitted by **Jannatul Ferdous** to the Department of Nutrition and Food Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Nutrition and Food Engineering and approved as to its style and contents.

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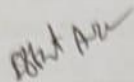
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DECLARATION

We hereby declare that this project has been done by us under the supervision of **Effat Ara Jahan**, Assistant Professor, Department of Nutrition and Food Engineering, Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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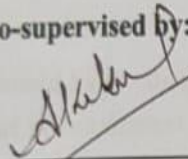
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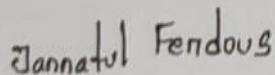
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ABSTRACT

Food hygiene is an important public health concern, especially in places like orphanages where the impoverished are more vulnerable. The primary objective of this study is to evaluate food hygiene knowledge, attitudes, and practices (KAP) among orphans in certain localities. Standardized questionnaires were used to evaluate the knowledge, attitudes, and daily food hygiene practices of orphanage personnel. The questionnaire addressed a variety of subjects, such as managing, preparing, storing, and upholding personal hygiene. A cross-sectional survey was conducted with 326 orphans from various orphanage in Satkhira. The questionnaire gathered data on demographic characteristics, frequency of knowledge level, everyday performance of hygiene maintaining, comment for agree or disagree, and awareness of the associated health consequences. The data analysis revealed that a significant proportion of orphans in satkhira.65.0% of respondents wash their hands daily and 32.8% wash their hands occasionally before eating. On the other hand, 33.7% of orphans wash their hands with soap every day, 3.7% do not use soap at all. The sample consisted of 100 % males. In contrast, awareness about foodborne diseases is very low, with only 16.3% of respondents familiar with diseases. 51.2% strongly agree and 31.0% agree with the practice of avoiding bare hand touch with food that is ready to eat, indicating a high level of knowledge on the significance of reducing direct hand contact with food. 51.5% of respondents strongly agree that washing hands under running water is enough to get rid of bacteria before handling food, compared to 29.1% who are neutral and 5.8% who oppose this statement. These findings highlight the need for targeted interventions and educational programs to promote personal habits of hygiene among orphans. The survey found that respondents' awareness of food safety and hygiene procedures varied widely. The significance of washing hands and fruit before eating is something that more than half of the respondents (56.4%) are aware of. On the other hand, just 16.3% of respondents were familiar with foodborne illnesses, indicating a relatively low level of awareness. The study reveals significant relationships between socio demographic characteristics and their food hygiene knowledge, attitude, and practice (KAP). Orphan students' knowledge, attitudes, and practices (KAP) are greatly influenced by their class, parent presents, and reasons for entering an orphanage. The findings highlight the impact of foster education on students' health behaviors and point to the necessity of targeted health education to improve personal cleanliness and reduce the prevalence of foodborne illness.

Keywords: *Food Hygiene, Public Health, knowledge, attitudes, and practices (KAP), Vulnerability, Orphanages.*

TABLE OF CONTENTS

CONTENT	PAGE NO
Cover Page	i
Approval	ii
Declaration	iii
Acknowledgement	iv
Abstract	v
Table of Contents	vi
List of Tables	vii
CHAPTER 1 INTRODUCTION	1-2
1.1 Introduction	1
1.2 Research Objectives	2
CHAPTER 2 LITERATURE REVIEW	3-4
2.1 Literature Review	3
CHAPTER 3 METHODOLOGY	5-6
3.1 Place of Study	5
3.2 Population of The Study	5
3.3 Sample Size Estimation	5
3.4 Data Collection Method	5
3.5 Data Analysis Method	5
3.6 Ethical Consideration	6
CHAPTER 4 RESULTS AND DISCUSSION	7-16
4.1 Results	7
4.2 Discussion	15
CHAPTER 5 CONCLUSION AND RECOMMENDATION	17
5.1 Conclusion	17
5.2 Recommendation	17

REFERENCES	18-19
APPENDICES	20-24
Appendix 1: Questionnaire	20
Appendix 2: Synopsis	23

LIST OF TABLES

Table	PAGE NO
Table 1: Background characteristics of study participants	7
Table 2: Frequency distribution table of knowledge	8
Table 3: Frequency distribution table of Attitude	9
Table 4: Frequency distribution table of Practice	10
Table 5: Associate table including demographic and knowledge variable	11
Table 6: Associate table including demographic and attitude variable	13
Table 7: Associate table including demographic and practice variable	14

CHAPTER 1

INTRODUCTION

1.1 Introduction

Food hygiene is an essential component of public health, especially in environments like orphanages that provide care for vulnerable groups of people. Because they often lack access to nutrition and hygiene education, improper food handling procedures, and poor sanitation, orphaned and abandoned children are more likely to contract foodborne illnesses. According to studies, a lot of institutions put food availability before food safety. (Andrea Insfran-Rivarola & Karina Arredondo-Soto, 2020). A residential facility dedicated to the care and education of orphans—children whose parents are either dead or otherwise unable to care for them—is referred to as an orphanage. They give orphans a community-based environment in which to live and develop, offering an alternative to foster care or adoption. Children who have no one to care for them are the focus of an orphanage. Despite their low resources, these orphanages frequently make an effort to offer decent, high-quality care in terms of basic necessities like food, clothes, and shelter (Surendra Babu Reddy & Indhira Kandula, 2018).

In many orphanages, the focus tends to be on food availability rather than food safety, which can exacerbate the risk of foodborne diseases. Studies indicate that improper food handling practices, poor sanitation, and a lack of food hygiene training among caregivers contribute significantly to the prevalence of foodborne illnesses in these settings. (Abegaz, 2022). One of the main illnesses that affect public health globally is intestinal parasite infection. Particularly in less developed tropical and subtropical nations, several parasite species are linked to severe morbidity that frequently results in fatality. Among the most prevalent intestinal parasite illnesses in the world are amoebiasis, hookworm infection. These infections are strongly linked to socioeconomic status, inadequate medical care, poor sanitation, and a lack of safe drinking water sources. (Hamid Atabati & Yadolah Fakhri, 2020)

Any infectious or toxic sickness brought on by eating tainted food is referred to as a foodborne illness. A foodborne disease outbreak occurs when two or more people contract the same foodborne illness after consuming the same food. Microbiological, chemical, and physical factors can contaminate food. Bacteria, viruses, parasites, and fungi are the microbiological agents that cause food-borne illnesses. Nonetheless, there are many other sources of food contamination. Additionally, unsanitary food workers may contaminate the meal with respiratory drippings, contaminated excreta, pus, or other infectious discharges. According to a research done in Malaysia, food handler contamination accounts for 10–20% of foodborne illness outbreaks (Nur Nadiatul Asyikin Bujang & Noor Khalili Mohd Ali, 2019). Therefore, appropriate screening procedures are necessary to keep an eye on food handlers' sanitary standards and minimize potential morbidity. Additionally, food, drink, nails, and fingers contaminated with feces can all directly or

indirectly spread enteric infections such as Helminthes, protozoa, and enteropathogenic bacteria, highlighting the significance of fecal-oral person-to-person transmission. Food handlers who carry and expel enteric infections may contaminate food with feces through their fingers, which can then spread to the food processing system and ultimately to healthy people (Bethlehem Yemane, 2022).

The purpose of this study is to look into the KAP about food hygiene among orphanage. By shedding light on these areas, we can create plans to enhance the health and wellbeing of orphaned children and gain a better understanding of the variables affecting food safety in institutional settings. Children who are orphaned frequently suffer from neglect in many areas of their lives, such as food and medical attention. When handling food improperly, they may come into contact with dangerous germs that can cause illnesses and long-term health problems. In order to promote a safe food environment in orphanages, it is imperative to improve resource accessibility (Temitope Kayode Bello, 2019). The Ethiopian Central Statistics Agency reports that a sizable portion of children are orphans, and many of them reside in institutions that do not have the means to maintain adequate food hygiene. For example, an Ethiopian study found that food handlers' incidence of intestinal parasite illnesses was greatly elevated by poor personal hygiene and inadequate food storage, endangering the children they serve (Gashaw Andargie & Moges Tirunch, 2008). Research reveals that food handlers in orphanages frequently follow poor cleanliness standards, which is alarming. For example, one Ethiopian study discovered that inadequate food storage and inadequate personal cleanliness greatly increased the incidence of intestinal parasite infections among food handlers, which in turn increased the risk of transmission to children. Similarly, research from many areas shows that one of the biggest obstacles to enhancing the health of children who are institutionalized is caregivers' ignorance of and lack of training in proper food hygiene practices (Wondimagegn Desalegn & Legesse Tesfaye, 2022). Developing effective interventions requires an understanding of the food hygiene knowledge, attitudes, and practices (KAP) of caregivers in orphanages. Improved cleanliness habits are associated with positive views about food safety and can dramatically lower the risk of foodborne illnesses (Eunice Achiro & Prossy Nassanga, 2023).

1.2 Research Objectives

General objective: The primary objective of this study is to assess the status of knowledge, attitude and practice.

Specific objectives:

1. To investigate the attitudes of orphanage residents towards personal hygiene practices in relation to food preparation and consumption.
2. To Determine the level of awareness among orphanage regarding basic food safety, knowledge and hygiene principles.

CHAPTER 2

LITERATURE REVIEW

2.1 Literature Review

Food hygiene is a significant public health concern, especially in vulnerable populations such as orphans. The World Health Organization (WHO) highlights those foodborne illnesses disproportionately affect children, with an estimated 600 million people falling ill from contaminated food each year (WHO,2020). These illnesses can lead to malnutrition and stunted growth, particularly detrimental for orphans, who often lack access to adequate healthcare and nutrition. Research indicates that knowledge of food hygiene practices is often inadequate among orphans. A study in Ethiopia found that only 17% of orphans displayed adequate knowledge regarding food safety, which is alarmingly low (Elbehiry, 2023). Similarly, a study conducted in Bangladesh revealed that children in orphanages had limited knowledge about essential hygiene practices, highlighting a critical gap that could contribute to increased vulnerability to foodborne diseases (Safa, 2024)This lack of knowledge is often exacerbated by the educational and social environment in orphanages.

The attitudes of orphans toward food hygiene significantly influence their hygiene practices. Research has shown that positive attitudes correlate with better food safety practices (Hyg, 2019). However, many orphans may not fully appreciate the importance of hygiene due to insufficient education and awareness. For instance, in this study, only 16.3% of participants were aware of foodborne diseases, indicating a substantial gap in both knowledge and attitude. This finding aligns with previous research that reported similar deficiencies in understanding the risks associated with poor food hygiene among children in institutional settings (Mamun, 2013). Despite some awareness of food hygiene, the actual practices among orphans are often inconsistent. In this study, while 65% of respondents reported washing their hands daily, only 33.7% did so using soap, and 32.8% washed their hands occasionally before eating. This discrepancy between knowledge and practice is consistent with findings from other studies. For example, a study in Ghana found that while many children recognized the importance of handwashing, only 48% practiced it consistently before meals (Nizame, 2013). Such inconsistencies can lead to increased risks of foodborne illnesses, emphasizing the need for targeted interventions to improve hygienic practices in orphanages.

The lack of food safety education for children in orphanages is further compounded by their traumatic experiences (DeLacey, 2022). suggested that the children's upbringing in environments marked by instability and neglect may shape their views on hygiene, with many children failing to understand or prioritize food safety. These psychological factors, combined with limited knowledge, result in behaviors that undermine food hygiene practices. It is important to note that children in orphanages are often highly influenced by their peers and the behaviors modeled by their caregivers. Therefore, any educational efforts to promote food safety must target both the children and the caregivers to ensure meaningful changes in practices and attitudes. Caregivers in orphanages often exhibit

gaps in their knowledge, attitudes, and practices (KAP) regarding food hygiene, despite an awareness of its importance. For example, caregivers are often unaware of key practices such as safe cooking temperatures, proper food storage, and hand hygiene (Chidziwisano, 2019). These deficiencies can be exacerbated by institutional challenges, such as inadequate resources, poor sanitation facilities, and high staff turnover (VerKuilen, 2023). As a result, orphanages may struggle to implement proper food safety standards, further putting the children at risk. The knowledge gap extends beyond food safety practices (Atoloye, 2024). Training programs for caregivers should be mandatory, with an emphasis on practical learning, such as food storage, safe preparation, handling, and the critical role of clean water and sanitation. Studies indicate that hands-on training is one of the most effective methods for improving caregivers' food hygiene practices (Ogutu, 2022).

CHAPTER 3

METHODOLOGY

3.1 Place of The Study

This study focused on students residing in residential orphanages in Satkhira, who were the primary participants in the survey. These children were chosen for their specific living conditions, which contribute to increased vulnerability to foodborne illness.

3.2 Population of The Study

This study focused on students from classes six to ten, with ages ranging from 11 to 17 years. By including a diverse age group within this range, the research aimed to capture a broad perspective on food hygiene knowledge, attitudes, and practices (KAP) among young individuals in orphanages.

3.3 Sample size Estimation

$$\begin{aligned}n_0 &= \frac{z^2 pq}{e^2} \text{ (Ghosh, Al Mamun, Kabir, kabir, \& Chowdhury, 2020)} \\&= \frac{1.96^2 \times 0.5 \times (1-P)}{0.05^2} \\&= \frac{1.96^2 \times 0.5 \times (1-0.70)}{0.05^2} \\&= 323\end{aligned}$$

Where:

- n is the required sample size
- Z is the Z-value, which corresponds to the desired confidence level (e.g., 1.96 for 95% confidence)
- p is the estimated proportion of the population (if unknown, 0.5 is often used for maximum variability)
- E is the margin of error (desired precision)

3.4 Data Collection Method

To collect data from different age groups about education, parent presence, length of stay in an orphanage, and awareness of nutritional health in relation to determinants, a closed-ended questionnaire was created. Data on the participants' level of hygiene was obtained from this investigation.

3.5 Data Analysis Method

For data analysis, SPSS Windows version 26.0 was utilized to conduct various statistical tests, such as cross-tabulations and descriptive statistics such as the percentages and frequency of various parameters and chi square test.

3.6 Ethical Consideration

Ethical guidelines will be strictly adhered to throughout this study to ensure informed consent and participant confidentiality. Prior to the commencement of data collection. This approval ensures that the study follows the necessary protocols for safeguarding participants' rights and privacy. The informed consent process will clearly explain the purpose of the study, the voluntary nature of participation, and the steps taken to protect participant anonymity, with all data being handled in accordance with ethical research standards.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Results

This table interprets that, the majority of the children are between the ages of 11 and 13, with 13 making up the largest number (35.0%). The data reveals that there were 0 female orphans and 326 male orphans included in the study.

Table 1. Background characteristics of study participants

Background characteristic	Frequency N	n (%)
Age		
11	38	11.7
12	90	27.6
13	114	35.0
14	34	10.4
15	25	7.7
16	10	3.1
17	15	4.6
Gender		
Male	326	100
Educational level		
Class 6	87	26.7
Class 7	113	34.7
Class 8	104	31.9
Class 9	22	6.7
Duration in orphanage		
Less than 4 years	130	39.9
4 years	144	44.2
More than 4 years	52	16.0
Presence of parent		

No parent	118	36.2
The father	109	33.4
The mother	99	30.4
Causes of entering orphanage		
Father's death	57	17.5
Mother's death	37	11.3
Parental separation	24	7.4
poverty	208	63.8

Orphan participants categorized by their educational levels. The largest group of participants comprising 34.7% of the total, were in Class 7. 44.2% have spent precisely four years there. The table shows that a sizable fraction of the children (36.2%) has no living parents. Given that most of the children had lost one or both of their parents, this emphasizes the children complicated family circumstances. Poverty is the main reason for entering the orphanage (63.8%).

Table 2. Including knowledge about hygiene of study participants

Background characteristic	Knowledge	
	Yes n (%)	No n (%)
Do you know the importance of hand washing?	184(56.4)	142(43.6)
Do you know the importance of washing fruit before eating?	184(56.4)	142(43.6)
Do you know about food borne disease?	53(16.3)	273(83.7)
Do you know Diarrhea can be transmitted through food?	23(7.1)	303(92.9)
Food must be stored in closed container	194(56.5)	132(40.5)
Food storage in an open place can cause health hazards	20(6.1)	306(93.9)
Hand washing before starting food processing activities can reduce the risk of contamination of food.	164(50.3)	162(49.7)

The study identified mixed level of knowledge among respondents regarding food safety and hygiene practices. While more than half of the respondents (56.4%) are aware of the importance of hand washing and washing fruit before eating. In contrast, awareness about foodborne diseases is very low, with only 16.3% of respondents familiar with these diseases.

Table 3. Including Attitude about hygiene of study participants

Background characteristic	Attitude n (%)				
	strongly agree	agree	neutral	disagree	strongly disagree
Contamination occurs when the raw and ready to eat food are put together in one place	119(36.5)	0(0.0)	68(20.9)	139(42.6)	0(0.0)
Avoid bare hand contact with ready to eat food	167(51.2)	101(31.0)	45(13.8)	11(3.4)	2(.6)
Do not place chicken, fish and vegetables at the same place(freezer)	154(47.2)	96(29.4)	59(18.1)	19(5.8)	3(.9)
It is enough just by washing your hands under running water to remove bacteria before touching food	168(51.5)	41(12.6)	95(29.1)	19(5.8)	3(.9)
To determine the safety of food you should check the expiry date of ready to eat food before you eat	164(50.3)	106(32.5)	37(11.3)	16(4.9)	3(.9)
The kitchen sink drain of your orphanage should be cleaned every day	52(16.0)	199(61.0)	53(16.3)	14(4.3)	8(2.5)
Previously cooked food is unnecessary to be reheated	35(10.7)	18(5.5)	18(5.5)	253(77.6)	2(.6)

Orphanage children should be examined their health condition every six month	140(42.9)	100(30.7)	51(15.6)	23(7.1)	12(3.7)
How satisfied you with variety of food offered?	43(13.2)	94(28.8)	153(46.9)	23(7.1)	13(4.0)

Concerning the practice of avoiding bare hand contact with ready-to-eat food, 51.2% strongly agree and 31.0% agree, demonstrating a strong awareness of the importance of minimizing direct hand contact with food. A small percentage (3.4%) disagree, and 0.6% strongly disagree, suggesting some inconsistency in attitudes toward this practice. Regarding handwashing, 51.5% of respondents strongly agree that washing hands under running water is sufficient to remove bacteria before handling food, but 29.1% are neutral, and 5.8% disagree, indicating a potential gap in understanding the effectiveness of handwashing techniques.

Table 4. Including Practice about hygiene of study participants

Background characteristic	Practice n (%)		
	sometimes	every day	never
How times cleaned the container?	264(81.0)	54(16.6)	8(2.5)
Have you practice of hand washing before eating?	107(32.8)	212(65.0)	7(2.1)
Have you maintained the practice of hand washing with soap before eating?	204(62.6)	110(33.7)	129(3.7)
Have you wash the fruit before eating?	206(63.2)	110(33.7)	10(3.1)
Do you take Deworms tablet?	174(53.4)	0(0.00)	152(46.6)
Have you ever seen any unwanted particles in your meal which provide from your orphanage?	250(76.7)	52(16.0)	24(7.4)
Have you ever feel bad odor in your meal which provide from	239(73.3)	54(16.6)	33(10.1)

your orphanage			
	Plastic bottle	Mouthed container & other	
What is the storage container of drinking water?	41(12.6)	285(87.4)	
	Boiling, filter, tube well	Tap water	
What is the source of your drinking water?	138(42.3)	188(57.7)	

The majority of respondents (81.0%) clean their containers occasionally, and 16.6% clean them every day. A significant number of respondents (76.7%) have occasionally found unwanted particles in their meals, and 16.0% have encountered such particles on a daily basis. Similarly, 73.3% of respondents report sometimes smelling a bad odor in their meals, with 16.6% experiencing it every day.

Table 5. Significance including demographic and knowledge of Hygiene

	Knowledge(n%)		P value
	Poor	Good	
Age			0.00
11	34(13.8)	4(5.0)	
12	84(34.1)	6(7.5)	
13	75(30.5)	39(48.8)	
14	22(8.9)	12(15.0)	
15	15(6.1)	10(12.5)	
16	6(2.4)	4(5.0)	
17	10(4.1)	5(6.3)	
Educational level			.027
Class 6	67(27.2)	20(25.0)	
Class 7	93(37.8)	20(25.0)	
Class 8	74(30.1)	30(37.5)	

Class 9	12(4.9)	10(12.5)	
Duration of stay	Poor	Good	
Less than 4 years	101(41.1)	29(36.3)	0.005
4 years	115(46.7)	29(36.3)	
More than 4 years	30(12.2)	22(27.5)	
Parent			
No parent	74(30.1)	44(55.0)	0.00
The father	97(39.4)	12(15.0)	
The mother	75(30.5)	24(30.0)	
Causes of entering orphanage			
father's death	47(19.1)	10(12.5)	.508
Mother's death	28(11.4)	9(11.3)	
parental separation	19(7.7)	5(6.3)	
poverty	152(61.8)	56(70.0)	

The table displays the age, duration of staying and presence of parent variation with knowledge variable among orphans based on a total sample size of 326 respondents. For instance, 39 orphans around 114, who are 13 years old, possess good knowledge. The significance value ($p=0.00$) indicates that age varies statistically significantly across knowledge levels. Every orphan who has lived there for four years is well-informed. The significance value ($p=0.005$) indicates a statistically significant variation in the frequency of knowledge based on the length of time lived in an orphanage. The knowledge level of 326 respondents who have only their mother, only their father, or no parents. The significance value ($p=0.000$) indicates a statistically significant variation in the frequency.

Table 6. Significance including demographic and attitude of Hygiene

Age	Attitude (n%)		P value
	Poor	Good	
11	14(15.6)	24(10.2)	.002
12	15(16.7)	75(31.8)	
13	25(27.8)	89(37.7)	
14	12(13.3)	22(9.3)	
15	12(13.3)	13(5.5)	
16	5(5.6)	5(2.1)	
17	7(7.8)	8(3.4)	
Class			.004
Class 6	36(40.0)	51(21.6)	
Class 7	24(26.7)	89(37.7)	
Class 8	22(24.4%)	82(34.7)	
Class 9	8(8.9)	14(5.9)	
Duration of stay			.000
less than 4 years	36(40.0)	94(39.8)	
4 years	27(30.3)	117(49.6)	
More than 4 years	27(30.0)	25(10.6)	
parent			.543
No parent	29(32.2)	89(37.7)	
The father	30(33.3)	79(33.5)	
The mother	31(34.4)	68(28.8)	
Causes of entering orphanage			.000
Father's death	5(5.6)	52(22.0)	
Mother's death	14(15.6)	23(9.7)	
Parental separation	14(15.6)	10(4.2)	
Poverty	57(63.3)	151(64.0)	

Based on a total sample size of 326 respondents, the table shows the age variation with attitude variable among orphans. For example, there are 89 number, 13-year-old orphans with a positive outlook. Age differs statistically substantially among attitude levels, according to the significance value ($p=.002$). More students in class 7 maintain their positive attitudes than in any other orphanage class. The significance value ($p=.004$) shows that there is a statistically significant difference with attitude frequency maintenance based on educational level. within 326 responses, displays the attitude level

of orphans regarding the many reasons they entered an orphanage. According to the significance value ($p=.000$), there is a statistically significant difference in the reasons for entering an orphanage.

Table 7. Significance including demographic and practice of Hygiene

	Practice (n%)		P value
	Poor	Good	
Age			.649
11	1(20.0)	37(11.5)	
12	2(40.0)	88(27.4)	
13	0(0.0)	114(35.0)	
14	1(20.0)	33(10.3)	
15	1(20.0)	24(7.5)	
16	0(0.0)	10(3.1)	
17	0(0.0)	15(4.7)	
Educational level			.147
Class 6	3(60.0)	84(26.2)	
Class 7	1(20.0)	112(34.9)	
Class 8	0(0.0)	104(32.4)	
Class 9	1(20.0)	21(6.5)	
Duration of stay			.307
Less than 4 years	1(20.0)	129(40.2)	
4 years	2(40.0)	142(44.2)	
More than 4 years	2(40.0)	50(15.6)	
Parent			.799
No parent	2(40.0)	116(36.1)	
The father	1(20.0)	108(33.6)	
The mother	2(40.0)	97(30.2)	
Causes of entering orphanage			.614
father's death	0(0.0)	57(17.8)	
Mother's death	1(20.0)	36(11.2)	
Parental separation	0(0.0)	24(7.5)	
poverty	4(80.0)	204(63.6)	

The demographic factors age, educational level, duration of stay, parent status, and the cause of entering the orphanage do not show statistically significant associations with the quality of practices poor or good

4.2 Discussion

The study included 326 male orphans with varying age distributions, predominantly between 12 and 13 years. Educationally, most participants were in Class 7 (34.7%) and Class 8 (31.9%). The majority had spent four years or less in the orphanage (84.1%), with poverty being the primary reason for their admission (63.8%). Knowledge assessments revealed that 56.4% of participants recognized the importance of handwashing, but awareness of foodborne diseases was low, with only 16.3% familiar with them. Attitudinal responses indicated a strong belief in the significance of avoiding bare hand contact with ready-to-eat foods (82.2% combined agreement), yet practical application varied, as 65% reported handwashing before meals.

The findings of this study align with previous research that highlights significant gaps in food hygiene knowledge among children in institutional settings. For instance, a study by (Oma, 2024) found that only 27% of children in orphanages demonstrated adequate knowledge of food safety practices, which is notably lower than the 56.4% found in this study regarding handwashing. This discrepancy may be attributed to the targeted educational initiatives implemented in the orphanages studied, suggesting that improved knowledge can be achieved through structured interventions. Moreover, the low awareness of foodborne diseases, as indicated by the 16.3% familiarity rate in this study, is consistent with findings from a study in Ethiopia, where only 17% of orphans understood the risks associated with foodborne illnesses (Janet Fleetwood & Darren Holland, 2023). Such parallels underline the urgent need for comprehensive educational programs focused on food safety and hygiene to mitigate health risks in vulnerable populations.

Additionally, the attitudes towards food hygiene practices reported in this study reflect findings from similar research. For example, a study by (Singh, 2021) indicated that while 70% of respondents believed in the importance of food hygiene, actual practices were inconsistent, with many failing to wash fruits before consumption. This inconsistency is echoed in the current study, where 63.2% reported washing fruits, indicating a gap between knowledge and practice that is often observed in behavioral studies. The

association between socio-demographic factors and knowledge, attitudes, and practices (KAP) highlights critical areas for intervention. The significant correlation between age and knowledge ($p = 0.00$) suggests that older children tend to have better hygiene knowledge, supporting findings from a study by (Hadi Eslami & Mostafa Nasirzadeh, 2021) which reported that older students were more likely to engage in hygienic practices. Similarly, educational level also influenced knowledge ($p = 0.027$), emphasizing the importance of integrating hygiene education into the curriculum for younger students. The duration of stay in the orphanage did not significantly impact hygiene practices ($p = 0.307$), which contrasts with findings from a study by (Jember Azanaw & Garedew

Tadege Engdaw, 2022), where longer durations were associated with better hygiene practices due to increased exposure to educational resources. This variance may suggest that while longer residency could lead to more consistent practices, other factors, such as the quality of education and resources available, play a crucial role.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

This study highlights the critical importance of knowledge, attitude, and practice (KAP) regarding food hygiene in orphanages, emphasizing their profound impact on the health and well-being of vulnerable children. The findings reveal significant gaps in caregivers' knowledge and inconsistent implementation of hygiene practices, often influenced by attitudes shaped by cultural and psychological factors. Additionally, the broader issues of personal and environmental hygiene underscore the need for comprehensive interventions that address food safety, oral health, and sanitation. Resource limitations further complicate these challenges, necessitating targeted support and training for caregivers. By prioritizing enhanced education and practical training, orphanages can foster safer environments, significantly reducing the risk of foodborne illnesses and improving the overall health outcomes for children.

5.2 Recommendation

These results provide important information for Governments should implement policies to enhance hygiene and sanitation for orphaned children by establishing minimum standards for orphanages, including access to clean water and waste disposal. Increased funding is essential for facility improvements, hygiene supplies, and training programs for caregivers. Community engagement through partnerships with local organizations can support maintenance and resource mobilization. A robust monitoring framework should regularly assess conditions, while integrated health and education policies promote hygiene education in schools. Advocacy campaigns can raise public awareness, and collaboration with NGOs will facilitate best practices. Additionally, integrating mental health support and developing emergency preparedness plans are vital. By adopting these policies, governments can significantly improve hygiene and sanitation in orphanages, leading to better health outcomes and a higher quality of life for orphaned children.

CHAPTER 6

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APPENDICES

Appendix 1: Thesis Questionnaire on-

“Knowledge attitude and practice about food hygiene among orphanage in Satkhira District

Section 1: Demographic

1. Age: 	4.Duration of stay in orphanage 1) less than 4 years 2) 4 years 3) More than 4 years
2. Gender: 1) Male 2) Female	5. Presence of parent 1) No parent 2)The father 3)The mother
3.What is your educational level? 1) class-6 2) class-7 3) class-8 4) class-9	6.Causes of entering orphanage 1) father's death 2) Mother's death 3) parental separation 4) poverty

Section 2: Knowledge

1.Do you know the importance of hand washing before eating?	5.Food must be stored in closed container
1) yes 2) no	1) yes 2) no
2. Do you know the importance of washing fruit before eating?	6.Food storage in an open place can cause health hazards
1) yes 2) no	1) yes 2) no
3.Do you know about food borne disease?	7. Hand washing before starting food processing activities can reduce the risk of contamination of food.
1) yes 2) no	1) yes 2) no
4. Do you know Diarrhea can be	

Section 4: Practice

1.What is the source of your drinking water? 1)boiling 2) filter 3) tap water	6.Have you wash the fruit before eating? 1)sometimes 2)every day 3)never
2.What is the storage container of drinking water? 1)plastic bottle 2) mouthed container 3) other	7.Do you take Deworms tablet? 1)sometimes 2) every day 3) never
3.How times cleaned the container? 1)sometimes 2) every day 3) never	8.Have you ever seen any unwanted particles in your meal which provide from your orphanage? 1)sometimes 2) every day 3) never
4.Have you practice of hand washing before eating? 1)sometimes 2) every day 3) never	9. meal which provide from your orphanage Have you ever feel bad odor in you? 1)sometimes 2) every day 3) never
5.Have you maintain the practice of hand washing with soap before eating? 1)sometimes 2) every day 3) never	

Appendix 2: Synopsis



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1. Name: Jannatul Ferdous

2. Student ID: 201-34-330

3. Project title: Knowledge, Attitude and practice about Food Hygiene among Orphanage in Satkhira district

4. Introduction:

The hygiene conditions of orphaned children stems from a profound concern for one of society's most vulnerable populations. Orphans, often deprived of familial support and resources, face unique challenges that significantly impact their health and well-being (Chidziwisano, 2020). Inadequate hygiene practices in orphanages can lead to severe health issues, including increased susceptibility to infectious diseases and mental health problems. The importance of this study extends beyond academic inquiry (Singh, 2021), it aims to inform policy and practice in orphan care, contributing to the development of targeted interventions that can enhance the quality of life for orphaned children.

5. Objectives:

- To investigate the attitudes of orphanage residents towards personal hygiene practices in relation to food preparation and consumption.
- To Determine the level of awareness among orphanage regarding basic food safety, knowledge and hygiene principles.

6. Methodology:

6.1 Study Design: A cross-sectional study approach will be used to collect data from Satkhira district.

6.2 Data Collection: A closed-ended questionnaire will be used to obtain data on the demographics of participants, including their level of knowledge of different types of food-borne illnesses and practices. Participants' recent state will be evaluated by taking their personal hygiene.

6.3 Sample Size and Sampling Technique: The participants in the study will be chosen using a multi-stage random sampling process.

7. Data Analysis: The data will be collected and statistical analysis, including chi-square testing and descriptive statistics, will be carried out using the SPSS software (version 26).

8. Ethical Consideration: This study will abide by ethical standards, guaranteeing participants' informed consent and protecting participant privacy.

9. Expected outcome of the study: This study is expected to provide a comprehensive analysis of the current hygiene and sanitation practices in orphanages. This will include identifying common deficiencies and exploring the reasons behind inadequate conditions, thereby contributing to the body of knowledge in public health and child welfare.

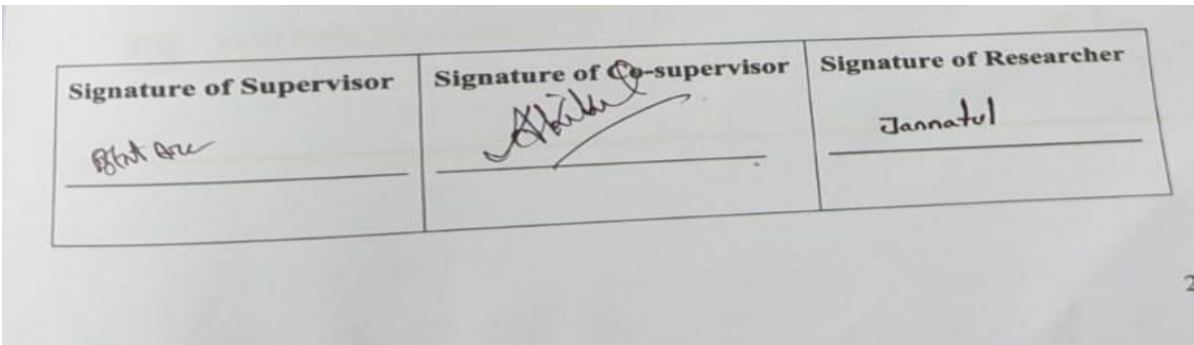
10. Time Schedule of Activities:

Task	Activities by Months or Days (Starts to Ends)					
	1	2	3	4	5	6
Literature review						
Study protocol and questionnaire development						
Sample selection						
Sample collection						
Data analysis						
Project writing and submission						

11. References

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