University of Kerbala/ College of Nursing

Mothers' Knowledge and Attitude Regarding Prevention and Home Management of Diarrhea in Children Under Five Years at the Eastern AlHamza city

A Thesis submitted

By

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To the Council College of Nursing /University of Kerbala, in Partial Fulfillment of the Requirements for the Master degree in the Specialty of Nursing Sciences

Supervised By

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Supervisor Certification

We certify that this thesis, which entitled (**Mothers' Knowledge and Attitude Regarding Prevention and Home Management of Diarrhea in Children Under Five Years at the Eastern AL Hamza city**),submitted by Mohammed Jameel Wahab ,was prepared under our supervision at the College of Nursing, University of Kerbala in partial fulfillment of the requirements for the degree of master in Nursing Sciences.

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After reviewing the thesis which(**Mothers' Knowledge and Attitude Regarding Prevention and Home Management of Diarrhea in Children Under Five Years at the Eastern AL Hamza city**), we certify that it fulfills all the requirements for awarding the degree of master in nursing science.

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Dedication

I dedicate my effort and work to:

*- *Who inspired me with knowledge and the ability to work... My God and my Lord.*

**-Those who sacrifice themselves and their blood to give us security and safety..... Heroes of the popular crowd and security.*

**-Who gave their life for my happiness..... My father.*

**-Who stayed up nights and endured all the hardships of life..... My mother.*

**-The shining stars in my life... My brothers and sisters.*

**-My love, my dear and my life partner... My wife.*

**-Everyone who helped me to complete this thesis .*

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Abstract

Diarrhea is defined as having three or more loose or water stools per day, or passing stools more frequently than is typical for children .This study aimed to assessment mothers knowledge and attitude regarding prevention and home management of diarrhea in children under five years, and to find out the relationship between knowledge and attitude of mothers and their demographic data.

This study used a descriptive cross-sectional design. The accessible population included mothers of children under five years who attend to the any reason in the centers for primary health care in Eastern AL-Hamza City. From the time of October 25th 2021, to May 1st 2022.A total of (6) primary health care centers distributed in the Eastern AL-Hamza City. A probability sampling (simple random sample) of (250) mothers of the children under five years. A questionnaire is constructed by Sanjeev Kumar Shah and modified for the purposes of the study, involving a review of relevant literature, consultation with an expert panel, and related research

The present study have found the majority of the mothers had low knowledge about prevention of diarrhea, that most of the mothers gave the false answers and low knowledge about home management of diarrhea .The study indicated that (45.6%) of mothers had low level of knowledge about prevention of diarrhea and (48%) of them had Moderate level of knowledge in same item. Regarding attitude, The current study indicated that (63.2%) of the mothers attitudes regarding Prevention and the Home Management of diarrhea were negative attitudes.

The current study concluded that most mothers had low level of knowledge about prevention and the home management of diarrhea, most of them had negative attitude prevention and the home management of

diarrhea. Mothers knowledge and attitude are correlated with their , educational level, monthly income and information sources about diarrhea.

The study recommended to Conducting educational program on the knowledge and attitude of mothers about diarrhea in children's under five years and implementing educational programs of mothers about use and preparation for ORS at home, promoting appropriate feeding during diarrheal episode ,child nutrition and Conducting further studies about practice of the parents about management of mothers about diarrhea among children under five years.

List of Contents

List of Appendices

List of Tables

List of Figures

List of Abbreviations

Items	*Meaning*
AGE	Acute Gastroenteritis
AIDS	Acquired Immunodeficiency Syndrome
AKI	Acute Kidney Injury
ARI	Acute Respiratory Infection
BMI	Body Mass Index
C.S.	Comparison Significant
CDC	Center For Disease Control
EBF	Exclusive Breastfeeding
ECI	Educational Communication Information
EDHS	Ethiopian Demographic Health Survey
FO	Fluid Overload
HAF	Home Accessible Fluids
HIV	Human Immunodeficiency Virus
HMD	Home Management Of Diarrhea
HMD	Home management of diarrhea
ICU	Intensive Care Units
IMNCI	Integrated Management Of Newborn And Childhood Illnesses
IOM	Institute Of Medicine
IVF	Intravenous Fluids
KAP	Knowledge, Attitude, And Practice
LATE	Local Average Treatment Effects
LMIC	Low- And Middle-Income Countries
MDG	Millennium Development Goals
NFHS	National Federation Of High Schools
NIPs	National Immunization Programs
ORS	Oral Rehydration Solution
ORT	Oral Rehydration Therapy
PHCCS	Primary Health Care Centers
RM	Malaysia Ringgit
SPSS	Statistical Package Of Social Sciences
SSS	Sugar Salt Solution
UNICEF	United Nations International Children's Emergency Fund
URTI	Upper Respiratory Tract Infections
WHO	World Health Organization
WIC	Women , infant and child
ά	Alpha Cronbach

NS	Non-Significant
S	Significant
%	Percentage
<	Less Than
>	More Than
≤	Less Than or Equal
≥	More Than or Equal

Chapter One

Introduction

Chapter One
Introduction

1.1. Introduction:

Diarrhea is the world's second reason of disease and death in children. Every year, children under five years' experience 2.5 billion events and 1.5 million death. This continues to account for (21%) of all deaths in developing countries. More children die from diarrhea than from coupled acquired immune deficiency syndrome (AIDS), malaria, and measles. Furthermore, it results in secondary infection(Khatun et al., 2021).

Diarrhea still kills roughly 3 million people every year in impoverished countries. Diarrhea is the fifth biggest cause of death worldwide, according to the World Health Organization (WHO), and it continues to have an effect on the health of children. Mothers in many impoverished nations care for their children under the age of five and treat most diarrhea outbreaks at home. They are in charge of the child's nutrition as well as the disease's overall treatment strategy. As a result, people must be aware of this widespread ailment. Individual and family measures to prevent and/or manage diarrhea are vital to reducing diarrhea-related morbidity and death(Shah et al., 2012).

Diarrhea is more common in developing countries than in developed countries. This is attributable to a number of circumstances, including a lack of safe drinking water, a lack of education about sanitary hygiene, and a poor nutritional and public health status. There are estimated to be insufficient sanitary facilities for 2.5 billion people, and 1 billion people do not have access to safe drinking water(Lubis et al., 2021).

The factors that directly incorporate the level of awareness, hand washing behavior, sanitary hygiene, latrines, sewerage , water bacteriological quality, and house circumstances are among the risk factors that are frequently researched. Hand washing with soap is the most cost-

efficient and effective health intervention in reducing the risk of diarrhea transmission, especially in infants and toddlers, when compared to the results of other health intervention(Ridawati and Nugroho, 2021).

Diarrhea causes symptoms such as vomiting and stooling, and in young children, it can quickly progress to dehydration tongue, sunken eye restlessness, lethargy, dry mouth , irritability, Thirst, dry skin, and fewer trips to the bathroom to urinate are all signs of dehydration. Others include a lack of desire to play and severe tiredness, as well as rapid respiration and increase heartbeat (Desmennu et al., 2017).

Diarrhea is a serious problem for children in low- and middle-income nations, due to number of causes such as low socioeconomic position, malnutrition, poor hygiene, poor sanitation and the deficiency of safe drinking water and low maternal knowledge (Opeyemi and Ayo, 2017).

Because of the deficiency of access to excellent medical treatment and early and effective care with oral rehydration solution and zinc, pediatric living in impoverished areas had higher case fatality rates than pediatric living in high-income nations(Commission, 2013). In underdeveloped nations, maternal education is widely acknowledged as one of the most important factors influencing infant survival(Abuqamar et al., 2011).

Exclusive breastfeeding is another factor that raises the risk of diarrhea, Toddlers who are not exclusively breastfed have more diarrhea, use less health services, and have maternal attitude that are unsuitable(Ahmad, 2021).

The most prevalent symptom of diarrhea illness is acute gastroenteritis . In young children, the most common reason of severe dehydration is rotavirus., with nearly every child having experienced at least one rotavirus infection before reaching the age of five(Enweronu-Laryea et al., 2014).

The majority of deaths and morbidities related with diarrhea can be prevented using primary prevention techniques such as using clean water, hand washing, exclusive breastfeeding, immunization, sanitary excreta disposal, use of latrines, and appropriate sanitary and hygienic practices. Timely and adequate management at home and in health care facilities is crucial for reducing mortality and disease associated with childhood diarrhea(Gollar and Avabratha, 2018).

The World Health Organization says Children not only perish, They can, however, suffer from malnutrition and stunting. The Rotavirus is one of the most common diarrheal infections, and it can cause dehydration and even death in the digestive system by causing fluid, electrolyte, and nutritional deficiencies. Inadequate and expensive health treatment, insufficient sanitary waste disposal, poor feeding methods, poor living conditions, and Contaminated weaning food increase diarrhea disease in children under five years(Gupta and Sah, 2021).

The first step in reducing diarrhea morbidity and mortality is proper management at the appropriate time at home and in medical centers. In general diarrhea is not a dangerous sickness that might result in death, thus it is often ignored or treated at home with over-the-counter medications. Inadequate health information and knowledge, at the other hand, are substantial roadblocks to effective and timely health intervention. Inadequate health information and attitude, on the other hand, are substantial roadblocks to effective and timely health intervention(Sarkar et al., 2016).

Simple practices such as clean water, latrines, proper cleanliness, restricted nourishing of good nursing care during the first six months of a baby's life, zinc and antibiotic medication, early detection of serious dehydration indications, and the rotavirus vaccine could all assist to prevent continuous diarrhea(Mathew et al., 2011).

By carefully using the Oral Rehydration Solution (ORS), the symptoms of diarrhea, such as dehydration, can be avoided and managed. The ORS is a blend of glucose and electrolytes that the World Health Organization (WHO) considers inexpensive and highly recommended for preventing and replacing fluid and vital electrolyte loss. The usage of the ORS has been shown to lower the number of deaths caused by diarrhea(Tobin et al., 2014).

As a result, while physicians should follow basic application recommendations for diarrhea care, they should also educate mothers on how to handle diarrhea at home in order to limit the rising number of cases. The literature on diarrhea management knowledge, attitude, and practice (KAP) reveals a poor attitude and practice. The majority of mothers surveyed had gaps in their understanding about how to properly prepare and administer ORS(Naseem and Swetha, 2016).

The Five Steps to stop Diarrhea were suggested to be implemented by public health care. It includes providing ORS orally, administering zinc, continuing nursing care, eating healthy foods, using antibiotics, and educating caregivers. These interventions are intended to minimize the risk of diarrhea-related death (Zain et al., 2020).

In the 24-hour period, you have three loose or watery stools. is considered diarrhea. When compared to what is considered normal, a person's daily stool fluidity, frequency, or increase volume may rise (Riaz et al., 2019).

Severe diarrhea in children at a young age can cause stunting and have an impact on their intellectual development ($P < 0.05$). As a result of these findings, health care professionals, particularly nurses, must educate parents so that they are better prepared to care for their healthy or sick children. In educational communication information(ECI), just one or two media are used, with audiovisual and tool aids being the most common(Sari et al., 2021).

However, their efficacy is still insufficient. To achieve maximum effects and achieve the aim, it is vital to integrate the three media on a continual basis. Nurses or health-care professionals use a variety of media at the same time when granting permission, such as video and visual tools and booklets in educational communication information (ECI) is referred to as integrated media (Kowaas et al., 2017).

In disease prevention , patient care and health promotion ,the role of the family especially the mother, is crucial. In terms of actions undertaken by mothers, the very minimum is a brief and superficial examination of the dehydrated child, as well as the amount and type of fluids provided to him in the event of diarrhea; yet, these acts are critical for protection of children (Abdinia, 2014).

In the majority of underdeveloped nations, diarrhea children account for one-third of hospital beds, with the bulk of them being treated with costly IV rehydration and ineffectual drugs. Water loss and critical minerals are the major causes of death from acute diarrhea, which can usually be compensated with an oral rehydration solution (ORS). oral rehydration solution is absorbed through the small intestine and restores the water and electrolytes lost by diarrhea, even with severe diarrhea(Abdinia, 2014).

Unsurprisingly, simple preventative measures such as appropriate sanitation and hygiene, as well as safe drinking water, can help to avert a considerable number of these deaths. Secondary preventative interventions, such as early detection of dehydration and quick oral rehydration with oral rehydration salts(ORS), could also help to avert fatal consequences (Mokomane et al., 2018).

ORS therapy is considered low-cost and simple to deliver to children, and it is generally recommended by WHO as a main intervention to reduce diarrhea-related mortality around the world(Dujaili et al., 2021).

Diarrhea, regardless of the cause or categorization, causes water and electrolyte (sodium and potassium) losses, which can be compounded by metabolic disorders and even mortality(Kebede Fufa et al., 2019).

In and of itself, diarrhea is not fatal; however, the mothers lack of knowledge and misguided approach to its management results in a high level of mismanagement and severe dehydration(Mumtaz et al., 2014).

The mothers role in diarrhea prevention ,health promotion and ill child treatment is critical. It is critical for caregivers to be aware of during a diarrheal episode, practice fluid intake and child feeding. Mothers are the primary caretakers, deciding on the type of food and water to provide their children. The mothers decision affects the entire management of diarrhea. As a result, their level of understanding and experience with diarrhea is vital(Kebede Fufa et al., 2019).

Oral rehydration therapy is frequently advised for diarrhea management. As home-based fluids, soup, yogurt, rice water, salt sugar solution, and clean water are also recommended. oral rehydration solution with a low osmolarity and Zinc are also includes in the Home Management of diarrhea. ORS should be administered as soon as possible. and tablets containing zinc proven to be a more cost effective and efficient method of reducing diarrhea illness fatalities of children (Kebede Fufa et al., 2019).

Diarrhea remained the leading cause of mortality and illness among children under the age of five years, despite advances in advanced diagnostic methods, increased utilization and improved therapy of health facilities. diarrhea prevention and treatment initiatives were lacked efficiency in lowering child mortality when used alone, and should be supplemented with strong household treatment practices (Okoh and Alex–Hart, 2014).

The main issue was a decrease in ORS users as well as poor preparation. mothers of sugar salt solution knowledge was lack (68.2%) than oral rehydration solution knowledge and actual production and used

were very lack (7%) (Okoh and Alex–Hart, 2014). Even in areas where ORS is widely used, there is growing concern that improper preparation and methods are harmful. The justification for the low use of ORS was unknown(Wilson et al., 2012).

In developing nations about 46% of children were fed less than the recommended amount of food, and only a lack of the mothers gave their children yogurt and rice water for breakfast. Diarrhea management is a term that refers to the treatment of diarrhea. The goal of this study is to determine the scope of inadequate diarrhea management methods at home and associated characteristics among caregivers of children under the age of five(Kebede Fufa et al., 2019).

1.2. Importance of the Study :

Diarrhea is a major health risk among children under the age of five years worldwide. Every year, over 1.9 million people die as a result of this. The majority of these occur in developing countries' rural and suburban regions, and they are the second greatest cause of under-5 mortality, accounting for 700,000 to 800,000 deaths that could have been avoided. Correct understanding of the disease's mechanics is critical in halting and reversing its spread(Elemile et al., 2019).

According to the WHO over 1.7 billion instances of diarrhea are reported among children under the age of five each year, with 760,000 children dying as a result. Diarrhea kills more children than malaria ,AIDS, and measles put together; diarrhea is a major cause of infant malnutrition(Peter and Umar, 2018b). In underdeveloped nations, diarrhea is one of the primary causes of infant and child mortality and morbidity(Bekar and Arikan, 2020).

The increased transmission of diarrheal cases may be due to a lack of knowledge and attitude of diarrhea transmission and prevention in the community. There has, understandably, been a scarcity of published data

on the morbidity burden associated with diarrheal disease (Ménard et al., 2016).

Mother preventative efforts in children with acute diarrhea refer to maternal actions taken in the treatment of their child to avoid the child contracting diarrhea. Hygiene techniques, infant feeding practices, clean water practices, and feces practices are all part of it(Vanommeslaeghe et al., 2010).

Improper management of childhood diarrhea has been connected to misperceptions and a lack of information among caregivers and medical workers. To ensure that diarrhea is prevented and children are treated effectively, these gaps in knowledge and attitude must be addressed(Anand et al., 2018).

The children's caretaker's abilities, which are often the mothers, as well as the inter subjectivity into which the child is placed, can influence the appropriateness of the care. The mothers and caretaker needs educational measures that will enable her to empower herself in terms of good attitude , allowing her to create healthy habits. The mothers and caretaker can provide the child with high-quality care(Melo et al., 2011).

The main difficulties are dehydration and malnutrition as a result of the fluid loss, which are the leading causes of illness and mortality in children worldwide, only being surpassed by pneumonia. In impoverished children, diarrhea is common, and diarrhea can lead to malnutrition. Children are more susceptible to life-threatening illnesses than adults(Olatona et al., 2016).

Due to the loss of micronutrients through liquid feces, vomit, sweat, urine, and respiration, as well as a lack of sufficient nutritional intake and absorption, diarrhea poses the most serious concern of dehydration. Severe dehydration causes illness and mortality that can be totally avoided and treated with a simple and inexpensive solution of Oral Rehydration Salts or through an intravenous drip(Sa’ad et al., 2018).

Regardless of the environment or resources available to them, mothers play a critical role in feeding and caring for their children, including recognizing dehydration symptoms and administering the appropriate amount and type of liquid feed to the baby, all of which are critical for pediatric survival. The majority of research show that mother awareness of good food, causes, symptoms, management, and preventative efforts for childhood diarrhea are quite low(Sunanda et al., 2017).

The depletion of electrolytes and fluids essential for normal body function and survival causes malnutrition, severe dehydration and electrolyte imbalances a host of other long-term consequences including as impaired physical fitness, stunting, poor academic performance and cognitive retardation(Kapwata et al., 2018).

Because the most common of diarrhea episodes in children are caused by viruses and most common reason of diarrhea may be treated at home by mothers without the use of drugs, medication therapy is not only unneeded but also contraindicated or harmful(Dodicho, 2016). Diarrhea, regardless of the cause or categorization, causes water and electrolyte (sodium and potassium) losses, which can be compounded by metabolic disorders and even mortality(Bhutta et al., 2013).

According to a recent research barely (20%) of the nation's children’s who could benefit from ORT are receiving it. Diarrhea causes dehydration, which leads to mortality. Although the amount of benefits and broad use in developing countries could control (15%) of death among children under the age of five years. Fear of causing iatrogenic hypernatremia, time constraints, Underuse has been blamed on a variety of factors, including a lack of efficacy in moderate dehydration and parental preference(Agbolade et al., 2015).

Diarrhea remained the leading reason of illness and death in children under five years, despite advances in advanced diagnostic methods, improved therapy and higher utilization of health facilities. Diarrhea

prevention and control initiatives were less efficient in lowering child mortality when used alone and should be supplemented with strong household treatment practices(Kebede Fufa et al., 2019).

More than (10%) of diarrhea deaths may be avoided if newborn and young child feeding practices were improved. Better hygienic measures, such as hand washing with soap and proper excreta disposal, can, on the other hand, lower the frequency of diarrhea by (35%)(Workie et al., 2018).

According to the WHO, diarrhea is the leading second reason of deaths among children under the age of five years in Iraq. According to the WHO, sanitary conditions and general hygiene in Iraq have deteriorated over the previous decade, particularly following the recent war(Abdullah et al., 2015).

In Iraq, diarrhea is associated with a high rate of mortalities and morbidity, particularly among children under five years. After decades of conflict and political instability, the delivery of essential public health and environmental sanitation services across Iraq has been severely hampered, resulting in increased morbidity and mortality(Argenziano et al., 2020).

Despite the fact that diarrhea is one of the leading causes of mortality in children, only a few comprehensive studies have looked into the disease's pattern in the country(Anim-Larbi, 2017). There have been studies that show a lack of public awareness and suitable education about diarrhea illness prevention and management(Osam–Tewiah, 2010).

1.3. Problem statement :

Detection of a mothers abilities to control any early sign of watery stool, or an indicator of fluid loss more than intake; by non -change of home management to protect the child from getting dehydration or any of her complex problems, which in turn will increase the level of mortality and morbidity.

1 .4.Objective of study :

The objectives of the study are as follows:

1-To assess mothers knowledge regarding prevention and home Management of diarrhea among children under five years.

2-To assess the level of mothers attitude regarding prevention and home Management of diarrhea among children under five years.

3- To find out the association between Mothers Knowledge and attitude regarding prevention and home Management of diarrhea among children under five years and their socio-demographic characteristics .

1.5. Definition of Terms :

1.5.1. Mothers Knowledge

A. Theoretical Definition:

The mothers knowledge about child care influences the nature and quality of care that is given to the child. Several studies have revealed that the mothers' level of education has a positive impact on her knowledge and how she deals with child health care issues. Our experience in pediatric practice has revealed significant gaps pertaining to child health issues in the mothers' knowledge (Al-Ayed, 2010).

B. Operational Definition:

Mothers Knowledge :The level of mothers information on how to Prevent and Home Management of diarrhea in children under five years at the Eastern AL Hamza city**.**

1.5.2. Mothers Attitude

A. Theoretical Definition

attitudes of the mother toward her children, particularly those attitudes that play an important role in her children's health, character formation, emotional adjustment, and self-image, as well as in her own self-perception as a mother(Pizur-Barnekow, 2006).

B. Operational Definition:

An assessment of an object by a group of mothers based on cognitive, affective, and behavioral data about Prevention and Home Management of diarrhea in children under five years at the Eastern AL Hamza city.

1.5.3. Diarrhea

A. Theoretical Definition:

Three or more loose or liquid stools in less than 24 hours or more frequently than normal for the person, results in inadequate water and nutrient absorption (Organization, 2015).

Chapter two

Review of Literatures

Chapter Two

Review of Literatures

2.1.Overview about diarrhea:

Diarrhea is derived from the Greek word diarrhea, which means " diarrhea pours through it"(Anim-Larbi, 2017). Overcrowding, inadequate sanitation, and violence have all been related to infectious diarrhea in the history. Regardless of whether infectious diarrhea has been documented since the dawn of civilization, effective preventive interventions were not widely or consistently implemented until the current era of active public health promotion. Prognosis has changed dramatically as a result of advances in understanding etiologies and treatments, but disease outbreaks must be avoided by maintaining vigilance against public health breaches(Schuster et al., 2020).

Diarrhea is the most serious public health problem associated with sanitation and water and it can be "waterborne" or "water-washed." availability of good sanitation, and good quality drinking water, oral rehydration therapy, promotion of breast feeding Personal hygiene, and specific health education programs have all been identified as important factors in the prevention of diarrhea in recent decades as part of national strategies aimed at improving the quality of life and reducing disease-related burdens(Hashmi et al., 2019).

According to one study on Northeast India, the region's percentage of fully vaccinated youngsters was relatively low(Hossain et al., 2019). Missing the rotavirus vaccine as part of a child's immunization increases the chance of infection, which can lead to death and severe diarrhea. According to a study based on a verbal autopsy, Northeast India has India's highest under-five child mortality rate (63.8 deaths per 1000 live births) and diarrhea is the third largest cause of death in the region, with 12.1% of children aged 1 to 59 months dying from diarrhea(Liu et al., 2019).

A number of children who death from diarrheal infections outnumbers those who death from AIDS, TB, and malaria combined. In children under five years, diarrhea is the second biggest reason death mortality in developing nations, after pneumonia. Diarrhea kills 31,000 children every week in low-income countries. Diarrhea and pneumonia are the most common causes of death among children under five years excluding new borns (UNICEF., 2008).

Childhood and infant mortality rates are significant components for assessing social development, health condition, and the outcome of behavioral, socioeconomic, and environmental interactions(Unicef, 2012). These aspects must be investigated in order to achieve the better grasp of childhood morbidity. Apart from all of this, diarrheal sickness is a financial burden not just for the healthcare system, but also for the families of patients(Burke et al., 2014).

In Ethiopian demographic and health studies conducted in 2000, 2005, 2011, and 2016, the two-week incidence of diarrheal illness among children under the age of five was 24, 18, 13, and 12% respectively. Even though the prevalence of diarrheal infections in children under five years has decreased by two-thirds in Ethiopia over the last 16 years, it remains one of the country's most pressing public health issues(Workie et al., 2018).

Malaysia is a South East Asian country with a middle-income economy. Despite significant progress in public health, discrepancies persist among the population in different geographical areas. These are due to natural barriers such as lush tropical woods, mountains, or remote islands making places inaccessible. In these places, diarrhea is a problem for the health-care system. Each year, approximately 16 intensive outpatient program visits and 57 incidents managed at house every 1000 children under the age of five were reported. with diarrhea are anticipated to cost the healthcare provider Malaysia Ringgit (RM) 10.8 million and society RM 15.8 million(Shahbaz et al., 2016).

Acute diarrhea has significant economic consequences for children, including high medical costs, lost productivity, and child health care adjustments. For acute diarrhea, the financial impact on the family is greatest in children under the age of two(Cebrián-Cuenca et al., 2011). Sabah is the poorest state in Malaysia in terms of economic development(Jamil and Che Mat, 2014).

The causes of diarrhea were still a mystery long into the 16th century, when it was considered that diarrhea may be caused by a rapid change in one's eating habits. After a decade food poisoning by flies was blamed for summer diarrhea, whereas winter diarrhea was related to a mixture of cold and rainy weather exposure, in addition to the absence of adequate clothes and food(McMahan and Dupont, 2007).

In underdeveloped countries, diarrhea is more common than in developed countries. Several factors contribute to this, including a shortage of drinkable water, a lack of awareness about personal cleanliness, and a poor nutritional and population health condition. 2.5 billion Individuals are predicted to having insufficient sanitary facilities and one billion individual lack access to safe drinking water (Lubis, 2021).

In the case of severe diarrhea, home remedies are essential. This is the case since most nations have a traditional practice of managing diarrhea characters at house. Children's diarrhea usually begins at house and continuing following they leave the clinic. According to research’s , caretakers are the ones who discover diarrhea first, thus they choose to seek treatment at home. Diarrhea is commonly treated at home with a combination of conventional and natural therapies. Conventional therapy doses are frequently incorrect and insufficient. This technique raises the risk of diarrheal sickness, as well as morbidity and mortality. Children with diarrhea must be handled at home to minimize dehydration and nutritional injury(Khatun et al., 2021).

Chronic malnutrition affects 156 million children under five years worldwide, with Asia (56%) and Africa (56%) having the highest numbers (37%).Malnutrition is responsible for (45%) of all fatalities among children under five years worldwide, and more than (33 %) in Sub-Saharan Africa. In Malawi, (47.1 %) of children under five years are shorts, (16.3%) are underweight and (3.1%) are obese (Geresomo et al., 2017). Dedza district in Malawi has one of the highest proportion of stunted children with (51.1%) of under-five and (47.1%) of the children age 6 to 23 months affected(Office and Macro, 2011).

2.2. Concepts of Diarrhea:

Diarrhea is described as thrice or more soft or watery feces each day, or even more frequently than is typical of youngsters(Brunt et al., 2020). Either an increase in stool frequency or a reduction in stool consistency Children's diarrhea can be either acute or chronic(Kumar et al., 2008).

Some germs are responsible for diarrhea that are founds as to milk, Food, flies, bottle feeding ,finger nails, water, avoiding the use of soap to wash food utensils, store water are to Canisters with a broad opening and pond waters is used for the for the uncontrolled disposal children's excrement are all ways in which germs enter the body of a healthy person. When germs enter the body, the body begins to lose water and salt, resulting in diarrhea. Continued diarrhea causes a deficiency in salt and water in the body. This is a dangerous condition that, if not treated promptly, can result in the children's death (Saha, 2021).

Diarrhea is a symptom of digestive, absorption, and secretory system diseases. Diarrhea is caused by improper water and electrolyte movement in the intestine. Diarrhea affects an estimated 1.7 billion people globally each year(Hockenberry and Wilson, 2018).

Diarrhea can be divided into three types: dysentery, acute diarrhea, and diarrhea with a long duration, with the last posing the greatest

risk to a child's nutrition. Prolonged diarrhea is defined as an abrupt onset of suspected infectious diarrhea that lasts for at least 7 days; persistent diarrhea lasts for at least 14 days. Furthermore, long-term exposure is linked to impaired cognitive development, an increased risk of malnutrition, a lack of micronutrients, and death(Perner et al., 2012).

Diarrhea causes dehydration, which leads to mortality. Although the number of deaths from diarrhea remains high in underdeveloped countries, there has been a significant reduction, largely due to the adoption of Oral Rehydration Therapy (ORT). Ever since late (1970s) ORT had been widely pushed throughout of poor world as a simple and inexpensive management of dehydration that as a result of diarrhea (Bukachi and Pakenham-Walsh, 2007).

Acute watery diarrhea, bloody diarrhea or dysentery, and chronic diarrhea are the three types of diarrhea in children. Chronic, secretary, osmotic, and inflammatory diarrhea are examples of other types of diarrhea(Sullivan et al., 2012).

Acute watery diarrhea is characterized by frequent passing of watery or loose stools that persist shorter than seven days. However, fever and vomiting may ensue, leading to dehydration and, in turn, child mortality(Meng et al., 2010). Dysentery, often known as bloody diarrhea, is another type of diarrhea that is caused by intestinal inflammation(Bump et al., 2013).

Diarrhea The only type of diarrhea that necessitates antibiotic treatment is dysentery(WHO et al., 2008). The beginning of persistent diarrhea is usually sudden, although it lasts at least fourteen (14) days. The episodes of chronic diarrhea may be marked by watery or bloody feces. Because of the huge stool volumes, diarrhea episodes are frequently associated with weight loss or dehydration(Lule, 2012). Chronic diarrhea is diarrhea that lasts longer than four weeks. Chronic diarrhea has no recognized cause and does not react to any treatment(Schiller et al., 2014).

Diarrhea causes a rapid loss of electrolytes and water, leading to dehydration and mortality if the liquids are not replaced. The severity of diarrhea disorders is typically shown by dehydration(Guarino et al., 2014).

Early, moderate, or severe dehydration are the three levels of dehydration. Early signs and symptoms of dehydration are rarely seen. Thirst, sunken eyes, irritability, and a loss of skin suppleness are all signs of moderate dehydration. In addition to the symptoms of moderate dehydration, severe dehydration can cause pale skin, shock, and altered consciousness. Furthermore, the frequency of stools, duration, and presence of fever or vomiting all contribute to the severity of diarrhea (Shearer et al., 2014).

Malnourishment in children is linked to changes in the intestines' function(Cabanetos et al., 2013). Every episode of diarrhea has an impact on the nutritional status required for growth and development. Malnutrition has been discovered in children who frequently die from diarrhea (Baldwin, 2013). Intestinal absorption is hampered during the episodes, depriving the body and the child's brain of important nutrients needed for growth and cognitive development(Lillard et al., 2013).

Because of poor hand washing habits, diarrhea diseases have a high prevalence rate. (Biran et al., 2014). Hand washing with soap and water is recommended by the World Health Organization. Hand cleanliness improves diarrhea disease prevention by 44%(Ehiri et al., 2015).

The usage of recommended measures is necessary for managing diarrhea bouts. In the treatment of childhood diarrhea, oral rehydration salts and zinc supplements provide better results(Organization, 2013). Since 1970, oral rehydration therapy (ORT) has been used to prevent and treat diarrhea dehydration. The treatment is taking ORS and other home-based fluids by mouth(Njoroge et al., 2014). Rice water, yoghurt drinks, and soups made with fish, poultry, or pork are among the recommended home-based fluids(Shah et al., 2011).

2.3. Prevalence and Epidemiology of Diarrhea:

Diarrheal diseases claim the lives of almost 1.8 million people each year. In underdeveloped countries, diarrhea was responsible for (21%) of all mortality among children under five years. In addition diarrhea was linked to (75%) of all childhood illnesses, and (25%) of outpatient visits and (16%) of hospital admissions were due to diarrhea(Dessalegn et al., 2011).

In Iraq, Diarrhea is a second most common reasons of deaths in children. Blood can be seen in the stools of children under the age of five in about (10 %) of diarrheal episodes. Iraq is a developing country that has endured the horrors of war and sanctions for more than two decades. Children are the most vulnerable population in every war, especially when it comes to their health. Because of a deficiency in proper nutrition(Alanazi et al., 2014).

Diarrhea begins at home, where it is first managed by mothers. Inadequate information can lead to a delay in getting the right help. Despite WHO's efforts to educate mothers about the benefits of using ORS and Zinc together to treat diarrhea, our community as a whole is unaware of the benefits of doing so. This study was done to measure the degree of knowledge of mothers of children under the age of five about diarrheal home management, with the goal of lowering diarrhea-related morbidity and death in our setting(Riaz et al., 2019).

Diarrheal diseases account for roughly (15%) of the 1600 mortality of children under five years that occur every day around the world. More than four-fifths of all under-five deaths in Africa and South Asia (82 percent) are caused by diarrhea, and over half of all deaths in the globe are caused by pneumonia and diarrhea in the five poorest nations; Pakistan, Nigeria, India, Ethiopia and the Democratic Republic of Congo (Stanaway et al., 2019).

Among all medical diseases, diarrhea is the second greatest source of missed time due to illness (72.8 million dalys). Diarrhea-related dehydration deaths about 1.8 million people each year(Alzahrani et al., 2017).

Due to mothers' lack of understanding about how to handle diarrhea, severe dehydration leads to death. Only (13.5%) of mothers were aware of Zinc as a medication in the management of diarrhea, according to Misbah and Rasheed's research at the Military Hospital in Rawalpindi. However (77%) of mothers knew what ORS was and (60%) knew what it was used for.(Riaz et al., 2019).

Almost(2.4) billion people do not have access to basic sewage and (663) million do not have access to better drinkable water. From 2016 to 2017, roughly 41% of Afghans had accessibility to upgraded sanitation services, while nearly (64%) used improved sources of drinking water as shown in a Afghanistan living circumstances study . E.coli is found in over 58 percent of household producer of potable water and (77%) of household drinkable water, showing that the producer is contaminated, storage of water, and handling (Alcock et al., 2020).

In the management of diarrhea in children, the (WHO) and United Nations International children's Emergency Fund unanimously advised the use of newly formulated low osmolality ORS and zinc supplementation. However, in India, ORT coverage ranges from (2 to 16 %)(Ajjampur et al., 2008).

According to National Federation of High Schools (NFHS)3, 26.2 % of children under the age of three are covered by ORS. Children with no dehydration should be handled at home with ORS, home accessible fluids (HAF) and continued feeding including breast feeding, according to the Integrated Management of Newborn and childhood illnesses (IMNCI) guidelines. Early home detection of diarrhea, early and optimal administration of ORT, and adequate, sanitary, and safe feeding practices

lower the duration, hospitalization, severity, overall medical costs and death of children under the age of five who have diarrhea(Gazi et al., 2015).

Globally, diarrhea-related mortality has decreased significantly in the previous two decades, according to evidence. In Sub-Saharan Africa, however, both morbidity and death from diarrhea have remained unacceptably high, due to high risk factors. To prevent diarrheal disease, it is necessary to have adequate and suitable knowledge as well as a good grasp of the underlying etiological components and dynamics involved in its onset and progression to various severe outcomes, complications, and mortalities(Omole et al., 2019a).

2.4. Causes and Risks Factor of Diarrhea:

Each year, infection related with unclean deliveries cause 26% of neonatal fatalities and 11% of maternal deaths, leading in about 1 million death. (Blencowe et al., 2010). Up to (20%) of mothers in some African nations have a wound infection following a caesarean operation(Morhason-Bello et al., 2009).

The current environmental condition and logistics available, as well as the educational level of mothers and/or caregivers, are all important considerations in the environment. diarrhea is a serious ailment. Many factors can induce diarrhea, especially in youngsters. The cause could be bacterial, viral, or something else entirely and it could be catastrophic in youngsters because fluid loss happens so quickly(Osam–Tewiah and Catherine, 2010).

The following are some causes of diarrhea in children ; Diarrhea is the indication of infection causes by a range to viral ,bacterium, and parasite species, the majority in that are transferred by polluted feces. Infectious is greater likely if there is the lack of good hygienic practices and cleanliness, as well as healthy drinking water, washing waters and cooking. Rotavirus and E coli are the two more prevalent etiological agents

that caused mild to severe diarrhea in poor income nations. Other infections, such as Shigella germs ,and Cryptosporidium can be important disease. It's also crucial to think about etiologic tendencies that vary by area (Organization, 2017).

Diarrhea disease in can be transmit from one individual to another, exacerbated by low individual cleanliness. As food is cooked or kept in unsanitary circumstances, it is a major cause of diarrhea. The improper storage and handling of home water is also a significant danger factor. Fish and seafood from polluted waters may potentially be affected by the sickness(Hockenberry and Wilson, 2018).

Malnutrition leads to diarrhea, which leads to further malnutrition, creating a vicious cycle. Despite the fact that no study has thoroughly examined the relationship between malnutrition and persistent diarrhea, at least one report revealed that impoverished children have diarrhea for longer periods of time. Nutritional deficiencies appear to be linked to an increase in the frequency of chronic diarrhea in other developing countries as well (Osam–Tewiah and Catherine, 2010).

Childhood diarrhea is caused by early weaning, a lack of awareness of basic personal and food hygiene habits, a lack of maternal education, poor sanitation standards, and a lack of safe water. These filthy conditions make it easy for the bacteria that cause diarrhea to spread (Cheruiyot et al., 2018).

Diarrhea is more common in children under the age of two, males are more affected than females, and instances in rural areas are more common (Padhy et al., 2017).

It's important to note that oral rehydration can effectively treat more than 90% of cases of acute diarrhea. Zinc, intravenous fluids, and, in some situations, antibiotics are also helpful treatments(Merali et al., 2018). After the neonatal period, diarrhea is many of the primary reason of deaths in children(Organization, 2017).

The most common symptoms of diarrhea are frequent loose or watery stools, the danger of intestinal damage, particularly when bloody diarrhea is present and loss of appetite with or without vomiting. Dehydration symptoms do not appear until about 4-5 percent of body weight is lost in a short period of time. Sunken eyes, a depressed fontanel, a dry mouth and throat, a quick and weak pulse, a lack of skin suppleness, and a reduced volume of urine are all signs and symptoms of dehydration. This causes shock and premature mortality in children under the age of five. Dehydration has the greatest impact on infants and children under the age of five (ODUNTAN and OLAJIDE, 2020).

In children under the age of 5, inadequate hand washing, dirty weaning food, lack of clean water, inappropriate nourishment practice, confined sterile waste transfer, bad lodging arrangements, and lack of access to satisfactory and reasonable social insurance are all aggravating factors of diarrhea. Environmental risk factors connected with children diarrhea, according to a Saudi Arabian study, included sewage leaking near the home, eating out after school hours, and drying dishes with reusable cloths or sponges(Alhossan and Al-Arifi, 2021).

Childhood diarrhea is referred to the passing of three or more loose or watery stools in the day as well as an abnormal rise in stool frequency or fluidity, as determined by the caregiver(Organization, 2017). Diarrhea can also be defined as a gastrointestinal disorder characterized by abnormalities in intestinal motility and absorption, resulting in an increase in the volume and composition of feces(Peter and Umar, 2018a).

In Pakistan, there are around 24 million children under five years, with each child experiencing 3-4 episodes of diarrhea each year on average in children under the age of four, totaling roughly 120 million episodes per year. The high frequency of diarrhea in our country is due to low socioeconomic conditions, inadequate personal cleanliness, and a contaminated water supply(Mohsin et al., 2009).

Diarrhea is a significant public health issue at Nepal, as seen by the rising incidence and mortality rates. Unlike other diseases, diarrhea is not commonly seen as an illness, and as a result, the majority of diarrheal cases are either not treated at all or treated at home using traditional methods. Roughly half of children under the age of five are not taken to a healthcare facility, and about a third of children with diarrhea are not treated at all(Ansari et al., 2012).

A (24%) of the globe's people have been infected with by soil-transmitted helminths, Stunted growth and mental disability in youngsters are the outcome. In 2017, about (220.8) million people with schistosomiasis in 52 nations needed schistosomiasis preventative therapy(Organization, 2019).

2.4.1. Child Hygiene Risk:

WASH issues contribute to malnutrition, It creates parasitic infections in the intestine, diarrhea , and possibly intestinal damage caused by the environment. In 2018, 149 million children under five years had stunting development, accounting for 21.9 percent of all children under five years, and 49.5 million (7%) have been at danger of becoming hungry (Organization, 2019).

High-risk water, hygiene practices and sanitation are still prevalent in most low-income nations. Due to a lack of clean water, children may be at an elevated risk of diarrheal infections.(Fromer et al., 2016).

In some cultures, the mothers hand serves as a utensil, pouring gruels, water, or other liquids into the infant's mouth. In other cultures, mothers put porridge or soft pastes into their children's mouths using their fingers. Feeding bottles have grown in popularity as a newborn feeding utensil in various regions of the world. Food is commonly served in cups and spoons, but because infants are unable to handle them on their own, busy mothers frequently switch to a bottle that an older sibling can easily carry or assist with(Githae, 2018).

Hundreds of millions of cases of diarrhea are treated each year with antibiotics. This might be reduced by 60% if everyone had access to water, sanitation and Hygiene (O'Neill, 2016). In many areas where water, sanitation and Hygiene is inadequate and infectious illness risks are high, prophylactic use of antibiotics after childbirth is prevalent . In certain nations, antibiotics are administered to 90% of mothers who give birth vaginal delivery before being released from the hospital (Bonet et al., 2017). Resistant infections may be to blame for about a third of sepsis-related newborn mortality worldwide each year (Laxminarayan et al., 2013).

Handwashing services are absent at the point of care in 42% of health care establishments worldwide, and 40% lack waste separation methods. Washing hands is among the most efficient strategies to avoid diarrhea and illnesses linked with health care. Smaller institutions, such as Water and sanitation facilities are twice as likely to be lacking in hospitals, medical clinics, and health centers as they are in hospitals. (Organization, 2019).

2.4.2. Feeding Practices Risks :

Climate change consequences in Malawi, such as regular floods and occasional droughts, have not spared Dedza district. In response to these effects, a variety of nutrition-related interventions has been implemented; however, levels of under nutrition in children have remained high, and some localized studies have identified poor child care and inadequate complementary feeding practices as important factors contributing to the high prevalence of under nutrition among children(Geresomo et al., 2017).

Infant malnutrition and development failure in the first (1000) days of life can also have lengthy consequences that last into adolescence and adulthood (Adair, 2014) . In 2011, it was projected that (45%) of all child deaths were due to malnutrition, which included inadequate nursing, stunting, wasting, and fetal growth restriction. Chronic under nutrition, as

measured by underweight stunting in children, is most prevalent in LMIC. With at minimum (25%) of children under the age of five stunting and around (20%) loss weight, Asia has among of the highest rate(Black et al., 2013).

Breastfeeding has been found in a number of studies to be a preventive factor against diarrhea, lowering the frequency and severity of diarrhea in children (Mortazavi et al., 2020).

According to recent studies, growth stalling can be observed as early as infancy, when poor supplemental feeding and inefficient nursing are substantial risk factors for chronic under nutrition in newborns. At one month of life, a recent cohort study across eight low- and middle- income countries (LMICs) revealed high rates of suboptimal breastfeeding, with 6 of the 8 sites reporting > 60 percent exclusively breastfed and > 20 percent partially breastfed infants(Hashmi et al., 2019).

Those living around the Thailand Myanmar border, who are at danger of baby and children malnourishment, are of particular attention. Poor infant growth has been observed among refugees in Thailand, Stunted growth rates range from 18% between the ages of 6 and 11 months, and 34% by the two year of the ages (Border Consortium, 2013).

The most appropriate way of sustenance for ensuring proper growth and immunological development of child is early initiation and continuation of nursing. Nutrient-rich colostrum's or breast milk has advantages in minimizing infectious illnesses, particularly severe diarrhea (Abatenh et al., 2017).

In a cross-sectional investigation, estimate with exclusive breastfeed among Karen and Burman refugees in Myanmar and migrants primarily originate—range from 24 to 41percent, whereas appropriate feed from newborn until 11 months ranges at (41 to 63%) (Thet et al., 2016).

The literature has shown that chronic under nutrition is linked to maternal and newborn risk factors. Maternal malnutrition, which may be

compounded by inadequate Weight increase pregnancy is a possibility result in negative the results of the pregnant, which a possibility affect at infant's risk of Stunted growth ,and being loss weight. Preeclampsia is linked to malnutrition during pregnancy(Ota et al., 2011).

Low birth weight, fetal growth restriction as well as small-for-gestational-age (Bodnar et al., 2010) and has an effect on baby and neonatal death and morbidity. Premature births with a lower birth weight for the gestation age newborns are more likely as a result of physical changes of the mothers, such in poor maternal BMI and low stature height < 145 cm (Addo et al., 2013).Early ingestion of milk formula or solid foods is thought to increase enter pathogen exposure and has been linked to a rise in acute diarrhea rates(Osam–Tewiah, 2010).

In addition, contextual factors, for example poverty, education achievement of parents and postnatal visit are linked to chronic malnutrition and poor feeding practices in Asian newborns (Beyene et al., 2015).

Poor maternal literacy rates, unemployment and unpredictable income ,and restricted access to diet of good quality and dietary sources are all factors that contribute to child malnutrition on the barrier between refugees and migrants. In 14 LMICs, however, ingestion of solid foods, the Minimal recommended Dietary, and nutritional differences among the ages of 6 and 8 months lowered the incidence of underweight and stunting (Hashmi et al., 2019).

The Institute of Medicine (IOM) listed several minerals with the mothers, infants and children (WIC) members may be of deficiency or excess, according to their research. Description of Proposal minerals with the mothers, infants and children WIC Packaged Food Selection Criteria. Iron and zinc are the nutrients of worry for potential deficiency in breast-fed infants aged 6 to 11 months, whereas iron, potassium, fiber and vitamin E are the nutrients of concern for children aged 12 to 23 months. sodium,

produced vitamin A , Zinc, and energy are the nutrients to watch for in children aged 12 to 23 months(Mokori et al., 2017).

Breastfeeding should be continued for as long as feasible for newborns with the significant household background in the dietary allergies, and Meals that are complementary to the baby's diet should not be given until he or she is six months old. As directed by the health care practitioner, the introduction of allergen found in common foods, like as fish, peanuts, milk, wheat, eggs, tree nuts, as well as soya and seafood, must be avoided unless after the first year of age (Mokori et al., 2017).

Multiple studies have found that newborns who are fed formula are more prone to acquire gastroenteritis and diarrhea. discovered that In a meta-analysis of cohorts studies, newborns who were fed a mix of formula and mother milk were 2.8 times more likely than those who were exclusively breast feeding to develop gastrointestinal infections. According to the PROBIT study, which was the randomized and controlled investigation of the treatment to prolong the length of breastfeeding, newborns in the control group were 1.7 times more likely than those in the intervention group to have gastrointestinal disease(Stuebe and Schwarz, 2010).

Housing, occupation, education, and income levels are used to determine a family's socioeconomic status in contrast to the country's statistical average. Poverty socioeconomic factors low per capita income, poor housing conditions and energy consumption are linked to a higher risk of mortality and malnutrition in the first five years of life(Memon et al., 2010).

In infant feeding patterns, there was a clear link to childhood diarrhea. Complementary breastfeeding maintenance, early breastfeeding initiation, time to begin complementary feeding hygiene of complementary foods, and newborn vaccination were all activities linked to childhood diarrhea(Abatenh et al., 2017).

2.4.3. Lack of Maternal Education and Care:

If India is to meet the Millennium Development Goals and compete with developed countries in terms of health indicators, maternal education will play a critical role. Even in difficult family or socioeconomic circumstances, there is a beneficial association between health service usage and maternal education .children death is linked to mothers educational levels. In most nations around the world, there are significant disparities in child mortality based on mother education(Mehta et al., 2014).

Maternal education is one of the most powerful factors of infant survival in affluent countries. The majority of maternal education and child nutrition research in Nigeria has focused on determining the numerous ways in which a mothers education affects her children's health(Desmennu et al., 2017). Despite the fact that numerous studies have found a generally good relationship between children's health, survival and maternal education(Mehta et al., 2014).

Furthermore, a low of knowledge is mentioned as one of the number of stressors influencing mothers during pregnancy and childbirth, along with a lack of money and Decision making authority creates vulnerability and increases the likelihood of undesirable consequences. (Mehta et al., 2014).

Aside from the lack of consistency in determining whether parental schooling has a causal impact on children's health outcomes, the existing literature provides relatively limited information on the policy implications of alternative education reforms' local average treatment effects (LATE) among various populations. For example, certain natural experiments allow researchers to examine the impact of greater educational attainment among people who have a strong desire to learn more (for example, by increasing school availability and/or eliminating school fees for those who cannot afford to attend school). Exogenous diversity in education caused by

compulsory schooling legislation, on the other hand, permits researchers to investigate the influence of education on persons who have a low proclivity to earn further years of education. Given that many developing countries' obligatory schooling regulations are poorly enforced and only demand a few years of education(Van Der Vegt et al., 2015).

There is a trend toward lower maternal education status, which shows that maternal ignorance of proper caretaker hygiene is significantly linked to diarrhea diseases. It also showed that households with low hygiene practices, such as lack of toilet paper, improper disposal of children's feces and solid or liquid waste disposal inside the living compound, are major risk factors. Hand washing with soap and running water is appropriate for habitual instruction(Osam–Tewiah, 2010).

Educated individuals are proven to be healthier, according to a significant body of research. Parental education, particularly that of the mother, has been demonstrated to be a substantial predictor of health outcomes in addition to an individual's own schooling(Currie et al., 2011).

Educated individuals may also benefit from a pay premium in the job market, or they may marry more educated, healthier, and affluent spouses, which may improve their children's health. Finally, if more educated people see the value in their children's future well-being, they are more likely to invest in them(Dursun et al., 2017).

The incidence of diarrhea varies depending on the mothers education level, with children of higher-educated mothers experiencing significantly less diarrhea than children of low-educated mothers. This could be due to the fact that education provides knowledge of hygiene rules, feeding and weaning activities, and symptom interpretation, all of which aid in quick response to childhood disease(Yilgwan and Okolo, 2012).

The literature has focused on four elements when the influence of a mother's learning on a child's nutrition outcomes: socioeconomic position, mother's Mothers' independence and responsibility, as well as their health

knowledge and attitudes, as well as their wellness and reproduction behaviors (Ezeh et al., 2009).

Maternal education is equally important in shaping mothers perceptions about pediatric diseases. Mothers education was linked to a greater knowledge of the reasons childhood ailments and as a result, a usage to good child health services. Other studies have discovered that a connection among a mothers learning and her child's health is not obvious, but is modified by other factors such geographical disparities(Njeri and Muriithi, 2013).

Mothers empowerment and autonomy models claim that education empowers mothers and influences their participation in decisions affecting child nutrition and access to health care(Ezeh et al., 2009).

2.4.4. Household Environmental Risks:

Malnutrition in its more apparent forms, such as stunting, wasting, underweight, and overweight, affects at least one out of every three under-five children globally(Nicholl, 2019). According to UNICEF, almost 2.6 million children die each year as a result of malnutrition, accounting for one-third of all child deaths worldwide(Un and So, 2011).

The united nations international children's emergency fund (UNICEF) just released a study titled "The State of the World's Children 2019," which highlights a current situation of children's wellness in India's and the rest of the world's .Stunting, wasting, underweight, and overweight affect 35 percent, 17 percent, 33 percent, and percent of children in India, according to the report(Nicholl, 2019).

Access to appropriate health care, clean drinking water sources, enough sanitation, and adequate housing are all prerequisites for healthy nutrition in children under the age of five. Inadequate sanitation, an unsanitary environment, unsuitable childcare, and poor family environment conditions all have a direct impact on the malnutrition and morbidity of children under the age of five(Saha and Chouhan, 2021)

Environmental factors play the significant role at the emergence of certain diseases, and even negative environmental factors have a significant impact on one's health, making one susceptible to diseases like diarrhea, cholera, and others, so environmental improvement measures are required to eradicate infectious diseases(Sugiyanto et al., 2021).

Air pollution is not only one of the primary reasons of premature deaths around the world's, but it is also a possible indicator of economic development's unequal environmental repercussions. Higher economic disparity has been linked to increased environmental deterioration, particularly in cities and in terms of short-term air and water pollution, according to research(Elstad, 2011).

Lower socioeconomic sections of countries, mainly in North America, the United Kingdom, Asia, and Africa, have greater PM concentrations, according to a global analysis(Hajat et al., 2015). Calculated pollution equities for racial groupings across the United States and discovered that Black and Hispanic people face disproportionately large pollution burdens(Rao et al., 2021).

There is the association among environmental conditions and development of diarrhea in children. Such variables include the amounts of waters available, accessibility to improved waters supply, the access to restroom facility, waste disposal, hygienic complex and dwelling quality. Approximately 125 million children’s under five years live at families without access to a safe drinking water source, and over 280 million of these children live in households without adequate sanitation(Adam et al., 2014).

Seasonal trends, absence of water supply, inefficient water storage techniques, younger maternal age, poor waste disposal, and caregivers not washing their hands with soap have all been found as risk factors for diarrhea in multiple studies(Kalakheti et al., 2016).

Undeveloped areas, such as Sub-Saharan Africa, where there is a lack of clean water, inappropriate disposal of human feces, extreme crowding of primitive dwellings, and poor general hygiene standards, diarrhea is common. As the result of these poor living conditions, young children's under five years are more likely to be exposed to bacteria that cause diarrhea, contributing to a significant disease burden in the population(Yaya et al., 2018).

The health of native populations, particularly those in poor income areas, is impacted not only by the accumulating of overflowing garbage, among waste handling systems such as landfill, dump, and waste incineration. Persons handling homes waste lack protective clothing or understanding on how to manage possibly toxic chemicals become risky and pose health risks(Gutberlet and Uddin, 2017).

Children under the age of five have a unique physiological makeup that makes them vulnerable to a range of health risks in and around the home, such as unsanitary settings and contaminated water sources . As a result, providing safe drinking water and improved sanitation in the home can minimize the risk of death and diseases in children under five years(Organization, 2009).

This has been proved in certain industrialized countries, where efforts such as the proper sanitation and supply of safe drinking water have reduced childhood mortality. Although certain parts of the developing world are seeing significant reductions in childhood mortality as a result of such measures, the situation in Sub-Saharan Africa remains grave, with about half of a population without access to adequate sanitation and safe drinking water(Fayehun, 2010).

Despite many methods to improving child health in Africa, a decline in under-five deaths has been modest. Although there are significant differences between areas and nations in the developing world, deaths rates between children under five years are greater in African countries than in

other less developed cultures.19 of the 20 countries with the highest under-five death rates are in Sub Saharan Africa(Heyns and Viljoen, 2021) .

In nations where adult HIV incidence is quite high more than (5 percent),reductions in under five years mortality have reversed; deaths rates among children of Human Immunodeficiency Virus (HIV)-positive mothers are two to five times higher than those of HIV-negative mothers (Fayehun, 2010).

Poor hygiene quality, lack of safe water for drinking, cooking, and washing food ingredients, low food management, toilets or the unsafe septic tanks polluting water sources, babies not receiving exclusive breastfeeding during the first six months, not washing hands properly and timely after defecation, after cleaning child's stool, before and after preparing food, and before eating are some of the causes of diarrhea in households(Pahmi and Endah, 2019).

Environment waste has been related to infantile diarrhea. Housefly larvae eat moist food that is high in organic materials. Dumping household rubbish in open locations, particularly near residential areas, attracts flies and provides a good breeding environment for them. The utilization of closed/sheltered waste disposal sites or the reduction of open waste disposal sites would directly minimize the source of flies(Das et al., 2015).

Indeed, environmental health hazards endanger the health of millions of people in the areas where they live. The residential environment has a number of health concerns, such as contamination of water and food, low building standards and low air quality. According to studies, water supply, hygiene and sanitation are often poor in developing nations; more than 1 billion people do not have enough shelter, 1.4 billion do not have access to clean drinking waters and over 2.9 billion will not have access to proper sanitations (Fayehun, 2010).

2.5. Types of Diarrhea:

Diarrhea can be divided as acute, persistent, and chronic diarrhea depending on how long it lasts, and this categorization is significant for diagnostic and therapy purposes(Navaneethan and Giannella, 2010).

Diarrhea is a major health issue. The three clinical kinds of diarrhea acute watery diarrhea which last for many days or hours, acute bloody diarrhea, sometimes known as dysentery, and chronic diarrhea can last 14 day or more. The great majority of diarrhea related mortality occur in children under five years who live in poor- and middle-income nations. Diarrhea caused by a lack of sanitation and contaminated water is the leading cause of sickness and death among children's under five years all throughout the world, particularly in developing nations(Dodicho, 2016).

2.5.1. Acute Diarrhea:

Acute diarrhea, especially in children, is a distressing condition with potentially dangerous implications(McIlroy et al., 2018). It primarily affects children in their the initial 5 years of live, especially in the second half of the year and in small children(Radlović et al., 2015).

Acute diarrhea is defined as a bout of diarrhea that lasts shorter than 14 days. Acute watery diarrhea causes dehydration, which leads to malnutrition. In children with acute diarrhea, dehydration is the most likely cause of mortality(Schuster et al., 2020).

2.5.2. Persistent Diarrhea:

It's characterized by an increase in stool frequency and a higher water content in the stool. Malabsorption , inflammatory bowel disease, food allergies, lactose intolerance, and immunological deficiency are only some of the chronic illnesses that cause this(Sammour et al., 2010).

When diarrhea lasts for 14 days or longer, it is considered persistent diarrhea. Diarrhea might last for up to 20 days in up to (20%) of cases.

Chronic diarrhea can also cause nutritional problems, such as malnutrition and non-intestinal infections(Schuster et al., 2020).

2.5.3. Chronic diarrhea:

A common yet difficult clinical issue is a reduction in stool consistency for more than four weeks. Watery, fatty (malabsorption), and inflammatory are the three basic classifications. Watery diarrhea is classified as osmotic, secretary, or functional diarrhea. Irritable bowel syndrome is the most prevalent cause of functional diarrhea, and it causes watery diarrhea(Juckett and Trivedi, 2011).

Finally, diarrhea can be classified according to its severity. The amount and size of feces can help determine the severity: If you have more than 10 times watery stools in 24 hours, you have severe diarrhea; if you have many loose stools in a day, but not more than 10 times, you have moderate diarrhea. Mild diarrhea is defined as a few loose, watery stools each day(Siegel et al., 2019).

2.6. Clinical Manifestation of Diarrhea:

It is defined by the incidence of 3 times or more loose or watery feces in a row on a daily basis(Farahdina et al., 2021). Anorexia, vomiting, abdominal pain, and an increased body temperature are all common symptoms in the early stages of the disease(Farthing et al., 2013) .

Although it is found all across the world, it is most common in underdeveloped countries. Acute diarrhea, With the exception of newborn pathological conditions and pneumonia, is mostly caused by dehydration, i.e. hypovolemia, electrolyte disbalance, and acidosis, and is the most common reason of mortality among children until they reach the five years (Jepkorir and Nyaora, 2018).

Viral diarrhea can be preceded by clinical descriptions of watery stool diarrhea, four or more times a day defecation frequency, typically

accompanied by vomiting, fever, lack of appetite, weak body, nausea, and vomiting symptoms(Imanadhia et al., 2019).

Watery and postprandial feces characterize enteritis, while mucous or mucous-hemorrhagic stools characterize colitis(Radlović et al., 2015) . The early stage of the disease is usually followed by an increase in temperature one to three days, lack of appetite, vomiting, abdominal pain and, in the case of colitis, the false need to evacuate stools, as well as tenesmus. Gastrointestinal infections in general and particularly viral infections, are frequently asymptomatic or with minimal clinical signs in infants aged six to nine months, especially those who are breastfeeding, due to the inherent passive immunity developed prenatally(Farthing et al., 2012).

If liquids are not replaced with oral rehydration solution, diarrhea causes fast loss of water and electrolytes, resulting in dehydration. Early dehydration has no symptoms; moderate dehydration causes thirst, restlessness, sunken eyes and decreased skin elasticity; severe dehydration causes all of the symptoms of moderate dehydration plus those of increased severity, such as pale skin, altered consciousness, low blood pressure and shock(Shearer et al., 2014).

2.7. Complication of Diarrhea:

Dehydration caused by diarrhea, vomiting, and fever is the most common complication of acute diarrheal disease(Farahdina et al., 2021) . It can be mild, moderate, or severe in terms of severity, while isotonic, hypotonic, or hypertonic in terms of osmolality, This is mostly determined by the sodium level in the blood(Greenbaum, 2011).

Each child under five years has a median of three bouts of the Acute diarrhea each year. Severe diarrhea is a second biggest reason of mortality in this age range worldwide post pneumonia, and Children of this age range have the highest incidence and mortality rates from diarrheal illnesses, particular through Infants rate then gradually fall. In resource-constrained

areas, add direct repercussions of diarrhea in children includes decreased cognitive development, poor nutrition and stunted growth, (Farthing et al., 2013).

Malnutrition of protein energy arises as a result of recurrent assaults, and if not addressed, issues such as renal failure and death might result. Malnutrition, on the other hand, is a risk factor for increased diarrhea incidence and severity. As a result, the illness is linked to protein and energy deficiency(Alkizim et al., 2011).

The majority of mortality from acute infectious diarrhea are caused by electrolyte losses and excessive fluid, which result in dehydration; thus, most deaths can be avoided if fluid and electrolyte losses are effectively replenished(Sharma et al., 2017).

Dehydration and malnutrition are linked to the risks of diarrhea, whereas dysentery is a leading cause of death due to its lethal consequences(Yasin and Halala, 2017).

2.8. Assessment and Diagnostic Findings:

A thorough physical examination, and appropriate laboratory tests are used to diagnose acute diarrhea(Farahdina et al., 2021).

The Stool regularity and color, sensitivity and adoption of food , Mothers or a caretaker collect information about urine production, vomit, abdominal discomfort, fever, and other problems. It's also crucial to learn about the prevalence of similar issues in the children’s immediate environment , as well as ingesting tainted eating or drinking tainted water. The level of dehydration must be taken into account, the degree of awareness, and various complications, both intestinal and extra intestinal, during the physical examination, which must always be comprehensive. Serum Na, Cl, K, acid-base status, glucose, cretonne, biochemical markers of inflammatory(erythrocyte sedimentation rate, leukocytosis, C-reactive protein), a routine urinal test, and to some situations, hem culture are all performed in the laboratory. It’s important of evaluate there is a reductive

element present chemicals in stools to patient suspected of lactose intolerance, which is the common presentation of diarrheas illness. (Radlović et al., 2015) .

Similarly, in the diagnosis of parasitic and pseudo membranous enter colitis, Entamoeba histolytic, Giardia lamblia antigens, Cryptosporidium and Clostridium difficile toxins A and B in stool are currently the method of choice.(Sammons et al., 2013).

Children with diarrhea should be examined for dehydration, malnutrition, chronic diarrhea, bloody diarrhea and severe non-intestinal infections so that an appropriate care plan can be established and implemented as soon as possible(Health et al., 2005).

The degree of vomiting, the type of diarrhea noticed, the visibility of blood in the stool, and the length of the diarrhea episode all play a role in the diagnosis. Treatment regimens differ depending on the results of this clinical examination. Microbiological culture and microscopy are not utilized to diagnose diarrhea and commence treatment, even in high-income nations, while these tools may help categorize specific bacteria for outbreak investigations(WHO, 2009).

Because the occurrence of diarrhea in children varies greatly, it is critical to precisely identify dehydration status in order to avoid death and illness. Children’s with acute dehydration require immediate intravenous fluids (IVF) to avert hemodynamic compromise, death and organ ischemia. When children with mild to moderate dehydration are treated with oral rehydration solution , they had shorter hospital stays and fewer adverse outcomes. In resource-constrained situations, accurately detecting dehydration status can also improve the cost effectiveness of diarrhea therapy by reducing the use of expensive and resource intensive IVF(Levine and McPhaden, 2016).

2.9. Treatment of Diarrhea:

Every year, about 6 million children under five years die, however the vast majority of these infants could be rescued if the conditions were prevented or treated. The total number of mortality among children under the five years has decreased from (12.6) million in 1990 to (5.3) million in 2018(Siegel et al., 2019).

Despite tremendous progress in lowering child deaths globally in recent decades, diarrhea remains a primary reason of mortality in children under five years. Diarrhea was responsible of almost (8%) of all mortality among children under five years in 2016. This equates to roughly 1,300 young children per day, or around (480,000) per year. The bulk of these deaths could be avoided if water, nutrition, sanitation, breastfeeding, hygiene and immunization were all improved(Organization, 2017).

Acute diarrhea in children usually disappears on its own, thus restoration of lost water and electrolytes, as well as proper nourishment, are the mainstays of treatment(Farahdina et al., 2021) .

Antipyretics are not recommended for children who have a fever below (39°C) unless there is another cause. Paracetamol is the preferred antipyretic for children of this age, However, if the child is more than three years old (BW>5 kg), profen is also an option. Unless there is severe dehydration or some major consequence, hospitalization is not required for the treatment of acute diarrhea disease(Guarino et al., 2014).

Infant diarrhea management encompasses rehydration and preservation of ORS, as well as replacement of continuous losses of diarrheal stools and vomit following rehydration, continued breastfeeding, and replenishment with an age-appropriate, unrestricted diet as soon as dehydration is rectified. Zinc supplementation is advised for children in impoverished nations(Levine et al., 2020).

2.9.1. Hydration:

The cornerstone of acute diarrhea treatment is ORS, and its widespread use has improved the condition's prognosis during the last 30 years(Eberlin and Ducic, 2018).

In adults and children, adequate fluid intake and hydration evaluation are critical for athletic performance and overall health. Urine osmolality has been recognized as a simple, laboratory-based hydration assessment approach, despite the fact that testing techniques differ(Adams et al., 2021).

Many critically sick patients get significant amounts of fluid during their initial resuscitation and throughout their critical illness, which can result in fluid overload (FO). FO has been linked to poor clinical outcomes, including higher mortality rates, longer periods of mechanical breathing, longer hospital stays, and a higher frequency of acute kidney injury (AKI)(Barhight et al., 2021).

ORT is a critical technique for reducing dehydration caused by diarrhea. The principles, use, and importance of this all-important tool in maternity clinics and child welfare have been taught to mothers all around the world, particularly in impoverished nations, with reference to diarrhea and its attendant sequelae. In addition, print and electronic media can be used to convey health care education (Yilgwan and Okolo, 2012).

To avoid dehydration delays and death, ORS must be administered at home as soon as possible. ORS is the salt and glucose solution made by diluting of one sachet in one liter of clean water. It's crucial to provide of the solution in modest doses at regular intervals on the regular basis. If oral rehydration solution packets are unavailable, Homemade solutions create with 1litre of safe drinking water and half a cup spoon of salt and 6 level smaller spoon of sugar, rice waters with a mild saltiness, or even plain water can be administered to avoid or postpone dehydration while traveling to the health center. These remedies, on the other hand, are insufficient for

treating dehydration induced by acute diarrhea(Organization and Control, 2008).

Infants and children who have been exposed to diarrhea should be given a low-osmolality oral rehydration solution or an intravenous electrolyte solution if they are severely dehydrated(Kutter et al., 2010).

Yogurt, soup, Rice water and (ORS) are all examples of UNICEF-approved instructions. The child's eating should be continued, especially with lots of nutritional food, to avoid any essential growth loss during and after the diarrhea episode. Typically, mothers prefer traditional diarrhea treatment methods and seek medical help only when those methods fail. Unfortunately, it's usually too late at this point. Either the youngster is dehydrated or he or she has begun to lose weight. It's also critical to take note of and recognize these symptoms or indicators so that you can get medical care as soon as possible(Haroun et al., 2010).

In cases of dehydration, the kid can be rehydrated by drinking fluids containing glucose, sugar, or starch, as well as electrolytes, and if there is no bloody diarrhea, bismuth subsalicylate or loperamide can be given(Pawłowski et al., 2009).

While Oral Rehydration Therapy (ORT) has reduced morbidity and mortality associated with diarrhea, it has no effect on the number or frequency of stools. An Oral Rehydration Solution should not be used to treat diarrhea as a last resort (ORS) According to the World Health Organization (WHO), opioid treatment should be included as long as the medicine used has been proved to be safe and effective in children(Sharma et al., 2017).

When ORS and appropriate fluids are not available, To avoid dehydration produced by diarrhea, increase your fluid intake in any way you can. However, in wealthy nations, only around a quarter (22%) of children’s with diarrhea Increase fluid intake during their illness. These low levels highlight the urgent need to educate caregivers on current

treatment standards, such as the importance of giving children with diarrhea more water(WHO, 2009).

2.9.2. Zinc Treatment and Other Micronutrients:

Zinc is a necessary micronutrient for a variety of metabolic activities in the body. zinc is largely stored of skeletal muscles and an adult human body contains about (2 to 3g) of zinc, with the daily needs of 12 to 16 mg (Choi et al., 2018).

Zinc deficiency can be caused by a lack of zinc in the diet, malabsorption, or significant losses of micronutrients from the stomach, as a result of this, growth is stunted, Poor iron absorption causes iron deficiency anemia, neuronal abnormalities and even cardiovascular disease. Zinc deficit affects over than two billion people globally, resulting in over than 0.5 million mortality in newborns and children's under the age of five each year(Choi et al., 2018).

Because the human body does not keep zinc in any form, it is necessary to consume this mineral on a regular basis to maintain recommended levels. Pediatric populations and mothers from low-income nations, such as Sub Saharan Africa and Southeast Asia, that follow a plant-based diet, may have greater incidences of zinc deficiency(King et al., 2015).

A country is considered at danger of developing zinc insufficiency if more than (25%) of its population consumes the diet low in zinc. A quarter of the children's population under five years has a stunted growth rate due to a zinc-deficient diet, which is consumed by around 17 percent of the global population. 8 According to the study by Khalid in Pakistan, (20.6%) of the children's community had zinc amounts low (60 μg/dL) (Ahsan et al., 2021).

A number of steps have been taken to combat prevent zinc deficiency it from occurring, including The World Health Organization and the United Nations Children's Fund recommendations to give 20 mg oral zinc

supplements to pediatric suffering from diarrhea for 10 to 14 days in order to make up for lost micronutrients, as zinc supplements lowering mortality from diarrhea and pneumonia in pediatric by (13%) and (15%), respectively(Young et al., 2012).

Other international organizations and associations, such as the Global Alliance for Improved Nutrition, the International Zinc Association, the Micronutrient Forum and Harvest Plus, the Food Fortification Initiative, have contributed their support to combat zinc deficiency through a variety of programs(Ahsan et al., 2021). The National Wheat Flour Fortification Program was launched in Pakistan to supplement wheat flour with zinc to treat zinc deficiency(Akhtar, 2013).

Zinc deficiency is common among children in developing nations, and it contributes to lowered immunity and an increased risk of infection. Zinc supplementation can help prevent death in healthy youngsters due to typical reasons like diarrhea(Imdad et al., 2011).

Zinc is a crucial mineral for protein biosynthesis, therefore it can benefit children with diarrhea , immunological function, cell development and differentiation, and water and salts transport in the intestine (Falzon et al., 2011).

In response to accumulating information that therapeutic zinc supplementation for diarrhea in children under five years is beneficial and safe, the WHO and the United Nations Children's Fund released a worldwide guideline at 2004 to prescribe supplementing with zinc in addition to ORS for the therapy with all of diarrhea (Bordiga et al., 2013).

Infants in poor nations are particularly vulnerable to growth retardation and micronutrient deficiencies due to a lack of complementary diets. Peruvian children suffer from stunting and anemia as a result of poor nutrition. Micronutrient deficiencies, such as zinc deficiency, impair immunological function and increase the likelihood of diarrhea(Isbell et al., 2011).

A deficiency in zinc is more common in children, especially in low-income nations like Nepal, where low diets and gastrointestinal illnesses are common(Wessells and Brown, 2012). A deficiency in zinc can present as the sign of illness, leading to negative health effects such as immunological abnormalities (since zinc is involved in innate immunity), poor appetite, dwarfism, rough skin and mental weariness (Livingstone, 2015).

Zinc deficiency is linked to anemia and heart disease, as well as affecting neurogenesis in the early stages of development. Zinc deficiency is linked to a number of chronic and infectious diseases around the world, including cancer, diabetes, measles, HIV, tuberculosis, and pneumonia(Mehata et al., 2021).

2.10. Management of Diarrhea:

Nursing assessment will be used to guide management. It comprises a complete medical history, a comprehensive physical examination, and a dehydration assessment. To develop the nursing diagnosis, the nature and frequency of stools, type of onset, length of sickness, and related symptoms must all be assessed(Datta et al., 2009).

To reduce the risk factors for diarrhea, a variety of strategies have been implemented ,involves the administration of rotavirus vaccine, encouragement and stimulation of the exclusive breastfeed for at least the first 6 months of a children live, effective community health literacy program about how to address and avoid diarrhea outbreaks, as well as how to keep children health by using ORS which is being used to restore fluid that has been lost due to dehydration, and soapy hands cleansing, According to the World Health Organization and UNICEF (Ndou et al., 2021).

Diarrheal illnesses in children under the age of five can be prevented at two levels: primary (by using good sanitation and water quality) and secondary (by recognizing dehydration early and

administering oral rehydration solution (ORS) promptly)(Munos et al., 2010).

There is association among caregiver comprehension of diarrhea and its management, and also preventive care practices at home, according to new research. To put it another way, the more the caregivers' health information, the decrease the incidence of diarrhea outbreaks between children, according to these studies. Surveys evaluating competence of providers to interpret and apply healthcare information on the prevention and treatment of diarrhea illness in children aged 0–5 years were undertaken in Thulamela B Municipality, Vhembe District, South Africa, to provide the baseline for future studies or interventions.(Ndou et al., 2021).

The integrated management of childhood illness covers the use of ORT and zinc, as well as continuing feeding, to treat diarrhea. ORS fights dehydration by replenishing water and replacing electrolytes in the body. It's a simple, economical, and effective strategy to relieve dehydration while also lowering the risk of diarrhea-related complications and mortality(Teshale et al., 2021).

Consultation with in the health care physician in the facility or community setting can help prevent dangerous home based children's and ensure that severe diarrhea and dehydration are treated promptly. Despite the fact that these simple, effective and lack cost therapies are available, many children do not receive adequate diarrhea therapy(Olorunsaiye et al., 2021).

The WHO recommends treating diarrhea with an ORS or an intravenous electrolyte solution in the case of extreme dehydration, continuous breastfeeding and zinc supplements. In many LMICs, however, proper diarrhea management remains a challenge. According to research indicated the increase level of incorrect treatment methods for example the indiscriminately used of Medications (Lanyero et al., 2021).

Another study in Nigeria looked at the management and prevention of acute children diarrhea and found that 85 percent of cases were treated with antibiotics(Efunshile et al., 2019).In a survey of antibiotic prescription procedures at Uganda's authorized medicine shops, 29.4 percent of those polled said antibiotic were the first level management for pediatric with diarrhea, despite the fact that the usual recommendation is to offer zinc tablets and oral rehydration salts(Mbonye et al., 2016).

Poor adherence to established recommendations for managing ARI and diarrhea is one of the issues of case treatment in health facilities in developing countries, As a result, the signs and symptoms are incorrectly assessed, leading to incorrect diagnosis, improper management and low results. Symptomatic alleviation and maintenance of appropriate ORT of Upper Respiratory Tract Infections and antibiotic for pneumonia are the current published guidelines for (ARI) cases treatment in Indonesia from the Indonesian Pediatric Society and WHO(Oktaria et al., 2017).

The treatment of diarrhea is still empirical and based on the child's clinical condition. In order to determine the therapeutic aims, certain signs and complications must be identified. The goal of treatment is to end an acute assault and induce remission, as well as to avoid relapse and control chronic symptoms. Individualized management should comprise general supportive measures, pharmacological treatment for the illness process itself if necessary, control of the child's nutritional status, and, if necessary, hygienic recommendations(Osam–Tewiah, 2010).

However, ORT has not yet reached its full potential for avoiding diarrhea mortality. Low socioeconomic level, a weak motherhood, and a lack of awareness among mothers are the main causes(Thammanna et al., 2015).

That some mothers are still unable to properly mix commercially available ORS, produce sugar salt solution at home, or grasp the

importance of providing additional fluids to their children during acute diarrhea(Seyal and Hanif, 2009).

The importance of home treatment for diarrhea stems from the fact that diarrhea occurs at home and is more likely to return to a health facility after being seen at home. Diarrheal stools lose a lot of fluid, therefore dehydration can be avoided if enough fluids are given in sufficient amounts shortly after the commencement of diarrhea. When given in significant quantities, however, the fluids must meet those standards. They're simple to make, but they should be familiar, successful, and age-appropriate for the child(Haroun et al., 2010).

2.11. Prevention of Diarrhea:

2.11.1. Breastfeeding and Optimal Complementary Feeding:

Several policy documents have emphasized the importance of breastfeeding practices for the health growth and development of young children and infants. Exclusive nursing and supplementary feeding are the two primary categories of breastfeeding practices. Each of these activities contains instructions for how to carry them out properly in order to achieve the best possible result in terms of children's health. Breastfeeding mothers are advised in order to exclusively breastfeed their infants during the first six months of their lives(Serwaa and Kwamena, 2021).

Breastfeeding, on the other hand, is a complicated adaptation process that unites a mother and her kid and is much more than just giving breast milk to early children’s. Physical, hormonal, physiological, and psychological exchanges aid in the transmission of necessary nutrients between the mother and her infant during this process(Elyas et al., 2017).

According to reports, good breastfeeding strategies, particularly exclusive breastfeeding (EBF), could avert around (11.6%) of the 6.9 million deaths of pediatric under the age of five in developing nations(Neji et al., 2015).

Nursing care should be continued with increased supplemental feeds beyond six months of exclusive breastfeeding as recommended by the WHO. At this stage, newborns must be fed a nutritionally adequate supplemental feed while progressively being introduced to family cuisine. According to research, significant others can sometimes negatively influence mothers' nursing practices(Serwaa and Kwamena, 2021).

Other difficulties include the idea that breast milk is insufficient to meet an babies nutritional demands, the short maternity leave period, and social pressure to introduce artificial milk and water. While some mothers try to breastfeed completely, the majority of mothers find it too difficult and time consuming, so they feed their babies infant formula(Heymann et al., 2013) . Due to the nature of their occupations, employed mothers were more likely than unemployed mothers to not practice exclusive breastfeeding(Liu et al., 2012) .

Furthermore, some companies discourage working mothers from continuing to breastfeed exclusively after the birth of their child because they believe it would interfere with their daily work. When mothers return to work and there is no baby-friendly space or room where they can keep their newborns close by to bottle feeding, it can be difficult to exclusively breastfeed(Serwaa and Kwamena, 2021).

Despite the benefits and efforts to promote breastfeeding, many developing nations, including Ghana, do not practice EBF adequately. As a result, it's critical that mothers are counseled, encouraged, and supported in starting exclusive breastfeeding. Governments, families, and community health workers all have a part in ensuring the survival of newborns by promoting exclusive breastfeeding (Medhi and Mahanta, 2004).

The World Health Organization describes supplementary feeding as "the process that begins when breast milk alone is no longer sufficient to meet an infant's nutritional needs" and "other meals and liquids are necessary in addition to breast milk". Supplemental feeding benefits

children aged 6 to 24 months because it promotes growth and minimizes stunting. Infants are especially prone to malnutrition and disease during the transition period when supplemental feeding begins(Hailu et al., 2021).

Malnutrition in children often peaks around the time of supplemental feeding. When low-nutrient-density meals begin to replace breast milk, growth stops most typically between the ages of 6 and 12 months (Hailu et al., 2021).

There's a lot of evidence that nursing care, especially exclusive breastfeeding, helps with diarrhea(Bener et al., 2011). While the health benefits of breastfeeding are well acknowledged, opinions and standards on the appropriate duration of exclusive breastfeeding are polarized. Since 2001, the World Health Organization has pushed for six months of exclusive breastfeeding(Kramer and Kakuma, 2012).

According to recent estimates, a combination of exclusive breastfeeding for six months, effective supplemental feeding practices, and zinc and vitamin A supplements could avert about a third of all child deaths. The importance of the supplemental feeding period is further underscored by the fact that not only is 50 percent of all pediatric mortality directly or indirectly related to malnutrition, but also that the first two years of life are a vital window of susceptibility. In several nations, stunting begins during the first few months of life, and wasting and under nutrition develop steadily over the first two years of life(Hambidge and Krebs, 2007).

2.11.2. Rotavirus Immunization:

In a recent multi-site investigation, rotavirus was revealed to be the most prevalent causes of mild to severe diarrhea in children aged 0-23 months (George et al., 2014).

Rotavirus was originally discovered in the feces of children with diarrhea in 1973, and it is now among the more prevalent cause of acute gastroenteritis in children under five years around the world. Rotavirus has

a wide range of clinical implications(Murrell et al., 2020). The World Health Organization (WHO) has introduced a two-dose vaccine to prevent rotavirus-related diarrhea (Wondimu et al., 2019) .

Rotavirus is the more prevalent causes of severe diarrhea in young children's, causing over 215,000 deaths worldwide in 2013. More than 70 nations have rotavirus vaccines to their national immunization programs (NIPs) by 2014, with (95)countries offering some sort of rotavirus vaccine program by 2018. As the finding, there have been significant reductions in hospitalizations and mortality(Luna-Casas et al., 2019).

Two years after the introduction of rotavirus vaccine, pediatric under the age of five experienced a (35%) reduction in mortality and a 40 percent reduction in hospitalization due to diarrhea(Sánchez-Uribe et al., 2016).

2.11.3.Improved Water and Sanitary Facilities and Promotion of Personal and Domestic Hygiene:

Nearly 90% of diarrheal disease is caused by poor water, hygiene, and sanitation (wash), and it is one of the top cause of illness and death in pediatric under five years in poor and middle income countries, malaria, killing more children than HIV, and measles combined(Ovaskainen et al., 2017).

Water and sanitation are critical survival factors in the early phases of a disaster. In general, children who have been affected by catastrophes are substantially more susceptible to disease, which is mostly due to poor sanitation, insufficient water supplies, and a failure to maintain basic hygiene(Zerbino et al., 2018).

Access to sanitation facilities and safe water, as well as the adoption to effective hygiene practices, are key determinants of a person's overall health, with access to sanitation facilities and safe water and the adoption of effective hygiene practices playing an important role in preventing

illness and death worldwide, particularly among pediatric(Satterstrom et al., 2020).

In households with better economic conditions, the prevalence of childhood diarrhea was lower(Huang et al., 2020). Hand washing with soap, hygiene education, latrine building in the home and community, water supply from the local government, and other viable initiatives to target previously known awareness and behavioral risk factors of the diarrheal illness in children include (George et al., 2014).

2.12. Role of mothers' in prevention and home Management of Diarrhea in children:

The rate of childhood death is higher among poor families that live in rural areas and whose mothers lack a basic education. In the age group of 6 to 23 months, diarrhea is around 13% greater in rural pediatric than in urban children. Furthermore, children with uneducated mothers have a higher rate of diarrhea than those whose mothers have at least an elementary education. It was also discovered that younger mothers (15 to 19 years) had less understanding of ORS than their older counterparts, particularly in rural areas(Ansari et al., 2009).

In (2–5%) of all occurrences of diarrhea, significant dehydration with altered electrolyte and acid-base imbalance occurs, which can be fatal. There are four important components to the treatment of acute diarrhea: 1) Maintaining hydration; 2) ensuring adequate nutrition; 3) oral zinc supplementation; 4) early diagnosis of danger symptoms and treatment of complications Controlling diarrhea illness is a critical and cost-effective investment in achieving millennium development goals (Reduction of children mortality) (Sumathi et al., 2020).

The key to preventing or halting the progression of diarrhea is to improve mothers knowledge and demonstrate suitable practice. However, hazardous actions by mothers have been reported, including limiting

nutrition, avoiding nursing, and using incorrect conventional therapy or the wrong prescription(Desta et al., 2017) .

Furthermore, the mothers' understanding of the symptoms of dehydration caused by diarrhea is limited(Masiha et al., 2015). Oral rehydration therapy (ORT), which has greatly reduced the mortality rate associated with diarrhea disease, can be managed at home in the majority of instances. Despite the fact that this technique of management is reasonable, adequate, safe and inexpensive,, only a few mothers mentioned that the goal of utilizing ORS during diarrhea is to management diarrheal dehydration (Mukhtar et al., 2011).

Nepal's government has a long-term health strategy (1997-2017) that focuses on the most vulnerable groups, such as mothers, children, and those who are impoverished, disadvantaged or reside in rural areas. It also aspires to "provide equal access by providing high-quality services to rural places with full community engagement and gender sensitivity by technically competent and socially responsible health staff." The government intends to boost the usage of oral rehydration solution and zinc, as well as raise public awareness, in order to accomplish Millennium Development Goal-4(Turin, 2019).

Several studies have discovered that different cultures have varied traditional beliefs, barriers, and practices around pediatric illnesses and their management. In caregivers, practices such as reducing breast feeding, restricting foods and fluids, using enema and specific herbs, and believing in magical power were observed(Pokhrel and Viraraghavan, 2004).

Many factors, such as the availability of health services/providers, out-of-pocket charges, occupation, income, geographic location, and transportation facilities, function as hurdles for caregivers to have access to current biomedical techniques in rural settings in developing countries. As a result, before devising an intervention, it would be beneficial to learn about the caregivers' traditional views(Ansari et al., 2009).

Educating communities on proper fluid and nutrient intakes, breastfeeding, and child care during diarrhea are three major elements that can help save children's lives. Poor practices may result from a lack of information in this area. Various statistics on mothers knowledge and attitude in the prevention and management of diarrhea illnesses in children have been compiled (Saberi et al., 2014) .

Becoming a mother as an adult can be a joyful experience. Raising a child affects several aspects of her life. The mother is continually striving to be a better version of herself and a stronger mother. However, because of the enormous expectations and duties that come with parenting, raising a child can be emotionally, psychologically, and physically taxing. Previous research has found that self-efficacy is the most important factor influencing mothers' actions and how they employ their experience and skills in caring for their children (Han and Yoon, 2015).

In the treatment of the children’s, the mothers is very important. Because she is the family's manager, nurse, doctor, cook, and everything else, it's critical that the mother understands basic treatment principles. She must realize that this additional fluid and oral rehydration therapy will save her child's life, and that they must be provided in sufficient amounts to be effective (Thakur et al., 2007).

Children, especially their mothers who are responsible for giving such therapy, generally rely on the behavior of others to survive in this situation. This study backs up this theory by pointing to the mothers' lack of comprehension of the situation, as well as their lack of education and young age, as factors influencing children with severe diarrhea illnesses (Joventino et al., 2013).

Considering the mechanisms of transmission of the agents that cause diarrhea, it is possible to prevent the disease by promoting breastfeeding, keeping the child's basic vaccination schedule up to date, ensuring that the children live in an environment with a basic sewage

system, always washing the hands of the children before meals and after using the bathroom, drinking and preparing food with treated water, not allowing the children to walk barefoot, and taking care of the children's teeth. As a result, it is clear that many approaches for preventing child diarrhea are dependent on the care of the children by their responsible subjects, in particular their mothers(Lopes et al., 2014).

Moreover, the health of the children is considered a potential element that can be linked to the mothers perceptions of efficacy in caring. In other words, the severity of the child's illness was one of several factors that influenced parental self-efficacy. It was a difficult scenario for mother to care for an unwell child. The more serious the sickness, the more challenging the situation becomes, leading to a decrease in mothers' confidence in their ability to care for their children(Han and Yoon, 2015).

2.13.Previous studies :

First study :

A Study was conducted by(Khatun et al., 2021): An Empirical Investigation .In the Kamarpara Slum Area of Dhaka ,to determine the mothers knowledge, attitude and practice about the prevention of diarrhea in infants .This study found that more than half of the respondents (62.7%) agreed that diarrhea means passing loose or watery stools (>3) times in 24 hours. The majority of respondents79.1% were aware of the causes of diarrhea, 74.5%were aware of the danger indications of diarrhea, and (25.5%) were unaware of the danger signs of diarrhea. Drinking clean water, according to (85.5 %) of respondents, can prevent diarrhea. (75.5 %) said hand washing prevents diarrhea, (46.4%)said they drink water from a tube-well, the majority of respondents55.5% said they used the sanitary latrine, 36.4 percent said they used a non-sanitary latrine, 20% said they didn't wash their hands properly, 33.6%said they washed their hands with plain water, (58.2 %) said they put their pediatric stool in the toilet,(87.3%)

said they gave oral rehydration solution to their child 81.8 percent of those polled said they clipped their nails on time.

Second study :

A study conducted by (Gupta and Sah, 2021): to look into mothers' knowledge, attitudes and practices towards diarrhea in children under the age of five , From March 7 to April 6, 2021.This study found The amount of knowledge about diarrhea was considered to be satisfactory (88.4%) correctly defining diarrhea. The majority of mothers have a positive outlook about diarrhea . However, just 23 mothers correctly identified indications of dehydration, while 44 mothers correctly identified sunken eyes. Oral rehydrate solutions were known by (81%) of the participants.

Third study:

A study conducted by(Abdulla et al.)2021: The major goal of this study was to assessment the knowledge, attitude and practice (KAP) of mothers in Aden, Yemen, regarding diarrhea and its management. This study found About 344 (83.1%) of mothers were familiar with the concept of diarrhea, 244 (58.9%) of mothers associated diarrhea to teething, and 284 (68.6%) of mothers identified lethargy as an indicator of dehydration. Nearly 201 (48.6%) of the mothers stated that diarrhea can be handled and prevented at home, 174 (42.0%) agreed that oral rehydration solution is the first line management for diarrhea and 286 (69.1%) of mothers continue to exclusively breastfeed when experiencing diarrhea. Only 170 (41.1%) of mothers prepared oral rehydration solution at home, and the majority of them did not know how to do it properly. During the occurrence, 327 (79.0%)of mothers sought medical advice, and 199 (48.1 percent) of mothers immediately took their children to the primary health care center.

Fourth study :

A study was conducted by (Sumathi et al., 2020): The objective of this study was to see if there was a link between ORT knowledge, attitude and practices and certain demographic characteristics in a hospital. This study found (94 %) (199) of the mothers in the study received health education regarding diarrhea. The ability of mothers to communicate about their awareness of diarrhea, causes, routes of infection transmission, predisposing factors, danger indicators, and dehydration was tested. **Conclusion:** Information, education, and communication activities, as well as the incorporation of a training component, can be used to scale up ORS and Zinc therapy during diarrhea and diarrheal disease prevention measures using existing infrastructure.

Fifth study:

A Study was conducted by(Omole et al., 2019b): The goal of this study was to find out how well mothers of under-five children in a community in northwestern Nigeria knew about Home Management of Diarrhea (HMD), how they felt about it, and how they used it . A cross-sectional, descriptive study was done among mothers of pediatric under the age of five in Samaru , Kaduna State, Nigeria, using a multistage sampling procedure. This study found The concept of Home Management of Diarrhea (HMD) was widely understood. Respondents indicated a variety of ways, ranging from recommended to unacceptable. Oral rehydration salts were well-known (93.7%), with health facilities serving as the primary source of information. However, just 34.4 % would use ORS for Home Management of Diarrhea , and only 64 percent would use any form of Home Management of Diarrhea .

sixth study :

A Study was conducted by(Gollar and Avabratha, 2018): A study from coastal Karnataka. The present study was conducted with an goal to

determine the knowledge, attitude and practice of mothers of children under five years regarding the diarrheal disease. When mothers of children under the age of five went to the hospital for outpatient or inpatient treatment for their children, they were handed a pretested questionnaire. This study found the majority of them (40%) were between the ages of 21 and 25. They were all literate, with 47% of the mothers having completed high school. The majority of Mothers (40%) were from a lower socioeconomic class. The majority of the mothers (84%) were well-versed on the signs and symptoms, prevention and spread. The majority of mothers (77%) were concerned about diarrheal sickness. During diarrheal episodes, the majority of the mothers (76%) followed appropriate dietary and preventative practices. The rotavirus vaccine was given to their children by 35% of mothers.

Seventh study :

A Study was conducted by(Workie et al., 2018): The goal of this study was to analyze mothers knowledge, attitude and practice in the prevention and home based treatment of diarrheal illness between children under five years in DireDawa, Ethiopia, from March 15 to April 14, 2016.This study found There were 295 participants in this study, with a 100% response rate. Around two-thirds of the 295 mothers (65.2%) had good knowledge, but more than half of the mothers (54.9%) had a negative attitude toward home-based care and prevention of diarrhea in children under the age of five. In terms of mothers' attitudes, (58*%)* had poor practice when it came to home-based care and prevention of diarrhea in children five years.

Eighth study :

A Study was conducted by (Padhy et al., 2017): The study's goal was to assess and compare mothers' knowledge, attitudes, and practices addressing diarrhea in children's prevention and care in Southern Odisha.

This study found the diarrhea was known to (47%) of mothers, (52 %) of the etiology, and (58%) of diarrhea risk factors. In terms of the role of breastfeeding in diarrhea, (48%)of mothers had an excellent understanding, and (56%)of mothers were aware of the negative impacts of bottle feeding. Only (34%) of mothers in this study knew how to recognize danger symptoms of dehydration, and only (27%) knew how to treat dehydration. In the prevention and treatment of diarrhea,(33%) of mothers had an excellent understanding of how to utilize a sanitary toilet and clean drinking water. Only (19%) of mothers had high knowledge about ORS preparation, while (65%) had moderate knowledge.

Chapter Three Methodology

Chapter Three

Methodology

This chapter focuses on the method of the study; design of the study ,administrative arrangements, ethical consideration ,the study setting , sample of study , instrument of the study , Validity of the Questionnaire, the pilot study, Reliability of the questionnaire ,the data collection methods, Statistical data analysis approach and inferential data analysis.

3.1. Design of the study:

The study was descriptive cross-sectional data collecting method's. In which assessment approach is applied to achieve the objectives of the study and was conducted for **Mothers' Knowledge and Attitude Regarding Prevention and Home Management of Diarrhea in Children Under Five Years at the Eastern AL Hamza city** from the period of October 25th 2021, to May 1st 2022

3.2. Administrative Arrangement:

Formal administrative approvals are to conduct the study were obtained from the following institutions prior to actual data collection by University of Kerbala /Collage Of Nursing, Department of Community Health Nursing as shown in (Appendix A-1). Permission was obtained from the Ministry of Health/AL-Diwaniyah Health Department/Training and Human Development Center as shown in (Appendix A-2),and also Permission was obtained from the Ministry of Health / AL-Diwaniyah Health Department/ AL-Hamza Sector as shown in (Appendix A-3).

3.3. Ethical Consideration:

ethical approval was obtained from the ethical committee of the research in the University of Kerbala/Collage of Nursing regarding confidentiality and anonymity of participants as shown in (Appendix B). Also, The participants were fully acquainted with the current study and its

objectives and them a voluntary consent was obtained on order to participate in the study . Besides , the confidentiality of information obtained from mothers children's under five years has been taken in to account.

3.4. Setting of the Study:

The accessible population included mothers of children under five years who attend to the any reason in the Centers for Primary Health Care (PHCCS) in Eastern AL Hamza city. This study conducted in Eastern AL Hamza city including AL hamza sector primary health care . A total of (6) primary health care centers distributed at the Eastern AL-Hamza City were selected from the Primary Health Care Sector in AL-Hamza (and they were chosen randomly for the purpose of the research) as shown in table (3-1).

Table (3-1): The sample was distributed in accordance with the setting of the study.

Primary health care centers	**Mothers visitors**	**Total sample**
1)AL-Hamza first health center	500	50
2)AL-Hamza second health center	400	40
3)AL-Hamza third health center	400	40
4)health center Al- sudair	400	40
5-)Al-shanafiya first health center	500	50
6)Al-shanafiya model health center	300	30
Total	*2500*	*250*

3.5. Sample of the study:

The sample selected by using of probability sampling (Simple random sample). sample of (250) mothers from primary health care centers, where they accompanied their children when they went to the health care centers. The total sample of mothers was selected 10% from the median of the (2 monthly) that was 2500 mothers as shown in table (3-1)

Inclusion criteria for the mothers were:

1-All mothers have children under five years of age.

2- Having inclination for communication and consent to participate in the research.

The following exclusion criteria were applied:

1-The study excluded nulliparous mothers, mothers without children under the age of five, and mothers who were not in the reproductive age range.

2- The criteria for discontinuation were as follows withdrawal of the mother from the study after beginning of the data collection.

3.6. Instrument of the study:

It is created a questionnaire by (Sanjeev Kumar Shah), and Permission was obtained to used the questionnaire as shown in (Appendix C) and has been modified by the researcher for the to conduct the study to include a review of the relevant literature, expert consultation, and related studies as show in (Appendix d). It is divided into five sections ;Socio-demographic characteristics of the mothers, and scales which supposed to measure Mothers' Knowledge and Attitude Regarding Prevention and Home Management of Diarrhea in Children Under Five Years at the Eastern AL Hamza city years as follows:

Section I: This section includes Sociodemographic characteristics of the mothers took part in the study and which consists age, education level, working condition, monthly income ,address ,family type , number of children under 5 years old and Information sources about diarrhea.

Section II: this section is consisted of 16 items using to assess the mothers knowledge about prevention of diarrhea .

Section III: this section is consisted of 9 items using to assess the mothers knowledge about home management of diarrhea .

Section IV: this section is consisted of 20 items using to assess the mothers Attitudes regarding the prevention and home management of diarrhea .

3.7. Validity of the Questionnaire :

To improve the instruments' validity, It was shown to a committee of 19 experts from various fields as show in (Appendix D). (1)Faculty members from the University of Baghdad/ College of Nurse,(4) Faculty members from the University of AL-Qadisiyah/Medical College,(2) Faculty members from the University of Babylon/College of Nurse ,(4) Faculty members from the University of Karbala/College of Nurse ,(2) Faculty members from the University of Kufa/College of Nurse ,(3) Faculty members from the University of AL-Qadisiyah/ College of Nurse ,(1) Faculty members from the University of Warith AL-Anbia/ College of Nurse, and (2) Consultant members from Al-Hamza General Hospital .

The experts' evaluation of the questionnaire found that all of the experts agreed that the items were clear and suitable for measuring the study's outcomes. A few things were tweaked somewhat, such as the content being rewritten. The enhancements were carried out in accordance with the expert's suggestions.

3.8. The Pilot Study:

A random sampling of (25) Mothers' Knowledge and Attitude Regarding Prevention and Home Management of Diarrhea in Children Under Five Years at the Eastern AL Hamza city , This preliminary research is carried out from 5 January to 11 January 2022.

3.9. Reliability of the questionnaire :

The correctness of the questionnaire was determined using the questionnaire's reliability, because the findings revealed that the researched subjective had a very high level of internal consistency and stability at the level of the applied questionnaire's items. Alpha Cronbach the acceptable of Reliability coefficients of the studied questionnaire concerning internal consistency Alpha Cronbach is(0.70)(Munro, 2005).as shown in the table (3-2) by calculating the outcome that the questionnaire is successful and relevant, as well as designing a valid questionnaire to examine the phenomena of (Mothers' Knowledge and Attitude Regarding Prevention and Home Management of Diarrhea in Children Under Five Years at the Eastern AL Hamza city) under the premise of constant conditions in the investigated population, on the same population at any period in the future.

Table (3-2): Internal consistency reliability coefficients for the investigated questionnaire (Alpha Cronbach).

No	Scale	Reliability Coefficients of the studied Questionnaire		
		Alpha (Cronbach - α)	Standard lower bound	Assessment
1)	Mother's knowledge about prevention and home management diarrhea	0.83	0.70	Accepted
2)	Mothers attitude about prevention and home management diarrhea	0.93	0.70	Accepted

3.10. Data Collection Methods:

Primary health care centers were visited 5 days a week and mothers who fit the study criteria and accepted to participate were included in the study. 250 mothers who had children under five years of age and applied to the 6 health centers in the Eastern AL Hamza city for any reason were given application via face-to-face method. The data were collected through from 13 January 2022 until the 14 of March 2022. The questionnaire should take between 10 -20 minutes to complete, and data will be collected from 8 a.m. to 2 p.m. visit every day , five days a week.

3.11.Statistical data analysis approach:

The statistical data analysis method approaches listed below were used to evaluate the study's findings using the Statistical Package For Social Sciences (SPSS) Version (23):

3.11.1.Descriptive Data Analysis approach :

a- Frequencies and Percentages.

b- Through the pilot study's reliability coefficient for estimating inter examiners and intra examiner.

c- The questionnaire's reliability was measured by Alpha Cronbach (α) (internal consistency)

3.11.2.Inferential Data Analysis approach :

This have been used to accept or refuse statistical hypotheses.which contained the following:

A- Chi-Square test for determining the independency distribution of observed frequencies and determining the type of relationship between study variables.

B- For the comparison significant abbreviations (C.S.), the following were used:

1-Ns: Non Significant At $P>0.05$

2-S: Significant At $p\leq0.05$

C- The cutoff point:

The Mothers' knowledge about diarrhea respondent , Mothers' knowledge about prevention of diarrhea and Mothers' knowledge about home management of diarrhea were scored with (2) for correct answer, (1) for incorrect answer. The cutoff point was (1.5), the cutoff point is a critical value that represents the place in a theoretical distribution at which all attained values from the study sample that are equal to or beyond that point are assumed to be statistically significant(Ingham-Broomfield, 2014). The Cutoff point was calculated according to the following formula: Cutoff point = (2+1)\ 2= 1.5 thereby the level of knowledge is classified as follow:

1-low level = 1- 1.4

2-moderate level = 1.5 – 1. 7

3-high level = 1. 8– 2

Each question's knowledge response: For attitudes of mothers regarding the treatment and prevention of diarrhea was given a score of (2) for agree and (1) for disagree. The cutoff point for responders with point of knowledge was (1.5). A cutoff point is a critical value that represents the point in a theoretical distribution where all achieved values from the study sample that are equal to or beyond that point are assumed to be statistically significant (Ingham-Broomfield, 2014).The following formula was used to calculate the cutoff point: 2+1/2=1.5 .thereby the level of mothers attitudes is classified as follow :

negative = 1-1.4

positive =1.5 -2

Chapter Four

Results and Findings

Chapter Four

Results and Findings

This chapter shows the results and findings of the analysis of the data that were in correspondence with the objectives of the study. The results were analyzed through the application of statistical procedures that were interpreted. Those results were organized as follows:

Table (4-1): Distribution of the mothers Socio-demographic Characteristics.

Socio-demographic Characteristics		Freq.	%
Age	15- 24 years	92	36.8
	25- 34 years	110	44.0
	35 - 45 years	48	19.2
	Total	250	100
Educational level	Do not read and write	75	30.0
	Read and write	54	21.6
	Primary level	30	12.0
	Middle school graduate	15	6.0
	Preparatory school graduate	19	7.6
	Institute graduate	20	8.0
	College graduate	35	14.0
	Master's Degree	2	.8
	Total	250	100
Working Status	Housewife	170	68.0
	Employee	65	26.0
	Free business	3	1.2
	Student	12	4.8
	Total	250	100
Monthly income	Enough	89	35.6
	Hardly enough	111	44.4
	Not enough	50	20.0
	Total	250	100

Address	Rural	112	44.8
	Urban	138	55.2
	Total	250	100
family type	Father, mother and sons	140	56.0
	Father, mother, sons and relatives	110	44.0
	Total	250	100
Number of children under 5 years old	One child	80	32.0
	Two children	113	45.2
	Three children	57	22.8
	Total	250	100
Information sources about diarrhea	Health care workers	216	86.4
	Internet	29	11.6
	Television	3	1.2
	Other ways	2	.8
	Total	250	100

%: percentage, ferq. : Frequency

Table (4-1) this table show that most mothers are less than 35 years old, as the study showed that (36.8%) of them were between 15-24 years old and (44.0%) of them were between 25-34 years old. The study's findings also showed that most of the mothers had a low educational level, as (30.0%) of them could not read and write and(21.6%) of those could read and write. Most of the mothers worked as housewife, with a rate of (68.0%). The study showed that (44.4%) of the mothers were of low income so their answers about monthly income were "hardly enough". The mothers' place of residence was close to rural and urban, and the percentage was (44.8%) and (55.2%), respectively. There was no difference between the types of mothers' families in the sample, as (56%) of them were of the type (Father, mother, and sons) and (44%) of the type (Father, mother, sons, and relatives). (45.2%) of the mothers participating in the study had two children. The study indicated that (86.4%) of the mothers had health care workers as the source of their information.

Table (4-2): Mothers' knowledge about prevention of diarrhea.

Item	True		False		Assess	
	Freq.	**%**	**Freq.**	**%**	mean of score	Level
What mean of diarrhea?	65	26	185	74	1.26	Low
What do you think is the cause of diarrhea?	60	24	190	76	1.24	Low
How do you think diarrhea is transmitted to children?	52	20.8	198	79.2	1.20	Low
What are the signs and symptoms associated with diarrhea?	51	20.4	199	79.6	1.20	Low
Which children are more likely to have diarrhea?	63	25.2	187	74.8	1.25	Low
What are the complications of diarrhea?	52	20.8	198	79.2	1.20	Low
Diarrhea can be prevented by	124	49.6	126	50.4	1.49	Low
To prevent diarrhea, it is preferable to feed the child a day?	137	54.8	113	45.2	1.54	Moderate
What kind of water should be used for daily needs to avoid diarrhea, preferably?	165	66	85	34	1.66	Moderate
The following prevention method can prevent diarrhea	158	63.2	92	36.8	1.63	Moderate
The following food should be avoided because it causes diarrhea	165	66	85	34	1.66	Moderate
Washing hands is of paramount importance in the prevention of diarrhea and should it be?	164	65.6	86	34.4	1.65	Moderate
A child can be prevented from catching diarrhea by avoiding milk.	51	20.4	199	79.6	1.20	Low
The preferred milk for the child to protect him from diarrhea is.	49	19.6	201	80.4	1.19	Low
To prevent a child from diarrhea must?	51	20.4	199	79.6	1.20	Low
What are the habits that prevent a child from catching diarrhea?	50	20	200	80	1.20	Low

%: percentage, ferq. : Frequency, ***low*** *=1-1.4 ,* ***moderate*** *=1.5-1.7,* ***high*** *=1.8-2*

Table (4-2) this table show that most of the mothers gave incorrect answers to items of knowledge about diarrhea and prevention of it. Most of them had low knowledge for majority of items.

Table (4-3): Mothers' knowledge about home management of diarrhea.

Item	True		False		Assess	
	Freq.	**%**	**Freq.**	**%**	mean of score	Level
Which of the following can be considered an effective treatment for diarrhea?	83	33.2	167	66.8	1.33	Low
Once the oral rehydration salts are prepared, they should be used.	83	33.2	167	66.8	1.33	Low
To treat complications of diarrhea, the oral rehydration solution should be continued.	71	28.4	179	71.6	1.28	Low
What is the Oral Solution (ORS) used for?	77	30.8	173	69.2	1.30	Low
Oral solution (ORS) can be prepared at home by?	84	33.6	166	66.4	1.33	Low
Which of the following foods helps treat diarrhea?	82	32.8	168	67.2	1.32	Low
Which of the methods that are considered correct to treat diarrhea and its complications?	85	34.0	165	66.0	1.34	Low
Which of the following fruits help treat diarrhea?	96	38.4	154	61.6	1.38	Low
Which of the following dairy products helps treat diarrhea?	82	32.8	168	67.2	1.32	Low

%: percentage, ferq. : Frequency ***low*** *=1-1.4 ,* ***moderate*** *=1.5-1.7,* ***high*** *=1.8-2*

Table (4-3) this table show that mothers' answers regarding Mothers' knowledge about home management of diarrhea were wrong by most of them and it was in level of low in all items .

Table (4-4): Attitudes of mothers regarding prevention and home management of diarrhea.

Item	Agree		Disagree		Assess	
	Freq.	%	Freq.	%	mean of score	Attitudes
Diarrhea is a life-threatening disease for children.	99	39.6	151	60.4	1.39	Negative
Diarrhea is a non-contagious disease.	111	44.4	139	55.6	1.44	Negative
Bottle feeding contributes to diarrhea.	100	40.0	150	60.0	1.44	Negative
Cow's milk causes diarrhea in children less than two years of age.	110	44.0	140	56.0	1.44	Negative
Teething can cause diarrhea in children.	95	38.0	155	62.0	1.38	Negative
Foods that contain fiber contribute to diarrhea.	98	39.2	152	60.8	1.39	Negative
Sugary substances make diarrhea worse.	97	38.8	153	61.2	1.38	Negative
Fatty foods should be avoided during the period of diarrhea.	100	40.0	150	60.0	1.4	Negative
Diarrhea can be prevented.	89	35.6	161	64.4	1.35	Negative
Diarrhea can be controlled at home.	65	26.0	185	74.0	1.26	Negative
Mothers can prepare oral rehydration fluids at home.	55	22.0	195	78.0	1.22	Negative
Diarrhea can be treated with oral rehydration solution.	59	23.6	191	76.4	1.23	Negative
Oral rehydration solution replaces fluids and minerals lost as a result of diarrheal disease.	53	21.2	197	78.8	1.21	Negative
Breastfeeding is important	69	27.6	181	72.4	1.27	Negative

for children with Diarrhea.						
Avoid tap water in cases of diarrhea in children.	59	23.6	191	76.4	1.23	Negative
Breast milk should not be diluted during diarrhea in children.	89	35.6	161	64.4	1.35	Negative
Washing hands before and after eating helps prevent diarrhea.	92	36.8	158	63.2	1.36	Negative
Using the toilet is a healthy practice to prevent diarrhea.	92	36.8	158	63.2	1.36	Negative
Yogurt relieves diarrhea.	86	34.4	164	65.6	1.34	Negative
Zinc reduces the severity and duration of diarrheal disease.	64	25.6	186	74.4	1.25	Negative

%: percentage, ferq. : Frequency ***negative*** *=1-1.4* ***positive*** *=1.5-2*

Table (4-4) this table show that most of Attitudes of mothers regarding Prevention and Home Management of diarrhea were negative.

Table (4-5): Total mothers' knowledge Regarding Prevention And Home Management of diarrhea in children under five years.

Level / Knowledge	Low level		Moderate level		High level		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Mothers' knowledge about prevention of diarrhea	**114**	**45.6**	**120**	**48**	**16**	**6.4**	**250**	**100**
Mothers' knowledge about home management of diarrhea	**167**	**66.8**	**10**	**4**	**73**	**29.2**	**250**	**100**

Table (4-5): This table show that (45.6%) of mothers had low level of knowledge about diarrhea and prevention and (48%) of them had Moderate level of knowledge in same item. Regarding the level of

knowledge about home management of diarrhea this study reported that (66.8%) of mothers had low level but only (29.2%) had high level.

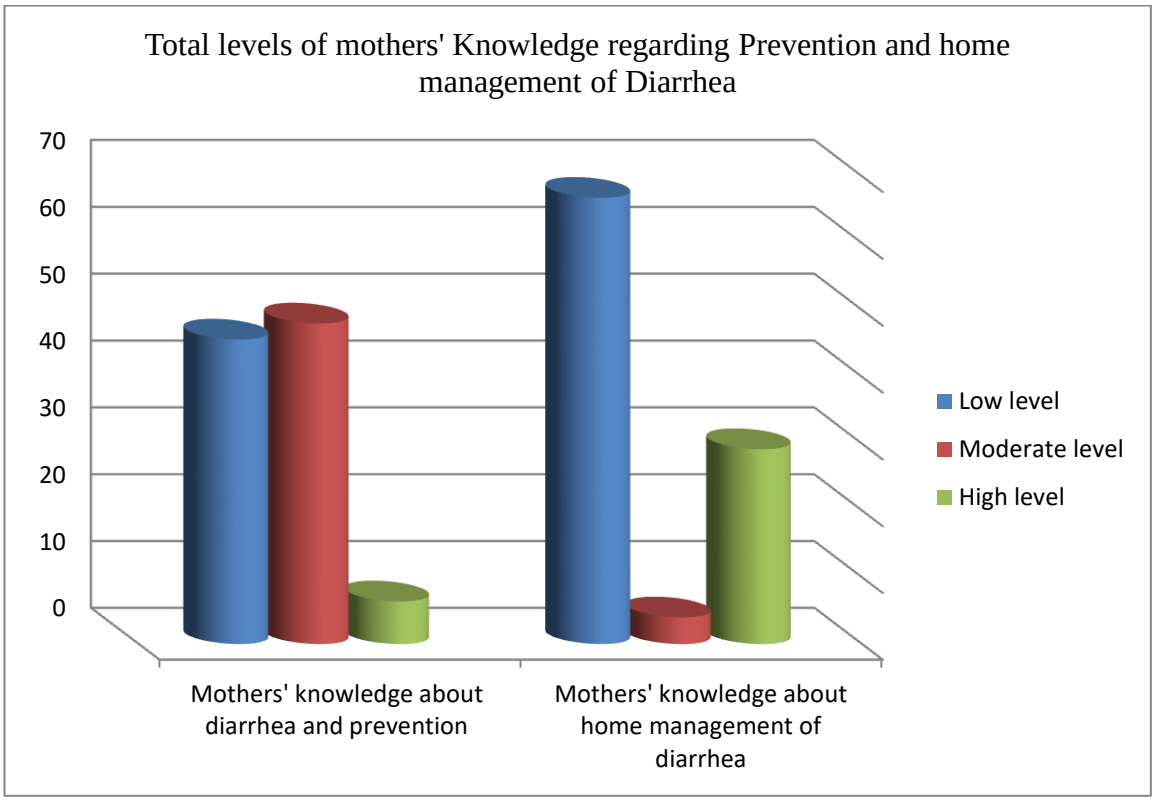

Figure (4-1): Total level of mothers knowledge regarding prevention and home Management of Diarrhea .

Table (4-6): Total attitudes of mothers regarding Prevention and Home Management of diarrhea.

Assess / Attitudes	Positive		Negative		Total	
	Freq.	%	Freq.	%	Freq.	%
attitudes of mothers regarding the prevention and home management of diarrhea	**92**	**36.8**	**158**	**63.2**	**250**	**100**

Table (4-6): This table found that (63.2%) of mothers had negative attitude regarding prevention and home management of diarrhea and (36.8%) only of them had positive attitude.

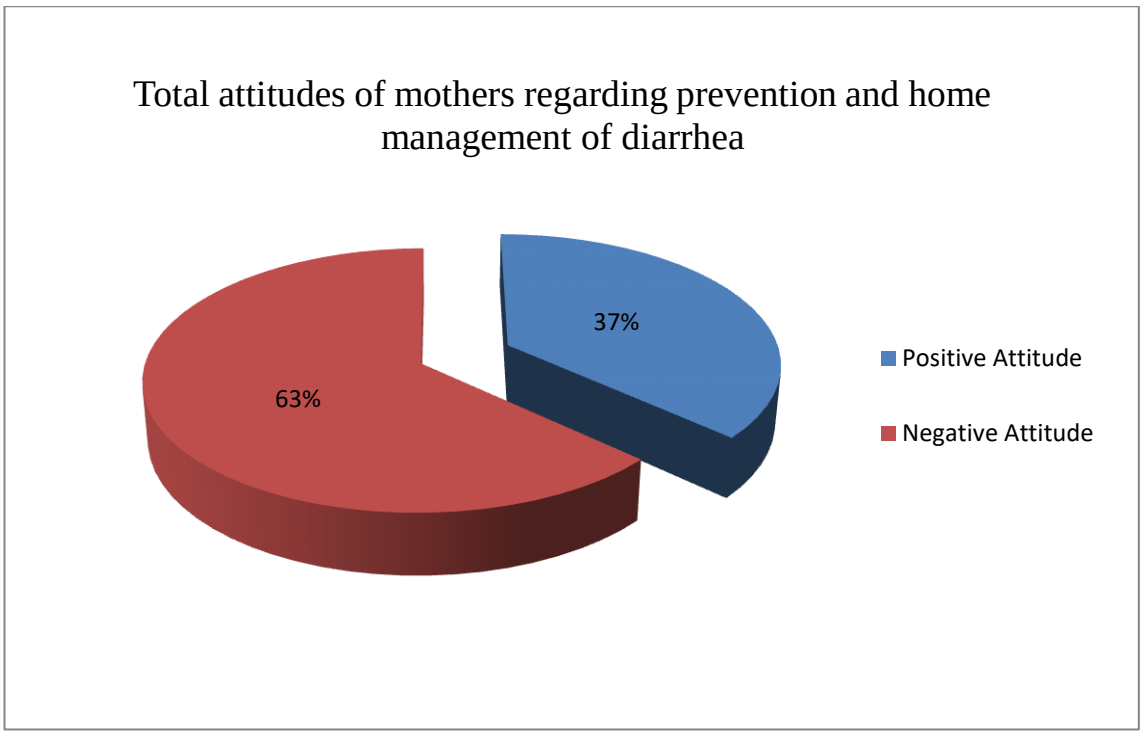

Figure (4-2): Total attitudes of mothers regarding prevention and home management of diarrhea.

Table (4-7): Association between Mothers' Knowledge and attitude and their socio-demographic Characteristics.

Mothers' Knowledge and attitude	socio-demographic Characteristics															
	age		**Educational level**		**Working Status**		**Monthly income**		**Address**		**family type**		**Number of children under 5 years old**		**Information sources about diarrhea**	
	P. value	**Sig.**	**P. value**	**Sig.**	**P. value**	**Sig.**	**P. value**	**Sig.**	**P. value**	**Sig.**	**P. value**	**Sig.**	**P. value**	**Sig.**	**P. value**	**Sig.**
Mothers' knowledge about prevention of diarrhea	.548	N.S	.012	S	.659	N.S	.380	N.S	.317	N.S	.552	N.S	.463	N.S	.028	S
Mothers' knowledge about home management of diarrhea	.859	N.S	.624	N.S	.318	N.S	.000	S	.671	N.S	.237	N.S	.405	N.S	.033	S
Attitudes of mothers regarding prevention and home management of diarrhea	.955	N.S	.100	N.S	.895	N.S	.000	S	.534	N.S	.102	N.S	.781	N.S	.060	N.S

Sig. : Significant

Table (4-7): this table showed that there was association between Mothers' knowledge about prevention of diarrhea with educational level and Information sources about diarrhea. Also it indicates that there was relationship between mothers' Knowledge about home management of diarrhea with monthly income and Information sources about diarrhea. Finally, there was association between attitudes of the mothers regarding

prevention and home management of diarrhea of diarrhea with monthly income.

Chapter Five

Discussion of The Result

Chapter five

Discussion of the result

This chapter has presented the results it reached in this study and provided a regular interpretation of it and discussed it and supported this discussion with the available sources related to the subject of the study.

5.1. Discussion of Socio-demographic Characteristics of the study sample:

The current study has shown that (44.0%) of mothers were between 25-34 years old. The results of the study also showed that most the mothers had the low educational level, as (30.0%) of them could not read and write and 21.6% of those could read and write. Most of the mothers worked as housewife, with a rate of (68.0%). The study showed that (44.4%) of the mothers were of low income so their answers about monthly income were "hardly enough" as show in (table 4-1).

We believe that the reason for the appearance of nearly half of the participants aged (25-34) is that this age period is the appropriate period for childbearing. The researcher also attributes the reason for the low level of education of most mothers to the nature of the study community, which does not encourage education for females. Most of the mothers worked as housewives, the researcher attributed this to their low level of education. The poor economic status of the study population, which lacks agriculture, industry, and commerce, is the reason that led most mothers to answer about monthly income was "hardly enough" (the researcher).

Similar findings were achieved by (Shah et al., 2019) . who discovered that (42.7 %) of them were between the ages of 20-24years, and that the majority of the mothers had a low educational level (93.2 %). The majority of the mothers were housewives, with a rate of (46.2 %).

The findings could be similar to those of (Workie et al., 2018), who performed a survey in Ethiopia from March 15 to April 14, 2016, and discovered that more than half of the mothers (51.5%) were between the

ages in 25-34years, 38.3% were housewives and 132 (44.8%) were unable to write and read. (Kier and Dai, 2018)conducted in Nepal's Morang district comprised 216 mothers who participated in interviews, with the majority (52.7%) of them being uneducated.

According to (Khatun et al., 2021), just (47.3%) of mother have finished primary school, (34.5%) are illiterate, and(12.7%)hold a bachelor's degree. (9%) and master (4.5%). (Bennion et al., 2021) Respondents' median age was 28.2 years of the old, with 56.5% of mothers have completing primary school. The bulk of the Participants were all married (81.8%) and resided in a city (86.0%).

(Yüksel Kaçan et al., 2022) found that the mean old of the mothers participating to The research was 32.37 ± 4.63, their average marriage age was 25.03 ± 4.00, and their average age at the time of their first births was 27.16 ± 4.83. The mothers were found to be (14.4%) graduates of primary school, (98.6%) married, (13%) earning low than their expenses, and (10.6 %) having extended families.

In terms of information sources, it was discovered that 86.4 percent of mothers got their information from health care workers as show in (table 4.1). This can be ascribed to the work of doctors and nurses in informing patients and their families about the disease and how to treat it (the researcher). The current study supports this (Abadi and Hujail, 2019) The majority of mothers (90.8%) obtained information on diarrhea from medical staff, according to the cross-sectional survey conducted study among mothers attending Karbala teaching hospital for pediatric.(Sultana, 2011) discovered that the majority of respondents (37.19%) learned about (ORS) through doctors followed by the media (25%) and their mothers (20%).Similarly results of the KAP study carried out among mothers whose pediatric presented with diarrhea showed as that (75.8%) mothers got information pertaining of (ORS) mainly from PHC center(Khan et al., 2016).

5.2. Discussion of Mothers' knowledge about prevention of diarrhea:

The current study has found that most of the mothers gave the false answers and low knowledge about definition and main concept of diarrhea, and prevention of diarrhea; regarding of Mothers' knowledge about prevention of diarrhea that most of the mothers gave the false answers and has found the level Knowledge about prevention of diarrhea as show in (table 4.2).

The majority of the mothers had poor knowledge of the definitions and general knowledge of diarrhea. This may be due to low educational level of the participated mother as (30%) of them do not read and write, (21.6%) of them just can read and write, (12%) of them are primary school graduated, so that low knowledge is mainly related to low educational level. The results of the current study agree with a study conducted in Anantapur District by (Sunanda et al., 2017) who showed that only 378 (98.4) of mothers say the correct meaning of diarrhea. (Elhusein and Fadlalmola, 2020) In a study conducted in Sudan, it was discovered that mothers lack knowledge about signs and symptoms.

However, these results disagree with (Yüksel Kaçan et al., 2022) who discovered that the average total diarrhea knowledge score of the participating mothers was high in their study.(Ndou et al., 2021) who conducted a study in Thulamela B Clinics, South Africa stated that (48.5 %) of mothers knew the correct definition of diarrhea .(Shah et al., 2019) found that The majority of the 117 respondents (97.4%) gave the correct answer on the definition of diarrhea, the majority of them (74.8%) said that eating unhygienic food is the cause of diarrhea, nearly all respondents identified loose motion and abdominal pain as symptoms of diarrhea, and the majority of them (97.4%) said that dehydration is the most common complication of diarrhea.

(Gupta and Sah, 2021) found, in the survey conducted, 22 (19.5%) When a child is unwell with diarrhea, mothers report that they stop breastfeeding, whereas 54 (47.8 %) When children develop diarrhea, mothers strongly think that nursing care to the should be continued. Confirmed study conducted by (Ndou et al., 2021) revealed 63.1 percent agreed that poor hygiene habits might cause diarrhea, as well as teething, which was named as the most prevalent cause of diarrhea by 95.5 percent.

(Workie et al., 2018) achieved a cross-sectional study in 2016, in Ethiopia among 295 mothers who had under five years of the children's with diarrhea and observed that the majority of the mothers (92.5%) diarrhea is described as the production of watery feces three times or more per day, while of the, only (2.7%) mothers found blood in the stool; (85.5%)drinking contaminated water, according to respondents, causes diarrhea, and around half of the participants that(51.2%) selected weakness or lethargy as a danger symptom of diarrheal sickness in children under the age of five, but it was unexpectedly observed that only two (0.7%) of them were aware that a persistent water is in short supply a warning indication of diarrhea illness.(Raji et al., 2017) conducted the cross-sectional study, 238 study participants with pediatric low than or equal to five years were recruited into the study using systematic sampling technique, and discovered that the majority of caregivers (90%) had a good understanding of diarrhea sickness.(Padhy et al., 2017) have found that (47%) mothers had knowledge about diarrhea, (52%) regarding diarrhea's causes, and (58%) about its risk factors. Regarding role of the breastfeeding in diarrhea (48%) of mothers had good knowledge, and 56 % of mothers were aware of the negative impacts of bottle feeding.

(Ndou et al., 2021) this study showed that the causes of diarrhea are multiple, including the most important results The most common causes of diarrhea (76.4 percent) were identified as indigestible meals, followed by teething(75.4percent),Worm infestation(63.1percent)and poor hygiene

procedures(62.8%).This difference in the mothers' knowledge between our study and other studies can be attributed to the difference in the demographic characteristics of societies regarding educational status, economic level and the role of government institutions in providing educational program for mothers and other caregivers (the researcher).

Regarding the items about the prevention of diarrhea, in which most mothers had (low) knowledge about methods of prevention of diarrhea. This moderate level can be attributed to the instructions given by health care providers about the methods of prevention specially those regarding washing hands and personal hygiene (the researcher). This the current study comes in agreement with (Mumtaz et al., 2014) It discovered that 62% of mothers were not aware of numerous preventive measures like as handwashing, keeping the surroundings clean, and keeping the infant clean,(Dhingra et al., 2018)Hygiene practices was seen as important by mothers as a way to maintain wellness and prevention from causes the diarrhea. (Ndou et al., 2021) and found that In terms of (80.7%) said they practice good hand hygiene wash their child’s hands before feeding, while almost all the respondents In comparison to 3.5 percent who said they did not wash their hands before feeding their children, 96.5 percent said they wash their hands before feeding their children. In terms of food quality, 97.2 percent of do not heat raw meals before serving them to their children, whereas only 2.8 percent do so . 69.6% of respondents buy food for their children from street vendors, while 30.4 percent said they don't.(Shah et al., 2019) Handwashing was mentioned by the majority of respondents as a diarrhea prevention method.(Workie et al., 2018) According to this study, 42% of mothers were knowledgeable of how to prevent diarrhea.(Bennion et al., 2021) conducted the study in Tanzania handwashing before a meal was linked to a lower risk of diarrhea in youngsters, according to the study

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5.3.Discussion of Mothers' knowledge about home management of diarrhea:

The present study has found that most of the mothers gave the false answers and low knowledge about home management of diarrhea as show in (table 4.3).

Concerning low knowledge about management of diarrhea, the reason behind this decreased knowledge is the same that have been explained in prevention in which the low educational level and the absence of educational programs given to these mothers (the researcher). The current study come in agreement with (Abdulla et al.)2020 who found that only approximately 34% of the mothers were aware that weakness is a sign of dehydration, and(6.8%)I had a notion that it might be accompanied by a fever and blood in the stool. The mothers knowledge of diarrhea prevention was approximately evenly distributed between clean drinking water and diarrhea prevention (26.3 percent), consuming clean food (19.6%), cleaning hands with soap (12.6%), and sterilizing the milk bottle (23.7percent), Milk feeding time has increased by 7.5 percent, and you have no idea why (10.4 percent),only a little more than half of the mothers knew how to treat dehydration (58.2 percent), and 51.2 percent of mothers knew how to make ORT .The majority of mothers (41.3 percent) have no idea how to make ORS at home by combining sugar and salt. Only 38.6% of the mothers were aware that the ORS should be administered after each bout of liquid diarrhea, and only 50.5 percent were aware that the ORS should be retained for 24 hours. (Elhusein and Fadlalmola, 2020) conducted a study in sudan and recorded that mothers have some lack of knowledge regarding management and prevention of dehydration at home.

However, the results of the current study disagree with some other previous studies .(Sillah, 2012) in his study revealed that mothers demonstrated the good knowledge to managing pediatric diarrhea.(Wilson

et al., 2012) Caregivers sometimes fail to notice children's diarrhea, particularly among younger infants and when the symptoms are milder. (Gupta and Sah, 2021) Blood in the stool was mentioned by 63 mothers as the warning symptom, while an Vomiting has increased was mentioned by 72 mothers as an indication of risk. (Desta et al., 2017) according to the findings, 208 (56.2%) of the mothers investigated had good knowledge and 139 (37.6%) of them had well practiced of diarrhea management at home.(Workie et al., 2018) according to the study, 42% of mothers had well practiced in diarrhea prevention and home management.(Mumtaz et al., 2014) according to the findings the majority of mothers (75.5%) knew how to properly create oral rehydration solution.

Parents who are well-versed in the treatment of diarrhea were found to be able to handle the therapy at home with ease. In the event of diarrhea, almost every family seeks treatment at the health facility. This was largely the private practice or the primary health care facility(ApA et al., 2015) .(Bennion et al., 2021) It was founded that knowing the necessity of cleanse hands was important in the of cleanse hands after assisting before preparing meals for the children who had defecated and before feeding the children. These data show the Parental participation is critical in preventing child illness and mortality.

Food consumption should be increased rather than reduced. to prevent weight loss during diarrhea. In situations of diarrhea, the majority of the study group's parents possessed accurate knowledge, attitudes and practices (ApA et al., 2015) . WHO recommends oral rehydration solution as a protected and lifesaving method for dehydration management. In the instance of diarrhea .mothers with moderate and low SCL agreed that ORS is beneficial to children’s. The vast majority of mothers have no idea how to make ORS. As the result, even mothers who stated that ORS should be used did not use it(Mohamed and Mohammed, 2020) ,(Shah et al., 2019) found that the majority of the respondents had heard of ORS and agreed

that the child with diarrhea should be given it. However, only 29.1% of respondents were aware of the four step process for making ORS.

In a research conducted in in Saudi Arabia only (23.5%) of mothers claimed that ORS prevents dehydration during diarrhea. The study found that 66 percent of participants knew how to prepare ORS, and that 62.16 percent of those who knew how to prepare ORS could successfully demonstrate the procedure. It was discovered that (99.6%) of mothers correctly answered that prepared ORS should be taken within 24 hours (Alghadeer et al., 2021).

(Sultana, 2011) found that Approximately (44%) of respondents appeared to have good awareness of ORS preparation and its importance in the management of diarrhea. Only 4.06 percent of mothers were unaware of ORS .Other studies in southern Nigeria found that (58.3%) of mothers correctly answered that prepared ORS should be taken within 24 hours. (Shah et al., 2019).

(Abadi and Hujail, 2019) When it comes to the use of ORS, the majority of mothers give it to their children during a bout of diarrhea. reveals that 89.9% of mothers believe ORS is beneficial, Also, 72.3% of mothers give their children home-available fluids, and 98.7% of mothers continue to feed their children during diarrhea attacks, Said that the taste of ORS was not accepted by their children by 53.8% of mothers, and 29% of mothers stopped giving ORS to their children when they started vomiting or had diarrhea continue, (78%) of mothers know how to properly prepare of the ORS, reveals that only 9.7% of mothers administer ORS at the appropriate time.

5.4. Discussion of Attitudes of mothers regarding prevention and home management of diarrhea:

The current study indicated that (63.2%) of the mother's attitudes regarding Prevention and home Management of diarrhea were negative

attitudes, and only (36.8%) were positive attitudes as show in (table 4.4). The attitude seems to be correlated to knowledge which is – in turn – associated with educational level of the mothers, so that low attitude is also attributed to low educational status (the researcher). This result comes in agreement with (Workie et al., 2018) who found revealed over half of all mothers (54.9 percent) had low attitude about home based management and prevention of diarrhea in children's under the age of five; Other research, on the other hand, found the reverse.

(Yüksel Kaçan et al., 2022) It was also discovered that all of the mothers who participated in the survey used a traditional way to the treat their children's diarrhea. (Alo et al., 2021) reported were high levels of awareness, a positive attitude, and preventative activities against diarrhea causes, particularly intestinal and urinary parasites. (Workie et al., 2018) found that most of the mothers (67.8%) usually have a negative attitude regarding handwashing before preparing food and after defecation.

(Gupta and Sah, 2021) From March 7 to April 6, 2021, A descriptive cross-sectional investigation was carried out on 113 mothers of children under the age of five They went to the hospital with their children's to get them treated for diarrhea, and it was discovered that the majority of mothers have a positive attitude toward diarrhea.

In Shimla City, on the other hand, roughly 46 percent of diarrhea prevention methods employed filtered water, while 27.6% used hot water for drinking. Around 22% and 11%, respectively, exercised good and frequent hand washing and avoided eating outside(Bansal et al., 2020).Culture, sociodemographic, and information access may all play a role in this variation.

In the same table revealed that the majority of mothers had a (negative) attitude regarding oral rehydration solution, which restores fluids and minerals lost as a result of diarrhea ,this result agrees with(Omole et al., 2019b) who discovered that attitude regarding giving ORS was not so

strong among studied mothers.(Workie et al., 2018) found that most of mothers (55%) disagreed regarding the provision of ORS in the house for the management of children under five years diarrhea illness.

In the current study has found about (21.2%) of mothers agreed with the statement that diarrhea can be treated with oral rehydration solution; this result in accordance with (Workie et al., 2018) that found the majority of the participants (61.4%) didn't agree with the concept "mothers can treat their children's diarrhea disease at home". Approximately a Half of the mothers, 152 (51.5%), thought their children disliked the flavor of ORS.

(Omole et al., 2019b)indicated that the importance of mothers' attitude, Oral rehydration salts (ORSs) were mentioned by over two-thirds(69.1%) of the respondents as a method of HMD in this study without any prompting. This indicates that mothers who are aware of the beneficial implications of utilizing Oral rehydration treatment are more likely to utilize it is versus those who consider the consequences to be low. Furthermore, the study demonstrates even mothers who are aware that oral rehydration solution eliminates diarrhea, restores waters low, prevents weakness, and quenches thirst use other treatments as well. Mothers who had serious attitude regarding diarrheal diseases were (82%). Mothers who had serious attitude regarding management measures diarrheal diseases were (52%), (Bapanpally et al., 2021)Mothers who had serious attitude regarding Preventive measures at home were (32%).

(Asakitikpi, 2010) Among those who thought diarrhea Although they could be cured, the majority (74%) favor modern medication, while the Only 16% of respondents believed self-medicating alone would suffice. 10% said they would use both modern medicine and self-medication, while the significant majority ,(76%) said they would do nothing for the first two days after experiencing diarrhea.

Before beginning any type of treatment, this group would "observe" the sick child. On the other side, 14% of respondents said the

child's diet should be altered to more appropriate foods, anti-diarrhea medications would be obtained over-the-counter, and given to sick children, according to 8% of respondents. A physician should be consulted by 1% of respondents, while oral rehydration solution would be administered the by another 1%. The ability of mother's to notice indicators of dehydration was low(Gupta and Sah, 2021).

5.5. Discussion of Association between Mothers' Knowledge and attitude and their socio-demographic Characteristics:

The finding of the current study have shown that there is the significant association ($P<0.05$) between mothers' knowledge about diarrhea and each of educational level, monthly income and information sources about diarrhea. In addition, there was association between attitudes of mothers regarding prevention and home management of diarrhea and monthly income about diarrhea as show in (table 4.7).

Many previous studies indicated that educational status is associated with mother knowledge about diarrhea.(Yüksel Kaçan et al., 2022) have discovered that a mothers level of education influences her decision to seek health care for her children, The average overall diarrhea ,the mothers had a knowledge score of found to be 22.01±3.72 in this study, and it was revealed that as one's education level improved, so did their average knowledge score.

(Raji et al., 2017) this study found that a caregiver's knowledge of diarrhea disease was associated to her marital status, her and her husband's educational position, and the husband's occupational status. (Sillah, 2012) It was discovered that knowledge on how to treat diarrhea in children's under the age of five years varies depending on mothers degree in education and socioeconomic status.

(Yüksel Kaçan et al., 2022) have also said that there is There was a statistically significant difference in awareness score based on

educational levels ($p < .001$), with The mothers with a primary education had a mean awareness level of (19.50 ± 5.66), (21.02 4.27) for grads from high school, (22.56 ± 2.88) for grads of universities, and (23.32 ± 1.73) for mothers who have completed a master's degree.(Shah et al., 2019) The age and level of education of respondents had a major connection with their diarrhea awareness

(Sultana, 2011) Household wealth and mother education are both favorably correlated. The literacy rate was shown to have a positive relationship with the level of ORS knowledge ($p<0.001$).

According to the study conducted by (Madrim et al., 2021) There were 57 households (61.3%) in the case group and 36 (38.7%) in the control group with low household income (n=93), While 48 households (41.0%) in the case group and 69 (59.0%) in the control group (n=117) do not have a low home economic situation, We discovered a statistically significant link between home economic status and acute diarrhea in children under the age of five. When comparing those with poor home economic status to those who do not have poor household economic status, the odds of having severe diarrhea in children under the age of five are 2.3 time greater (OR=2.3,95% , CI 1.3–4.0, $p<0.0004$).

In terms of monthly revenue,(Yüksel Kaçan et al., 2022) the mothers educational level, and the family's financial situation and whether or not she had health insurance were found to be the most significant variables determining the mothers diarrhea knowledge scores. Fewer children’s suffered from diarrhea as a result of their mothers knowledge of the condition.

The variations in education level amongst the mothers in the research could be related to geographical and cultural variables affecting information access. (the researcher). Generally ,with the exception of mothers' personal attitude and conduct, socio-demographic characteristics like as mothers' education and occupation, husbands' work status, family

income, and family size are generally associated to mothers' understanding of diarrhea and its management(Mukhtar et al., 2011).

The study conducted by (Upadhayay et al., 2017) in Earth Quake Displaced Population of Sindupalchok District, Nepal , show that attitudes are not acquired at birth; rather, they are learned and accepted through experiences, as well as culturally acquired through socialization. mothers attitudes about family planning are influenced by their education and previous contraceptive experiences. Respondents' attitudes regarding family planning methods and their appraisal of other people's perspectives, as well as their community's socio-cultural ideas and values, all affect their attitudes toward the practice of family planning. In this study, the majority of respondents had a good attitude toward family planning, which is reflected in the high number of current users.

Previous studies found that In both rural and urban areas, the prevalence of bad house management practices was significant. Furthermore, rural residents had a worse house management practice than city dwellers. In both urban and rural residents, low caregiver awareness of components of home diarrhea management and difficulties preparing ORS were statistically linked to poor home management practice(Humphrey et al., 2019).

Chapter six
Conclusions and Recommendations

Chapter six

Conclusions and Recommendations

6.1.Conclusions:

According to the results obtained by the current study, it is concluded that:

1. Most mothers had low level knowledge about prevention of diarrhea in children under five years.

2. Most mothers had low level knowledge about Home Management of diarrhea of the children's under five years.

3. Most mothers' had negative attitude regarding Prevention and Home Management of the diarrhea in the children's under five years.

4. There was association between mothers knowledge about prevention of diarrhea and educational level.

5. There was association between mothers knowledge about home management of diarrhea ,educational level and monthly income.

6. There was association between attitudes of mothers regarding prevention and home management of diarrhea and educational level, working Status, and information sources about diarrhea.

6.2.Recommendations :

Based on the results and conclusions the researcher suggests the following recommendations:

1-Conducting educational program on the knowledge and attitude of mothers' regarding diarrhea in children under five years ,and implement educational programs of mothers about use and preparation for ORS at home, promoting appropriate feeding during diarrheal episode, child nutrition.

2-Conducting further studies about practice of the parents about management of the mothers' regarding diarrhea in the children under five years.

3-The government and municipality should take care of environmental hygiene, provide clean water for drinking, sanitation, and continuous supply of electricity to save the foods properly.

4- There must be awareness of diarrhea, its causes, and ways to prevent it through the various media.

5-Provide ongoing educational community campaigns in schools, health centers, and workplaces.

6-Future research needs to identify other relating factors that may contribute to maternal preventive behaviors regarding diarrhea in children.

7-Rotavirus vaccination campaigns must be continued, and awareness should be raised on its importance.

8-The health care workers must spread awareness, knowledge among mothers about breastfeeding and ORS in diarrhea, inform them on signs of dehydration, and proper management with ORS.

9-involve all family's through primary health care program online

Reference :

القرآن الكريم سورة يوسف اية 76

-A-

Abadi MFKA, Hujail SAAR. 2019. Assessment of Mothers' Knowledge, Attitude, and Practice about Oral Rehydration Solution in Treatment of Diarrhea in Karbala. Karbala Journal of Medicine 12.

Abatenh E, Gizaw B, Tsegaye Z, Wassie M. 2017. The role of microorganisms in bioremediation-A review. Open Journal of Environmental Biology 2:038-046.

Abdinia B. 2014. Knowledge and practice of mothers in the management of children's Diarrhea, in Northwest, Iran. Arch Pediatr 2:e17581.

Abdulla ON, Badulla WF, Alshakka M, Al-Abd N, Ibrahim MIM. Mothers Knowledge, Attitude and Practice Regarding Diarrhea and its Management in Aden-Yemen: A Cross-Sectional Study in Poor Resource Setting.

Abdullah NN, Mokhtar MM, Bakar MHA, Al-Kubaisy W. 2015. Trend on fast food consumption in relation to obesity among Selangor urban community. Procedia-Social and Behavioral Sciences 202:505-513.

Abuqamar M, Coomans D, Louckx F. 2011. The impact of parental education on infant mortality in Gaza strip, Palestine. Journal of Public Health and Epidemiology 3:28-33.

Adair LS. 2014. Long-term consequences of nutrition and growth in early childhood and possible preventive interventions. In: International nutrition: achieving millennium goals and beyond: Karger Publishers. p 111-120.

Adam MB, Dillmann M, Chen M-k, Mbugua S, Ndung'u J, Mumbi P, Waweru E, Meissner P. 2014. Improving maternal and newborn health: effectiveness of a community health worker program in rural Kenya. PLoS One 9:e104027.

Adams J, Arnaoutis G, Johnson EC, Jansen LT, Bougatsas D, Capitan-Jimenez C, Mauromoustakos A, Panagiotakos DB, Perrier ET, Guelinckx I. 2021. Combining urine color and void number to assess hydration in adults and children. European Journal of Clinical Nutrition:1-5.

Addo OY, Stein AD, Fall CH, Gigante DP, Guntupalli AM, Horta BL, Kuzawa CW, Lee N, Norris SA, Prabhakaran P. 2013. Maternal height and child growth patterns. The Journal of pediatrics 163:549-554. e541.

Agbolade M, Dipeolu I, Ajuwon A. 2015. Knowledge and use of oral rehydration therapy among mothers of under-five children in a Military Barrack in Ibadan, Nigeria. African Journal of Biomedical Research 18:7-15.

Ahmad ZF. 2021. The E-Learning Utilization On Attitudes And Behavior Of Diarrhea Prevention During Pandemic. Turkish Journal of Computer and Mathematics Education (TURCOMAT) 12:231-236.

Ahsan AK, Tebha SS, Sangi R, Kamran A, Zaidi ZA, Haque T, Ali Hamza MS. 2021. Zinc Micronutrient Deficiency and Its Prevalence in Malnourished Pediatric Children as Compared to Well-Nourished Children: A Nutritional Emergency. Global Pediatric Health 8:2333794X211050316.

Ajjampur S, Rajendran P, Ramani S, Banerjee I, Monica B, Sankaran P, Rosario V, Arumugam R, Sarkar R, Ward H. 2008. Closing the diarrhoea diagnostic gap in Indian children by the application of molecular techniques. Journal of medical microbiology 57:1364-1368.

Akhtar S. 2013. Zinc status in South Asian populations—an update. Journal of health, population, and nutrition 31:139.

Al-Ayed IH. 2010. Mothers' knowledge of child health matters: are we doing enough? Journal of family and community medicine 17:22.

Alanazi AM, Alaa A-M, Al-Suwaidan IA, Abdel-Hamide SG, Shawer TZ, El-Azab AS. 2014. Design, synthesis and biological evaluation of some novel substituted quinazolines as antitumor agents. European journal of medicinal chemistry 79:446-454.

Alcock BP, Raphenya AR, Lau TT, Tsang KK, Bouchard M, Edalatmand A, Huynh W, Nguyen A-LV, Cheng AA, Liu S. 2020. CARD 2020: antibiotic resistome surveillance with the comprehensive antibiotic resistance database. Nucleic acids research 48:D517-D525.

Alghadeer S, Syed W, Alhossan A, Alrabiah Z, Babelghaith SD, Al Arifi MN, Alwhaibi A. 2021. Assessment of Saudi Mother's Knowledge and Attitudes towards Childhood Diarrhea and Its Management. International Journal of Environmental Research and Public Health 18:3982.

Alhossan A, Al-Arifi M. 2021. Childhood Diarrhea and its management-a community based study estimating knowledge, attitude and practice of Saudi Mothers, Saudi Arabia.

Alkizim F, Matheka D, Muriithi A. 2011. Childhood diarrhoea: failing conventional measures, what next? Pan African Medical Journal 8.

Alo C, Akamike I, Agbo U, Eze I, Madudueze U, Okedo-Alex I, Azuogu B, Una A, Elum P, Ugochukwu C. 2021. Prevalence, Knowledge, Attitude and Preventive Practices Regarding Intestinal and Urinary Parasites among Primary School Children in a Rural Community in Ebonyi State, Nigeria. Journal of Epidemiological Society of Nigeria 4:39-50.

Alzahrani AS, Murugan AK, Qasem E, Alswailem M, Al-Hindi H, Shi Y. 2017. Single point mutations in pediatric differentiated thyroid cancer. Thyroid 27:189-196.

Anand SS, Bosch J, Eikelboom JW, Connolly SJ, Diaz R, Widimsky P, Aboyans V, Alings M, Kakkar AK, Keltai K. 2018. Rivaroxaban with or without aspirin in patients with stable peripheral or carotid

artery disease: an international, randomised, double-blind, placebo-controlled trial. The Lancet 391:219-229.

Anim-Larbi M. 2017. Management Of Diarrhoeal Diseases In Children Under Five Years By Market Women: The Case Of Makola, Accra. In: University Of Ghana.

Ansari M, Ibrahim MIM, Shankar PR. 2012. Mothers' knowledge, attitude and practice regarding diarrhea and its management in Morang Nepal: an interventional study. Tropical Journal of Pharmaceutical Research 11:847-854.

Ansari M, Palaian S, Ibrahim M. 2009. The role of mothers in the management of childhood diarrhoea in Nepal. Australasian Medical Journal 1:235-238.

ApA H, Soylu Ö, GünAy İ, DEvrİm F. 2015. Knowledge, attitude and behaviour of the parents about management of acute gastroenteritis. İzmir Dr Behçet Uz Çocuk Hast Dergisi 5:28-33.

Argenziano MG, Bruce SL, Slater CL, Tiao JR, Baldwin MR, Barr RG, Chang BP, Chau KH, Choi JJ, Gavin N. 2020. Characterization and clinical course of 1000 patients with coronavirus disease 2019 in New York: retrospective case series. Bmj 369.

Asakitikpi AE. 2010. Acute diarrhoea: Mothers' knowledge of ORT and its usage in Ibadan metropolis, Nigeria. Studies on Ethno-Medicine 4:125-130.

-B-

Baldwin J. 2013. The fire next time: Vintage.

Bansal K, MedhaSharma D, Sachdeva A, Gupta A. 2020. Knowledge, Attitude and Practices about Diarrhea and its Prevention in Shimla City. Himalayan Journal of Community Medicine and Public Health 1.

Bapanpally N, Shree GVU, Ranjeet M, SundarJunapudi S. 2021. Knowledge, Attitude, and Practice of Mothers of Under-Five

Children Regarding Diarrheal Illness: A Cross Sectional Study; Hyderabad. Education 31:17.

Barhight MF, Nelson D, Chong G, Basu RK, Sanchez-Pinto LN. 2021. Non-resuscitation fluid in excess of hydration requirements is associated with higher mortality in critically ill children. Pediatric research:1-6.

Bekar P, Arikan D. 2020. Reliability and Validity of a Turkish version of the Maternal Self-Efficacy Scale for Preventing Early Childhood Diarrhea. International Journal of Caring Sciences 13:583.

Bener A, Saleh NM, Al-Hamaq A. 2011. Prevalence of gestational diabetes and associated maternal and neonatal complications in a fast-developing community: global comparisons. International journal of women's health 3:367.

Bennion N, Mulokozi G, Allen E, Fullmer M, Kleinhenz G, Dearden K, Linehan M, Torres S, West J, Crookston B. 2021. Association between WASH-Related Behaviors and Knowledge with Childhood Diarrhea in Tanzania. International Journal of Environmental Research and Public Health 18:4681.

Beyene M, Worku AG, Wassie MM. 2015. Dietary diversity, meal frequency and associated factors among infant and young children in Northwest Ethiopia: a cross-sectional study. BMC public health 15:1-9.

Bhutta ZA, Zipursky A, Wazny K, Levine MM, Black RE, Bassani DG, Shantosham M, Freedman SB, Grange A, Kosek M. 2013. Setting priorities for development of emerging interventions against childhood diarrhoea. Journal of global health 3.

Biran A, Schmidt W-P, Varadharajan KS, Rajaraman D, Kumar R, Greenland K, Gopalan B, Aunger R, Curtis V. 2014. Effect of a behaviour-change intervention on handwashing with soap in India

(SuperAmma): a cluster-randomised trial. The Lancet Global Health 2:e145-e154.

Black RE, Victora CG, Walker SP, Bhutta ZA, Christian P, De Onis M, Ezzati M, Grantham-McGregor S, Katz J, Martorell R. 2013. Maternal and child undernutrition and overweight in low-income and middle-income countries. The lancet 382:427-451.

Blencowe H, Lawn J, Graham W. 2010. Clean birth kits-potential to deliver? Evidence experience, estimated lives saved and cost. Save the Children and Immpact.

Bodnar LM, Siega-Riz AM, Simhan HN, Himes KP, Abrams B. 2010. Severe obesity, gestational weight gain, and adverse birth outcomes. The American journal of clinical nutrition 91:1642-1648.

Bonet M, Ota E, Chibueze CE, Oladapo OT. 2017. Routine antibiotic prophylaxis after normal vaginal birth for reducing maternal infectious morbidity. Cochrane Database of Systematic Reviews.

Border Consortium TB. 2013. Nutrition survey report to CCSDPT health agencies. Bangkok: The Border Consortium.

Bordiga S, Groppo E, Agostini G, van Bokhoven JA, Lamberti C. 2013. Reactivity of surface species in heterogeneous catalysts probed by in situ X-ray absorption techniques. Chemical reviews 113:1736-1850.

Brunt S, Solomon H, Leavitt H, Lasek-Nesselquist E, LaPierre P, Shudt M, Bigler L, Singh N, Davis AD. 2020. Origin of 3 Rabid Terrestrial Animals in Raccoon Rabies Virus–Free Zone, Long Island, New York, USA, 2016–2017. Emerging Infectious Diseases 26:1315.

Bukachi F, Pakenham-Walsh N. 2007. Information technology for health in developing countries. Chest 132:1624-1630.

Bump JB, Reich MR, Johnson AM. 2013. Diarrhoeal diseases and the global health agenda: measuring and changing priority. Health Policy and Planning 28:799-808.

Burke LA, Neimeyer RA, Young AJ, Bonin EP, Davis NL. 2014. Complicated spiritual grief II: A deductive inquiry following the loss of a loved one. Death Studies 38:268-281.

-C-

Cabanetos C, El Labban A, Bartelt JA, Douglas JD, Mateker WR, Fréchet JM, McGehee MD, Beaujuge PM. 2013. Linear side chains in benzo [1, 2-b: 4, 5-b′] dithiophene–thieno [3, 4-c] pyrrole-4, 6-dione polymers direct self-assembly and solar cell performance. Journal of the American Chemical Society 135:4656-4659.

Cebrián-Cuenca AM, Díez-Domingo J, San-Martín-Rodríguez M, Puig-Barberá J, Navarro-Pérez J. 2011. Epidemiology and cost of herpes zoster and postherpetic neuralgia among patients treated in primary care centres in the Valencian community of Spain. BMC infectious diseases 11:1-12.

Cheruiyot SK, Lattorff HMG, Kahuthia-Gathu R, Mbugi JP, Muli E. 2018. Varroa-specific hygienic behavior of Apis mellifera scutellata in Kenya. Apidologie 49:439-449.

Choi S, Liu X, Pan Z. 2018. Zinc deficiency and cellular oxidative stress: prognostic implications in cardiovascular diseases. Acta Pharmacologica Sinica 39:1120-1132.

Commission NP. 2013. Nigeria demographic and health survey 2013. In: National Population Commission, ICF International.

Currie C, Levin KA, Kirby JLM, Currie DB, van der Sluijs W, Inchley JC. 2011. Health behaviour in school-aged children: World Health Organization collaborative cross-national study (HBSC): Findings from the 2010 HBSC survey in Scotland.

-D-

Das O, Sarmah AK, Bhattacharyya D. 2015. Structure–mechanics property relationship of waste derived biochars. Science of the Total Environment 538:611-620.

Datta A, Bansal V, Diaz J, Patel J, Reato D, Bikson M. 2009. Gyri-precise head model of transcranial direct current stimulation: improved spatial focality using a ring electrode versus conventional rectangular pad. Brain stimulation 2:201-207. e201.

Desmennu AT, Oluwasanu MM, John-Akinola YO, Oladunni O, Adebowale SA. 2017. Maternal education and diarrhea among children aged 0-24 months in Nigeria. African journal of reproductive health 21:27-36.

Dessalegn M, Kumie A, Tefera W. 2011. Predictors of under-five childhood diarrhea: Mecha District, west Gojam, Ethiopia. Ethiopian journal of health development 25:192-200.

Desta BK, Assimamaw NT, Ashenafi TD. 2017. Knowledge, practice, and associated factors of home-based management of diarrhea among caregivers of children attending under-five clinic in Fagita Lekoma District, Awi Zone, Amhara Regional State, Northwest Ethiopia, 2016. Nursing research and practice 2017.

Dhingra D, Dabas A, Anand T, Pinnamaneni R. 2018. Maternal knowledge, attitude and practices during childhood diarrhoea. Tropical Doctor 48:298-300.

Dodicho T. 2016. Knowledge and practice of mothers/caregivers on home management of diarrhea in under five children in Mareka district, Southern Ethiopia. Journal of Health, Medicine and Nursing 27:71-79.

Dujaili JA, Blebil AQ, Jayasinghe D, Sivanandan N. 2021. Knowledge, attitudes, and practices of mothers on the use of oral rehydration salts in children with diarrhoea: a cross-sectional survey in Malaysia. Journal of Pharmacy Practice and Research 51:321-327.

Dursun B, Cesur R, Kelly IR. 2017. The value of mandating maternal education in a developing country. In: National Bureau of Economic Research.

-E-

Eberlin KR, Ducic I. 2018. Surgical algorithm for neuroma management: a changing treatment paradigm. Plastic and Reconstructive Surgery Global Open 6.

Efunshile AM, Ezeanosike O, Nwangwu CC, König B, Jokelainen P, Robertson LJ. 2019. Apparent overuse of antibiotics in the management of watery diarrhoea in children in Abakaliki, Nigeria. BMC infectious Diseases 19:1-7.

Ehiri J, Arikpo D, Meremikwu M, Critchley J, Ejemot-Nwadiaro R. 2015. Hand washing promotion for preventing diarrhea. Cochrane Database Syst Rev.

Elemile OO, Raphael DO, Omole DO, Oloruntoba EO, Ajayi EO, Ohwavborua NA. 2019. Assessment of the impact of abattoir effluent on the quality of groundwater in a residential area of Omu-Aran, Nigeria. Environmental Sciences Europe 31:1-10.

Elhusein A, Fadlalmola H. 2020. Mothers' Knowledge and Practices Regarding Prevention of Dehydration in Children Under Five Years of Age: A Study in the Context of Sudan. Healthcare Review 1:19-23.

Elstad JI. 2011. Does the socioeconomic context explain both mortality and income inequality? Prospective register-based study of Norwegian regions. International journal for equity in health 10:1-11.

Elyas L, Mekasha A, Admasie A, Assefa E. 2017. Exclusive breastfeeding practice and associated factors among mothers attending private pediatric and child clinics, Addis Ababa, Ethiopia: a cross-sectional study. international journal of pediatrics 2017.

Enweronu-Laryea CC, Boamah I, Sifah E, Diamenu SK, Armah G. 2014. Decline in severe diarrhea hospitalizations after the introduction of rotavirus vaccination in Ghana: a prevalence study. BMC infectious diseases 14:1-6.

Ezeh AC, Mberu BU, Emina JO. 2009. Stall in fertility decline in Eastern African countries: regional analysis of patterns, determinants and implications. Philosophical Transactions of the Royal Society B: Biological Sciences 364:2991-3007.

-F-

Falzon D, Jaramillo E, Schünemann H, Arentz M, Bauer M, Bayona J, Blanc L, Caminero J, Daley C, Duncombe C. 2011. WHO guidelines for the programmatic management of drug-resistant tuberculosis: 2011 update. In: Eur Respiratory Soc.

Farahdina F, Herda C, Zein SH, Adila V. 2021. Effectiveness of Gelatin Tannate among Children with Acute Diarrhea: A Systematic Review and Meta-Analysis. Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences 4:4518-4528.

Farthing M, Salam M, Lindberg G, Dite P, Khalif I. 2012. Salazar-Lindo et al. J Clin Gastroenterol 47:12-20.

Farthing M, Salam MA, Lindberg G, Dite P, Khalif I, Salazar-Lindo E, Ramakrishna BS, Goh K-L, Thomson A, Khan AG. 2013. Acute diarrhea in adults and children: a global perspective. Journal of clinical gastroenterology 47:12-20.

Fayehun OA. 2010. Household environmental health hazards and child survival in Sub-Saharan Africa: ICF Macro.

Fromer M, Roussos P, Sieberts SK, Johnson JS, Kavanagh DH, Perumal TM, Ruderfer DM, Oh EC, Topol A, Shah HR. 2016. Gene expression elucidates functional impact of polygenic risk for schizophrenia. Nature neuroscience 19:1442-1453.

-G-

Gazi E, Chowdhury A, Kumar R, Sarkar AP, Basu S, Saha S. 2015. Can mothers care for acute diarrhoeal disease of their under five children effectively at home? a cross sectional study in slum

community in bankura. Journal of Evidence Based Medicine and Healthcare 2:5575-5584.

George G, Haas MR, Pentland A. 2014. Big data and management. In: Academy of Management Briarcliff Manor, NY.

Geresomo NC, Kamau-Mbuthia E, Matofari JW, Mwangwela AM. 2017. Child feeding practices and factors (risks) associated with provision of complementary foods among mothers of children age 6–23 months in Dedza district of Central Malawi. Journal of Nutritional Ecology and Food Research 4:15-22.

Githae EW. 2018. Status of Opuntia invasions in the arid and semi-arid lands of Kenya. CAB Reviews 13:1-7.

Gollar L, Avabratha K. 2018. Knowledge, attitude, and practice of mothers of under-five children regarding diarrheal illness: A study from coastal Karnataka. Muller Journal of Medical Sciences and Research 9:66-66.

Greenbaum L. 2011. Maintenance and replacement therapy. Nelson Textbook of Pediatrics 19th ed Philadelphia: Elsevier:242-245.

Guarino A, Ashkenazi S, Gendrel D, Vecchio AL, Shamir R, Szajewska H. 2014. European Society for Pediatric Gastroenterology, Hepatology, and Nutrition/European Society for Pediatric Infectious Diseases evidence-based guidelines for the management of acute gastroenteritis in children in Europe: update 2014. Journal of pediatric gastroenterology and nutrition 59:132-152.

Gupta DK, Sah PK. 2021. Knowledge, Attitude and Practice of Mothers of Children Below Five Years Regarding Diarrhoea. Nepal Journal of Health Sciences 1:16-20.

Gutberlet J, Uddin SMN. 2017. Household waste and health risks affecting waste pickers and the environment in low-and middle-income countries. International journal of occupational and environmental health 23:299-310.

-H-

Hailu D, Tilahun A, Dagnew Y. 2021. Complementary feeding practice and its determinants among mothers with children 6 to 23 months of age in Finote Selam, Ethiopia. The Pan African Medical Journal 40.

Hajat A, Hsia C, O'Neill MS. 2015. Socioeconomic disparities and air pollution exposure: a global review. Current environmental health reports 2:440-450.

Hambidge KM, Krebs NF. 2007. Zinc deficiency: a special challenge. The Journal of nutrition 137:1101-1105.

Han H, Yoon HJ. 2015. Hotel customers' environmentally responsible behavioral intention: Impact of key constructs on decision in green consumerism. International Journal of Hospitality Management 45:22-33.

Haroun Y, Legendre D, Raynal L. 2010. Volume of fluid method for interfacial reactive mass transfer: application to stable liquid film. Chemical Engineering Science 65:2896-2909.

Hashmi A, Nyein P, Pilaseng K, Paw M, Darakamon M, Min A, Charunwatthana P, Nosten F, McGready R, Carrara V. 2019. Feeding practices and risk factors for chronic infant undernutrition among refugees and migrants along the Thailand-Myanmar border: a mixed-methods study. BMC public health 19:1-16.

Health WHODoM, Abuse S, Organization WH, Health WHODoM, Health SAM, Evidence WHOMH, Team R. 2005. Mental health atlas 2005: World Health Organization.

Heymann J, Raub A, Earle A. 2013. Breastfeeding policy: a globally comparative analysis. Bulletin of the World Health Organization 91:398-406.

Heyns C, Viljoen F. 2021. The impact of the United Nations human rights treaties on the domestic level: Brill.

Hockenberry MJ, Wilson D. 2018. Wong's nursing care of infants and children-E-book: Elsevier Health Sciences.

Hossain MZ, Sohel F, Shiratuddin MF, Laga H. 2019. A comprehensive survey of deep learning for image captioning. ACM Computing Surveys (CsUR) 51:1-36.

Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, Zhang L, Fan G, Xu J, Gu X. 2020. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. The lancet 395:497-506.

Humphrey JH, Mbuya MN, Ntozini R, Moulton LH, Stoltzfus RJ, Tavengwa NV, Mutasa K, Majo F, Mutasa B, Mangwadu G. 2019. Independent and combined effects of improved water, sanitation, and hygiene, and improved complementary feeding, on child stunting and anaemia in rural Zimbabwe: a cluster-randomised trial. The Lancet Global Health 7:e132-e147.

-I-

Imanadhia A, Ranuh IRG, Nuswantoro D. 2019. Etiology Based on Clinical Manifestation of Acute Diarrhea Incidence of Children Hospitalized in Dr. Soetomo General Hospital Surabaya Period 2011-2013. Biomolecular and Health Science Journal 2:31-35.

Imdad A, Yakoob MY, Bhutta ZA. 2011. Impact of maternal education about complementary feeding and provision of complementary foods on child growth in developing countries. BMC public health 11:1-14.

Ingham-Broomfield R. 2014. A nurses' guide to quantitative research. Australian Journal of Advanced Nursing, The 32:32-38.

Isbell F, Calcagno V, Hector A, Connolly J, Harpole WS, Reich PB, Scherer-Lorenzen M, Schmid B, Tilman D, Van Ruijven J. 2011. High plant diversity is needed to maintain ecosystem services. Nature 477:199-202.

-J-

Jamil N, Che Mat SH. 2014. Realiti kemiskinan: Satu kajian teoritikal. Jurnal Ekonomi Malaysia 48:167-177.

Jepkorir KJ, Nyaora MW. 2018. The Impact of Open Defecation on Fecal-Oral Infections: A Case Study in Burat and Ngaremara Wards of Isiolo County, Kenya. International Journal of Medical and Health Sciences 12:428-431.

Joventino ES, Ximenes LB, Almeida PC, Oria MO. 2013. The Maternal Self-efficacy Scale for Preventing Early Childhood Diarrhea: Validity and Reliability. Public Health Nursing 30:150-158.

Juckett G, Trivedi R. 2011. Evaluation of chronic diarrhea. American family physician 84:1119-1126.

-K-

Kalakheti B, Panthee K, Jain KC. 2016. Risk factors of diarrhea in children under five years in urban slums. Journal of Lumbini medical college 4:94-98.

Kapwata T, Mathee A, Le Roux WJ, Wright CY. 2018. Diarrhoeal disease in relation to possible household risk factors in South African villages. International journal of environmental research and public health 15:1665.

Kebede Fufa W, Berhe Gebremedhin G, Gebregergs GB, Marama Mokonnon T. 2019. Assessment of poor home management practice of diarrhea and associated factors among caregivers of under-five years children in urban and rural residents of Doba Woreda, Ethiopia: Comparative cross-sectional study. International journal of pediatrics 2019.

Khan AI, Danish SH, Ashfaq A, Ahmad F, Warsi SMA, Khan MP. 2016. Knowledge, Attitude and Practices of Mothers Regarding Diarrheal Risk Factors and Management in under 5 Children: A Cross Sectional Survey in Dadu and Badin Districts of Sindh, Pakistan.

Journal of the Dow University of Health Sciences (JDUHS) 10:19-24.

Khatun M, Sharmin A, Bithi IJ. 2021. Mothers' Knowledge, Attitude and Practice regarding Prevention of Diarrhea among Children: An Empirical Investigation. Randwick International of Social Science Journal 2:469-475.

Kier PPD, Dai Y-C. 2018. Mothers' knowledge, attitudes and practices on preventing diarrhoea in Juba, South Sudan. South Sudan Medical Journal 11:60-64.

King JC, Brown KH, Gibson RS, Krebs NF, Lowe NM, Siekmann JH, Raiten DJ. 2015. Biomarkers of Nutrition for Development (BOND)—zinc review. The Journal of nutrition 146:858S-885S.

Kowaas IN, Ismanto AY, Lolong J. 2017. Hubungan Penerapan Manajemen Terpadu Balita Sakit (MTBS): status imunisasi dengan kelengkapan imunisasi dasar pada bayi (usia 2–12 bul an) di Puskesmas Bahu. JURNAL KEPERAWATAN 5.

Kramer MS, Kakuma R. 2012. Optimal duration of exclusive breastfeeding. Cochrane database of systematic reviews.

Kumar SK, Rajkumar SV, Dispenzieri A, Lacy MQ, Hayman SR, Buadi FK, Zeldenrust SR, Dingli D, Russell SJ, Lust JA. 2008. Improved survival in multiple myeloma and the impact of novel therapies. Blood, The Journal of the American Society of Hematology 111:2516-2520.

Kutter E, De Vos D, Gvasalia G, Alavidze Z, Gogokhia L, Kuhl S, Abedon ST. 2010. Phage therapy in clinical practice: treatment of human infections. Current pharmaceutical biotechnology 11:69-86.

-L-

Lanyero H, Ocan M, Obua C, Stålsby Lundborg C, Nanzigu S, Katureebe A, N Kalyango J, Eriksen J. 2021. Antibiotic use among children under five years with diarrhea in rural communities of Gulu,

northern Uganda: a cross-sectional study. BMC Public Health 21:1-9.

Laxminarayan R, Duse A, Wattal C, Zaidi AK, Wertheim HF, Sumpradit N, Vlieghe E, Hara GL, Gould IM, Goossens H. 2013. Antibiotic resistance—the need for global solutions. The Lancet infectious diseases 13:1057-1098.

Levine AF, McPhaden MJ. 2016. How the July 2014 easterly wind burst gave the 2015–2016 El Niño a head start. Geophysical research letters 43:6503-6510.

Levine MM, Nasrin D, Acácio S, Bassat Q, Powell H, Tennant SM, Sow SO, Sur D, Zaidi AK, Faruque AS. 2020. Diarrhoeal disease and subsequent risk of death in infants and children residing in low-income and middle-income countries: analysis of the GEMS case-control study and 12-month GEMS-1A follow-on study. The Lancet Global Health 8:e204-e214.

Lillard AS, Hopkins EJ, Dore RA, Palmquist CM, Lerner MD, Smith ED. 2013. Concepts and theories, methods and reasons: Why do the children (pretend) play? Reply to Weisberg, Hirsh-Pasek, and Golinkoff (2013); Bergen (2013); and Walker and Gopnik (2013).

Liu X, He P, Chen W, Gao J. 2019. Improving multi-task deep neural networks via knowledge distillation for natural language understanding. arXiv preprint arXiv:190409482.

Liu YZ, Hou FQ, Ding P, Ren YY, Li SH, Wang GQ. 2012. Pegylated interferon α enhances recovery of memory T cells in e antigen positive chronic hepatitis B patients. Virology journal 9:1-11.

Livingstone C. 2015. Zinc: physiology, deficiency, and parenteral nutrition. Nutrition in Clinical Practice 30:371-382.

Lopes RT, Gonçalves MM, Fassnacht DB, Machado PP, Sousa I. 2014. Long-term effects of psychotherapy on moderate depression: a

comparative study of narrative therapy and cognitive-behavioral therapy. Journal of affective disorders 167:64-73.

Lubis I, Indirawati SM, Marsaulina I. 2021. The Coralation Between Sanitation Facilities and Personal Hygiene with the Cases of Diarrhea in Breastfeeding Toddlers in Sinabung Post-Eruption Settlements, Berastagi District, Karo Regency. Randwick International of Social Science Journal 2:241-249.

Lubis K. 2021. Evaluation of Dimensions and Drainage Performance Office in the Aceh Tamiang Area Kuala Simpang. Britain International of Exact Sciences (BIoEx) Journal 3:20-32.

Lule G. 2012. Current concepts in colonic disorders: BoD–Books on Demand.

Luna-Casas G, Juliao P, Carreño-Manjarrez R, Castañeda-Prado A, Cervantes-Apolinar MY, Navarro-Rodriguez R, Sánchez-González G, Cortés-Alcalá R, DeAntonio R. 2019. Vaccine coverage and compliance in Mexico with the two-dose and three-dose rotavirus vaccines. Human vaccines & immunotherapeutics 15:1251-1259.

-M-

Madrim MF, Rahim SSSA, Ghazi HF, Myint T, Lukman KA, Ahmed K, Hassan MR, Alabed AAA, Jeffree MS. 2021. ACUTE DIARRHOEA AMONG UNDER FIVE YEARS OLD CHILDREN OF UNDERPRIVILEGED COMMUNITY IN KOTA KINABALU, SABAH. Global Journal of Public Health Medicine 3:429-437.

Masiha SA, Khalid A, Malik B, Shah SMA. 2015. Oral rehydration therapy-knowledge, attitude and practice (KAP) survey of Pakistani mothers. Journal of Rawalpindi Medical College Students Supplement 19:51-54.

Mathew JL, Shah D, Gera T, Gogia S, Mohan P, Panda R, Menon S, Gupta P. 2011. UNICEF-PHFI series on newborn and child health, India:

Methodology for systematic reviews on child health priorities for advocacy and action. Indian pediatrics 48:183.

Mbonye AK, Buregyeya E, Rutebemberwa E, Clarke SE, Lal S, Hansen KS, Magnussen P, LaRussa P. 2016. Prescription for antibiotics at drug shops and strategies to improve quality of care and patient safety: a cross-sectional survey in the private sector in Uganda. BMJ open 6:e010632.

McIlroy J, Ianiro G, Mukhopadhya I, Hansen R, Hold G. 2018. the gut microbiome in inflammatory bowel disease—avenues for microbial management. Alimentary pharmacology & therapeutics 47:26-42.

McMahan Z, Dupont H. 2007. the history of acute infectious diarrhoea management–from poorly focused empiricism to fluid therapy and modern pharmacotherapy. Alimentary pharmacology & therapeutics 25:759-769.

Medhi G, Mahanta J. 2004. Breastfeeding, weaning practices and nutritional status of infants of tea garden workers of Assam. Indian Pediatr 41:1277-1279.

Mehata S, Tamang MK, Parajuli KR, Rayamajhee B, Yadav UN, Mehta RK, Singh DR. 2021. Serum zinc status is a matter of concern among children and non-pregnant women in a nationwide survey of Nepal. Scientific reports 11:1-14.

Mehta SR, Parmar GB, Gamit CL, Mansuri BM, Patel PB, Patel SS. 2014. Does maternal education affect maternal and child health care utilization? A community based study in a urban slum area of western India. Int J Interdiscip Multidiscip Stud 1:80-87.

Melo RP, Moreira RP, Fontenele FC, de Aguiar ASC, Joventino ES, de Carvalho EC. 2011. Criteria for selection of experts for validation studies of nursing phenomena. Rev Rene 12.

Memon S, Shaikh S, Kousar T, Memon Y, Rubina Y. 2010. Assessment of infant feeding practices at a tertiary care hospital. JPMA-Journal of the Pakistan Medical Association 60:1010.

Ménard D, Khim N, Beghain J, Adegnika AA, Shafiul-Alam M, Amodu O, Rahim-Awab G, Barnadas C, Berry A, Boum Y. 2016. A worldwide map of Plasmodium falciparum K13-propeller polymorphisms. New England Journal of Medicine 374:2453-2464.

Meng H, Liong M, Xia T, Li Z, Ji Z, Zink JI, Nel AE. 2010. Engineered design of mesoporous silica nanoparticles to deliver doxorubicin and P-glycoprotein siRNA to overcome drug resistance in a cancer cell line. ACS nano 4:4539-4550.

Merali HS, Morgan MS, Boonshuyar C. 2018. Diarrheal knowledge and preventative behaviors among the caregivers of children under 5 years of age on the Tonle Sap Lake, Cambodia. Research and reports in tropical medicine 9:35.

Mohamed HM, Mohammed FS. 2020. Awareness and attitude towards dehydration and its management amongst mothers and factors influence on in under-five children of Omdurman locality, Sudan. Sudanese Journal of Paediatrics 20:136.

Mohsin A, Raza AB, Ahmad TM. 2009. Knowledge, attitude and practices of the mothers regarding oral rehydration solution, feeding and use of drugs in childhood diarrhoea. Annals 15:38-42.

Mokomane M, Kasvosve I, Melo Ed, Pernica JM, Goldfarb DM. 2018. The global problem of childhood diarrhoeal diseases: emerging strategies in prevention and management. Therapeutic advances in infectious disease 5:29-43.

Mokori A, Schonfeldt H, Hendriks SL. 2017. Child factors associated with complementary feeding practices in Uganda. South African Journal of Clinical Nutrition 30:7-14.

Morhason-Bello I, Oladokun A, Adedokun B, Obisesan K, Ojengbede O, Okuyemi O. 2009. Determination of post-caesarean wound infection at the University college hospital Ibadan Nigeria. Nigerian journal of clinical practice 12.

Mortazavi SS, Assari S, Alimohamadi A, Rafiee M, Shati M. 2020. Fear, loss, social isolation, and incomplete grief due to COVID-19: a recipe for a psychiatric pandemic. Basic and clinical neuroscience 11:225.

Mukhtar A, Izham MIM, Pathiyil RS. 2011. A survey of mothers' knowledge about childhood diarrhoea and its management among a marginalised community of Morang, Nepal. The Australasian medical journal 4:474.

Mumtaz Y, Zafar M, Mumtaz Z. 2014. Knowledge attitude and practices of mothers about diarrhea in children under 5 years. Journal of the Dow University of Health Sciences (JDUHS) 8:3-6.

Munos MK, Walker CLF, Black RE. 2010. The effect of oral rehydration solution and recommended home fluids on diarrhoea mortality. International journal of epidemiology 39:i75-i87.

Munro BH. 2005. Statistical methods for health care research: lippincott williams & wilkins.

Murrell DF, Peña S, Joly P, Marinovic B, Hashimoto T, Diaz LA, Sinha AA, Payne AS, Daneshpazhooh M, Eming R. 2020. Diagnosis and management of pemphigus: Recommendations of an international panel of experts. Journal of the American Academy of Dermatology 82:575-585. e571.

-N-

Naseem A, Swetha R. 2016. Knowledge attitude and practice of childhood diarrhea and ORS administration in diarrhea amongst mothers of children below age 5 years. J Pediatr 3:416-420.

Navaneethan U, Giannella RA. 2010. Definition, epidemiology, pathophysiology, clinical classification, and differential diagnosis of diarrhea. In: Diarrhea: Springer. p 1-31.

Ndou A, Lebese RT, Tshitangano TG, Damian JU. 2021. A Descriptive Cross-Sectional Assessment of Caregivers' Knowledge and Practices Regarding the Prevention and Management of Diarrhea among Children under the Age of Five in Thulamela B Clinics, South Africa. International Journal of Environmental Research and Public Health 18:9452.

Neji OI, Nkemdilim CC, Ferdinand NF. 2015. Factors influencing the practice of exclusive breastfeeding among mothers in tertiary health facility in Calabar, Cross River State, Nigeria. Am J Nurs Sci 4:16-21.

Nicholl P. 2019. "For Every Child, the Right to a Childhood" UNICEF (2019). In: Taylor & Francis.

Njeri G, Muriithi M. 2013. Household Choice of Diarrhea Treatments for Children Under The Age of Five In Kenya: Evidence From The Kenya Demographic And Health Survey 2008-09. European Scientific Journal 9:77-91.

Njoroge M, Njuguna NM, Mutai P, Ongarora DS, Smith PW, Chibale K. 2014. Recent approaches to chemical discovery and development against malaria and the neglected tropical diseases human African trypanosomiasis and schistosomiasis. Chemical reviews 114:11138-11163.

-O-

O'Neill J. 2016. Tackling drug-resistant infections globally: final report and recommendations.

ODUNTAN AE, OLAJIDE TE. 2020. Effect of Nurse-Led Intervention On the Knowledge and Management of Childhood Diarrhoea Among Caregivers in Child Daycare Centres in Ibadan, Oyo State.

Office MNS, Macro I. 2011. Malawi Demographic and Health Survey, 2010: National Statistical Office.

Okoh BA, Alex–Hart BA. 2014. Home management of diarrhoea by caregivers presenting at the diarrhoea training unit of a tertiary hospital in Southern Nigeria. Journal of Advances in Medicine and Medical Research:5524-5540.

Oktaria V, Lee K, Bines J, Watts E, Satria C, Atthobari J, Nirwati H, Kirkwood C, Soenarto Y, Danchin M. 2017. Nutritional status, exclusive breastfeeding and management of acute respiratory illness and diarrhea in the first 6 months of life in infants from two regions of Indonesia. BMC pediatrics 17:1-10.

Olatona F, Obrutu O, Adeniyi O. 2016. Home management of childhood diarrhea including zinc supplementation among mothers attending primary health centers in an urban community in Lagos. Tropical Journal of Health Sciences 23:23-29.

Olorunsaiye CZ, Degge HM, Saigh J. 2021. Association Between Source of Treatment and Quality of Childhood Diarrhea Management Among Under-Five Children in Nigeria. International Journal of Translational Medical Research and Public Health 5:173-182.

Omole VN, Wamyil-Mshelia TM, Aliyu-Zubair R, Audu O, Gobir AA, Nwankwo B. 2019a. Knowledge and prevalence of diarrheal disease in a suburban community in north western Nigeria. Sahel Medical Journal 22:114.

Omole VN, Wamyil-Mshelia TM, Nmadu GA, Usman NO, Andeyantso EA, Adiri F. 2019b. Knowledge, attitude and practice of home management of diarrhoea among mothers of under-fives in Samaru, Kaduna State, Nigeria. Port Harcourt Medical Journal 13:19.

Opeyemi O, Ayo AS. 2017. Maternal Education and Diarrhea among Children aged 0-24 Months in Nigeria. African Journal of Reproductive Health 21.

Organization WH. 2009. WHO vaccine-preventable diseases: monitoring system: 2009 global summary. In: World Health Organization.

Organization WH. 2013. Global tuberculosis report 2013: World Health Organization.

Organization WH. 2015. World health statistics 2015: World Health Organization.

Organization WH. 2017. WHO report on the global tobacco epidemic, 2017: monitoring tobacco use and prevention policies: World Health Organization.

Organization WH. 2019. Water, sanitation, hygiene and health: a primer for health professionals. In: World Health Organization.

Organization WH, Control RfIT. 2008. WHO report on the global tobacco epidemic, 2008: the MPOWER package: World Health Organization.

Osam–Tewiah E, Catherine E. 2010. Prevalence and management of diarrhoea in out-patient children less than 5 years of age at the Princess Marie Louis hospital (PML). Osamu, M, Franz-X, B, Adolf, D and Klaus:1107-1112.

Osam–Tewiah EIC. 2010. Prevalence and Management of Diarrhoea in Out-Patient Children Less Than 5years of Age at the Princess Marie Louis Hospital (PML), Accra Ghana. In.

Ota E, Haruna M, Suzuki M, Anh DD, Tho LH, Tam NTT, Thiem VD, Anh NTH, Isozaki M, Shibuya K. 2011. Maternal body mass index and gestational weight gain and their association with perinatal outcomes in Viet Nam. Bulletin of the World Health Organization 89:127-136.

Ovaskainen O, Tikhonov G, Norberg A, Guillaume Blanchet F, Duan L, Dunson D, Roslin T, Abrego N. 2017. How to make more out of community data? A conceptual framework and its implementation as models and software. Ecology letters 20:561-576.

-P-

Padhy S, Sethi RK, Behera N. 2017. Mother's knowledge, attitude and practice regarding prevention and management of diarrhoea in children in Southern Odisha. Int J Contemp Pediatr 4:966-971.

Pahmi L, Endah WC. 2019. HOUSEHOLD Risk Factors on the Event of Diarrhea Disease: In Children Under Five Years Old in Indonesia (Secondary Data Analysis' 2017 Idhs). Jurnal Ilmu Kesehatan Masyarakat 10:50-58.

Pawłowski M, Paterek T, Kaszlikowski D, Scarani V, Winter A, Żukowski M. 2009. Information causality as a physical principle. Nature 461:1101-1104.

Perner A, Haase N, Guttormsen AB, Tenhunen J, Klemenzson G, Åneman A, Madsen KR, Møller MH, Elkjær JM, Poulsen LM. 2012. Hydroxyethyl starch 130/0.42 versus Ringer's acetate in severe sepsis. New England Journal of Medicine 367:124-134.

Peter AK, Umar U. 2018a. Combating diarrhoea in Nigeria: the way forward. J Microbiol Exp 6:1.

Peter AK, Umar U. 2018b. Combating diarrhoea in Nigeria: the way forward. J Microbiol Exp 6:191-197.

Pizur-Barnekow K. 2006. Maternal attitudes and self-definition as related to perceptions of infant temperament. The American journal of occupational therapy 60:494-499.

Pokhrel D, Viraraghavan T. 2004. Diarrhoeal diseases in Nepal vis-à-vis water supply and sanitation status. Journal of water and health 2:71-81.

-R-

Radlović N, Leković Z, Vuletić B, Radlović V, Simić D. 2015. Acute diarrhea in children. Srpski arhiv za celokupno lekarstvo 143:755-762.

Raji M, Abdullahi U, Raji I, Oladigbolu R, Kaoje A, Awosan K. 2017. Caregivers knowledge, home treatment of diarrhoea disease and predictors of child diarrhoea disease in a semi urban community of Sokoto, North-west, Nigeria. Journal of Public Health and Epidemiology 9:16-23.

Rao ND, Kiesewetter G, Min J, Pachauri S, Wagner F. 2021. Household contributions to and impacts from air pollution in India. Nature Sustainability 4:859-867.

Riaz N, Muntaha ST, Qibtia M, Sohail S. 2019. Use of Zinc and ORS in Home Management of Diarrhea: Knowledge of Mothers attending a Tertiary Care Hospital. Journal of Islamabad Medical & Dental College 8:135-140.

Ridawati ID, Nugroho B. 2021. Relationship between Mothers' Knowledge with Diarrhea Prevention in Toddlers. In: Proceeding International Conference On Health, Social Sciences And Technology. p 17-20.

-S-

Sa'ad ZSi, Hoque KE, Arkilla BM. 2018. Mothers' knowledge practices in home management of childhood diarrhea in kano state: a cross sectional study.

Saberi F, Amini S, Jan Nesari R. 2014. Mothers' roles in prevention and care of diarrhea in children of aran and bidgol, iran. Nurs Midwifery Stud 3:e19985.

Saha J, Chouhan P. 2021. Do malnutrition, pre-existing morbidities, and poor household environmental conditions aggravate susceptibility to Coronavirus disease (COVID-19)? A study on under-five children in India. Children and Youth Services Review 128.

Saha N. 2021. Management of Diarrhea with Home Available Fluid Among Mothers of Under Five Children in ICDS Centre. J West Bengal Univ Health Sci 1:26-33.

Sammons JS, Toltzis P, Zaoutis TE. 2013. Clostridium difficile infection in children. JAMA pediatrics 167:567-573.

Sammour T, Zargar-Shoshtari K, Bhat A, Kahokehr A, Hill AG. 2010. A programme of Enhanced Recovery After Surgery (ERAS) is a cost-effective intervention in elective colonic surgery. NZ Med J 123:61-70.

Sánchez-Uribe E, Esparza-Aguilar M, Parashar UD, Richardson V. 2016. Sustained reduction of childhood diarrhea-related mortality and hospitalizations in Mexico after rotavirus vaccine universalization. Clinical Infectious Diseases 62:S133-S139.

Sari PM, Suryani D, Anggraini M, Amir AN, Morika HD, Arman E. 2021. The Effect of Integrated Media Educational Information Communication (EIC) on Mother's Behavior in Caring Children with Diarrhea in Jambi, Indonesia. In: 2nd Syedza Saintika International Conference on Nursing, Midwifery, Medical Laboratory Technology, Public Health, and Health Information Management (SeSICNiMPH 2021): Atlantis Press. p 249-252.

Sarkar R, Gladstone B, Warier J, Sharma S, Raman U, Muliyil J, Kang G. 2016. Rotavirus and other diarrheal disease in a birth cohort from Southern Indian community. Indian pediatrics 53:583-588.

Satterstrom FK, Kosmicki JA, Wang J, Breen MS, De Rubeis S, An J-Y, Peng M, Collins R, Grove J, Klei L. 2020. Large-scale exome sequencing study implicates both developmental and functional changes in the neurobiology of autism. Cell 180:568-584. e523.

Schiller LR, Pardi DS, Spiller R, Semrad CE, Surawicz CM, Giannella RA, Krejs GJ, Farthing MJ, Sellin JH. 2014. Gastro 2013 APDW/WCOG Shanghai working party report: chronic diarrhea: definition, classification, diagnosis. Journal of gastroenterology and hepatology 29:6-25.

Schuster AK-G, Hoh S, Neubert K, Ibrahim AH, Nickels S, Korb CA, Schulz A, Muenzel T, Michal M, Schmidtmann I. 2020. Prevalence of hypertensive retinopathy and its risk for mortality–results from the Gutenberg Health Study. Investigative Ophthalmology & Visual Science 61:1308-1308.

Serwaa A, Kwamena A. 2021. A Preliminary Cross-Sectional Assessment on Exclusive Breastfeeding among Women Attending a Postnatal Clinic at the Holy Family Hospital, Techiman, Ghana. Journal of Nutrients 7:8-13.

Seyal T, Hanif A. 2009. Knowledge, attitude and practices of the mothers and doctors regarding feeding. Annals of King Edward Medical University 15:38-38.

Shah D, Choudhury P, Gupta P, Mathew JL, Gera T, Gogia S, Mohan P, Panda R, Menon S. 2012. Promoting appropriate management of diarrhea: a systematic review of literature for advocacy and action: UNICEF-PHFI series on newborn and child health, India. Indian pediatrics 49:627-649.

Shah S, Shrestha M, Sharma B, Pandey N, Dahal S. 2019. Knowledge and practice on childhood Diarrhea among mothers having children under five years of age in Madhuban, Sunsari, Nepal. Religion 20:29.21.

Shah SIH, Khan AZ, Bokhari RH, Raza MA. 2011. Exploring the impediments of successful ERP implementation: A case study in a public organization. International Journal of Business and Social Science 2.

Shahbaz M, Loganathan N, Muzaffar AT, Ahmed K, Jabran MA. 2016. How urbanization affects CO2 emissions in Malaysia? The application of STIRPAT model. Renewable and Sustainable Energy Reviews 57:83-93.

Sharma SK, Vashishtha R, Chauhan L, Sreenivas V, Seth D. 2017. Comparison of TST and IGRA in diagnosis of latent tuberculosis infection in a high TB-burden setting. PLoS One 12:e0169539.

Shearer GC, Chavan S, Ethiraj J, Vitillo JG, Svelle S, Olsbye U, Lamberti C, Bordiga S, Lillerud KP. 2014. Tuned to perfection: ironing out the defects in metal–organic framework UiO-66. Chemistry of Materials 26:4068-4071.

Siegel RL, Miller KD, Jemal A. 2019. Cancer statistics, 2019. CA: a cancer journal for clinicians 69:7-34.

Sillah F. 2012. Knowledge, attitude and practice assessment of mothers in managing children under five years old with diarrhea in the Gambia.

Stanaway JD, Parisi A, Sarkar K, Blacker BF, Reiner RC, Hay SI, Nixon MR, Dolecek C, James SL, Mokdad AH. 2019. The global burden of non-typhoidal salmonella invasive disease: a systematic analysis for the Global Burden of Disease Study 2017. The Lancet Infectious Diseases 19:1312-1324.

Stuebe A, Schwarz E. 2010. The risks and benefits of infant feeding practices for women and their children. Journal of Perinatology 30:155-162.

Sugiyanto S, Febrianti FD, Maddinsyah A, Sarwani S, Pranoto P. 2021. The Influence Of Intellectual Capital, Conservatism, Earning Management, To Future Stock Return And Its Implications On Stock Return (Case Study Of Mining Companies In Indonesia Listed On Indonesia Stock Exchange For The Period Of 2013-2018).

Sullivan IS, Morales MF, Hazelton BJ, Arcus W, Barnes D, Bernardi G, Briggs FH, Bowman JD, Bunton JD, Cappallo RJ. 2012. Fast holographic deconvolution: A new technique for precision radio interferometry. The Astrophysical Journal 759:17.

Sultana A. 2011. Knowledge and attitude of mothers regarding oral rehydration salt. Journal of Rawalpindi Medical College 15:109-111.

Sumathi W, Balasubramanian S, Pradeebaa T, Sumathi B. 2020. A study on knowledge, attitude and practices of mothers about acute diarrhea and its management with oral rehydration therapy and zinc in children under 5 years. Int Arch Integr Med 7:1-10.

Sunanda G, Ramaiah D, Sadiq MMJ, Narayana G. 2017. Impact of structured educational program on maternal knowledge, attitude, and practice toward diarrhea management in children< 5 years age in Anantapur District. CHRISMED Journal of Health and Research 4:186.

-T-

Teshale AB, Tesema GA, Tessema ZT. 2021. Spatial variations and associated factors of knowledge of ORS packet or pre-packaged liquids for the management of diarrhea among women of reproductive age in Ethiopia: A spatial and multilevel analysis. PLoS One 16:e0247772.

Thakur D, Yadav A, Gogoi B, Bora T. 2007. Isolation and screening of Streptomyces in soil of protected forest areas from the states of Assam and Tripura, India, for antimicrobial metabolites. Journal de Mycologie Médicale 17:242-249.

Thammanna P, Sridhar P, Sandeep M. 2015. Morbidity pattern and hospital outcome of neonates admitted in a tertiary care teaching hospital, Mandya. International Journal of Scientific Study 3:126-129.

Thet MM, Richards L-M, Sudhinaraset M, Paw NET, Diamond-Smith N. 2016. Assessing rates of inadequate feeding practices among children 12–24 months: results from a cross-sectional survey in Myanmar. Maternal and child health journal 20:1688-1695.

Tobin E, Isah E, Asogun D. 2014. Care giver's knowledge about childhood diarrheal management in a rural community in South-South Nigeria. International Journal of Community Research 3:93-99.

Turin M. 2019. Translation and interpretation in the United Nations Mission in Nepal. Nepalese Translation 3:34-45.

-U-

Un K, So S. 2011. Land rights in Cambodia: How neopatrimonial politics restricts land policy reform. Pacific Affairs 84:289-308.

Unicef. 2012. The state of the world's children 2012: children in an urban world. In: Esocialsciences.

UNICEF. 2008. The state of the world's children 2009: maternal and newborn health: Unicef.

Upadhayay A, Shah SK, Thapa DK, Ts S, Ghimire R, Dahal HR. 2017. Knowledge, attitude and practice of family planning method among married women of reproductive age group in earth quake displaced population of Sindupalchok Disrtict, Nepal. Am J Public Health Res 5:1-5.

-V-

Van Der Vegt GS, Essens P, Wahlström M, George G. 2015. Managing risk and resilience. In: Academy of Management Briarcliff Manor, NY.

Vanommeslaeghe K, Hatcher E, Acharya C, Kundu S, Zhong S, Shim J, Darian E, Guvench O, Lopes P, Vorobyov I. 2010. CHARMM general force field: A force field for drug-like molecules compatible with the CHARMM all-atom additive biological force fields. Journal of computational chemistry 31:671-690.

-W-

Wessells KR, Brown KH. 2012. Estimating the global prevalence of zinc deficiency: results based on zinc availability in national food supplies and the prevalence of stunting. PLoS One 7:e50568.

WHO U. 2009. UNAIDS. Technical guide for countries to set targets for universal access to HIV prevention, treatment and care for injecting drug users.

WHO U, USAID A, UCDavis I. 2008. Indicators for assessing infant and young child feeding practices. Geneva: World Health Organization.

Wilson SE, Ouédraogo CT, Prince L, Ouédraogo A, Hess SY, Rouamba N, Ouédraogo JB, Vosti SA, Brown KH. 2012. Caregiver recognition of childhood diarrhea, care seeking behaviors and home treatment practices in rural Burkina Faso: a cross-sectional survey. PloS one 7:e33273.

Wondimu A, Cao Q, Wilschut JC, Postma MJ. 2019. Factors associated with the uptake of newly introduced childhood vaccinations in Ethiopia: the cases of rotavirus and pneumococcal conjugate vaccines. BMC Public Health 19:1-10.

Workie HM, Sharifabdilahi AS, Addis EM. 2018. Mothers' knowledge, attitude and practice towards the prevention and home-based management of diarrheal disease among under-five children in Diredawa, Eastern Ethiopia, 2016: a cross-sectional study. BMC pediatrics 18:1-9.

-Y-

Yasin DDEKY, Halala Y. 2017. Assessment of Knowledge, Attitude& Practice of Child Care Givers towards Oral Rehydration Salt for Diarrhea Treatment in under 5 Children in Wolaita Sodo Town, SNNPR/2016. Assessment 7.

Yaya S, Uthman OA, Ekholuenetale M, Bishwajit G. 2018. Women empowerment as an enabling factor of contraceptive use in sub-Saharan Africa: a multilevel analysis of cross-sectional surveys of 32 countries. Reproductive health 15:1-12.

Yilgwan CS, Okolo S. 2012. Prevalence of diarrhea disease and risk factors in Jos University Teaching Hospital, Nigeria. Annals of African medicine 11:217.

Young M, Wolfheim C, Marsh DR, Hammamy D, Organization WH. 2012. United Nations Children's Fund joint statement on integrated community case management: an equity-focused strategy to improve access to essential treatment services for children. Am J Trop Med Hyg 87:6-10.

Yüksel Kaçan C, Palloş A, Özkaya G. 2022. Examining knowledge and traditional practices of mothers with children under five in Turkey on diarrhoea according to education levels. Annals of Medicine 54:674-682.

-Z-

Zain RSM, Primanagara R, Naldi Y, Nurbaiti N. 2020. The Influence of Giving Information on Diarrhea Management to the Knowledge and Attitude of the Mother Carrying Infants in the Primary Health Care in Sitopeng Cirebon. In: Proceedings of the International Conference on Agriculture, Social Sciences, Education, Technology and Health (ICASSETH 2019). International Conference on Agriculture, Social Sciences, Education, Technology and Health (ICASSETH 2019), Cirebon, Indonesia. https://doi. org/10.2991/assehr. k.

Zerbino DR, Achuthan P, Akanni W, Amode MR, Barrell D, Bhai J, Billis K, Cummins C, Gall A, Girón CG. 2018. Ensembl 2018. Nucleic acids research 46:D754-D761.

Appendices

Administrative Arrangements

Appendix A-1

Arrangement of University of Karbala \ collage of nursing

Republic of Iraq
Ministry of higher education & scientific research
University of Karbala
College of Nursing
Graduate studies Division

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة كربلاء
كلية التمريض
شعبة الدراسات العليا

العدد: ج ع / 158
التاريخ: 6 / 11 / 2021

الى / دائرة صحة الديوانية / مركز التدريب و تطوير الملاكات

م/ تسهيل مهمة

تحية طيبة...

يرجى التفضل بالموافقة على تسهيل مهمة السيد (محمد جميل وهاب) وهو احد طلبة الدراسات العليا / الماجستير في كليتنا / للعام الدراسي (2021-2020) لغرض جمع عينات لإنجاز رسالة الماجستير الموسومة (Mothers' Knowledge and Attitude regarding Prevention and Home Management of Diarrhea in Children under Five Years at the Eastern Al Hamza City (معرفة واتجاهات الأمهات فيما يتعلق بالوقاية والعلاج المنزلي من الإسهال لدى الأطفال دون سن الخامسة في مدينة الحمزة الشرقي)

... مع التقدير ...

أ.م.د. سلمان حسين فارس الكريطي
معاون العميد للشؤون العلمية و الدراسات العليا
2021 / 11 / 16

جامعة كربلاء - كلية التمريض - شعبة الدراسات العليا

نسخة منه الى :-
- مكتب السيد المعاون العلمي المحترم.
- شعبة الدراسات العليا.

العنوان : العراق - محافظة كربلاء المقدسة - حي الموظفين - جامعة كربلاء
Mail: nursing@uokerbala.edu.iq website: nursing.uokerbala.edu.iq

Appendix A-2

Arrangement of Ministry of Health /AL-Diwaniyah Health Department, Training and Human Development Center

جمهورية العراق
وزارة الصحة
دائرة صحة الديوانية
قسم تدريب والتنمية البشرية
العدد / ٧٠٨
التاريخ / ٢٠٢١/١١/١٦

وزارة الصحة العراقية
مركز التدريب والتطوير
Iraqi Ministry of Health
Training & Dev. Center

دائرة صحة الديوانية
قسم التدريب والتنمية البشرية
الصادرة
العدد /
التاريخ

قطاع الحمزة العام
وحدة البحوث

م / تسهيل مهمة بحثية

نهديكم أطيب تحياتنا....

كتاب وزارة التعليم العالي والبحث العلمي/ جامعة كربلاء / كلية التمريض /شعبة الدراسات العليا ذي العدد ١٠٨ بتاريخ ٢٠٢١/١١/١٦ ، المتضمن اتسهيل المهمة البحثية لطالب الماجستير (محمد جميل وهاب) عن رسالته الموسومة (معرفة واتجاهات الامهات فيما يتعلق بالوقاية والعلاج المنزلي من الاسهال لدى الاطفال دون سن الخامسة في مدينة الحمزة الشرقي).لامانع لدينا من تسهيل مهمة الطالب على ان لاتتحمل موسساتنا اي تبعات مالية او قانونية

مع الاحترام

المرفق
كتاب وزارة التعليم العالي والبحث العلمي/ جامعة كربلاء / كلية التمريض /شعبة الدراسات العليا ذي العدد ١٠٨ بتاريخ ٢٠٢١/١١/١٦
أقرار بحث + استمارة المعلومات البحثية

ح الطبيب الاختصاص
يحيى فالح محمد
مدير قسم التدريب والتنمية البشرية

الدكتورة
بشرى [illegible] شناوة
مركز تدريب وتطوير الملاكات

نسخة منه الى //
مكتب المدير العام
قسم التدريب والتنمية البشرية / شعبة ادارة المعرفة والبحوث
التعليم العالي والبحث العلمي/ جامعة كربلاء / كلية التمريض /شعبة الدراسات العليا

Appendix A-3

Arrangement of Ministry of Health /AL-Diwaniyah Health Department, Training and Human Development Center /AL-Hamza Sector

جمهورية العراق
محافظة الديوانية

٤٩٦٨

العدد//
التاريخ // / /٢٠٢١

دائرة صحة الديوانية
قطاع الحمزة

مجتمع بلا عنف ٠٠٠٠٠ وطن مزدهر

الى / المراكز الصحية كافة

م / تسهيل مهمة بحثية

كتاب قسم التدريب والتنمية البشرية المرقم ٦٧٠ في ٢٠٢١/١١/٢١ والمتضمن تسهيل المهمة البحثية لطالب الماجستير محمد جميل وهاب عن رسالته الموسومة (معرفة واتجاهات الامهات فيما يتعلق بالوقاية والعلاج المنزلي من الاسهال لدى الاطفال دون سن الخامسة في مدينة الحمزة الشرقي) لا مانع لدينا من تسهيل مهمته البحثية ٠ مع التقدير ٠

العدد /
التاريخ / /

الدكتور
علي حسين جبيب
مدير عموم قطاع الحمزة

نسخة /
-قسم التدريب والتنمية البشرية
- الموما اليه
-الحفظ

Appendix A-4

Statistical Expert

Republic of Iraq
Ministry of higher education & scientific research
University of Kerbala
College of Nursing

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة كربلاء
كلية التمريض
الدراسات العليا

اقرار الخبير الاحصائي

اشهد بان الرسالة الموسومة :

(معرفة واتجاهات الأمهات فيما يتعلق بالوقاية والعلاج المنزلي من الإسهال لدى الأطفال دون سن الخامسة في مدينة الحمرة الشرقي.)

قد تم الاطلاع على الاسلوب الاحصائي المتبع في تحليل البيانات واظهار النتائج الاحصائية وفق مضمون الدراسة ولأجله وقعت.

توقيع الخبير الاحصائي:
الاسم واللقب العلمي: م.م. ايناس عبد الحافظ محمد
الاختصاص الدقيق: احصاء تصحيح
مكان العمل: جامعة كربلاء / كلية الادارة والاقتصاد / قسم الاحصاء
التاريخ: 15 / 2022

العنوان : العراق - محافظة كربلاء المقدسة - حي الموظفين - جامعة كربلاء

Appendix A-5

Linguist Expert

Republic of Iraq
Ministry of higher education & scientific research
University of Kerbala
College of Nursing

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة كربلاء
كلية التمريض
الدراسات العليا

اقرار الخبير اللغوي

اشهد بان الرسالة الموسومة :

(معرفة واتجاهات الأمهات فيما يتعلق بالوقاية والعلاج المنزلي من الإسهال لدى الأطفال دون سن الخامسة في مدينة الحمرة الشرقي.)

قد جرى مراجعتها من الناحية اللغوية بحيث اصبحت بأسلوب علمي سليم خال من الاخطاء اللغوية ولأجله وقعت.

توقيع الخبير اللغوي:
الاسم واللقب العلمي: أ.د. حسين موسى كاظم الخفاجي
الاختصاص الدقيق: علم اللغة - تداولية وتحليل خطاب
مكان العمل: جامعة كربلاء / كلية التربية للعلوم الإنسانية
التاريخ: ٨ / ٥ / 2022

العنوان : العراق - محافظة كربلاء المقدسة ـ حي الموظفين - جامعة كربلاء
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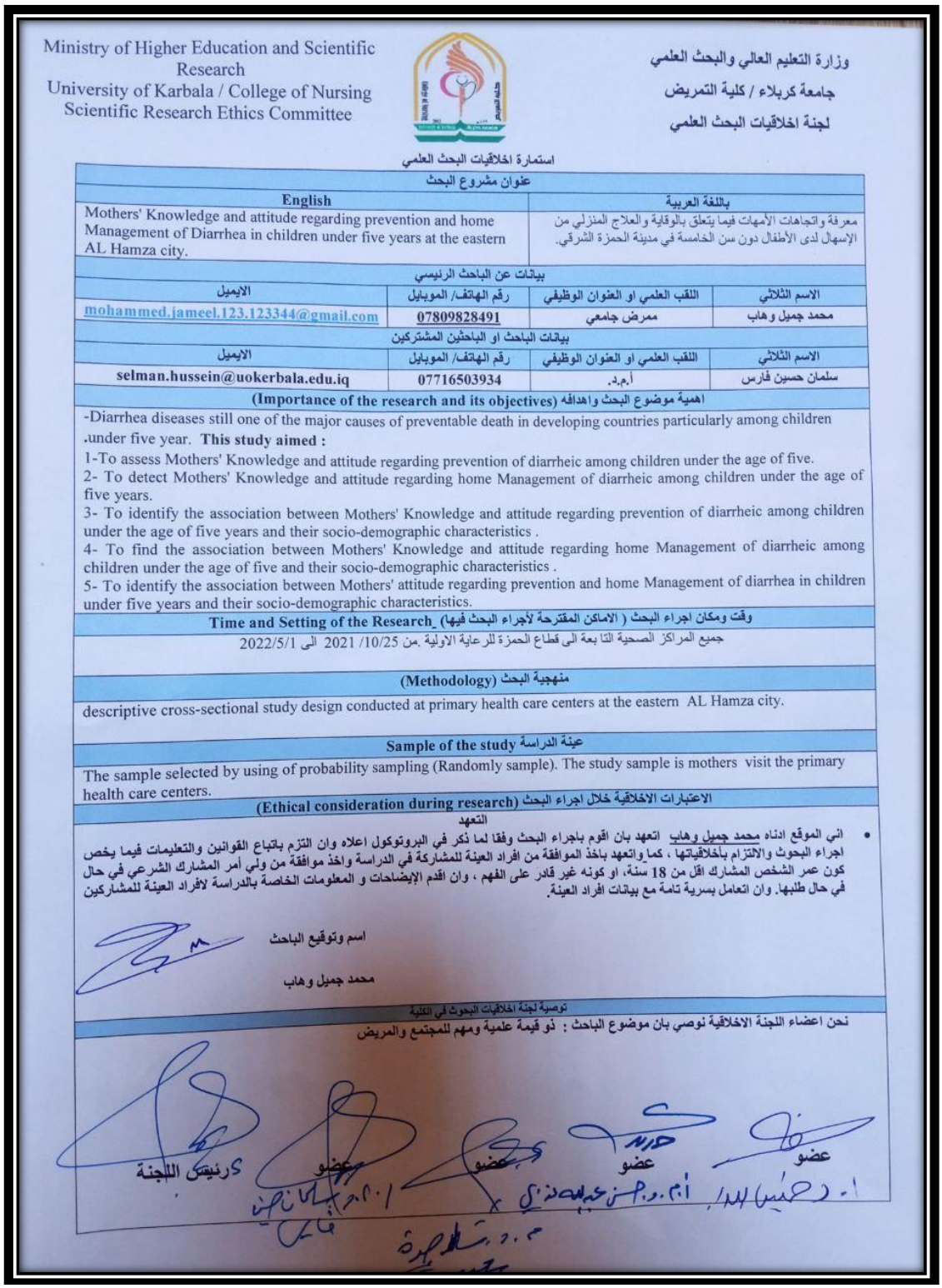
Appendix B

Ethical consideration



Ministry of Higher Education and Scientific Research
University of Karbala / College of Nursing
Scientific Research Ethics Committee

وزارة التعليم العالي والبحث العلمي
جامعة كربلاء / كلية التمريض
لجنة اخلاقيات البحث العلمي

استمارة اخلاقيات البحث العلمي

عنوان مشروع البحث

English	باللغة العربية
Mothers' Knowledge and attitude regarding prevention and home Management of Diarrhea in children under five years at the eastern AL Hamza city.	معرفة واتجاهات الأمهات فيما يتعلق بالوقاية والعلاج المنزلي من الإسهال لدى الأطفال دون سن الخامسة في مدينة الحمزة الشرقي.

بيانات عن الباحث الرئيسي

الاسم الثلاثي	اللقب العلمي او العنوان الوظيفي	رقم الهاتف/ الموبايل	الايميل
محمد جميل وهاب	ممرض جامعي	07809828491	mohammed.jameel.123.123344@gmail.com

بيانات الباحث او الباحثين المشتركين

الاسم الثلاثي	اللقب العلمي او العنوان الوظيفي	رقم الهاتف/ الموبايل	الايميل
سلمان حسين فارس	أ.م.د.	07716503934	selman.hussein@uokerbala.edu.iq

اهمية موضوع البحث واهدافه (Importance of the research and its objectives)

-Diarrhea diseases still one of the major causes of preventable death in developing countries particularly among children under five year. **This study aimed :**

1-To assess Mothers' Knowledge and attitude regarding prevention of diarrheic among children under the age of five.
2- To detect Mothers' Knowledge and attitude regarding home Management of diarrheic among children under the age of five years.
3- To identify the association between Mothers' Knowledge and attitude regarding prevention of diarrheic among children under the age of five years and their socio-demographic characteristics .
4- To find the association between Mothers' Knowledge and attitude regarding home Management of diarrheic among children under the age of five and their socio-demographic characteristics .
5- To identify the association between Mothers' attitude regarding prevention and home Management of diarrhea in children under five years and their socio-demographic characteristics.

وقت ومكان اجراء البحث (الاماكن المقترحة لأجراء البحث فيها) Time and Setting of the Research

جميع المراكز الصحية التا بعة الى قطاع الحمزة للرعاية الاولية .من 2021 /10/25 الى 2022/5/1

منهجية البحث (Methodology)

descriptive cross-sectional study design conducted at primary health care centers at the eastern AL Hamza city.

عينة الدراسة Sample of the study

The sample selected by using of probability sampling (Randomly sample). The study sample is mothers visit the primary health care centers.

الاعتبارات الاخلاقية خلال اجراء البحث (Ethical consideration during research)

التعهد

- اني الموقع ادناه محمد جميل وهاب اتعهد بان اقوم باجراء البحث وفقا لما ذكر في البروتوكول اعلاه وان التزم باتباع القوانين والتعليمات فيما يخص اجراء البحوث والالتزام بأخلاقياتها ، كما واتعهد باخذ الموافقة من افراد العينة للمشاركة في الدراسة واخذ موافقة من ولي أمر المشارك الشرعي في حال كون عمر الشخص المشارك اقل من 18 سنة، او كونه غير قادر على الفهم ، وان اقدم الإيضاحات و المعلومات الخاصة بالدراسة لافراد العينة للمشاركين في حال طلبها. وان اتعامل بسرية تامة مع بيانات افراد العينة.

اسم وتوقيع الباحث

محمد جميل وهاب

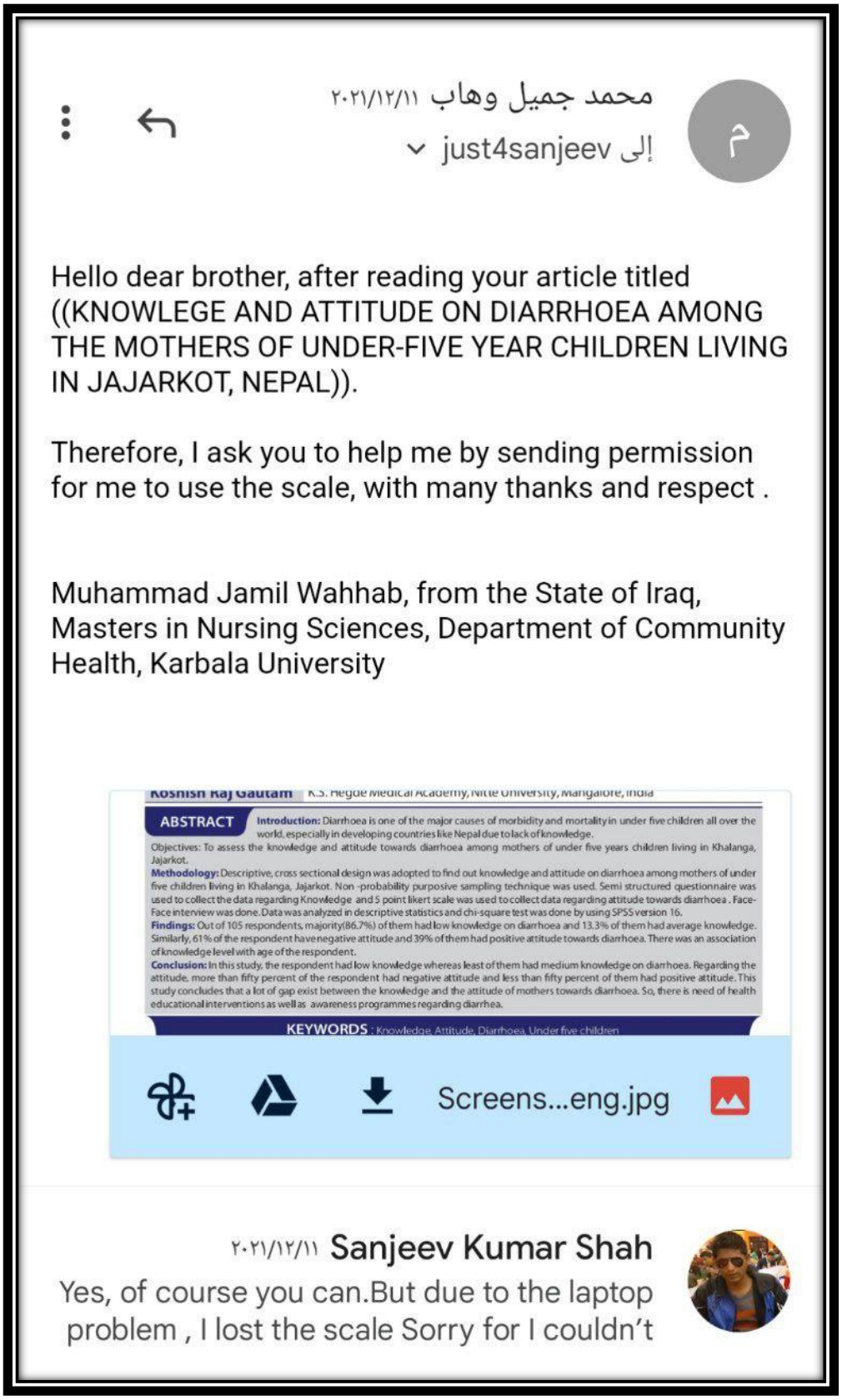
توصية لجنة اخلاقيات البحوث في الكلية

نحن اعضاء اللجنة الاخلاقية نوصي بان موضوع الباحث : ذو قيمة علمية ومهم للمجتمع والمريض

رئيس اللجنة — عضو — عضو — عضو — عضو

Appendix C

Permission



م

محمد جميل وهاب ٢٠٢١/١٢/١١

إلى just4sanjeev

Hello dear brother, after reading your article titled ((KNOWLEGE AND ATTITUDE ON DIARRHOEA AMONG THE MOTHERS OF UNDER-FIVE YEAR CHILDREN LIVING IN JAJARKOT, NEPAL)).

Therefore, I ask you to help me by sending permission for me to use the scale, with many thanks and respect .

Muhammad Jamil Wahhab, from the State of Iraq, Masters in Nursing Sciences, Department of Community Health, Karbala University

Koshish Raj Gautam K.S. Hegde Medical Academy, Nitte University, Mangalore, India

ABSTRACT

Introduction: Diarrhoea is one of the major causes of morbidity and mortality in under five children all over the world, especially in developing countries like Nepal due to lack of knowledge.

Objectives: To assess the knowledge and attitude towards diarrhoea among mothers of under five years children living in Khalanga, Jajarkot.

Methodology: Descriptive, cross sectional design was adopted to find out knowledge and attitude on diarrhoea among mothers of under five children living in Khalanga, Jajarkot. Non -probability purposive sampling technique was used. Semi structured questionnaire was used to collect the data regarding Knowledge and 5 point likert scale was used to collect data regarding attitude towards diarrhoea . Face-Face interview was done. Data was analyzed in descriptive statistics and chi-square test was done by using SPSS version 16.

Findings: Out of 105 respondents, majority(86.7%) of them had low knowledge on diarrhoea and 13.3% of them had average knowledge. Similarly, 61% of the respondent have negative attitude and 39% of them had positive attitude towards diarrhoea. There was an association of knowledge level with age of the respondent.

Conclusion: In this study, the respondent had low knowledge whereas least of them had medium knowledge on diarrhoea. Regarding the attitude, more than fifty percent of the respondent had negative attitude and less than fifty percent of them had positive attitude. This study concludes that a lot of gap exist between the knowledge and the attitude of mothers towards diarrhoea. So, there is need of health educational interventions as well as awareness programmes regarding diarrhea.

KEYWORDS : Knowledge, Attitude, Diarrhoea, Under five children

Screens...eng.jpg

٢٠٢١/١٢/١١ Sanjeev Kumar Shah

Yes, of course you can.But due to the laptop problem , I lost the scale Sorry for I couldn't

Appendix D

Instrument of the Study

اولا :الخصائص الاجتماعية الديموغرافية للام :

1. العمر : (....).

2. المستوى التعليمي :

أ- لا تقرأ ولا تكتب (....) ب- تقرأ وتكتب(....) ج- خريجة مرحلة ابتدائية (....)

د- خريجة مرحلة متوسطة (....) ه- خريجة مرحلة اعدادية(....) و- خريجة معهد(....) ي- خريجة كلية(....)

ع- شهادة عليا (....).

3.حالة العمل:

أ- موظفة (....) ب- ربة بيت (....) ج- اعمال حره (....) د- طالبة (....)

4. الدخل الشهري :

أ- يكفي (....) ب- بالكاد يكفي (....) ج- لا يكفي(....)

5. مكان السكن : أ- ريف (....) ب- مدينة (....)

6. نوع الأسرة: أ- اب وام وابناء (....) ب- اب وام وابناء واقارب (....)

7- عدد الاطفال بعمر اقل من 5 سنوات : (....)

8. مصادر المعلومات حول الاسهال :

أ- العاملين في الرعاية الصحية: نعم (....) لا (....)

ب- الانترنيت : نعم (....) لا (....)

ج- التلفاز: نعم (....) لا (....)

د- طرق اخرى : نعم (....) لا (....)

ثانيا : معرفة الأمهات حول الإسهال

ت	الأسئلة	الإجابة
1.	يقصد بالإسهال هو :	أ. تكرار خروج البراز المائي (3 مرات أو أكثر) . ب. تكرار خروج البراز غير المائي. ج. لون البراز مخضر. د. لا توجد لدي أي فكرة.
2.	برأيك ما هو سبب الإسهال؟	أ- المياه الصحية.

		ب- التنوع في الطعام . ج- التغيرات البيئية. د- الطعام الملوث.
.3	برأيك كيف ينتقل الإسهال للأطفال ؟	ا- غسل اليدين باستمرار . ب- عدم التخلص من النفايات . ج- وراثيا . د- من شخص لآخر.
-4	من العلامات والاعراض المرتبطة بالإسهال .	أ- رائحة كريهة بالفم ب - مرونة الجلد العالية. ج- 3 مرات أو أكثر من البراز الرخو د- زيادة الوزن.
.5	من الأطفال أكثر عرضة للإصابة بالإسهال؟	أ- طفل لديه امراض سوء التغذية. ب- طفل غير معرض لصرف صحي سيئ. ج- الطفل قوي المناعة. د- طفل ليس لديه حساسيه أغذية.
-6	من مضاعفات الاسهال ؟	أ- وزيادة المناعة . ب- سمنة مفرطة. ج- الجفاف. د- الاختناق.

ثالثا : معرفة الامهات حول طرق الوقاية من الاسهال:

ت	الاسئلة	الاجابة
.1	يمكن الوقاية من الإسهال من خلال .	أ- تجنب تناول بعض الأطعمة الملوثة . ب- شرب الماء المعقم . ج- النظافة الشخصية الجيدة. د- الإصحاح البيئي الجيد.
.2	للوقاية من الاسهال يفضل اطعام الطفل في اليوم ؟	أ. مرتين ب. 3-4 مرات ج. 5 مرات د. عندما يريد الطعام
.3	ما نوع المياه التي تستخدم للاحتياجات اليومية لتجنب الاسهال يفضل ان يكون ؟	أ- الماء المخزون في الخزانات (التانكي) ب- مياه مصفاة (RO). ج- ماء مغلي ومبرد. د- ماء عادي (مياه الحنفية) .

.4	يمكن لطريقة الوقاية التالية ان تجنب الاصابة بالإسهال	أ- ابعاد الطفل عن الذين يعانون من المصابين بالانفلاونزا . ب- تقريب الطفل عن مياه الصرف الصحي. ج- تشجيع الطفل على عدم تناول الحلويات بكثرة . د- تشجيع الطفل على تناول المشروبات الغازية الحاوية على الكافائين .
.5	يجب تجنب الطعام التالي لأنه يسبب الاسهال	أ-الأطعمة الدهنية. ب-الطعمة المطبوخة جيدا. ج- اللبن الرائب . د- اللحوم الحمراء .
.6	لغسل اليدين اهمية قصوى في الوقاية من الاسهال ويجب ان يكون ؟	أ-غسل اليدين بالماء قبل وبعد الطعام . ب- غسل اليدين بالماء والصابون قبل وبعد الطعام . ج- غسل اليدين بالماء بعد الطعام فقط . د- غسل اليدين بالماء والصابون بعد الطعام فقط .
.7	يمكن وقاية الطفل من الاصابة بالإسهال من خلال تجنب الطفل تناول الحليب	أ. الرضاعة الطبيعية . ب. الغير مبستر. ج. المبستر . د- قليل الدسم .
.8	الحليب المفضل للطفل لحمايته من الاسهال هو .	أ. حليب الام . ب. الحليب المصنع . ج- المزج بين حليب الام والحليب المصنع . ج. حليب البقر.
.9	لوقاية الطفل من الاسهال يجب؟	أ- تناول الاطعمة والمشروبات من الباعة المتجولين . ب- تناول الاطعمة المعدة بالبيت . ج- السباحة في الانهار والمسطحات المائية. د- عدم الاهتمام بالنظافة الشخصية للطفل.
.10	من العادات التي تقي الطفل من الاصابة بالإسهال ؟.	أ- تحضير الحليب بشكل مسبق . ب- تحضير الحليب عند حاجة الطفل اليه. ج- تغيير نوع الحليب بين فترة واخرى . د- عدم غلي الماء والزجاجة قبل كل رضاعة.

رابعا: معرفة الامهات حول علاج المنزلي من الاسهال

ت	الاسئلة	الاجابة
.1	أي الامور التالية يمكن اعتباره علاجا فعالا للإسهال؟	أ- أملاح الارواء الفموية. ب- سكر وملح وماء. ج- عدم طلب المساعدة الطبية. د- التقليل من ارضاع الطفل.

.2	بمجرد تحضير أملاح الارواء الفموية يجب استخدامها :	أ- أقل من 12 ساعة من تحضيرها. ب- خلال 12 ساعة من تحضيرها. ج- خلال 24 ساعة من تحضيرها. د- أكثر من 24 ساعة من تحضيرها.
.3	لعلاج مضاعفات الاسهال يجب الاستمرار على اعطاء محلول الارواء الفموية:	أ- يومان. ب- اربعة ايام . ج- أسبوع. د- ما دام الإسهال مستمر
.4	لأي غرض يستخدم محلول (ORS) الفموي ؟	أ- يعوض عن السوائل المفقودة فقط من جسم الطفل . ب- علاج مرض الاسهال . ج -علاج حالات الجفاف . د- لمنع الاصابة بالأمراض الاخرى.
.5	يمكن تحضير علاج محلول (ORS) الفموي المنزل عن طريق ؟	أ- خلط 1 ملعقة صغيرة من ملح الطعام و 8 ملاعق صغيرة من السكر في لتر واحد من الماء. ب-خلط نصف ملعقة صغيرة من ملح الطعام و 5 ملاعق صغيرة من السكر في نصف لتر واحد من الماء. ج-خلط 6 ملاعق صغيرة مستوية من السكر، ونصف ملعقة صغيرة مستوية من الملح إلى 1 لتر من الماء النقي د. لا توجد لدي أي فكرة .
.6	اي من الاطعمة التالية تساعد في معالجة الاسهال	أ- الاطعمة التي تحتوي على الدهون . ب-الاطعمة التي تحتوي على النشويات كالرز والذرة . ج- الحليب الدسم . د- الاطعمة التي تحتوي على السكريات كالحلويات .
.6	أي من الاساليب التي تعتبر صحيحة لمعالجة الاسهال ومضاعفاته ؟	أ- عدم شرب السوائل اثناء فترة الاصابة بالإسهال. ب- عدم تناول الاطعمة اثناء فترة الاصابة بالإسهال. ج- الاستمرار بالرضاعة الطبيعية اثناء فترة الاصابة بالإسهال . د- الاكثار من تناول السوائل وتناول الاغذية الغنية بالدهون .
.8	أي من الفواكه التالية تساعد في معالجة الاسهال ؟	أ- الرمان . ب البرتقال . ج- الخوخ . د-الكرز .
.9	أي من منتجات الالبان التالية تساعد في معالجة الاسهال ؟	أ- الزبد . ب-الحليب . ج- القيمر . د-اللبن الرائب .

خامسا : اتجاهات الامهات فيما يتعلق بالوقاية والعلاج المنزلي من الاسهال :

ت	العبارة	الاجابة	
		أتفق	لا أتفق
.1	يعتبر الاسهال من الامراض التي تهدد حياة الطفل		
.2	الإسهال مرض غير معد		
.3	الرضاعة بالزجاجة تساهم بالإصابة بالإسهال.		
.4	حليب البقر يسبب الاسهال عند الاطفال بعمر اقل من سنتين		
.5	يمكن للتسنين ان يسبب الإسهال عند الاطفال		
.6	الأطعمة التي تحتوي على الألياف تساهم في الإسهال		
.7	المواد السكرية تجعل حالة الإسهال أسوأ.		
.8	يجب تجنب الأطعمة الدهنية أثناء فترة الإسهال.		
.9	يمكن الوقاية من مرض الإسهال		
.10	يمكن التحكم بمرض الاسهال بالمنزل		
.11	يمكن للأمهات تحضير سوائل معالجة الجفاف عن طريق الفم بالمنزل		
.12	يمكن أن يعالج مرض الإسهال بإعطاء محلول الارواء الفموي		
.13	يعوض محلول الارواء الفموي السوائل والاملاح المفقودة نتيجة مرض الإسهال .		
.14	الرضاعة الطبيعية مهمة للأطفال الذين يعانون من الإسهال		
.15	الابتعاد عن ماء الحنفية في حالات الإسهال عند الاطفال		
.16	حليب الام يجب ان لا يخفف اثناء الاسهال عند الاطفال		
.17	غسل اليدين قبل وبعد الطعام يساهم في الوقاية من مرض الاسهال		
.18	استخدام المرحاض هي ممارسة صحية للوقاية من مرض الاسهال		
.19	يخفف الزبادي من شدة مرض الإسهال		

.20	يقلل الزنك من شدة ومدة مرض الاسهال		

Part I : the mother's socio-demographic characteristics:

1-Age (….).

2- Educational level :

A- Do not read and write (....)
B- read and write (....)
C- Primary level (....)
D- Middle school graduate (....)
E- Preparatory school graduate (....)
F- Institute graduate (....)
G- College graduate (....)
H- Master's Degree (....)

3- Working Status:

A- Housewife (....)
B- employee (....)
C- free business (....)
D- student (....)

4- Monthly income:

A- enough (....)
B- hardly enough (....)
C- not enough (....)

5- Address :

A- rural (....)
B- urban (....)

6- family type :

A- Nuclear family (....)
B- Extended family (....)

7- Number of children under 5 years old (….)

8- Information sources about diarrhea :

A- health care workers Yes (….) No (….)
B- Internet Yes (….) No (….)
C- Television Yes (….) No (….)
D- other ways Yes (….) No (….)

Part II : Mothers' knowledge about diarrhea

No.	Item	Answer

1.	It means diarrhea	a. Frequent passing of watery stools (3 or more times). B. Frequent passing of non-watery stools. c. Stool color is greenish. D. I have no idea.
2.	What do you think is the cause of diarrhea?	A- Healthy water. B - Diversity in food. C- Environmental changes. D - contaminated food.
3.	How do you think diarrhea is transmitted to children?	A- Wash hands frequently. b- Not disposing of waste. C- genetically. D- From person to person.
4.	Signs and symptoms associated with diarrhea.	A - bad breath B - high skin elasticity. C - 3 or more times of loose stools D - weight gain.
5.	Which children are more likely to have diarrhea?	A- A child with malnutrition. b- A child who is not exposed to poor sanitation. C - The child is strong immune. D- A child who does not have a food allergy.
6.	Complications of diarrhea?	A- Increase immunity. b- Excessive obesity. C- dehydration. D - suffocation.

Part III: Mothers' knowledge about prevent of diarrhea :

No.	Item	Answer

1.	Diarrhea can be prevented by .	A - Avoid eating some contaminated foods. B- Drink sterilized water. C - good personal hygiene. D - good environmental sanitation.
2.	To prevent diarrhea, it is preferable to feed the child a day?	A. Twice B. 3-4 times C. 5 times D. When he wants food
3.	What kind of water should be used for daily needs to avoid diarrhea, preferably?	A- Water stored in tanks B- Filtered water (RO). C- Boiled and cooled water. D- Plain water (tap water)
4.	The following prevention method can prevent diarrhea.	A - Keeping the child away from those who are infected with the flu. B - Bringing the child closer to sewage. C - Encourage the child not to eat a lot of sweets. D - Encouraging the child to drink soft drinks containing caffeine.
5.	The following food should be avoided because it causes diarrhea.	A- Fatty foods. B - Food cooked well. C- curdled milk. D - red meat.
6.	Washing hands is of paramount importance in the prevention of diarrhea and should it be?	A- Wash hands with water before and after eating. B- Washing hands with soap and water before and after eating.

		c- Wash hands with water only after eating. D- Wash hands with soap and water only after eating.
7.	A child can be prevented from catching diarrhea by avoiding milk.	a. Breastfeeding . B. Unpasteurized. c. pasteurized; D- Low fat.
8.	The preferred milk for the child to protect him from diarrhea is.	a. Mother's milk . B. processed milk. C- Mixing breast milk and formula milk. c. cow's milk.
9.	To prevent a child from diarrhea must?	A- Eating food and drinks from street vendors. B - Eating foods prepared at home. C - Swimming in rivers and water bodies. D - Lack of attention to the personal hygiene of the child.
10.	What are the habits that prevent a child from catching diarrhea?	A - Prepare the milk in advance. B - preparing milk when the child needs it. C - Changing the type of milk from time to time. D - Do not boil water and the bottle before each feeding.

Part IV : Mothers' knowledge about home management of diarrhea :

No.	**Item**	**Answer**

1.	Which of the following can be considered an effective treatment for diarrhea?	A- Oral rehydration salts. b- Sugar, salt and water. C - Not to seek medical help. D- Reducing the feeding of the child.
2.	Once the oral rehydration salts are prepared, they should be used.	A - Less than 12 hours from its preparation. B - Within 12 hours of its preparation. C - Within 24 hours of its preparation. D - more than 24 hours from its preparation.
3.	To treat complications of diarrhea, the oral rehydration solution should be continued.	A- Two days. B- Four days. C- a week. D - As long as the diarrhea continues.
4.	What is the Oral Solution (ORS) used for?	A - compensates for the lost fluids only from the child's body. B - treatment of diarrhea. C - treatment of drought cases. D- To prevent infection with other diseases.
5.	Oral solution (ORS) can be prepared at home by?	A- Mix 1 teaspoon of table salt and 8 teaspoons of sugar in one liter of water. b- Mix half a teaspoon of table salt and 5 teaspoons of sugar in one pint of water. c- Mix 6 level teaspoons of sugar, and ½ teaspoon small amount of salt to 1 liter of pure water

		D. I don't have any idea.
6.	Which of the following foods helps treat diarrhea?	A - Foods that contain fat. B - Foods that contain carbohydrates such as rice and corn. C- fat milk. D - Foods that contain sugars such as sweets.
7.	Which of the methods that are considered correct to treat diarrhea and its complications?	A - Do not drink fluids during the period of diarrhoea. B - Not to eat food during the period of diarrhea. C - Continuing to breastfeed during the period of diarrhoea. D - Increase fluid intake and eat foods rich in fat.
8.	Which of the following fruits help treat diarrhea?	A- Pomegranate. b orange. C- a peach. D-cherry.
9.	Which of the following dairy products helps treat diarrhea?	A- Butter. B- milk. C- Qaimer. D - yoghurt.

Part V : Attitudes of mothers regarding prevention and home management of diarrhea:

No.	**Item**	**Answer**	
		Agree	**Disagree**
1.	Diarrhea is a life-threatening disease for children.		
2.	Diarrhea is a non-contagious disease.		
3.	Bottle feeding contributes to diarrhea.		
4.	Cow's milk causes diarrhea in children under		

	two years of age.		
5.	Teething can cause diarrhea in children.		
6.	Foods that contain fiber contribute to diarrhea.		
7.	Sugary substances make diarrhea worse.		
8.	Fatty foods should be avoided during the period of diarrhea.		
9.	Diarrhea can be prevented.		
10.	Diarrhea can be controlled at home.		
11.	Mothers can prepare oral rehydration fluids at home.		
12.	Diarrhea can be treated with oral rehydration solution.		
13.	Oral rehydration solution replaces fluids and minerals lost as a result of diarrheal disease.		
14.	Breastfeeding is important for children with Diarrhea.		
15.	Avoid tap water in cases of diarrhea in children.		
16.	Breast milk should not be diluted during diarrhea in children.		
17.	Washing hands before and after eating helps prevent diarrhea.		
18.	Using the toilet is a healthy practice to prevent diarrhea.		
19.	Yogurt relieves diarrhea.		
20.	Zinc reduces the severity and duration of diarrheal disease.		

Appendix

Expert's Panel

ت	اسم الخبير	سنوات الخبرة	اللقب العلمي	مكان العمل	الاختصاص الدقيق
.1	د. سلمى كاظم جهاد	39 سنة	أستاذ	جامعة بابل /كلية تمريض	تمريض صحة المجتمع
.2	د. هادي جبر سهيل	38سنة	أستاذ	جامعة القادسية /كلية الطب	طب مجتمع
.3	د. أمين عجيل ياسر	37سنة	أستاذ	جامعة بابل /كلية تمريض	تمريض صحة المجتمع
.4	د. وسام جبار قاسم	27سنة	أستاذ	كليه تمريض جامعه بغداد	تمريض صحة المجتمع
.5	د. عباس محمد الشباني	22سنة	أستاذ	جامعة القادسية /كلية الطب	طب الأطفال
.6	د. رحمن كريم محسن	38سنة	أستاذ مساعد	جامعة القادسية /كلية الطب ة	طب الأطفال
.7	د. غزوان عبدا لحسين	17سنة	استاذ مساعد	جامعة كربلاء/ كلية التمريض	تمريض صحة المجتمع
.8	د. مرتضى غانم عداي	15سنة	أستاذ مساعد	كلية التمريض /جامعة وارث الأنبياء	تمريض صحة المجتمع
.9	د. منصور عبدا لله فلاح	15 سنة	أستاذ مساعد	جامعة الكوفة / كلية التمريض	تمريض صحة المجتمع
.10	د. حسين منصور علي	11سنة	استاذ مساعد	جامعة الكوفة / كلية التمريض	تمريض صحة المجتمع
.11	د. فاطمة عبد الكاظم رضا	8سنة	أستاذ مساعد	جامعة القادسية /كلية الطب	طب مجتمع
.12	د.مخلص مهدي ابو لويخ	27سنة	طبيب اختصاص	مستشفى الحمرة العام	طب الأطفال وحديثي الولادة
.13	د. منذر عبد زيد ألعابدي	سنة22	طبيب اختصاص	مستشفى الحمرة العام	طب الأطفال
.14	د. ساجدة خميس عبدا لله	32 سنة	مدرس	جامعة القادسية / كلية تمريض	تمريض صحة المجتمع
.15	د. ساجدة سعدون عليوي	30سنة	مدرس	جامعة كربلاء/ كلية التمريض	تمريض صحة إلام والوليد
.16	د. زكي صباح	سنة21	مدرس	جامعة كربلاء/ كلية التمريض	تمريض أطفال
.17	د. فاديه حسين عبد	10سنة	مدرس	جامعة القادسية / كلية تمريض	تمريض صحة إلام والوليد
.18	د. علاء إبراهيم سعيد	10سنة	مدرس	جامعة القادسية / كلية تمريض	تمريض بالغين
.19	د. حقي إسماعيل	5سنة	مدرس	جامعة كربلاء/كلية التمريض	تمريض صحة المجتمع

Appendix F

المستخلص

يُعرَّف الإسهال بأنه وجود ثلاثة براز رخو أو مائي أو أكثر يوميًا ، أو خروج البراز بشكل متكرر أكثر من المعتاد للأطفال. تهدف هذه الدراسة إلى تقييم معرفة الأمهات واتجاهات فيما يتعلق بالوقاية من الإسهال وإدارته في المنزل عند الأطفال دون سن الخامسة ، وكذلك معرفة العلاقة بين معرفة واتجاهات الأمهات وبياناتهن الديموغرافية.

استخدمت هذه الدراسة تصميم المنهج الوصفي دراسة عرضية. وكان من بين السكان الذين يمكن الوصول إليهم أمهات الأطفال دون سن الخامسة اللواتي يتوجهون لأي سبب من الأسباب في مراكز الرعاية الصحية الأولية مدينة الحمزة الشرقي. اعتباراً من 25 أكتوبر 2021 حتى 1 مايو 2022 م من مجموعه (6) مراكز الرعاية الصحية الأولية موزعة على مدينة الحمزة الشرقي. عينة احتمالية (عينة عشوائية بسيطة) لعدد (250) أم للأطفال دون سن الخامسة. قام سانجيف كومار شاه ببناء استبيان وتعديله لأغراض الدراسة ، بما في ذلك مراجعة الأدبيات ذات الصلة ، والتشاور مع فريق الخبراء ، والأبحاث ذات الصلة

اظهرت الدراسة الحالية أن معظم الأمهات لديهن معرفة قليلة عن الوقاية من الإسهال ، وأن معظم الأمهات أعطن إجابات خاطئة ومعرفة قليلة عن العلاج المنزلي للإسهال ، وأشارت الدراسة إلى أن (45.6٪) من الأمهات لديهن مستوى متدني من المعرفة حول الوقاية من الإسهال و (48٪) منهم لديهم مستوى متوسط من المعرفة في نفس البند. فيما يتعلق بالاتجاهات ، أشارت الدراسة الحالية إلى أن (63.2٪) من اتجاهات الأمهات فيما يتعلق بالوقاية والعلاج المنزلي للإسهال كانت مواقف سلبية.

استخلصت الدراسة الحالية إلى أن معظم الأمهات لديهن مستويات متدني من المعرفة حول الوقاية والعلاج المنزلي من الإسهال ، وكان لدى معظمهن اتجاهات سلبية فيما يتعلق بالوقاية والعلاج المنزلي من الإسهال. ترتبط معرفة واتجاهات الأمهات بمستوى تعليمهن ودخلهن الشهري ومصادر معلوماتهن عن الإسهال.

أوصت الدراسة بإجراء برنامج تعليمي حول معرفة واتجاهات الأمهات حول الإسهال عند الأطفال دون سن الخامسة وكذألك تنفيذ برامج تثقيفية للأمهات حول استخدام أملاح الإماهة الفموية والتحضير لها في المنزل ، وتعزيز التغذية المناسبة أثناء نوبة الإسهال ، وتغذية الطفل ، وإجراء مزيد من الدراسات حول ممارسة الوالدين فيما يتعلق بالعلاج المنزلي من الاسهال بين الأطفال دون سن الخامسة.

كلية التمريض/جامعة كربلاء

معارف واتجاهات الأمهات فيما يتعلق بالوقاية والعلاج المنزلي من الإسهال لدى الأطفال دون سن الخامسة في مدينة الحمزة الشرقي.

رسالة تقدم بها

محمد جميل وهاب

الى مجلس كلية التمريض/ جامعة كربلاء جزء من متطلبات نيل درجة الماجستير في علوم التمريض

بإشراف

أ.م. د سلمان حسين فارس

محرم- 1444هـ **أب – 2022 م**