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Knowledge, Attitude, and Feeding Practices among Caregivers of under Five Years Old Malnourished Children in the Gaza Strip, Palestine

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Dedication

To the fountain of patience and optimism and hope.

To each of the following in the presence of Allah and His Messenger, my father's pure soul.

To the big heart my dear mother.

To those who have demonstrated to me what is the most beautiful of life, my brothers and sisters.

To the people who paved our way for science and knowledge.

All our teachers are Distinguished.

To the taste of the most beautiful moments with my friends.

I dedicate this work.

Declaration

I certify that this thesis submitted for the degree of Master is the result of my research, except where otherwise acknowledged, and this study (or any part of the same) has not been submitted for a higher degree to any other university or institution.

Signed: 

Mohammed Darwish Mohammed EL-Yazory

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Abstract

Children’s nutritional status is essential since it determines their health status, development, physical growth, academic performance, and general progress in life. Malnutrition refers to deficiencies or excesses in nutrient intake, imbalance of essential nutrients, or impaired nutrient utilization. This study aimed to assess the nutritional knowledge, attitude, and feeding practices of caregivers, of under five years malnourished children in the Gaza Strip. A descriptive, cross-sectional design was used. Caregivers with malnourished children less than five years of age who came to take the service from Ard El-Insan Palestinian Benevolent Association and Middle East Council of Churches Department institution were surveyed using an interviewing questionnaire Data collection took place from March 2021 to November 2021. A consecutive sample was used to enroll all the study sample until the required sample size (140 caregivers) were obtained. The majority of children (61.4%) are aged between 24 and 35 months, while (83.5 %) are born between 37 and 40 weeks. The majority (84.9%) were healthy at birth. (50.9 %) of participants had good knowledge, while (74.2 %) had a good attitude. The three outcome factors are moderately correlated with each other. Three subcategories of knowledge, attitude, and practice statistics show that (5.7%) of the caregivers have strong knowledge, (37.9%) have fair knowledge, and (56.4%) have poor knowledge. The attitude scores are substantially better, with (48.1%) positive and (51.9%) moderate. Caregiver practices were rated as follows: (17%) good, 50% fair, and (37.9%) poor. The study found that education, gender, and family size influence attitude score. The sole factor affecting the knowledge score is one's education. However, no variables were found to affect the nutritional practice score. The data show that caregivers' knowledge and behaviors regarding child feeding and nutrition are lacking. Basic health education and competent counseling by health care experts can help mothers put their information into practice. As a result, the study recommended that there was a need for the government to educate the caregivers on the need for a balanced diet. Malnutrition will also be reduced if caregivers provide a balanced diet of readily available foods. Health care professionals should provide the required information to help caregivers gain knowledge and confidence about nutritional practices, thereby preventing malnutrition.

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List of abbreviations

A	Agree
AEPBA	Ard El-Insan Palestinian Benevolent Association
ANC	Antenatal Care
ANOVA	Analysis of Variance
BMI	Body Mass Index
CMAM	Community-based Management of Acute Malnutrition
D	Disagree
HIV	Human Immunodeficiency Virus
KAP	Knowledge, attitude, and practice
MAM	Moderate Acute Malnutrition
MoH	Ministry of Health
MUAC	Mid-Upper-Arm Circumference
MUAC	Mid-Upper Arm Circumference
N	Neutral
NGOs	Nongovernmental Organizations
NRH	National Referral Hospital
PCBS	Palestinian Center Bureau of Statistics
SA	Strongly Agree
SAM	Severe Acute Malnutrition
SD	Standard Deviation
SD	Strongly Disagree
SPSS	Statistical Package for Social Sciences
UINCEF	United Nations International Children's Emergency Fund
UNRWA	United Nations Relief and Work agency for the Palestinian People
WHO	World Health Organization
WLI	Weight-for-Length Index

Chapter One

Introduction

1.1 Background

Malnutrition refers to deficiencies or excesses in nutrient intake, imbalance of essential nutrients, or impaired nutrient utilization. The double burden of malnutrition consists of both undernutrition and overweight and obesity, as well as diet-related non-communicable diseases. The World Health Organization (WHO) reported that undernutrition manifests in four broad forms: wasting, stunting, underweight, and micronutrient deficiencies (WHO, 2020). Malnutrition can appear in a variety of forms. Poor sanitation, lack of breastfeeding, and restricted availability of nutritional foods prevent children from reaching their full potential, and young women become anemic during pregnancy as a result. The newborn who is underweight and later experiences developmental problems; the youngster who becomes obese as a result of overconsumption of poor-quality food; or the child who is dangerously underweight and wasting away, facing certain death soon (WHO, 2020).

Children's nutritional status is essential since it determines their health status, development, physical growth, academic performance, and general progress in life (Briend,et al., 2015). The WHO recommends some infant and young child feeding practices during the first 1000 days of life. These include initiation of breastfeeding within 1 hour of birth, exclusive breastfeeding until 6 months of age, continued breastfeeding up to 2 years of age and beyond, timely introduction of complementary feeding at 6 months, and appropriate complementary feeding to children 6–23 months. The Ministry of Health (MoH) and Sanitation have instituted an infant and young child feeding program to increase awareness and improve caregivers' knowledge of proper feeding practices. The activities are conducted at both the facility and community levels, through a mother

support group (Pasqualino et al. 2016). Food insecurity, poverty, low birth weight, low birth weight due to low birth weight, low birth weight, poor breastfeeding, frequent infectious diseases, poor water quality, hygiene, and other factors are all to blame. Primarily social rather than biological in origin, primary acute malnutrition is hence complex. Environmental enteropathy, a disorder that contributes to acute malnutrition in children, is increasingly being linked to poor water quality, sanitation, and hygiene practices (Ahmed et al., 2012).

An unfortunate side effect of inadequate nutrition and early childhood development is stunting. Stunted children may never grow to their fullest height or develop cognitively to their fullest extent. Stunting affects 149 million children under the age of five around the world. When these children are young, they are already at a severe disadvantage: they struggle in school, have lower earnings as adults, and experience several other challenges as they grow up. Poor nutrient intake and/or disease can lead to wasting in children, making it life-threatening. When wasting is severe, children's immune systems are compromised, making them vulnerable to developmental delays and even death. These youngsters must be fed, treated, and cared for immediately if they are to live. Worldwide, approximately 17 million children under the age of five were considered seriously wasted in the year 2018 (WHO, 2019).

Poor knowledge, negative attitude and poor practice of caregivers leading to high rate of suboptimal feeding practices (Guled et al., 2016). Research on the attitudes, knowledge and feeding practices of caregivers of children under five are lacking in Gaza Strip. The goal of this research to find out how much caregivers understand about the nutritional condition of under-five malnourished children and how they act on that knowledge.

1.2 Problem Statement

Malnutrition affects people in every country. Around 1.9 billion adults worldwide are overweight, while 462 million are underweight. An estimated 41 million children under the age of 5 years are overweight or obese, while some 159 million are stunted and 50 million are wasted. Adding to this burden are the 528 million or 29% of women of reproductive age around the world affected by anemia, for which approximately half would be amenable to iron supplementation. Many families cannot afford or access enough nutritious foods like fresh fruit and vegetables, legumes, meat, and milk, while foods and drinks high in fat, sugar, and salt are cheaper and more readily available, leading to a rapid rise in the number of children and adults who are overweight and obese, in poor as well as rich countries. It is quite common to find undernutrition and overweight within the same community, household, or even individual – it is possible to be both overweight and micronutrient deficient (WHO, 2020). Nearly half of all deaths in children under 5 can be attributed to undernutrition. This translates into the unnecessary loss of about 3 million young lives a year. Only a fraction of these children die in catastrophic circumstances such as famine or war. In the majority of cases, the lethal hand of malnutrition is far more subtle: it stunts children's growth, deprives them of essential vitamins and minerals, and makes them more susceptible to disease. Malnutrition is more than a lack of food - it is a combination of factors: insufficient protein, energy, and micronutrients, frequent infections or disease, poor care, and feeding practices, inadequate health services, and poor water and sanitation. The lack of or inadequate breastfeeding practices alone results in almost 12 % of all deaths among children under the age of five (WHO, 2019).

Stunting prevalence at 8.7% of children under the age of five years in Palestine suffers from moderate and severe stunting. The percentage was 8.5% in the West Bank and 9.0% in the Gaza Strip. Underweight prevalence at 2.1% of children under the age of five years in Palestine suffers from being underweight. This percentage was equal in both the West Bank and the Gaza Strip at 2.1%. Also, 1.3% of children under the age of five years in Palestine suffers from wasting. The percentage was 1.7% in the West Bank and 0.8% in the Gaza Strip according to Palestinian Center Bureau of Statistics (PCBS, 2020).

This is a public health issue that must be understood and addressed and policymakers must implement an appropriate nutrition action plan to control the dual form of malnutrition based on the underlying specific risk factors in the study population. Besides, interventions are needed to help individuals to translate their nutrition knowledge into healthy dietary behaviors (El Kishawi et al., 2016).

1.3 Justification of the study

Participants and stakeholders in nutrition-related policies for children under the age of five were divided into four categories of governmental, semi-governmental, non-governmental, and international organizations (Mohseni et al., 2019).

It is possible to gain a better understanding of caregivers' knowledge, attitudes, and practices regarding child nutrition management, which could aid in the development and implementation of targeted interventions. To conclude, this research will look into the need for health promotion strategies aimed at improving maternal knowledge about child health. Researchers in the future will be able to use the findings of the study as a starting point for determining caregiver awareness levels. Institutions can also better target their awareness of the knowledge gaps that caregivers face using the result of this study. Hence, the goal of

this study is to assess the nutritional knowledge, attitude, and feeding practices of caregivers of malnourished children under the age of five in Gaza.

1.4 Study objectives

1.4.1 General Objective

The main purpose is to assess the caregivers' nutritional knowledge, attitudes, and feeding practices of under five years malnourished children's in the Gaza Strip.

1.4.2 Specific objectives

1. To assess the level of caregiver's knowledge regarding malnutrition for under-five children.
2. To assess the level of attitudes of caregivers on malnutrition for under-five children
3. To identify the level of feeding and nutrition practices among caregivers of malnourished children.
4. To examine the correlation between caregivers' knowledge, attitude, and practice of nutrition under-five children.
5. To predict factors affecting knowledge, attitude, and feeding practices of caregivers of malnourished children.

1.5 Research questions

1. What is the level of the caregivers' knowledge regarding the nutrition of under-five children?
2. What is the level of the caregivers' attitude regarding malnutrition among under-five children?
3. What are the relationship between the caregivers' nutritional knowledge, attitude, and feeding practices?

4. What is caregivers' level of knowledge regarding the signs and symptoms of malnutrition?

5. What are factors influence caregivers' knowledge, attitude, and feeding practices with children under the age of five?

1.6 Theoretical and operational definitions

1.6.1 Independent variables

The independent variables are demographic factors (age, gender, educational status, marital status, and the order of a child) and socioeconomic factors (Occupation, healthcare accessibility, employment status, residence, income).

1.6.2 Dependent variables

The dependent variable is the caregiver's knowledge, attitude, and feeding practices regarding the caregivers of children under-five years old malnourished, and malnutrition types such as stunting, wasting, underweight as well and anemia among the under-five years' old children.

1.6.2.1 Malnourished children

Malnutrition refers to deficiencies or excesses in nutrient intake, imbalance of essential nutrients, or impaired nutrient utilization. Undernutrition manifests in four broad forms: wasting, stunting, underweight, and micronutrient deficiencies (WHO, 2020).

1.6.2.2 Knowledge

The Knowledge amongst a population refers to their understanding of any given topic (Kaliyaperumal, 2004). The knowledge score in this study was calculated and the possible

score 0-100. Knowledge score was considered poor (0-50), fair (51-75), and good (76-100).

1.6.2.3 Attitude

Attitude: is an organization' beliefs, feelings, and behavioral tendencies towards objects, groups, events or symbols (Hogg and Vaughan, 2005). The possible attitude score was calculated and the possible score was 0-100. The attitude score was considered negative at (0-50), moderately favorable at (51-75), and positive attitude at (76-100).

1.6.2.4 Practice

Ways in which participants demonstrate their knowledge and attitude through their actions (Kaliyaperumal, 2004). In this study practice score was calculated and the possible score was 0- 100. Practice scores were considered poor (0-50), fair (51-75), and good (76-100).

1.6.2.5 Caregivers

The researcher used the term caregiver for the person who is directly responsible for the child, whether it is one of his parents or a member of his family.

1.7 Context of the study

1.7.1 Sociodemographic context

In terms of size, Palestine is a small country (26.323Km2). It is situated in the eastern Mediterranean Sea in the Middle East, bordered on the east by Syria and Jordan, on the north by Lebanon, on the south by the Gulf of Aqaba, and on the west by Egypt and the Mediterranean Sea. The Palestinian National governs the West Bank and Gaza Strip, which are geographically separated. In the end of 2016, the population density in Palestine was 811 (capita / km2), with 519 in the West Bank and 5154 in the Gaza Strip (PCBS, 2017).

GGs is a small piece of land in Palestine's southern region, with a population of 2,040,000 MoH, 2020). North Gaza, Gaza City, the Mid Zone, Khanyounis, and Rafah are the five governorates (Annex 2).

1.7.2 Health care system

Health care system plays an important role in improving health. Well-functioning health system enables achievement of good health with efficient use of available resources (Atun, 2012). In the Gaza Strip, health care services are provided mainly through four sectors, governmental health services at MoH, NGOs, UNRWA, and the Private Sector.

MoH provides primary, secondary, and tertiary health services and purchase the unavailable tertiary health services from domestic and abroad providers. UNRWA provides primary care services and purchase secondary care services for refugees. NGOs provide primary, secondary and some tertiary services. Private for-profit sector provides the three level of care through a variety of specialized hospitals and investigation centers.

Primary health care in Palestine deals with health in its comprehensive physical, psychological and social aspects, the essence of which is the provision of care as a whole and needs.Primary health care guarantees the health of the citizen throughout his life, and is not limited to a period of time (MoH, 2020)

1.7.3 Mother and child health services

The total number of pregnant women's visits to primary health care centers in Palestine in 2020 was 360.97, and the coverage rate for pregnant women registered in MoH centers for the same year was 54728, where it reached or did not. The MoH centers accounted for 4.37 % of all visits, with each pregnant woman making 4.3 visits during her pregnancy (MoH, 2020). The total number of mothers who received postnatal care services in maternal and

child centers in primary health care was 252,10, accounting for 4.13 % of all live births reported, and 429,52. 6.68 % of all live births were attributed to the nurse (MoH, 2020).

A non-governmental, non-profit organization that has been working in Palestine since its establishment in 1984 as a branch of the Swiss International Foundation (Terdesm-Lausanne) and it became independent in 1997 as a Palestinian civil society and is managed by an elected Palestinian board of directors. The organization focuses on health and nutrition in the context of primary health care, to reduce common childhood diseases such as malnutrition and its complications, anemia, and osteoporosis by providing preventive and curative services, as well as health education programs and community psychological support, too poor and marginalized families, with a focus on children in their early stages. Children between the ages of six months and five years are targeted in all Gaza Strip governorates. The Foundation continues to deliver health services through foreign donor-funded projects.

Awarded for her project “Meeting the unique needs of celiac disease patients (wheat gluten sensitivity) in the Gaza Strip governorates”. The project activities include providing gluten-free flour to all patients, monitoring their health, nutritional, and psychological status, and educating their families. How to make their healthy dishes and participate in social events to foster information sharing and community bonding among families and moms of sick children. Complicated patients are referred to hospitals as soon as they show indicators of complications. Empowering mothers to share their stories and best methods in fighting the disease. The Palestinian Territory of Human Charity Association is the only specialist located in the Gaza Strip that provides for this sector of patients by offering guidance, support, therapy, and food. The project aims to enhance celiac disease patients' health and lifestyle in Gaza (AEPBA, 2018).

1.7.4 Middle East Council of Churches Department of Service for Palestinian Refugees, Gaza

The association was founded in 1952 to support Palestinians who took sanctuary in Rafah after the founding of Israel in 1948. During that period, the Union of Churches focused on humanitarian relief, helping to improve living circumstances and alleviate poverty. The association focuses on providing primary health care services in poor, crowded, and isolated areas that lack or have limited health services. Encourage and promote public and environmental health in the targeted areas, reduce malnutrition (anemia) and improve the quality of services offered by the association health clinics. Increasing psychological and social assistance for vulnerable groups, particularly women and children - Coordination with relevant organizations to avoid duplication.

In addition to basic mother and child health care, the association offers a well-baby clinic, family planning, a medical laboratory and medication home visits as well as nutrition and dental treatments as well as a psychological support program. It's not just anemia and malnutrition. It also contributes to improving the living conditions of young people who have dropped out of school, improving the living situations of women, and providing high-quality education and training on a variety of skills and vocations geared to meet the needs of society and the market. It also helps professionals find jobs and assists Union of Churches graduates find jobs. The Union of Churches offers basic education.

The association serves Palestinians, and health centers serve patients in their allocated districts. Family planning, primary care, and health education are priorities at treatment centers. , a business project that helps about 20-25 women earn money, and a community development program that helps schools, kindergartens, and youth groups (Middle East Council of Churches Department of Service for Palestinian Refugees, 2021).

Chapter Two

Conceptual Framework and Literature Review

This chapter explains the current study's conceptual framework. After that, a thorough review of the literature on the connected topics is offered. Previous works in the field are also addressed and presented chronologically.

2.1 Conceptual framework

This framework illustrates associations between variables such as nutritional knowledge, attitudes, and feeding practices among the caregivers and their impact on malnutrition.

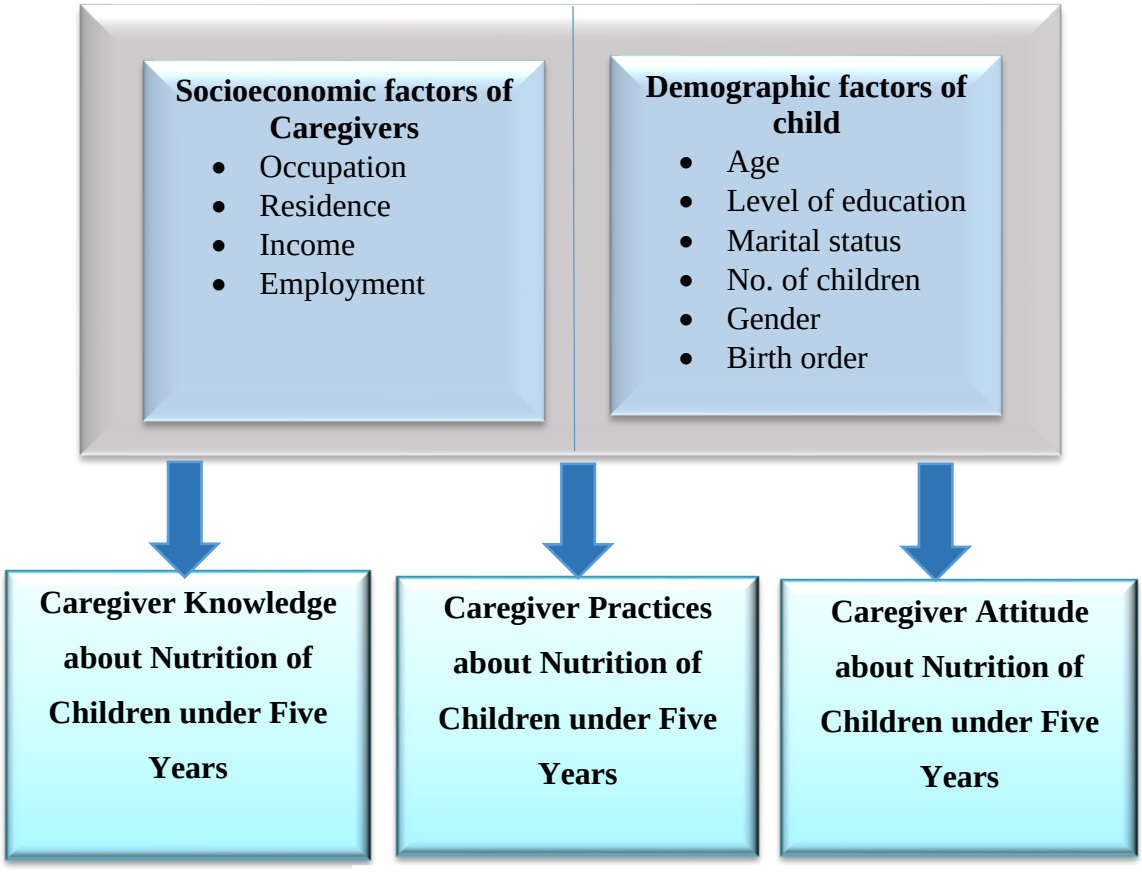

Figure 2.1: Conceptual frameworks (Self developed, 2020)

2.2 literature Review

Childhood malnutrition is a major public health concern, as it is associated with significant short- and long-term morbidity and mortality (Das et al., 2020), All these children will suffer poor health and learn slowly at school. Their lives and abilities are inextricably connected to progress towards goals to end extreme poverty and preventable child deaths. A truly transformative post-2015 development agenda will leave future generations a well-nourished world in which nobody goes to bed hungry and all children can survive and thrive and live life to their full potential (Hawkes et al., 2020). Severe malnutrition being the major killer of children below five years of age, had its treatments based in facilities, and this extensively limits its coverage and effects. The current proof however suggests that a greater number of undernourished children can be treated in their communities without being admitted to a health facility or a therapeutic feeding Centre (Ali et al., 2020)

Using existing studies of case fatality rates in several countries, WHO has concluded mortality rates of children are mostly due to severe acute malnutrition (SAM). The mortality rates University of Ghana http://ugspace.ug.edu.gh 10 listed in the table below shows that malnourished children are 5–20 times higher at risk of death compared to adequately nourished children. Severe malnutrition can directly be associated with a child's death, or act indirectly by increasing the case fatality rate of some common childhood illnesses such as diarrhea and pneumonia. An estimated number of one million children die yearly from SAM (WHO, 2007).

The huge burden of child mortality resulting from SAM is still not seen in international health programs. Even though countries with increased incidence, have specific policies intended to comprehensively address it. The introduction of community-based

management to the existing facility-based approach will enhance the process of addressing all these important causes of child mortality (WHO, 1999).

Stunting continues to be a major public health problem in developing countries. It is one of the most important risk factors for morbidity and mortality during childhood. In Palestine, it is another health problem, which adds to the catastrophic issues in the region, the prevalence of stunting and its associated factors among preschool children in the Gaza Strip (El Kishawi et al., 2017)

2.3 Definitions

Child Malnutrition has been defined or described in many ways. To summarize the common points, child malnutrition may be defined as a pathological state resulting from inadequate nutrition, including undernutrition (protein-energy malnutrition) due to insufficient intake of energy and other nutrients; overnutrition (overweight and obesity) due to excessive consumption of energy and other nutrients; deficiency diseases due to insufficient intake of one or more specific nutrients such as vitamins or minerals. In the assessment of child malnutrition, a large number of measures are available. Among these measuring methods, Z-score, growth charts, weight-for-length index (WLI), height standard weight, Body Mass Index (BMI), skinfold thickness, and clinical grading diagnosis standard for child malnutrition are selected for discussion. The same set of anthropometry data of a group of preschool children was analyzed by using different methods. The results showed that it was very difficult to determine the nutritional state of children using a single index. For a given group of children, the Z-score method is recommended to observe their height, weight, and weight for height at the same time to have a comprehensive understanding (Ge and Chang, 2001).

2.4 Pathophysiology

Malnutrition results from an imbalance between intake and protein-energy requirements resulting in tissue losses with adverse functional consequences. However, it would be better to speak of "states of malnutrition" rather than "malnutrition". Indeed, the mechanisms involved associate, with varying degrees, intake deficiency and increased needs with different clinical consequences. Adaptation to nutrient deficiency aims at establishing lasting saving conditions by promoting optimization of energy reserve utilization while preserving protein pool. This is achieved by reducing basal metabolism (low T3), decreasing the secretion of anabolic factors, and moderately increasing catabolic hormones. Unlike the previous process, the metabolic response to injury or stress, which will sometimes induce a major increase in requirements, will have an immediate purpose for the defense of the organism. The body will draw sometime substantially in its protein pool to produce the glucose required for example by the immune cells. Stress response stems from both an endocrine response, and an immuno-inflammatory one with the important role of pro-inflammatory cytokines released in response to pathogens and more recently alarmins in response to endogenous stress in the inflammatory phenomena of the stress response and the resulting malnutrition state. Treatment of these malnutrition conditions will thus differ: promoting anabolism in one case and fighting resistance to anabolism and hypercatabolism in the other (De Bandt, 2015).

2.5 Causes

Diet problems, psychological problems, digestive complaints, and stomach conditions, lack of food, high food prices, and lack of breastfeeding all the main causes of malnutrition (Khan et al. 2017 a) The main causes of malnutrition include changes in nutrient requirements, secondary to disease processes and drug modalities in combination with low

or marginal dietary intake. Infections are common and result in anorexia, poor dietary intake, and malnutrition, which predispose the patient to another infection (Rabiee and Geissler, 1990)

The main causes of malnutrition among children are insufficient intake of food and lack of nutritional knowledge. In childhood, the majority of Childs does not know the daily caloric intake. As result, they lead to malnutrition (Khan et al., 2017 b).

2.6 Management

Although the typology of interventions for Moderate acute malnutrition (MAM) and their indicated uses in different contexts have been topics of considerable discussion, substantial ambiguity remains in practice in the classification of interventions, and evidence gaps persist regarding the effectiveness of interventions. One example of guidelines recently developed is the Global Nutrition Cluster decision-making tool that guides the selection of appropriate programming approaches in emergencies (Force, 2017).

The management of MAM can be broadly categorized into prevention and treatment strategies. In general, because wasting results in a loss of body mass relative to height, the standard practice has been to provide the child with additional energy and nutrient-dense foods to promote weight gain. The selection of the particular management approach is context-specific; different approaches are warranted for more stable populations and food security than for populations experiencing significant food insecurity or humanitarian emergencies (Lenters et al, 2016).

2.7 Implications

The malnutrition–environment–infection axis is complex and not easily addressed by individual interventions. Better understanding will come through applying new tools to re-examine longitudinal immune competence ex vivo concerning infection events and changes in nutritional status, more specific biomarkers of infection, correlates of intestinal function and bacterial translocation, microbial populations, and causes of disease (Walson and Berkley, 2018).

2.8 Nutritional knowledge of caregivers' and nutritional status of the child

The main care providers in the family are mothers and the quality of that care provided mostly depends on the caregivers‟ nutritional knowledge. Knowledge in nutrition simply understands the different types of food and appropriate food choices and combinations that nourish the body and influence health, Nutrition knowledge can be acquired through schools, community health centers, families, and friends and this affects food choices, preparations, and food distribution among members of a household. Nutritional knowledge is strong artillery for women against malnutrition since the increase in knowledge (educational level) will not only lead to improvements in incomes earned by women but will also improve household food security levels and the quality of care that women provides for themselves and other members of the household especially children (Dammann and Smith, 2009).

Most studies that have used nutrition education as an intervention to improve complementary feeding have measured maternal knowledge and feeding practices investigated the effect of nutritional education which is culturally accepted on feeding practices of infants and growth in rural Sichuan (a province in China). The researchers

reported that after one year, mothers in the intervention group showed significantly higher nutritional knowledge for the response to which type of food will help their child to grow well and better-reported infant feeding practices for the rate of current breastfeeding than their control counterparts. Mothers in Peru who received education intervention fed their children with nutrient-dense thick foods as lunch as compared to their control counterparts at six months (Friston et al, 2005).

Webb and Lapping (2002) who explored the question „are the determining factor of malnutrition the same as those of food argue that even though poverty is noted as a major contributor to causing malnutrition, the association between poverty and malnutrition in their estimation is oversimplified. Over the decades, poverty reduction strategies have been progressive but such economic achievements have not been interpreted into nutritional benefits and development against malnutrition.

Webb and Lapping (2002) examined the relationship between mothers' knowledge on nutrition, education, and child's nutritional outcomes in six developing countries, they reported that mothers' knowledge on nutrition and maternal education are independently related to the nutritional outcome of the child.

An investigation conducted by Mu et al. (2014) indicated the benefit of educating rural women on community-based nutrition programs in Cambodia. Although women in this area consume vitamin A and iron-rich foods daily, the nutritional requirement is not necessarily enough. Nutritious foods are not being patronized by women because are expensive, while less nutritious foods are inexpensive and accessible. The study indicated that women who acquired knowledge in nutrition through the community-based nutritional program could make an informed choice of nutritious foods which in turn impacted positively on their children (Mu et al., 2014).

2.9 Factors influencing caregiver's nutritional knowledge

2.9.1 Age

In the study conducted by Nekesa (2012), the age of respondents ranged from 15 to 82 years, 66 % of them were in their fertility age group (15-50years) while the other 34 % were aged (>51years). The age of the respondents had a weak negative association with the score for knowledge. This result indicated that, with the advancement in age, the nutritional knowledge score of respondents‟ decreases. The older respondents with little or no education on nutrition were grandmothers as indicated by the - Focus Group Discussion. However, the education program on community-based nutrition together with numerous years of‟ experience as primary caregivers would have helped elevate nutritional knowledge among older respondents. This is why there is a possible weak association between knowledge and age in the study (Nekesa, 2012).

2.9.2 Level of Education

Minimal training brought down the chances of salaried jobs that provided additional earnings to keep up an adequate diet in addition to self-production.

2.9.3 Attitudes of caregiver

Intakes of children among rural households; however, we further demonstrated that caregivers' nutritional knowledge is an important factor that mediates seasonal changes in diets. Therefore, increasing nutrition knowledge among these households will help to stabilize dietary intakes across seasons. Moreover, we recommend that programs that aim at improving dietary intake among children should consider changing attitudes in addition to nutrition education (Oduor et al., 2019).

2.9.4 Nutritional/Feeding practices and Level of Education

Child feeding practices were directly influenced the nutritional status of a child. Maternal education level has long been associated with child feeding practices. Thus, this study aims to compare the various feeding practices and nutritional status of the children according to a different level of maternal education. This was a cross-sectional study that was conducted among kindergarten school children aged 4 to 6 years old in Selangor, Malaysia. One hundred forty-two children (n = 142) of mothers from secondary school qualification (n = 70) and diploma and above qualification (n = 72) from urban (7 kindergartens) and rural (2 kindergartens) areas were involved in this study. A feeding practices questionnaire compromising of questions regarding sociodemographic data, anthropometry measurement, feeding practices, and three days diet records. Overall, children of mothers with secondary school qualifications had a higher prevalence of wasted (14.3%), 67.1% of mothers had exclusively breastfed them up to 6 months and their mother had a higher rate of using rewards (82.9%). However, children of mothers with a diploma and above qualification had a higher prevalence of obese (13.9%), had higher fast food intake (70.8%), and had a higher frequency of skipping breakfast (47.2%). There is a significantly different ($p<0.05$) between energy and fat intakes among boys and girls of mothers from different education levels. Also, there is a significant ($p = 0.05$) negative ($r = -0.26$) excellent relationship between children's BMI of mothers from secondary school qualification and their energy intake. The findings of this study suggested that the education levels of the mother were affecting the child's feeding practices and finally determined the child's nutritional status (Norshahida and Muniandy, 2012).

2.9.5 Marital Status

A Pearson chi-square test found an essential relationship between the nature of household meal diet and the conjugal status of respondents. The larger number (67%) of respondents who prepared an adequate family diet was hitched whiles the rest of the respondents have either lost a University of the partner or not hitched. The number of respondents who did not prepare an adequate family diet were widows‟ whiles the remaining majority were present (Norshahida and Muniandy, 2012).

2.9.6 Home-Based Management of Malnutrition

Undernutrition is responsible for a greater number of all childhood mortalities globally; it is mostly due to poor feeding practices, starvation or available healthcare, and good sanitation. In Ghana, 13% of children below 5years are reasonably or extremely undernourished, according to the study (Nikoi and Anthamatten, 2013).

SAM remains a major killer of children under five years of age. Until recently, treatment has been restricted to facility-based approaches, greatly limiting its coverage and impact. New evidence suggests, however, that large numbers of children with SAM can be treated in their communities without being admitted to a health facility or a therapeutic feeding center .The community-based approach involves timely detection of SAM in the community and provision of treatment for those without medical complications with ready-to-use therapeutic foods or other nutrient-dense foods at home. If properly combined with a facility-based approach for those malnourished children with medical complications and implemented on a large scale, community-based management of SAM could prevent the deaths of hundreds of thousands of children (WHO, 2007).

2.10 Acute Malnutrition

SAM is defined by very low weight for height (below -3 z scores1 of the median WHO growth standards), by visible severe wasting, or by the presence of nutritional edema. In children aged 6–59 months, an arm circumference less than 110 mm is also indicative of SAM. Globally, it is estimated that there are nearly 20 million children who are severely acutely malnourished.2 Most of them live in South Asia and sub-Saharan Africa (Collins, 2001).

Using existing studies of case fatality rates in several countries, WHO has extrapolated mortality rates of children suffering from SAM. The mortality rates listed in the table at right reflect a 5–20 times higher risk of death compared to well-nourished children. SAM can be a direct cause of child death, or it can act as an indirect cause by dramatically increasing the case fatality rate in children suffering from such common childhood illnesses as diarrhea and pneumonia. Current estimates suggest that about 1 million children die every year from SAM (Collins and Sadler, 2002).

Weight-for-height below -3 SD is a highly specific criterion to identify severely acutely malnourished infants and children. Statistical theory shows that in a well-nourished population, only 0.13% of children will have a weight-for-height less than -3 SD, giving a specificity of more than 99%2 for this cut-off. With the release of the WHO standards for MUAC-for-age, the revision of the earlier recommended MUAC cut-off of 110 mm as an independent diagnostic criterion for SAM was necessary. A higher cut-off of 115 mm is recommended as it will identify more infants and children as having SAM and still have a high specificity of more than 99% over the age range of 6–60 months (WHO, 2009).

2.11 Moderate Acute Malnutrition (MAM)

In children aged 6–59 months, MAM is defined as moderate wasting (i.e. weight-for-height between –3 and –2 Z-scores of the WHO Child Growth Standards median) and/or mid-upper-arm circumference (MUAC) greater or equal to 115 mm and less than 125 mm . The dietary management of children with MAM is based on the optimal use of locally available foods to improve nutritional status and prevent the condition from deteriorating to SAM. In situations of food shortage, or where some nutrients are not sufficiently available through local foods, supplementary foods have been used to treat children with MAM . Children with a history of low birth weight, or acute or chronic undernutrition, are at increased risk of morbidity and mortality during childhood. Also, they may be at increased risk of becoming overweight and obese, and developing non-communicable diseases later in life if high-energy food supplements are given indiscriminately as part of efforts to treat or prevent moderate wasting, as doing so may promote unhealthy weight gain. Currently, there are no evidence-informed recommendations on the composition of supplementary foods used to treat children with MAM. WHO has published a technical note that summarizes existing knowledge and presents principles on the dietary management of children with MAM. The technical note also proposes a nutrient composition profile for supplementary foods (WHO, 2009).

2.12 Severe Acute Malnutrition (SAM)

In children who are 6–59 months of age, SAM is defined by a very low weight-for-height/weight-for-length, or clinical signs of bilateral pitting edema, or a very low mid-upper arm circumference. SAM affects an estimated 19 million children under 5 years of age worldwide and is estimated to account for approximately 400,000 child deaths each year.

Edema is a swelling caused by the accumulation of fluid in the body tissues and can be categorized as:

- Mild (+): edema in both feet/ankles.
- Moderate (++): edema in both feet plus lower legs, hands, or lower arms.
- Severe (+++): generalized edema including both feet, legs, hands, arms, and face.

Children with SAM who have severe edema (+++) have an increased risk of mortality compared to children with SAM but with lesser degrees of edema (WHO, 2019).

Malnutrition has many faces. It is the child who never reaches his full height potential, because of poverty, poor sanitation, lack of breastfeeding, and limited access to nutritious foods; it is the young woman who becomes anemic during her pregnancy and gives birth to an. an underweight baby who later faces developmental delays; it is the child who becomes obese through overconsumption of low-quality food; or the desperately thin and wasted child, at imminent risk of death (UNICEF, 2018).

SAM is the most extreme and visible form of undernutrition. Its face is a child frail and skeletal who requires urgent treatment to survive. Children with SAM have very low weight for their height and severe muscle wasting. They may also have nutritional edema characterized by swollen feet, face, and limbs. About two-thirds of these children live in Asia and almost one-third live in Africa. SAM is a major cause of death in children under five, and its prevention and treatment are critical to child survival and development. Across the globe, an estimated 16 million children under the age of five are affected by SAM. This number is staggering most importantly because children with SAM are nine times more likely to die than well-nourished children. These deaths are the direct result of malnutrition itself, as well as the indirect result of childhood illnesses like diarrhea and pneumonia that

malnourished children are too weak to survive. SAM can increase dramatically in emergencies. But despite what we see in the headlines, the majority of cases occur in developing countries not affected by emergencies. These settings are plagued by chronic poverty, lack of education, poor hygiene, limited access to food, and poor diets. The result is significant barriers to sustainable development in these nations (UNICEF, 2018).

Malnutrition, in all its forms, includes undernutrition (wasting, stunting, underweight), inadequate vitamins or minerals, overweight, obesity, and resulting diet-related noncommunicable diseases, .1.9 billion adults are overweight or obese, while 462 million are underweight. 47 million children under five years of age are wasted, 14.3 million are severely wasted and 144 million are stunted, while 38.3 million are overweight or obese. Around 45% of deaths among children under 5 years of age are linked to undernutrition. These mostly occur in low and middle-income countries. At the same time, in these same countries, rates of childhood overweight and obesity are rising. The developmental, economic, social, and medical impacts of the global burden of malnutrition are serious and lasting, for individuals and their families, for communities, and for countries (WHO, 2020).

All these children will suffer poor health and learn more slowly at school. Their lives and abilities are inextricably connected to progress towards goals to end extreme poverty and preventable child deaths. A truly transformative post-2015 development agenda will leave future generations a well-nourished world in which nobody goes to bed hungry and all children can survive and thrive and live life to their full potential (Fanzo et al., 2015).

Mortality among children under five years of age admitted to malnutrition units in sub-Saharan Africa remains high. The burden of HIV infection, a major risk factor for mortality among patients with SAM, has reduced due to concerted prevention and

treatment strategies. Nonetheless, anecdotal reports from the malnutrition unit at Uganda's National Referral Hospital (NRH) indicate that there is high mortality among patients with SAM in routine care. Uganda has recently adopted the revised WHO treatment guidelines for SAM to improve outcomes. The mortality among children with SAM in routine care has not been recently elucidated. We report the magnitude and factors associated with mortality among children under five years of age admitted to the NRH for routine care of SAM (Nalwanga et al., 2020). Mortality among children with SAM was higher than the minimum standard of the WHO SAM management guidelines throughout the study period. History of using herbal medicines, lack of appetite, MUAC <11.5 cm, LRTIs, anemia, hypoglycemia, and HIV infection were factors associated with increased mortality. These factors should inform the management of children with SAM. There is a need to enhance community-level interventions, targeted towards awareness of rational use of herbal medicines. Future studies assessing factors for mortality in children with SAM could be community-based to fill the knowledge gaps not addressed by our study (Gavhi et al., 2020).

Regarding the high prevalence of malnutrition among children all over the province, it is necessary to promote the knowledge and education of parents - particularly mothers - and the social-economical, health, and nutritional status of families. This is mainly the responsibility of the authorities to seek solutions to such problems (Musa et al., 2014), low birth weight, the interaction of short birth intervals with more than two children in the family, and illness in the past month to be significant predictors of under-nutrition. A diet without milk or a diet with diluted milk was also found to be significantly associated with under-nutrition. This reiterates the need for appropriate and locally feasible awareness campaigns that alleviate food fads and promote birth spacing (Basit et al., 2012).

Malnutrition in the same household was prevalent in the Gaza Strip. This is a public health issue that must be understood and addressed and policymakers must implement an appropriate nutrition action plan to control the dual form of malnutrition based on the underlying specific risk factors in the study population. Besides, interventions are needed to help individuals to translate their nutrition knowledge into healthy dietary behaviors. The prevalence of stunting was of alarming magnitude in the Gaza Strip. Our results also demonstrated that parental consanguinity and short maternal stature were associated with stunting. Culturally appropriate interventions and appropriate strategies should be implemented to discourage these types of marriages. Policymakers must also raise awareness of the importance of the prevention and control of nutritional problems to combat stunting among children in the Gaza Strip (El Kishawi et al., 2016).

Several factors appear to affect wasting within a family. For example, firstborn children are less likely to experience competition for food resources and suffer from acute malnutrition, compared with their younger siblings since younger children are more dependent on others for their food intake. Also, the greater the number of living children in a family, the more likely the children will be wasted (Salah, 2004), as the number of family members is directly associated with the amount of money needed for feeding. Additionally, maternal undernutrition also has effects on children's nutritional status as undernourished mothers tend to raise undernourished children and experience miscarriages, stillbirths, and under-5 mortality more often than not (Black et al., 2008), In Palestine, a great majority of the population is unemployed (Lavie, 2011) one-third of the population is food insecure (WHO, 2001) more than half of the families receive food donations (Massad et al., 2011).

The Palestinian population is very young, with nearly half (46.3%) of the total population being under the age of 15 years (Giacaman et al., 2009) This fact adds importance to the

present findings as a great proportion of the Palestinian population appears to be malnourished, a state contributing to increased morbidity and mortality. According to the WHO, more than 50.0% of children's deaths are directly or indirectly caused by malnutrition. When a child is malnourished during the first two years of life, the child's physical and mental growth and development are slowed irreversibly (UNICEF, 2010).

The prevalence of stunting was of alarming magnitude in the Gaza Strip, the total prevalence of stunting was 19.6%, with the highest prevalence being (22.6%) in the Jabalia refugee camp. It turns out that shorter mothers had increased the odds of stunting in preschool children in the Gaza Strip (El Kishawi et al., 2017), Our results also demonstrated that parental consanguinity and short maternal stature were associated with stunting. Culturally appropriate interventions and appropriate strategies should be implemented to discourage these types of marriages. Policymakers must also raise awareness of the importance of the prevention and control of nutritional problems to combat stunting among children in the Gaza Strip (El Kishawi et al., 2017), the dual form of malnutrition in the same household was prevalent in the Gaza Strip.

2.13 Empirical studies

This section summarizes the key findings of prior relevant investigations which are chronologically arranged. The presentation of previous studies will aid in demonstrating the domain that defines the research's dimensions and comparing it to the current study's outcomes later in Chapter 4.

At Livingstone Central Hospital in Zambia, Ndaambelela. (2021) conducted a study to measure caregivers' knowledge, attitude, and practical skills on malnutrition in children under the age of five. A structured qualitative questionnaire was employed in the study, and 100 people were surveyed. According to the findings, 82 % of caregivers were aware

of malnutrition, whereas 16 % were unaware. In terms of attitudes, 80 % of respondents believed that a baby should be breastfed immediately after birth, or at the very least within one hour, while 20% disagreed. When it came to exclusive breastfeeding for the first six months of life, 80 % of respondents agreed, while 8% disagreed and 12% were unclear.

A cross-sectional study was carried out among 486 mothers/caregivers from Assosa Districts in Western Ethiopia. A semi-structured interviewer-administered questionnaire was used. Out of 486 study participants, 93.8 % of mothers had good knowledge, 88.9 % had a positive attitude, and 78.2 % of mothers had good practice of child feeding and nutrition (Assefa et al., 2021).

In a study, mothers of children with SAM were asked to assess their knowledge, attitudes, and practices surrounding child feeding. A total of 120 mothers with children ranging in age from babies to pre-schoolers (0-5 years) were surveyed. According to the findings, out of 120 women, 69 (57.5%) have acceptable knowledge, 36 (30%) have moderately adequate knowledge, and 15 (12.5%) have inadequate information. However, only 40 women (33.33 %) demonstrated adequate feeding procedures in practice, with the remaining 62 (51.66 %) demonstrating moderately adequate practices and 18 (15 %) demonstrating inadequate feeding practices. On average, out of 120 mothers, 43 (35.83%) have a favorable attitude toward infant feeding, 35 (29.16%) have a moderately favorable attitude, and 42 (35%) have a negative attitude (Manohar et al., 2018).

A descriptive cross-sectional study was conducted among 389 mothers of under-five children in Inaruwa, Nepal. To assess knowledge, attitude, and practice towards malnutrition among mothers. The study showed mothers with adequate knowledge on malnutrition were 45.2%. The majority of the mothers (87.4%) had a good attitude towards malnutrition. Among the mothers, 76.6% of them started feeding complementary food after

6 months age of the baby. The association between educational level and knowledge was found to be statistically significant. Although less than half of mothers had adequate knowledge of malnutrition, they had a good attitude. It was also observed that the education of respondents affects the knowledge of malnutrition (Dahal et al., 2020).

In a cross-sectional prospective study done in the pediatric wards and public health clinics at eleven public health institutions on South Tarawa in Kiribati, 82 mothers with malnourished children under the age of five were admitted to the pediatric wards and public health clinics. they gathered data on breastfeeding, weaning, and food knowledge, attitudes, and practice. On breastfeeding, weaning, food, and immunization, the participants had a low level of knowledge and a middle level of attitude and practice (Reiher et al., 2020).

In a study conducted to evaluate knowledge, attitude, and practices of mothers regarding nutrition of under-five children and prevention of malnutrition in India. The majority of mothers had fair to good KAP regarding nutrition of under-five children and prevention of malnutrition (Sangra and Nowreen, 2019).

Edith and Priya (2016) did a study in India to assess mothers of under-five children's knowledge, attitude, and practice about dietary habits in the prevention of malnutrition. A descriptive survey utilizing the interview approach was conducted to obtain data from 200 mothers of children under the age of five. According to the findings, the majority of mothers (56%) had moderately adequate knowledge and moderately adequate practice (58%) when it came to dietary practices for malnutrition prevention. The majority of mothers (56 %) had a positive attitude toward dietary practices in the prevention of malnutrition.

In a study conducted in the Hail district of Saudi Arabia by Shommo and Al-Shubrumi. (2014) to assess breastfeeding KAP, participants who had at least one child aged five years or younger at the time of the study were assessed using a questionnaire, with emphasis on their experience with the previous child. The majority of mothers (31.7 %) mentioned only two benefits. Seventy percent of the mothers started breastfeeding, while 30% did not. The average length was 9.3 8.97 months. Mothers' work was the most common reason for discontinuing breastfeeding before the age of two years, accounting for 38.6 % of the cases, followed by disease (15.8 %).

Chapter Three

Materials and Methods

3.1 Study design

The researcher used a descriptive, cross-sectional design. The primary goal of the cross-sectional analytical method is to enable the investigator to analyze facts or information that are already available in order to develop a critical assessment of the situation under investigation (Kesmodel, 2018; Levin, 2006; Kothari, 2004).

3.2 Study Setting

The study was conducted at Ard El-Insan Palestinian Benevolent Association (AEPBA) and Middle East Council of Churches Department of Service for Palestinian Refugees, Gaza.

3.3 Period of the study

The study was conducted during the period from March 1, 2021, until November 15, 2021.

3.4 Study population

The study population was the caregivers that have children under five years of age who come to receive services for their malnourished children at the time of the study.

3.5 Sample size and sampling process

The prevalence of malnutrition among children under the age of five years in the Gaza Strip is 9% (PCBS, 2020). We used the following equation to calculate the sample size:

$N = Z^2 \times P\ (100\text{-}P)/\ D^2$

Where:

N = the minimum required sample size

Z = the critical value for the 95% confidence level (1.96).

P = Estimated prevalence of malnourished cases in the Gaza Strip in Palestine (9%)

D = the margin of error or level of precision (5%).

So, the sample is 126, and the researcher increased the sample size to 140 to avoid missing data in some questionnaires. Consecutive sampling was used to enroll all the study participants whose met the study inclusion criteria until the required sample size was obtained. Also known as total enumerative sampling is a sampling technique in which every subject meeting the criteria of inclusion is selected until the required sample size is achieved.

3.6 Data collection technique

An interview with eligible candidates was conducted, and a total of 140 questionnaires were distributed in the process of collecting data on caregivers of malnourished children who were evaluating or attending the designated institutions. Procedures were thoroughly described to caregivers in their native Arabic dialect, and interviews were conducted in a calm and unhurried manner to maintain anonymity. Personal information in the questionnaire, such as name and address, was optional to maintain anonymity. All caregivers who met the criteria gave written consent to participate in the study before

starting filling out the questionnaires. The mean time for each questionnaire was approximately 10-15 minutes.

3.7 Eligibility criteria

3.7.1 Inclusion criteria

- Caregivers with malnourished children less than five years of age came to take the service from the two institutions.
- Caregivers who gave consent to take part in the study.

3.7.2 Exclusion criteria

- Caregivers of malnourished children whose malnutrition looked to be caused by an underlying illness condition were excluded.
- Caregivers' who are not first-line relatives will be excluded from the research.
- Caregivers who are caring for children who have other co-morbidities besides malnutrition.

3.8 Instruments of the study

A structured interviewing questionnaire created by the researcher and delivered by him served as the data-gathering technique, see (Annex 3) and (Annex 4) for the English and Arabic versions of the questionnaire. A structured interviewing questionnaire entailed piecing together questions that addressed or answered the research questions by gathering information on the caregiver's sociodemographic characteristics, nutritional knowledge, feeding practices, health-seeking behaviors, and home-based malnutrition management. Questions were asked in Arabic using the questionnaire, and the responses were then translated into the questionnaire.

The caregivers' demographic and socioeconomic characteristics were the first portion of the questionnaire. These data comprised demographic and socioeconomic characteristics of carers (age, gender, educational status, marital status, and the number of children) (Occupation, healthcare accessibility, employment status, residence, income status). Second, information on the child, including age, gender, height, weight, head circumference, mid-upper arm circumference, gestational age, the presence of any diseases, and breastfeeding and weaning methods. Third, the participants were questioned on nursing, colostrum, complementary feeding, nutritional sources, and the benefits of specific foods or macronutrients, as well as malnutrition signs and symptoms. Fourth, a five-point Likert scale statement was used to assess the participant's attitude toward nutrition. Fifth, participants' practices were explored by asking about the types of food they fed their children, how many times they were fed, how frequently they were fed, and what they were provided in between meals. The minimum meal frequency (WHO) of children was calculated using data on the frequency with which the children were fed. Information on whether the child is now breastfeeding, how soon after delivery the child was placed on the breast when the supplemental feed was begun if the child is on it, and when the child was weaned if the child was no longer breastfeeding.

3.9 Pilot study

Before beginning the actual data collection phase, the questionnaire was pretested among the same cohort of caregivers in a health care center with 15 caregivers (10% of the study sample) to provide feedback on the study questionnaire, test response rate, ensure the questionnaire's reliability, and identify areas of ambiguity. As a result, some changes to the structure of some questions have been made. The participants included in the pilot study were not included in the analysis.

3.10 Validity and reliability

3.10.1 Face and content validity

The degree of agreement between the results or conclusions obtained from the research questionnaire and the real world is measured here. The researcher double-checked that the questionnaire accurately reflected the topic under examination. A panel of questionnaire construction and research methodology experts (Annex 5) assesses the instrument's suitability, determining whether the questions correspond to the breadth of the items and the amount to which these items reflect the research problem's concept. They also searched for queries that were duplicated, ambiguous, or leading questions.

3.10.2 Reliability of the instrument

The reliability of an instrument is the degree of consistency of the questionnaire. For this purpose, the reliability coefficient was measured using Cronbach's coefficient alpha; that a result above 0.70 will be accepted for a pilot sample as well as for the actual study (Taber, 2018).

The Cronbach's alpha coefficient for the questionnaire used is 0.823. For knowledge, Attitude, and practice, Cronbach's alpha coefficients are as follows; 0.783, 0.722, 0.786 respectively. Table (3.1) shows the results of reliability tests.

Table 3.1: Test of reliability

Domain	Alpha Coefficient	No. of questions
Knowledge	0.783	14
Attitude	0.722	12
Practice	0.786	17
Overall	**0.823**	**33**

3.11 Data entry and analysis

The researcher used Statistical Package for Social Sciences (SPSS), version 25 to enter and analyze the data. Before analyzing the data, the researcher arranged cleaned the data, encoded it, and prepared it for entry. The results are presented according to the study objectives in tables and graphs showing percentages, frequencies, and associations. Descriptive statistics included frequencies, means, and standard deviation (SD) for variables as caregivers, children, Household features, or characteristics. Each respondent was asked to express his or her feelings concerning 15 different topics relating to the nutrition of children under the age of five. A five-point Likert scale was utilized, with one point for strongly disagree and five points for strongly agree. After that, the reverse statements were reverse coded (six statements). The attitude score was calculated by adding all of the statements together and multiplying by 100 over 75. Regarding knowledge and practice. The correct answer got one point and the wrong one got zero. Each domain's total number of questions was calculated by adding all the points and multiplying by 100. The possible knowledge, attitude, and practice scores are 0-100. Further, scoring criteria derived from previous related studies (Sangra and Nowreen, 2019; Tahilramani et al., 2021) for the knowledge and practice; poor (0-50), fair (51-75), and good (76-100) were considered. For attitude; negative (0-50), moderately favorable (51-75), and positive (76-100) were considered. We used linear regression to examine factors affecting participants' knowledge, attitude, and feeding practices.

3.12 Ethical and administrative considerations

Admin approvals were obtained from Al-Quds University, (Annex 6) and (Annex 7). Ethical approval was obtained from the Palestinian health research council, Helsinki committee (Annex 8). To guarantee participants' rights, a covering letter indicating that the participation is voluntary and confidentiality was assured for all of them. All caregivers were asked to assign a consent form for their agreement to participate in the study, (Annex 9).

Chapter Four

Results

The quantitative data is presented in this chapter. These findings respond to the research questions posed in the introduction chapter about participants' knowledge, attitudes, and practices about nutrition and feeding children under the age of five

4.1 Descriptive analysis

Table 4.1 : Demographic characteristics of the caregivers

Categories	N	%
caregivers' gender		
Male	7	5.0
Female	133	95.0
caregivers' age		
15-20years	4	2.9
21-30years	87	62.6
31-40years	42	30.2
>=41	6	4.3
education level		
Illiterate	3	2.2
Primary	8	5.8
Preparatory	15	10.9
Secondary	68	48.8
Diploma	12	8.6
Bachelor Degree	33	23.7
Occupation		
Work	5	3.6
does not work	132	96.4
Marital status		
Married	133	95.7
Single	2	1.4
Widow	3	2.2
Divorced	1	0.7

Table (4.1a) Continued

Variable	**Mean ± SD**	**Min- Max**
Number of children	3.7±2	1- 11
Number of a household member	5.8±2.1	3- 13
Caregiver's relationship with the malnourished child		
Father	9	6.5
Mother	124	89.9
Grandmother	3	2.2
Aunt	2	1.4
Income (N= 134)		
< 1973 NIS	133	99.3
1973-2470 NIS	1	.7

Table (4.1) shows the descriptive analysis of the study participants. One hundred and forty caregivers participated in the study. One hundred and forty caregivers participated in the study. The majority (95%) of the participants are females, in the age groups 21- 30 years, and 31-40 years 62.6%, and 30.2% respectively, the majority 48.9% had only secondary school, and 96.4% are not working, 95.7% are married, and 89.9% are the mothers for the malnourished children. Except for one, all of the caregivers have monthly incomes less than 1973 NIS. The mean of their child number is 3.7 (1-11), and the number of household members is 5.8 (3- 13).

Table 4.2: Demographic characteristics of the malnourished child

Categories	N	%
age child		
24-35 months	86	61.4
36-47 months	30	21.4
48-60 months	24	17.2
child gender		
Male	53	38.1
Female	86	61.9
The child was born in		
≤ 37	18	12.9
37- 40	116	83.5
≥ 40	5	3.6
Did the child have any disease at birth		
Yes	21	15.1
No	118	84.9
	Mean ± SD	**Min- Max**
Child's weight (Kgm)	10.9±7.7	7- 98
Height (cm)	87.4± 10.3	67-120
Mid-Upper Arm Circumference (MUAC)	16±7.1	11-48
Head Circumference	45.9±7.5	13-54

Table (4.2) shows the demographic characteristics of malnourished children. The majority 61.4%are 24-35 months, 61.9% are females, 83.5% are born in 37- 40 months of gestational age. The majority (84.9%) did not have any disease at birth. The average of their anthropological measurements are as follows; weight 1.9 Kgm, length 87.4, MUAC 16, and head circumference 45.9.

Table 4.3: Information about the malnourished children

Categories	N	%
At what age the child was weaned		
≤ 6 months	19	13.6
6-11 months	33	23.6
12- 17 months	63	45.0
18-24 months	25	17.8
Did the child enter the nursery at birth?		
Yes	28	20.0
No	112	80.0
Have children been born after the malnourished child?		
Yes	43	30.9
No	96	69.1
Has your child been sick for the past month?		
Yes	105	75.0
No	35	25.0
Where is your first point of call when you feel that the child is not well?		
Traditional healer	33	23.7
One of the family members	34	24.5
Health facility	72	51.8
Is there any available health facility in your area?		
Yes	88	62.9
No	52	37.1
How promptly do you seek treatments for the child?		
1 day	49	35.0
2 days	62	44.3
3 days	29	20.7

About half of the malnourished children 45% were weaned at 12- 17 months, 80% did not enter the nursery at birth, 30.9% have younger brothers. 75% have had no diseases in the past month, and 51.8% seek help from a health facility when the child becomes ill, and 62% have a health facility located in their area. The participants seek health care within one day, two days, and three days in the percentages 35%, 44.3%, and 20.7% respectively. The results are demonstrated in the table (4.3).

Table 4.4: Knowledge about serving food, and breastfeeding

Categories	N	%
When serving food at home who do you think should get the greatest portion?		
Mother	2	1.4
Father	27	19.3
older children	12	8.6
Young children	96	68.6
I don't know	3	2.1
At what age should complementary food be introduced?		
6 ≥	27	19.3
6-11	87	62.2
12-17	17	12.1
18-24	6	4.3
Don’t know	3	2.1
Is colostrum (first yellowish milk) a benefit to the newborn baby?		
Yes.	139	99.3
No	1	0.7

More than two-thirds of the participants 68.6% know that the greater portion of the food should be served for young children and 62.1% know the correct age (6-11 months) to introduce complementary food. All the participants know the benefit of colostrum for the child, table (4.4). The sources of their information are family members 50.7%, relatives 28.6%, and medical staff 14.3% Figure (4.1).

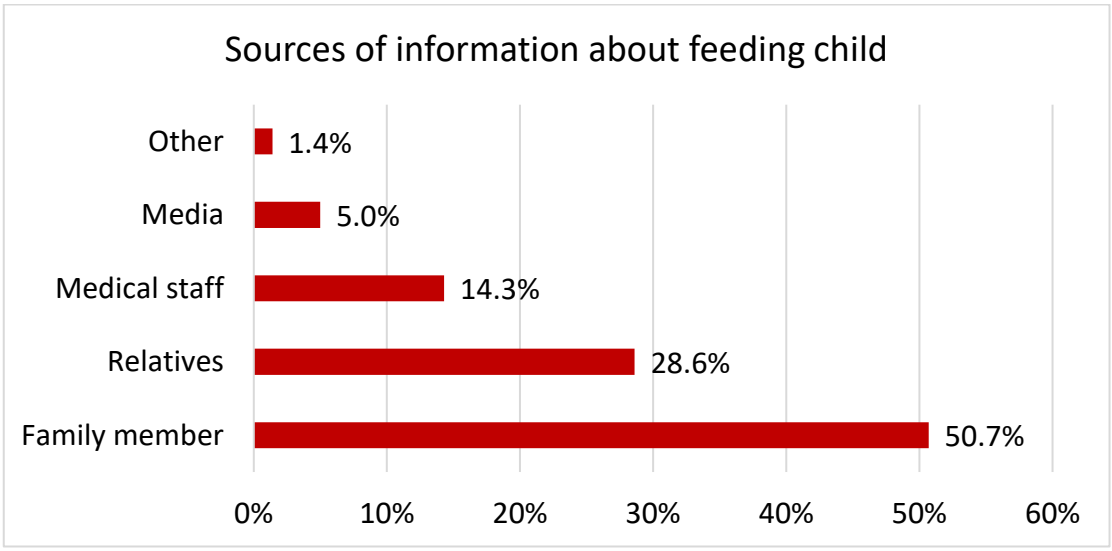

Figure 4.1: Sources of information about feeding child

Table 4.5: Knowledge about the value of served food

Categories	N	%
What are the main sources of animal protein?		
Fish	20	14.3
Eggs	29	20.9
Cheese	13	9.4
Read meat	13	9.4
All	64	46.0
What are the main sources of plant protein?		
Peas	13	9.3
Beans with rice	13	9.3
Peanuts	8	5.7
Lentils	39	27.8
All	67	47.9
Which of the following is a rich source of iron/blood?		
Meat	34	24.4
Tomatoes	73	52.5
Carrot	10	7.2
Rice	14	10.1
I don’t know	8	5.8
What type of food is appropriate to wean a child?		
Fruits	29	20.7
Baby rice	61	43.6
Vegetables	42	30.0
Meat	2	1.4
I Don’t know	6	4.3

Participants' knowledge about the served food is clarified in Table (4.5). Less than half of the participants 46%, and 47.9% know the source of animal and plant proteins. 52.5% know that tomatoes are a rich food of iron. Also, 43.6% know that baby rice is appropriate to wean children.

Table 4.6: Participants' knowledge about malnutrition

Categories	N	%
Do you know what is the reason for Malnutrition?		
yes	127	90.7
no	13	9.3
How do you feed your malnourished child at home?		
Household meal	16	11.4
Specially Prepared meal	33	23.6
Any available food	73	52.1
General food	15	10.8
Don't know	3	2.1
What is the definition of Malnutrition?		
Deficiency, increase, or imbalance in the person's intake of energy or nutrients	15	11.7
Stunting, wasting, and underweight	24	18.8
Undernutrition, deficiency, or insufficiency of micronutrients	50	39.1
Diet-related overweight, obesity, and non-communicable diseases	2	1.6
All of above	37	28.8
What are the signs and symptoms that may be seen in a malnourished child?		
Stunting (A significant decrease in height to age)	1	0.7
Underweight (A significant decrease in weight to age)	40	28.6
(A significant decrease in weight to height)	6	4.3
All of above	93	66.4
What do you think the reasons for malnutrition		
Improper nutrition (Unhealthy processed foods)	20	14.3
Some chronic diseases such as chronic bowel disease, psychological stress, and loss of appetite	15	10.8
Increasing the need for nutrients in certain life periods such as pregnancy and lactation, as well as for athletes	14	10.1
Some medications prevent the proper absorption of nutrients	3	2.2
All of the above	87	62.6

The majority of the participants 90.7% know the reason for malnutrition. Only 23% make specialized food for their malnourished children, 28.9% know the correct answer for the definition of malnutrition, 66.4% know the signs and symptoms of malnutrition, 62.6% know the reasons for malnutrition. The results are demonstrated in Table (4.6).

The majority of the participants knew about the CMAM from community members, where the health workers constituted 10%, this result is demonstrated in Figure (4.2)

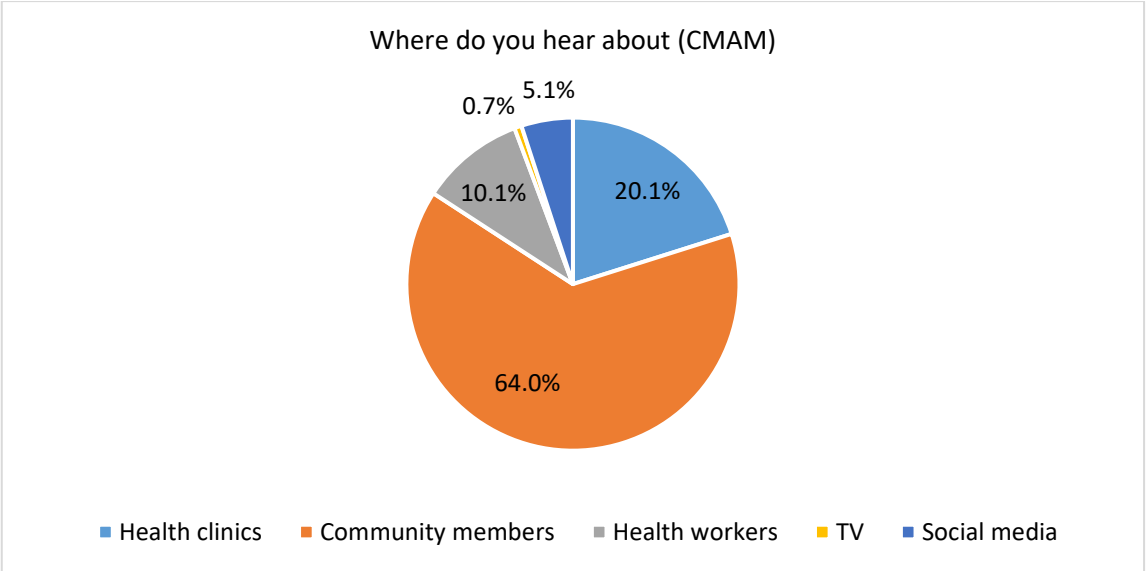

Figure 4.2: Participants knowledge about CMAM

Table 4.7: Participants' attitude about child feeding

Variable	SD N (%)	D N (%)	N N (%)	A N (%)	SA N (%)	Mean	Mean%
It is important to give the baby some water, honey, and other solid foods during the first six months after birth.	9 (6.4)	101 (72.1)	5 (3.6)	25 (17.9)	0 (0)	3.7	74
Nutritious foods are expensive	1 (0.7)	40 (28.6)	16 (11.4)	63 (45)	20 (14.3)	2.6	52
Malnutrition is caused by witchcraft and evil eye	21 (15)	72 (51.4)	14 (10)	24 (17.1)	9 (6.4)	3.5	70
Some foods are poorly digested e.g., eggs.	2 (1.4)	60 (42.9)	11 (7.9)	59 (42.1)	7 (5)	2.9	58
Breast milk protect your child from illnesses	0 (0)	1 (0.7)	0 (0)	90 (64.3)	49 (35)	4.3	86
Breast feeding should start immediately after delivery (within 1 hour)	2 (1.4)	2 (1.4)	79 (56.4)	57 (40.7)	0 (0)	4.4	88
Babies should not be given anything except breast milk up to 6 months	0 (0)	24 (17.1)	5 (3.6)	68 (48.6)	41 (29.3)	3.9	78
A child can be given butter, sugar, water and others from birth to 6 months	20 (14.3)	96 (68.6)	7 (5)	17 (12.1)	0 (0)	3.9	78
Breastfeeding should continue up to 2 years of age or more	8 (5.7)	51 (36.4)	5 (3.6)	51 (36.4)	24 (17.1)	3.2	64
Snacks should be given to the children between meals	0 (0)	4 (2.9)	12 (8.6)	92 (65.7)	32 (22.9)	4.1	82
A child should eat fruits and vegetables more than 3 times a weak	0 (0)	5 (3.6)	11 (7.9)	83 (59.3)	41 (29.3)	4.1	82
Serving balanced foods prevents malnutrition	1 (0.7)	21 (15)	9 (6.4)	79 (56.4)	29 (20.7)	3.8	76
Serving only starchy foods prevents malnutrition	3 (2.1)	83 (59.3)	10 (7.1)	39 (27.9)	4 (2.9)	3.3	66
Serving indigenous fruits/vegetables can keep children healthy	1 (0.7)	3 (2.1)	4 (2.9)	88 (62.9)	43 (30.7)	4.2	84
Malnutrition can be caused by disease like diarrhea and malaria	5 (3.6)	20 (14.3)	12 (8.6)	70 (50)	32 (22.9)	3.7	74
Overall						**3.7**	**74**

The overall score for the women's attitude about malnutrition is 74%. The majority of the women have a positive attitude about breastfeeding; 88% and 86% of the caregivers agree that breastfeeding should start immediately after birth, and protect tier children from illness respectively. Also, 78% have a positive attitude regarding exclusive breastfeeding. However, only 64% agreed that breastfeeding should continue up to 2 years of age or more. Caregivers do not agree with some statements in that 52% see that nutritional food is expensive. 52% agreed that some food such as eggs is poorly digested and have 66% attitude for the statement serving only starchy food and prevent malnutrition. The results are demonstrated in Table (4.7).

Table 4.8: Responses of caregivers about breastfeeding practices and complimentary food

Categories	N	%
Time usually started breastfeeding after birth.		
Within one hour	101	72.1
After one hour	39	27.9
Frequency of breastfeeding in 24 hours during the first month?		
< 8 times	17	12.1
8times	59	42.2
above 8 times	64	45.7
Do you practice exclusive breastfeeding?		
yes	57	40.7
no	83	59.3
Additional food other than breast milk started at any in the 1st 6 months		
yes	38	27.1
no	102	72.9
At what age did you begin giving your child complementary foods		
3- 5 months	27	19.3
6- 12 months	109	77.8
≥ 12 months	4	2.9
Did the mother stop breastfeeding before the child age 24 months?		
yes	99	70.7
no	41	29.3
If the answer is yes, what is the reason?		
Pregnancy	33	30.3
Inadequate breast milk	36	33.0
Mother sickness	13	11.9
the child refuse	24	22.0
the husband refuses	3	2.8

The majority of caregivers 72.1% said that breastfeeding usually started within one hour after birth. The frequency of breastfeeding is 8 times or more in 87.9% of them. About two-thirds, 59.3% did not have exclusive breastfeeding for their children and 27.1% added additional food for their children in the first 6 months of child age, and 77.9% had given complementary food for their children during age 6- 12 months. The majority 70.7% of the

caregivers said that breastfeeding was stopped before the child's age of 24 months for the following reasons; pregnancy 30.3%, inadequate breast milk 33%, mother illness 11.9%, children refuse 22%, and the husband refuses 2.8%. These results were demonstrated in Table (4.8).

Table 4.9: Child feeding Practices

Categories		**N**	**%**
The number of times a child should eat in a day?	one time	2	1.4
	two times	16	11.4
	≥ 3 times	122	87.2
Do you feed your child home-cooked meals	Yes	137	97.9
	No	3	2.1
What is the kind of food you give to your child?	Fruits	2	1.4
	vegetables	40	28.6
	All	98	70.0
Do you think that there are foods that can improve malnutrition	Yes	130	92.9
	No	10	7.1
If yes, what are foods?	Carbohydrates	22	16.9
	healthy fat	14	10.8
	plant and animal proteins	17	13.1
	vitamin and minerals	7	5.4
	All	70	53.8
Describe the amount of food eaten by the child in the previous 24 hours period	Snacks	91	65.0
	Balanced meals	36	25.7
	heavy metals	4	2.9
	fast food with no nutritional value	9	6.4
Do you add anything to the child's food when preparing it or after cooking? N= 139	Yes	111	79.9
	No	28	20.1
If the answer is yes, then what is the type of additives? N= 111	sweeteners	8	7.3
	Spice	50	45.0
	Herbs	14	12.6
	food supplements	11	9.9
	All	28	25.2
How many times per day do you feed your child?	one time	3	2.1
	2 times	7	5.0
	3 times	57	40.7
	4 times	49	35.0
	≥ 5 times	24	17.2
What type of semi-solid food do you give your children? N= 139	Porridge	6	4.3
	rice with milk	24	17.3
	vegetables soup	50	36.0
	All	59	42.4
Do you boil drinking water before given to the child?	Always	17	12.1
	Sometimes	34	24.3
	Never	89	63.6

The majority of the caregivers 87.1% said that the children should eat three times or more during one day, and 97.9% feed their children from the daily cooked food. 70% give their children both fruits and vegetables and 42.4% give their children all types of semisolid food. 92.9% see that there is food that may improve malnutrition and only 25% were fed with balanced meals in the previous 24 hours. Also, 45.0% and 12.6% added spice, and herbs respectively. 52.1% feed their children more than 3 times. And finally, 63.6% of them never boil the drinking water before being given to their children. The results are demonstrated in Table (4.9).

Table 4.10: Correlation between, knowledge, attitude, and practice

		Knowledge	**Attitude**	**Practice**
Knowledge	Pearson Correlation	1	0.482**	0.397**
	Sig. (2-tailed)		0.001	0.001
	N	140	135	140
Attitude	Pearson Correlation	0.482**	1	0.473**
	Sig. (2-tailed)	0.001		0.001
	N	135	135	135
Practice	Pearson Correlation	0.397**	.473**	1
	Sig. (2-tailed)	0.001	0.001	
	N	140	135	140
****. Correlation is significant at the 0.01 level (2-tailed).**				

Table (4.10) shows the Pearson correlation coefficient between knowledge, attitude, and practice. All the correlation coefficients are moderately positive correlation as all of them are 0.25- 0.75, which are statistically significant all the time as p- values are all ≤ 0.01.

Table 4.11: Descriptive Statistics of outcome variables

	N	Mean	SD	Min	Max
Knowledge	140	50.9	15.8	14.3	92.8
Attitude	135	74.2	8.2	52.0	93.3
Practice	140	54.7	15.1	17.7	88.2

Percentage mean scores, SD for knowledge, attitude, and practice are 50.9%, 74.2%, and 54.7% respectively as Table (4.11) clarifies.

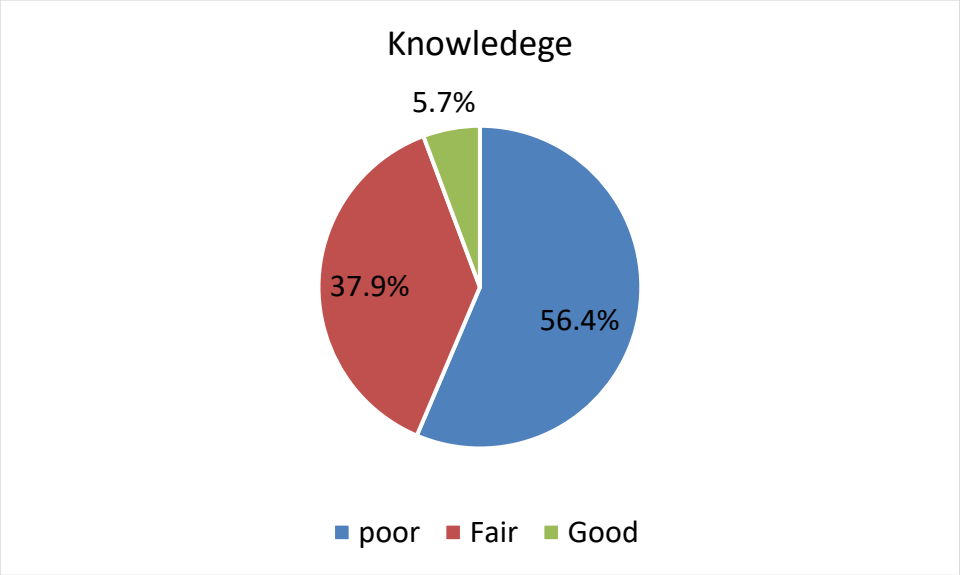

Figure 4.3: Knowledge categories among participants

According to the knowledge scores, eight caregivers (5.7%) had good knowledge, 96 (37. 9%) had fair knowledge, and 69 (56.4%) had poor knowledge about under-five nutrition and malnutrition prevention (Figure 4.3). Sixty-five caregivers (48.1 %) had a positive attitude, while seventy-nine percent (51.9%) had a moderately favorable attitude toward the nutritional needs of children under five and the prevention of malnutrition, as shown in the attitude scores (Figure 4.4). According to the results, only 17 % of caregivers had good practices, 50 % had fair practices, and 37.9 % had poor practices when it came to the

nutrition and malnutrition prevention of children under the age of five, according to the study (Figure 4.5).

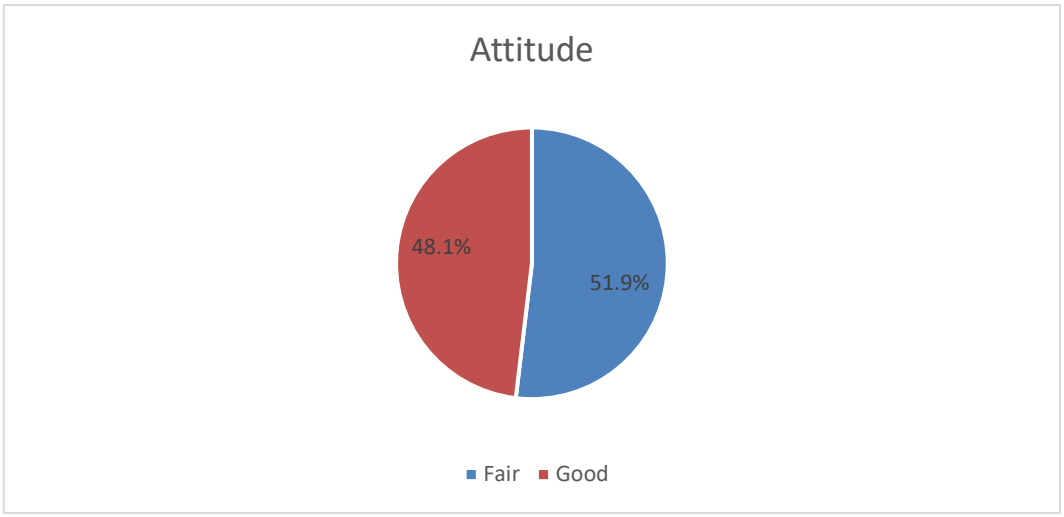

Figure 4.4: Attitude categories among participants

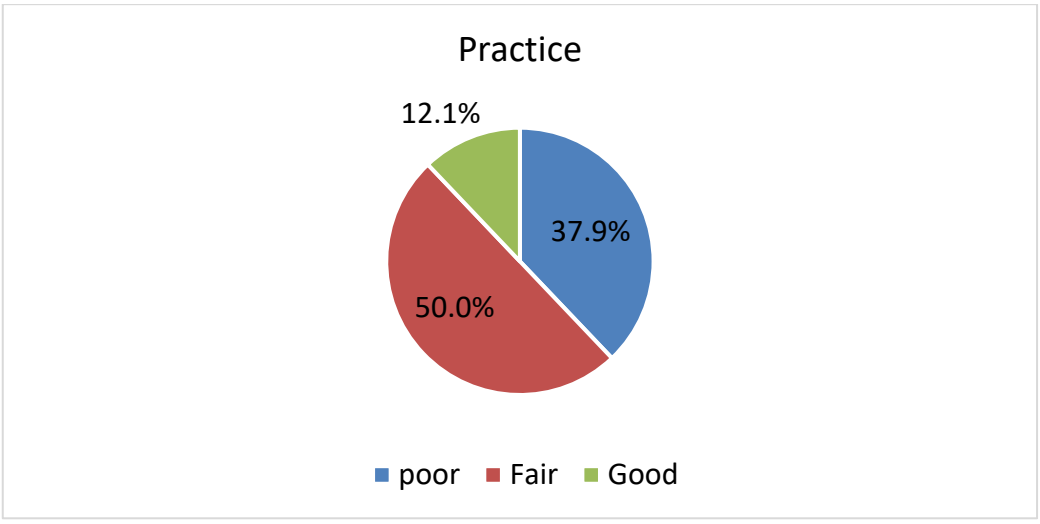

Figure 4.5: Practice categories among participants

4.2 Predictors of caregivers' knowledge

Table 4.12: Model Summary, knowledge

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.481[a]	0.232	0.175	14.31124

Table 4.13: ANOVA, knowledge

ANOVA						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	7474.363	9	830.485	4.055	0.001[b]
	Residual	24782.219	121	204.812		
	Total	32256.582	130			
a. Dependent Variable: Knowledge						

Table (4.12), and (4.13) demonstrate the model summary and ANOVA for the multilinear regression analysis for knowledge score. The model interprets 17.5% of the knowledge score and the model is statistically significant p- value= 0.001.

Table 4.14: Coefficients knowledge

Coefficients						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	78.873	29.410		2.682	.008
	Caregivers' gender	8.823	7.902	.126	1.117	.266
	Caregivers' age	-4.430	2.477	-.175	-1.788	.076
	Education level	4.829	1.112	.380	4.341	.000
	Occupation	-14.279	7.972	-.174	-1.791	.076
	Marital status	-4.003	5.118	-.066	-.782	.436
	Caregiver's relationship with the malnourished child	1.530	5.007	.034	.306	.760
	Number of children of the caregiver	.799	2.231	.099	.358	.721
	Number of household member	-.412	2.048	-.055	-.201	.841
	Monthly Salary	-26.068	16.385	-.145	-1.591	.114
a. Dependent Variable: Knowledge						

Table (4.14) shows that the only factor that affects knowledge, Education level is that the higher educated caregivers' have higher knowledge. Average knowledge scores for the illiterate caregivers is 21.4%, primary 43.7%, preparatory 45.2%, secondary 49.5%, diploma 60% and bachelor degree 59% (p- value= 0.001) .

4.3 Predictors of caregivers' Attitude

Table 4.15: Model Summary, attitude

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.479[a]	0.229	0.170	7.35593

Table 4.16:ANOVA, attitude

ANOVA						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	1868.040	9	207.560	3.836	0.001[b]
	Residual	6276.722	116	54.110		
	Total	8144.762	125			
a. Dependent Variable: Attitude						

Tables (4.15), and (4.16) demonstrate the model summary and ANOVA for the multilinear regression analysis for attitude score. The model interprets 17% of the attitude score and the model is statistically significant p- value= 0.001.

Table 4.17: Coefficients, Attitude

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	67.419	15.125		4.457	.001
	Caregivers' gender	9.329	4.135	.266	2.256	.026
	Caregivers' age	-.065	1.322	-.005	-.049	.961
	Education level	2.266	.581	.348	3.902	.001
	Occupation	-3.019	4.098	-.073	-.737	.463
	Marital status	.293	2.667	.010	.110	.913
	Caregiver's relationship with the malnourished child	-1.740	2.726	-.074	-.638	.525
	Number of children of the caregiver	1.827	1.148	.448	1.592	.114
	Number of household member	-2.167	1.055	-.571	-2.054	.042
	Monthly Salary	-5.822	8.425	-.064	-.691	.491
a. Dependent Variable: Attitude						

From Table (4.17), three factors affect attitude, caregivers' gender females (74.5%) have more positive attitude than males (68.9%) and the effect is significant (p- value= 0.026). Education level is also another predictor variable for their attitude. The higher educated caregivers' have a higher attitude. Average attitude scores for the illiterate caregivers is 59.6%, primary 74.5%, preparatory 70%, secondary 72.8%, diploma 79.3% and bachelor degree 78% (p- value= 0.000). Also, the number of household members affects the participants' attitude negatively (p- value= 0.042).

4.4 Predictors of caregivers' practices

Table 4.18: Model summary, Practice

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.419	0.176	0.114	14.17252

Table 4.19: ANOVA, practice

ANOVA						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	5181.618	9	575.735	2.866	0.004[b]
	Residual	24304.105	121	200.860		
	Total	29485.723	130			
a. Dependent Variable: Practice						

Table 4.20: Coefficients, practice

Coefficients						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	55.419	29.125		1.903	.059
	Caregivers' gender	.963	7.825	.014	.123	.902
	Caregivers' age	-.034	2.453	-.001	-.014	.989
	Education level	1.698	1.102	.140	1.541	.126
	Occupation	5.989	7.895	.076	.759	.450
	Marital status	-1.171	5.068	-.020	-.231	.818
	Caregiver's relationship with the malnourished child	.029	4.959	.001	.006	.995
	Number of children of the caregiver	.225	2.209	.029	.102	.919
	Number of household member	-2.708	2.028	-.378	-1.335	.184
	Monthly Salary	-4.967	16.226	-.029	-.306	.760
a. Dependent Variable: Practice						

There is no statistically significant relationship to predict the feeding practices of the participants as all p- values of the examined predictors > 0.05 as shown in Table (4.20).

Chapter Five

Discussion

In this chapter, the main findings of the study are presented. The primary findings were then evaluated and compared to the worldwide findings.

5.1 Summary of main findings

The study surveyed 140 caregivers of malnourished children who attended the Ard El-Insan Palestinian association and the Middle East Council of Churches Department of Service for Palestinian Refugees in Gaza about knowledge, attitude, and feeding practices of their children. The following percentages represent the knowledge, attitude, and practice of the participants: 50.9 %, 74.2 %, and 54.7 %, respectively. We found moderate significant correlations between the three outcome variables.

We further divided knowledge, attitude, and practice into three categories. According to the statistics, 5.7 % have good knowledge, 37.9% have fair knowledge, and 56.4 % have poor knowledge. The attitude scores are significantly better, with 48.1 % having a good attitude and 51.9 % having a moderately favorable attitude. Concerning practice, 17% of caregivers had good practices, 50% had fair practices, and 37.9% had poor practices. The analysis found that three variables influence attitude score: education level, gender, and household size. The only variable that influences the knowledge score is one's educational level. However, no variables were observed to have an impact on the practice score.

5.2 Comparison to findings from previous research

5.2.1 Prevalence of malnutrition

Malnutrition was more common in the younger age groups (24-35 months). This is because rapid growth happens in the first 1-3 years of life, increasing the need for nutrients for tissue construction. Malnutrition arises from a lack of protein, energy, and other micronutrients during these years. The findings are consistent with those of another study in the field (Manohar et al., 2018).

In our study, female patients were affected more when compared to males. Consistent with another study performed by Manohar et al. (2018) who reported more prevalence of malnutrition among females (56%) than males (44%).

5.2.2 Knowledge

Two-thirds of those surveyed knew when to start complementary foods, which was between six and twelve months. Another study found that 79.2% of those who took part knew this information (Zeidu, 2018). Almost all caregivers are aware of the value of colostrum, which is a far better outcome than the study of Zeidu (2018) which found that just 73% of participants were aware of the necessity of colostrum. 90.6 % was found in another study (Kabura, 2013). Family and relatives are the primary sources of information with medical professionals playing a smaller role (14.3%). This figure is insufficient and should be increased at all prenatal and postnatal appointments. Inconsistent with the findings; sources of information, such as community health workers (41%), and the media (29%), were cited by participants in another survey study (Nekesa, 2012).

5.2.3 Attitude

Breast milk protects the child from illness, initiating breast milk within the first hour of delivery, and exclusive nursing for the first six months of life are all statements that the participants have a good attitude toward. This is due to the good quality of Antenatal care (ANC) services in Gaza, as well as the availability of breastfeeding information during the procedure. Nassar (2018) found that 94% of participants received breastfeeding advice during their ANC visits. On the other side, some statements, such as malnutrition food is expensive, some foods are poorly digested, and giving solely starchy food prevents malnutrition, receive lower scores from the participants. The findings are comparable to those of earlier studies in this field (Abubakar et al., 2011; Lodha and Bharti, 2013; Kabura, 2013).

From my point of view, it could be related to inadequate and imbalanced diets, as a result of inappropriate beliefs and attitudes about certain foods, predisposing children to malnutrition.

5.2.4 Practice

When feeding regimens are implemented correctly or incorrectly, they can help or hurt malnourished children. Caregivers who are well-versed in proper feeding techniques are better equipped to improve their children's health. The caregivers in this study had a wide range of feeding habits, as the researchers discovered. The majority of people who cared for babies said they breastfed them within the first hour of their birth 72.1 %. ANC services provide an excellent opportunity to gain this knowledge (Nassar, 2018).

For children's optimal growth, exclusive breastfeeding is a recommended feeding practice. Researchers discovered that most mothers did not exclusively breastfeed their babies for

the entire time they were in the care of the mother. An even higher percentage of mothers 96.7%) reported that their children had been exclusively breastfed for six months in another study (Msiska et al., 2017). In addition, 77.9% of caregivers began complementary feeding exactly six months after the child's birth, according to the findings of this study. As a result, caregivers were well-versed in feeding techniques. Previously conducted studies by Bilal et al. (2014) and Banda (2012), which found poor feeding practices, differed in their findings. A study design difference could account for this discrepancy. These previous studies relied on qualitative methods, whereas the current study relied on quantitative ones.

When it came to weaning the kid, 70% of the children were weaned before completing 24 months of breastfeeding due to insufficient breast milk (33%), pregnancy (30%), child refusal (22%), and mother illness (11.9 %). In contrast to the study of Shommo and Al-Shubrumi. (2014) findings, mothers' job was the most common reason for weaning children (38.6%), followed by sickness (15.8 %).

When asked about their bad eating habits, participants said that they provided snacks and unbalanced meals and that they added spices and sweets. Only 12% of caregivers said they boil water for the child before giving it to them. As a result, water contamination was cited as a possible cause of infection in the study's participants. Another study found that 22.5% of mothers gave their children boiled water to drink (Manohar et al., 2018).

5.2.5 Knowledge, attitude, and practice scores

The knowledge score of this study is consistent with the study of Shettigar et al. (2013) which showed similar findings regarding level of knowledge in that only 4% had good knowledge, 38% had average knowledge, and 54% had poor knowledge.

On the other hand, inconsistent findings with another study which had higher good scores of knowledge and practice 45%, and 43.6% respectively and a lower percentage of those have attitude score 30.3% (Sangra and Nowreen, 2019). In addition, another study indicated higher findings in that 57.5 % of its participants have appropriate knowledge, 35.8 % have a favorable attitude, and 33.3 % have adequate practice (Manohar et al., 2018).

In surveys with different scoring criteria, 45.2 % have adequate knowledge, while 87.4 % have a positive attitude (Dahal et al., 2020). Further, in another study, 56 % had adequate knowledge, 56 % had a favorable attitude, and 58 % had adequate practice (Edith and Priya, 2016).

5.2.6 Relationship between dependents and independents variables

The study showed a moderate positive correlation between knowledge, attitude, and practice which indicates that as knowledge level increases attitude, and level practices increase. The result is in a line with previous related studies by Edith and Priya (2016) which revealed that there was a significant positive correlation ($r = 0.59$, $p < .05$) between knowledge and attitude regarding dietary practices in the prevention of malnutrition. However, Inconsistent findings existed in another study in that the association between knowledge and attitude was found to be statistically insignificant (Dahal et al., 2020).

The study showed that the only variable that affects the knowledge score is the education level. Higher education increases participants' knowledge about malnutrition and feeding children. Also, attitude is affected by three predictors; caregivers' gender, education level, and the number of household's members with no significant predictors for practice. Previous related studies are consistent with some results and not with others. Dahal et al. (2020) found that the association between knowledge on malnutrition and education level

is statistically significant. Reiher et al. (2020) found that attitude is affected by the education level, however, knowledge is not. Another study showed no significant predictors for knowledge. However, it showed higher age, education, and marital status are predictors of attitude. Also, higher education is a predictor of practices score (Li, 2017). Being in Gode District ($P \leq 0.001$) and not being a housewife (P 0.014) were significantly associated with good knowledge about optimal infant and young child feeding, wealth index ($P \leq 0.001$) is associated with a good attitude, and literacy ($P \leq 0.01$) is associated with good practice (Guled et al., 2016).

Chapter Six

Conclusion and recommendations

6.1 Conclusion

Objective 1: To assess the level of caregiver's knowledge regarding malnutrition for under-five children.

The findings of this study show that the mean score of caregivers' knowledges about nutrition and feeding practices for the under-five children is 50.2%. There are certain gaps in caregivers' knowledge and behaviors addressing child feeding and nutrition. Although mothers are aware of the importance of child nutrition, basic health education and good counseling by health care experts can help them put their knowledge into practice. Appropriate counseling and assistance should be provided to the caregivers to improve their knowledge and confidence, with the ultimate goal of preventing malnutrition.

Objective 2: To assess the level of attitudes of caregivers on malnutrition for under-five children.

Women's attitude score about the nutrition of their under-five children is 74.2%. Which is better than their knowledge and practice.

Objective 3: To identify the level of feeding and nutrition practices among caregivers of malnourished children.

Women's practice score about the nutrition of their under-five children is 54.7%. The figure is still insufficient. As a result, the government must play a role in educating the people about the need for a well-balanced diet. Furthermore, malnutrition will be

considerably decreased if mothers perform well in their tasks of breastfeeding at the proper time and providing a balanced diet from accessible food.

Objective 4: To examine the relationship between caregivers' knowledge, attitude, and practice

The study showed a significant moderate correlation between knowledge, attitude, and practice. This means that if the women knowledge well about the under-five children nutrition and feeding practices. Their attitude will increase and their practice well also increased.

Objective 5: To predict factors affecting knowledge, attitude, and feeding practices of caregivers of malnourished children.

The study found that education, gender, and family size influence attitude score. The sole factor affecting the knowledge score is one's education. However, no variables were found to affect the nutritional practice score. The government along with the child organization should conduct education programs to teach caregivers and women about nutrition and feeding practices of the under-five children.

6.2 Recommendations

Based on the study results the researcher recommended the following:

6.2.1 Recommendations for policymakers

- Educating and raising awareness among mothers about good dietary practices

- It is recommended that the ministry of health collaborate with Ard El-Insan Palestinian Benevolent Association, and the middle East Council of Churches Department institution to raise community malnutrition awareness.
- During postnatal care and under-five visits, a greater emphasis on excellent child nutrition and weaning practices is needed.

6.2.2 Recommendations for caregivers

- Continue provision of nutritional education by health care providers to caregivers in order to improve their knowledge and awareness of certain fundamental child nutritional information and, as a result, have a positive impact on their feeding habits.
- Mothers and caregivers should follow the best-practice dietary guidelines for children under the age of five.

6.2.3 Recommendations for further research

- Conducting a pretest-posttest intervention study is recommended to investigate the impact of training on women's nutrition knowledge, attitudes, and practices.

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Annexes

Annex 1: Palestine map

Source: Palestinian Central Bureau of Statistic(year)

Annex 2: Gaza Strip Map

Source: http://www.maps-of-the-world.net/maps-of-asia/maps-of-gaza-strip

Annex (3): Interviewing questionnaire- English version, with highlighted correct answers

Socio-demographic characteristics of caregiver and child

Kindly tick/write the appropriate response where applicable

CAREGIVERS

1. gender Male [ ] Female [ ]
2. Age group (years) [ ] 15-20 [ ] 21-30 [ ] 31-40 [ ] ≥ 41
3. Education Level: [ ] Illiterate [ ] Primary [ ] preparatory [ ] Secondary [ ] Diploma [ ] Bachelor Degree [ ] Master Degree or Higher
4. Occupation [ ] work [ ] does not work
5. Marital status; [ ] Married [ ] Single [ ] Widow [ ] Divorced
6. Caregiver's relationship with the malnourished child; [ ] Father Mother [ ] Grandmother [ ] Aunt [ ] Others, specify……
7. A number of children of the caregiver ……..
8. A number of household members …….
9. Monthly Salary: [ ] < 1973 NIS [ ] 1973-2470 NIS [ ] > 2470 NIS

MALNOURISHED CHILD

10. Age (months): [ ] 24-35 [ ] 36-47 [ ] 48-60
11. Sex: Male [ ] Female [ ]
12. Child's weight (Kgm)……
13. Height (cm)…….
14. Mid-Upper Arm Circumference (MUAC) …….
15. Head Circumference ……..
16. The child was born in [ ] ≤ 37 [ ] 37- 40 [ ] ≥ 40
17. Did the child have any disease at birth Yes [ ] no [ ]
18. At what age the child was weaned [ ] ≤ 6 [ ] 6-11 [ ] 12- 17 [ ] 18-24
19. Did the child enter the nursery at the moment of birth? yes [ ] no [ ]
20. Have children been born after the malnourished child? yes [ ] no [ ]
21. If the answer is yes, what is the period between the birth of the malnourished child and the new baby? ……months
22. Has your child been sick for the past month? [ ] Yes [ ] No

23. Where is your first point of call when you feel that the child is not well?

[ ] Traditional healer [ ] One of the family members [ ] Health facility [ ] searching internet 25. Is there any available health facility in your area? [ ] Yes [ ] No

26. How promptly do you seek treatments for the child? [ ] 1 day [ ] 2 day [ ] 3 day

I: Questions related to caregivers' knowledge of malnutrition

The questions from 1-17 are general questions regarding **caregivers' knowledge of malnutrition**, complete the following table according to the degree of approval.

General questions					
1. When serving food at home who do you think should get the greatest portion?	Father [ ]	Mother [ ]	Older children [ ]	Young children [ ]	Don't know [ ]
2. What are the main sources of animal protein?	Fish [ ]	Eggs [ ]	Cheese [ ]	Read meat [ ]	All [ ]
3. What are the main sources of plant protein?	Peas [ ]	Beans with rice [ ]	Peanuts [ ]	Lentils [ ]	All [ ]
4. Which of the following is a rich source of iron/blood?	Meat [ ]	Tomatoes [ ]	Carrot [ ]	Rice [ ]	Don't know [ ]
5. What type of food is appropriate to wean a child?	Fruits [ ]	Baby rice [ ]	Vegetables[ ]	Meat [ ]	Don't know [ ]
6. At what age should complementary feeding be introduced?	[ ] ≤ 6	[ ] 6-11	[ ] 12-17	[ ] 18-24	Don't know [ ]
7. Do you know what is the reason of Malnutrition?	Yes [ ]	No [ ]			
8. How do you fed your malnourished child at home?	Household meal [ ]	specially Prepared meal [ ]	Any available food [ ]	General food [ ]	Don't know [ ]
9. Where do you hear about Community-based Management of Acute Malnutrition (CMAM)?	Health clinics [ ]	Community members [ ]	Health workers [ ]	TV [ ]	Social media [ ]
10. Who supports you in caring for the child?	[ ]Husband or wife	[ ] Your children	[ ]Grandma	[ ] Aunt	[ ] No one
11. What is your source of information on feeding your child?	Family member [ ]	Relatives [ ]	Medical staff [ ]	Media [ ]	Other [ ]

12. If the answer in Q8 is yes, what is the Definition of Malnutrition?

[ ] Deficiency, increase, or imbalance in the person's intake of energy or nutrients

[ ] Stunting, wasting, and underweight

[ ] Undernutrition, deficiency, or insufficiency of micronutrients

[ ] Diet-related overweight, obesity, and non-communicable diseases

[ ] All of above

13. What are the signs and symptoms that may be seen in a malnourished child?

[ ] Stunting (A significant decrease in height to age)

[ ] Underweight (A significant decrease in weight to age)

[ ] (A significant decrease in weight to height)

[ ] All of above

14. What do you think are the reasons for malnutrition?

[ ] Improper nutrition (Unhealthy processed foods)

[ ] Some chronic diseases such as chronic bowel disease, psychological stress, and loss of appetite

[ ] Increasing the need for nutrients in certain life periods such as pregnancy and lactation, as well as for athletes

[ ] Some medications prevent the proper absorption of nutrients

[ ] All of above

II: Questions related to Health seeking attitude of the caregiver

The questions from 18-35 are general questions regarding **Health seeking attitude of the caregiver**, complete the following table according to the degree of approval.

	SD	D	N	A	SA
15. It is important to give the baby some water, honey, and other solid foods during the first six months after birth.					
16. Nutritious foods are expensive					
17. Malnutrition is caused by witchcraft and evil eye					
18. Some foods are poorly digested e.g., eggs.					
19. Breast milk protects your child from illnesses					
20. Breastfeeding should start immediately after delivery (within 1 hour)					
21. Babies should not be given anything except breast milk up to 6 months					
22. A child can be given butter, sugar, water and others from birth to 6 months					
23. Breastfeeding should continue up to 2 years of age or more					
24. Snacks should be given to the children between meals					
25. A child should eat fruits and vegetables more than 3 times a weak					
26. Serving balanced foods prevents malnutrition					
27. Serving only starchy foods prevents malnutrition					
28. Serving indigenous fruits/vegetables can keep children healthy					
29. Malnutrition can be caused by diseases like diarrhea and malaria					

III: Questions related to feeding practices of the caregiver

The questions from 36-53 are general questions regarding of **feeding practice of the caregiver**, complete the following table according to the degree of approval.

General questions					
36. Time usually started breastfeeding after birth.	[ ] Within one hour			[ ] After one hour	
37. Frequency of breastfeeding in 24 hours during the first month?	[ ] < 8 times		[ ] 8times		[ ] above 8 times
38. Additional food other than breast milk started at any in the 1st 6 months	[ ] Yes			[ ] no	
39. Did the mother stop breastfeeding before the child age 24 months?	[ ] Yes			[ ] no	
40. If the answer is yes, what is the reason?	[ ] Pregnancy	[ ] Inadequate breast milk	[ ] Mother sickness	[ ]the child refuse	[ ] the husband refuse
41. Number of times a child should eat in a day?	[ ]one time		[ ]two times		[ ] ≥ 3 times
42. Do you practice exclusive breastfeeding?	[ ] Yes			[ ]No	
43. At what age did you begin giving your child complementary foods?	[ ] 3- 5 months		[ ] 6- 12 months		[ ] ≥ 12 months
44. Do you feed your child home-cooked meals	[ ] Yes			[ ] no	
45. What is the kind of food you give to your child?	[ ] Fruits	[ ] vegetables		[ ] meat	[ ] all
46. Do you think that there are foods that can improve malnutrition	[ ] Yes			[ ] no	
47. If yes in Q47, What are foods?	[ ] Carbohydrates	[ ] healthy fat	[ ] plant and animal proteins	[ ]vitamin and minerals	[ ]All
48. Describe the amount of food eaten by the child in the previous 24 hour period	[ ] Snacks	[ ] Balanced meals	[ ] heavy meals	[ ] fast food with no nutritional value	[ ] don't know

49. Do you add anything to the child's food when preparing it or after cooking?	[ ] Yes			[ ]No	
50. If the answer in q49 is yes, then what is the type of additives?	[ ] sweeteners	[ ] spices	[ ] herbs	[ ] food supplements	[ ] All
51. How many times per day do you feed your child in a day?	[ ]1 time	[ ]2 times	[ ]3 times	[ ]4 times	[ ] ≥ 5 times
52. What type of semi-solid food do you give your children?	[ ] Porridge	[ ] rice with milk	[ ] vegetables soup	[ ] All	
53. Do you boil drinking water before given to the child?	[ ] Always	[ ] Sometimes	[ ] Never		

<u>Thank you for your cooperation</u>

Annex 4: Interviewed questionnaire- Arabic version

يرجى وضع علامة / كتابة الرد المناسب عند الاقتضاء

الخصائص الاجتماعية والديمغرافية لمقدم الرعاية والطفل

مقدمي الرعاية

24. الجنس [ ] ذكر [ ] أنثى
25. العمر (بالسنوات) [ ] 15 – 20 [ ] 21 – 30 [ ] 31 – 40 [ ] ≥ 41
26. المستوى التعليمي: [ ] أمي [ ] ابتدائي [ ] اعدادي [ ] ثانوي [ ] دبلوم [ ] بكالوريوس [ ] ماجستير أو أعلى
27. المهنة [ ] يعمل [ ] لا يعمل
28. الحالة الاجتماعية [ ] متزوج/ة [ ] أعزب / عزباء [ ] أرمل/ة [ ] مطلق/ة
29. إذا متزوج، عدد زوجات الزوج .....
30. علاقة مقدم الرعاية بالطفل المصاب بسوء التغذية [ ] الاب [ ]الأم [ ] الجد/ة [ ] الخالة/العمة [ ] آخرون .....
31. عدد أطفال مقدم الرعاية؟ .....
32. عدد أفراد الأسرة؟ .....
33. الراتب الشهري: [ ] أقل من 1973 شيكل [ ] بين 1973-2470 شيكل [ ] أكثر من 2470 شيكل

الطفل المصاب بسوء التغذية

34. العمر (أشهر) [ ] 24-35 [ ] 36 – 47 [ ] 48 - 60
35. الجنس [ ] ذكر [ ] انثى
36. وزن الطفل (كجم) .....
37. الطول (سم) .....
38. محيط منتصف العضد (MUAC) .....
39. محيط الرأس .....
40. ولد الطفل على كم اسبوع [ ] ≥ 37 [ ] 37 - 40 [ ] ≤ 40
41. هل أصيب الطفل بأي مرض عند الولادة [ ] نعم [ ] لا
42. في أي سن بالشهور تم فطام الطفل (≥ 6 ، 6 – 11 ، 12 – 17 ، 18 – 24)
43. هل دخل الطفل الحضانة لحظة ولادته؟ [ ] نعم [ ] لا
44. هل تم انجاب أطفال بعد الطفل الذي يعاني من سوء تغذية ؟ [ ] نعم [ ] لا
45. اذا كانت الاجابة بنعم في السؤال (21) ، كم المدة الزمنية بين الطفل الذي يعاني من سوء التغذية والطفل الذي تم انجابه من بعده ؟ ..... شهر
46. هل مرض طفلك خلال الشهر الماضي؟ [ ] نعم [ ] لا
24. أين هي نقطة الاتصال الأولى عندما تشعر أن الطفل ليس على ما يرام؟

أسألة عامة					
1. عند تقديم الطعام في المنزل ، من تعتقد أنه يجب أن يحصل على أكبر حصة؟	[ ] الأم	[ ]الأب	[ ] الأطفال الأكبر سنًا	[ ]الأطفال الصغار	[ ]لا أعرف
2. ما هي المصادر الرئيسة للبروتين الحيواني؟	الأسماك [ ]	[ ] البيض	[ ] الجبن	[ ] اللحوم الحمراء	[ ]الكل
3. ما هي المصادر الرئيسية للبروتينات النباتية؟	]البازيلاء [ ]	[ ] فاصوليا مع أرز	فول [ ]سوداني	[ ] عدس	[ ]الكل
4. أي مما يلي مصدر غني بالحديد / الدم؟	[ ] لحوم	[ ] طماطم	[ ] جزر	[ ] أرز	لا أعرف [ ]
5. ما هو نوع الطعام المناسب لفطام الطفل؟	] الفواكه [ ]	[ ]أرز الأطفال	[ ] الخضار	[ ] اللحوم	[ ] لا أعرف
6. في أي سن يجب إدخال التغذية التكميلية بالشهر؟	[ ] 6 ≥	[ ] 6 – 11	[ ] 12 – 17 [ ]	[ ] 18 – 24	] لا أعرف [ ]
7. هل تعرف ما هو سوء التغذية؟	[ ] نعم	[ ] لا			
8. كيف تطعم/ي طفلك المصاب بسوء التغذية في المنزل؟	[ ] وجبة منزلية	[ ] وجبة معدة خصيصًا	[ ] أي طعام متاح	[ ] طعام عام	]لا أعرف [
9. عندما ذهبت/ي الى أحدى مؤسسات علاج اطفال سوء التغذية ، فأين سمعت عنهم لأول مرة؟	[ ] العيادات	أفراد [ ]المجتمع	[ ] العاملون الصحيون	التلفزيون [ ]	[ ] مواقع التواصل الاجتماعي
10. من يساعدك في رعاية الطفل؟	[ ] زوج أو زوجة	[ ] أطفالك	[ ] الجد/ة	[ ] الخالة/العمة	[ ] لا احد
11. ما هو مصدر معلوماتك عن إطعام طفلك؟	أفراد]الأسرة [	[ ]الأقارب	الطاقم [ ]الطبي	[ ] وسائل الإعلام	[ ]أخرى

[ ] المعالج التقليدي [ ] أحد افراد العائلة [ ] منشأة صحية [ ] البحث على الانترنت

25. هل يوجد أي رعاية صحية متوفر في منطقتك؟ [ ] نعم [ ] لا

26. ما مدى سرعة البحث عن طلب معالجة الطفل؟ [ ] يوم واحد [ ] يومان [ ] 3 ≤ أيام

أولاً: الأسئلة المتعلقة بالمعرفة لدى مقدمي الرعاية بسوء التغذية

الأسئلة من 1-17 هي أسئلة عامة تتعلق بالمعرفة لدى مقدمي الرعاية بسوء التغذية، أكمل الجدول التالي وفقًا لما تراه صحيح.

12. إذا كانت الإجابة بنعم في السؤال الثامن ، فما هو تعريف سوء التغذية؟

[ ] النقص أو الزيادة أو عدم التوازن في ما يتناوله الشخص من الطاقة و / أو مغذيات

[ ] التقزم والهزال ونقص الوزن

[ ] نقص التغذية عوز المغذيات الدقيقة أو عدم كفايتها

[ ] زيادة الوزن والسمنة والأمراض غير السارية المرتبطة بالنظام الغذائي

[ ] جميع ما سبق

13. ما هي العلامات والأعراض التي قد تظهر عند الطفل المصاب بسوء التغذية؟

[ ] التقزم (انخفاض كبير في الطول بالنسبة للعمر).

[ ] نقص الوزن (انخفاض كبير في الوزن بالنسبة للعمر).

[ ] الضمور (انخفاض كبير في الوزن بالنسبة للطول)

[ ] جميع ما سبق

14. ما رأيك بالأسباب التي تؤدي لحدوث سوء التغذية ؟

[ ] التغذية الغير صحيحة (الأغذية المصنعة والمنتجات الجاهزة).

[ ] بعض الأمراض مثل أمراض الأمعاء المزمنة والإجهاد النفسي و فقدان الشهية.

[ ] زيادة الحاجة إلى العناصر المغذية في فترات حياتية معينة كالحمل والرضاعة، وكذلك بالنسبة للرياضيين.

[ ] بعض الأدوية قد تحول دون امتصاص العناصر المغذية بشكل سليم.

[ ] جميع ما سبق

ثانياً: الأسئلة المتعلقة بالتوجهات لدى مقدمى الرعاية

الأسئلة من 18 إلى 35 هي أسئلة عامة تتعلق بالتوجهات لدى مقدمى الرعاية، أكمل الجدول التالي وفقًا لدرجة الموافقة.

	موافق بشدة	موافق	محايد	لا أوافق	لا أوافق بشدة
15. من المهم إعطاء الطفل بعض الماء والعسل والأطعمة الصلبة الأخرى خلال الأشهر الستة الأولى بعد الولادة.					
16. قلة وشح حليب الثدي يجعل الطفل عرضة لسوء التغذية.					
17. الأطعمة المغذية باهظة الثمن.					
18. سوء التغذية ناتج عن السحر والعين الشريرة.					
19. حليب الأم يحمي طفلك من الأمراض.					
20. يجب أن تبدأ الرضاعة الطبيعية مباشرة بعد الولادة (خلال الساعة الأولى).					
21. لا ينبغي إعطاء الأطفال أي شيء عدا حليب الأم حتى عمر 6 أشهر.					
22. يمكن إعطاء الطفل الزبدة والسكر والماء وغيرها منذ الولادة وحتى 6 أشهر.					
23. يجب أن تستمر الرضاعة حتى عمر سنتين أو أكثر.					
24. يجب إعطاء الوجبات الخفيفة للأطفال بين الوجبات.					
25. يجب أن يأكل الطفل الفاكهة والخضروات أكثر من 3 مرات في الاسبوع					
26. تقديم أطعمة متوازنة يمنع سوء التغذية.					
27. تقديم الأطعمة النشوية فقط يمنع سوء التغذية.					
28. إن تقديم الفاكهة / الخضروات الطازجة يمكن أن يحافظ على صحة الأطفال.					
29. يمكن أن يكون سبب سوء التغذية أمراض مثل الإسهال والملاريا.					

ثالثًا: الأسئلة المتعلقة بممارسات التغذية لدى مقدمى الرعاية

الأسئلة من 36 إلى 53 هي أسئلة عامة بخصوص ممارسة التغذية لدى مقدمى الرعاية ، أكمل الجدول التالي وفقًا لما تراه صحيح.

أسألة عامة					
30. الوقت الذي يجب ان تبدأ الام الرضاعة الطبيعية بعد الولادة؟	[ ] خلال ساعة واحدة	[ ] بعد ساعة واحدة			
31. عدد مرات الرضاعة الطبيعية في ال 24 ساعة خلال الشهر الأول؟	[ ] 8> مرات	[ ] 8 مرات	[ ] ما فوق 8 مرات .		
32. يتم تقديم أي طعام إضافي بخلاف حليب الأم في أول 6 أشهر؟	[ ] نعم	[ ] لا			
33. هل توقفت الأم عن الرضاعة الطبيعية قبل 24 شهراً ؟	[ ] نعم	[ ] لا			
34. اذا كانت الاجابة بنعم في سؤال (39) فما هو سبب التوقف ؟	[ ] الحمل	[ ] حليب الثدي غير الكافي	[ ] مرض الأم	[ ] رفض الطفل	[ ] رفض الزوج
35. عدد الوجبات التي يجب أن يتناولها الطفل في اليوم؟	[ ] مرة واحدة	[ ] مرتين	[ ] ≤ ثلاثة		
36. خلال فترة الرضاعة ، هل مارست الأم الرضاعة الطبيعية فقط؟	[ ] نعم	[ ] لا			
37. في أي عمر بدأت بإعطاء طفلك أطعمة تكميلية؟	[ ] 3 - 5 شهور	[ ] 6 – 12 شهر	[ ] ≤ 12 شهر		
38. هل تطعم طفلك وجبات معدة في المنزل؟	[ ] نعم	[ ] لا			
39. ما نوع الطعام الذي تعطيه لطفلك ؟	[ ] فواكه	[ ] خضروات	[ ] لحوم	[ ] الجميع	
40. هل تعتقد/ي أن هناك أطعمة يمكن أن تحسن وتحد من سوء التغذية؟	[ ]نعم	[ ] لا			
41. إذا كانت الإجابة بنعم في سؤال (46) ، ما هي الأطعمة؟	[ ] النشويات	[ ] الدهون الصحية	[ ] بروتينات نباتية وحيوانية	[ ] الفيتامينات والمعادن	[ ] الجميع
42. صف كمية الطعام التي قام بتناولها الطفل في فترة الأربع والعشرين ساعة الماضية ؟	[ ] الوجبات	[ ] الوجبات المتوازنة	[ ] الوجبات	[ ] الوجبات السريعة "	[ ] لا أعرف

	الخفيفة		الدسمة	بدون قيمة غذائية"	
43. هل تقومي باضافة شيئاً إلى طعام الطفل عند تحضيره أو بعد الطبخ؟	[ ]نعم	[ ] لا			
44. إذا كانت الإجابة بنعم في سؤال (49) ، الرجاء تحديد ما هو مضاف	[ ] مُحليات	[ ] بهارات وتوابل	[ ] أعشاب	[ ] مكملات غذائية	[ ] الجميع
45. كم مرة تطعمين طفلك في اليوم ؟	[ ] 1 مرة	[ ] 2 مرة	[ ] 3 مرات	[ ] 4 مرات	[ ] ≤ 5 مرات
46. ما الذي تقومي بإعطائه لطفلك من أطعمة شبه صلبه ، على سبيل المثال؟	[ ] عصيدة	[ ] رز بحليب	[ ] شوربة خضار	[ ] الجميع	
47. هل تغلي مياه الشرب قبل إعطائها لطفلك؟	[ ] دائما	[ ] أحيانا	[ ] أبدا		

<u>شكرا لتعاونكم</u>

Annex 5: List of arbitrators

No.	Name	Specialty	Affiliation
1.	Dr. Ihab A. Naser	Ph.D. in Clinical Nutrition	Assistant Prof. at Al Azhar University
2.	Dr. Mohammed Al Lulu	Ph.D. in Clinical Nutrition	Assistant Prof. at Al Azhar University
3.	Dr. Marwan Jalambo	Ph.D. in Clinical Nutrition	Assistant Prof. at Palestinian Technical College
4.	Dr. Mohammed Tabash	Ph.D. in Public Health	Assistant Prof. Al Azhar University
5.	Dr. Samira Abo Al Sheikh	Ph.D. in Public Health	MoH

Annex 6: Admin approval 1

Al Quds University

Faculty of Health Professions

Nursing Dept. –Gaza

جامعة القدس

كلية المهن الصحية

دائرة التمريض- غزة

التاريخ:2021/9/15

حضرة الدكتور/ عيسى سليم طرزي المحترم

مدير جمعية اتحاد الكنائس

الموضوع: تسهيل مهمة الطالب محمد البازوري

تهديكم كلية المهن الصحية بجامعة القدس أطيب التحيات، ونرجو من حضرتكم مساعدة الطالب المذكور بخصوص جمع معلومات خاصة بموضوع رسالته البحثية ضمن برنامج ماجستير تمريض صحة الأم و الطفل الملتحق به الطالب والمعنونة ب:

Knowledge, Attitude, and Feeding Practices among Caregivers of under Five Years Old Malnourished Children in the Gaza Strip, Palestine

وسيتم جمع بيانات بخصوص الموضوع أعلاه من خلال استبانة لمرافقي الأطفال أقل من 5 سنوات ذوي سوء التغذية المترددين على مراكز جمعيتكم (الشجاعية – الدرج – خربة العدس)

وتفضلوا بقبول وافر الاحترام والتقدير

د. حمزة محمد عبد الجواد

أستاذ مساعد في علوم التمريض

منسق برامج ماجستير التمريض بغزة

كلية المهن الصحية - جامعة القدس

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تلفاكس: 2644220 8 972+

خلوي: 852755 599 972+

دائرة التمريض Nursing Department

Tel: 08 2644210+08 2644220

Tel. Fax: 08 2644220

تلفون: 08 2644210+08 2644220

تلفاكس: 082644220

Annex 7: Admin approval 2

Al Quds University
Faculty of Health Professions
Nursing Dept. –Gaza

جامعة القدس
كلية المهن الصحية
دائرة التمريض- غزة

التاريخ:2021/8/14

حضرة الأخ/ د. عدنان الوحيدي حفظه الله
المدير التنفيذي لجمعية أرض الإنسان الفلسطينية
السلام عليكم ورحمة الله وبركاته

الموضوع: تسهيل مهمة الطالب محمد درويش محمد اليازوري

تهديكم كلية المهن الصحية بجامعة القدس أطيب التحيات، ونرجو من حضرتكم مساعدة الطالب المذكور بخصوص جمع معلومات خاصة بموضوع:

Knowledge, Attitude, and Feeding Practices among Caregivers of under Five Years Old Malnourished Children in the Gaza Strip, Palestine

وذلك من مرافقي الأطفال الذين يصطحبون أطفالهم ممن ينتفعون بخدمات علاج سوء التغذية بمقري الجمعية بغزة وخانيونس وذلك لمتطلبات رسالة الماجستير الخاصة به لبرنامج تمريض صحة الأم والطفل.

وتفضلوا بقبول وافر الاحترام والتقدير

14/8/2021

د. حمزة محمد عبد الجواد
أستاذ مساعد في علوم التمريض
منسق برامج ماجستير التمريض بغزة
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دائرة التمريض
Nursing Department

جمعية أرض الإنسان الفلسطينية المحيرة
الرقم: 219
التاريخ: 25/8/2021
التوقيع:

Tel: 08 2644210+08 2644220
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تلفون: 08 2644210+08 2644220
تلفاكس: 082644220

Annex 8: Ethical approval – Helsinki Committee

المجلس الفلسطيني للبحث الصحي

Palestinian Health Research Council

تعزيز النظام الصحي الفلسطيني من خلال مأسسة استخدام المعلومات البحثية في صنع القرار

Developing the Palestinian health system through institutionalizing the use of information in decision making

Helsinki Committee

For Ethical Approval

Date: 2021/08/02 **Number:** PHRC/HC/959/21

Name: Mohammed Darwish EL-Yazory الاسم:

We would like to inform you that the committee had discussed the proposal of your study about:

نفيدكم علماً بأن اللجنة قد ناقشت مقترح دراستكم حول:

Knowledge, Attitude, and Feeding Practices among Caregivers of under Five Years Old Malnourished Children in the Gaza Strip, Palestine

The committee has decided to approve the above mentioned research. Approval number PHRC/HC/959/21 in its meeting on 2021/08/02

و قد قررت الموافقة على البحث المذكور عاليه بالرقم والتاريخ المذكوران عاليه

Signature

Member **Member**

Dr. Tahia Abed

Chairman

Genral Conditions:-

1. Valid for 2 years from the date of approval.
2. It is necessary to notify the committee of any change in the approved study protocol.
3. The committee appreciates receiving a copy of your final research when completed.

Specific Conditions:-

E-Mail:pal.phrc@gmail.com

Gaza - Palestine غزة - فلسطين

شارع النصر - مفترق العيون

Annex 9: Consent form

الاخ/الاخت ة

السلام عليكم ورحمة الله وبركاته ,,,,

الموضوع / تعبئة استبانة لرسالة ماجستير

يقوم الباحث بدراسة حول " **المعرفة ، والتوجه ، وممارسات التغذية لدى مقدمي الرعاية للأطفال دون سن الخامسة الذين يعانون من سوء التغذية** ", دراسة تطبيقية في مدينة غزة وذلك استكمالا لمتطلبات الحصول على درجة الماجستير في صحة الأم والطفل من جامعة القدس

" يعاني الأطفال الذين تقل أعمارهم عن خمس سنوات في قطاع غزة من أنواع متعددة من سوء التغذية، لكن الأكثر خطرا وشيوعا لديهم هو سوء التغذية المزمن، المقترن بنقص العناصر الغذائية الدقيقة، بسبب رداءة الغذاء المقدم إليهم وقلة كميته، و يُشار إلى تضاعف معدلات سوء التغذية الحاد بعد الحرب الأخيرة إلى سبعة أضعاف عما كان قبلها، يستبعد ارتباط ذلك بضعف المنظومة المعرفية لدى الأمهات والممارسة والتطبيق، ويؤكد علاقته المباشرة بعجزهن عن توفير الاحتياجات الغذائية الأساسية بسبب ضيق الرزق، وفي الوقت الذي يحذر فيه مستشاري التغذية والصحة العامة من تأثيرات سوء التغذية على الأطفال، كحدوث مشاكل في الأعضاء والأجهزة وكبح جماح النمو والتأثير على بنية الطفل ومعدلات الطول والقدرات البدنية وفشل الأعضاء وضعف المناعة، يلفت إلى تأثيرات ذلك على القدرات العقلية والذكاء والتحصيل العلمي والمعرفي ".

ولإيماننا العميق بأنكم الاكثر معرفة بالوضع القائم في المدينة , وأنكم خير مصدر للوصول الى المعلومات المطلوبة , يسر الباحث ان يضع بين ايديكم هذه الاستبانة لتعبئتها وكله امل ان يجد التعاون المطلق من قبلكم.

يرجى قراءة فقرات الاستبانة المرفقة واختيار الاجابة التي تعكس الواقع الفعلى , علما ان المعلومات التي ستعبأ من قبلكم ستعامل بسرية تامة , ولن تستخدم إلا لأغراض البحث العلمي.

وتقبلوا فائق الاحترام والتقدير ,,,

توقيع وإقرار بالموافقة ------

الباحث/ محمد اليازوري

عنوان الدراسة: "المعرفة، والمواقف، وممارسات التغذية بين مقدمي الرعاية للأطفال دون سن الخامسة الذين يعانون من سوء التغذية في قطاع غزة، فلسطين"

إعداد: محمد درويش اليازوري

إشراف: د. أحمد نجم

ملخص الدراسة:

الحالة التغذوية للأطفال ضرورية لأنها تحدد حالتهم الصحية، ونموهم، ونموهم البدني، وأدائهم الأكاديمي، والتقدم العام في الحياة. يشير سوء التغذية إلى القصور أو الإفراط في تناول العناصر الغذائية، أو عدم توازن العناصر الغذائية الأساسية، أو ضعف الاستفادة من المغذيات.

هدفت هذه الدراسة إلى تقييم المعرفة التغذوية ووجهات النظر وممارسات التغذية لدى مقدمي الرعاية للأطفال دون سن الخامسة الذين يعانون من سوء التغذية في قطاع غزة.

تم استخدام التصميم الوصفي المقطعي. تم استطلاع آراء مقدمي الرعاية لأطفال تقل أعمارهم عن خمس سنوات ويعانون من سوء التغذية والذين جاءوا لتلقي الخدمة من جمعية أرض الإنسان الخيرية الفلسطينية ومؤسسة دائرة مجلس الكنائس في الشرق الأوسط باستخدام استبيان مقابلة. تم استخدام عينة متتالية لتسجيل العينة المطلوبة من المشاركين في الدراسة حتى تم الحصول على حجم العينة المطلوب (140) مقدم رعاية.

غالبية الأطفال (61.4٪) تتراوح أعمارهم بين 24 و35 شهرًا، 83.5٪ ولدوا بين 37 و40 أسبوعا. الغالبية (84.9٪) كانوا يتمتعون بصحة جيدة عند الولادة. 50.9٪ من المشاركين لديهم معرفة جيدة، بينما 74.2٪ لديهم اتجاهات جيدة. ترتبط العوامل المدروسة الثلاث بشكل معتدل مع بعضها البعض. 5.7٪ من مقدمي الرعاية لديهم معرفة قوية، و37.9٪ لديهم معرفة عادلة، و56.4٪ لديهم معرفة ضعيفة. كانت درجات الاتجاهات أفضل بكثير، حيث بلغت 48.1٪ إيجابية و51.9٪ معتدلة. تم تصنيف ممارسات مقدمي الرعاية على النحو التالي: 17٪ جيد، 50٪ مقبول، 37.9٪ ضعيف. وجدت الدراسة أن التعليم والجنس وحجم الأسرة يؤثران على وجهات نظر المشاركين. العامل الوحيد الذي يؤثر على درجة المعرفة هو تعليم الفرد. ومع ذلك، لم يتم العثور على متغيرات تؤثر على درجة الممارسة التغذوية. **خلصت الدراسة** الى أن معرفة وسلوكيات مقدمي الرعاية فيما يتعلق بتغذية الأطفال غير كافية. يمكن أن يساعد التثقيف الصحي الأساسي والمشورة المختصة من قبل خبراء الرعاية الصحية الأمهات على وضع معلوماتهن قيد التنفيذ. نتيجة لذلك، أوصت الدراسة بانه يجب على الحكومة تثقيف الجمهور بشأن الحاجة إلى نظام غذائي متوازن. سيتم أيضًا الحد من سوء التغذية إذا قدم مقدمو الرعاية نظامًا غذائيًا متوازنًا من الأطعمة المتوفرة بسهولة. يجب على مقدمي الخدمات الرعاية الصحية تقديم المعلومات الأزمة لمساعدة مقدمي الرعاية على اكتساب المعرفة والثقة حول السلوك التغذوي الصحيح، وبالتالي منع سوء التغذية.