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Maternal and infant factors associated with infant's growth and development at the UNRWA clinics in the Jerusalem Area

Manal Shihadeh Mustafa Natour

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اهداء

الحمد لله الذي بنعمته تتم الصالحات

الهي لا تطيب الحياة الا بذكرك وطاعتك ولا تطيب الجنة الا برؤيتك

الله جل جلاله

الى نبي الرحمة من بلغ الرسالة وادى الامانة ونور العالمين

سيدنا محمد صلى الله عليه وسلم

لروح ابي الغالي الذي احمل اسمه بكل افتخار ، نور الله قبره

امي الرائعة، التي تدعمني دائمًا وتمنحني الرضى والإيمان ودعائها سر نجاحي

بناتي الحبيبات والروح اسماء وتسنيم... حفيدتي ريتا الجميلة روح الروح وفرحة حياتي

زوجي الذي كان قوتي .... انت الوفي

أبنائي الغوالي اسامة، نبيل، جود

إخوتي السند.. وأخواتي الأحباء

الى روح الشهداء من جنين الى غزة من كل وطني فلسطين

كل حرف هو بداية، وكل كلمة خطوة ، وكل جملة انطلاقة،

وإلى كل هؤلاء أهدي هذا العمل بكل حب

إهداء خاص لروح ابني الشهيد

مهدي بيادسة

ايها الشهيد الغالي لقد نلت شهادة فخر ووسام اعلقه على صدري نلت اسمى واعلى الدرجات العلى ومرتبة العز والشرف

هنيئا لنا شهادتك وستبقى ذكراك نبراسا يضيئ طريقنا على مدى الدهر

شاء القدرونلت الشهادة التي طالما تمنيتها

السلام عليك حين ولدت وحين استشهدت وانت بيننا حيا

Dedication

I thank God for giving me the abilities and strength to complete this thesis.
My God, life is not pleasant except with Your remembrance and obedience, and Paradise is not pleasant except through Your remembrance. I dedicate this thesis to the Prophet of Mercy, who conveyed the message, fulfilled the trust, and enlightened the world.

For the soul of my dear father, whose name I carry with all pride, may God enlighten his grave. My wonderful mother, who always supports me and gives me contentment and faith, and her prayers are the secret of my success.

To My Dearest Family, my husband: from you, I gained the strength...you are loyal. To My dear sons and beloved daughters and to my beloved brothers and sisters. I will not forget my beautiful granddaughter Rita, my soulmate who gave me the joy of my life To our distinguished professors, The beacon of knowledge and scholars, the lofty edifice of Al-Quds University. To those who carried a blessed message in life, to those who paved the path of science and knowledge to their master students. To the soul of the martyrs from Jenin to Gaza, from all of my homeland, Palestine. Every letter is a beginning, every word is a step, and every sentence is a starting point.

To all of them, I dedicate this work with love

Declaration

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

Name: Manal Shihadeh Mustafa Natour

Signed: Manal Natour

Date: 27/10/2024

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Manal Shihadeh Natour

Abstract

Introduction: Maternal health and well-being, including nutrition, mental health, and access to healthcare services, are foundational to an infant's initial growth and development trajectory. Infant factors, such as birth weight, breastfeeding practices, and immunization status, also play a critical role in shaping the child's growth and development. By studying these elements, healthcare providers and policymakers can better identify at-risk populations, tailor interventions, and create policies that promote equitable health outcomes.

Aim: To assess the growth and development of infants. Further to assess the maternal and infant factors associated with the growth and development of the infants in the UNRWA clinics in the Jerusalem Area.

Methodology: The study employed a cross-sectional design. The target population comprised infants and mothers registered at the UNRWA healthcare centers in the Jerusalem area. A convenience sampling method was employed. The sample size was 169 infants and their mothers. The study's instruments were the Ages and Stages Questionnaire to evaluate the infant's development milestones. In addition, infants' anthropometric measurements were taken by the researcher to assess infants' growth. (weight, height, head circumference), in addition to the body mass index measurement that was calculated according to the equation suggested by the World Health Organization for infants. The sociodemographic characteristics of the mothers as well as infant and maternal factors were assessed by using a structured questionnaire based upon the literature review. Study tools validation was ensured through adherence to standardized procedures and the use of a reliable tool adapted for the Palestinian context. Data collection was done by the researcher and trained staff in face-to-face attendance with the mothers who were also asked to fill out the questionnaire.

Results: The physical growth scores for infants in this study were well within the normal age range. The mean of infant's weight was 10.9 kg (SD7.03), the mean Height was 73.2 cm (SD 10.1), mean Head circumference was 46.2 cm (SD 5,6), and the BMI was 18.2 (SD 2.4). The total item scores of the developmental milestones of infants showed a normal range and above the cutoff point when compared with the specific chart of the ages and stages questionnaires. The mean of the total item scores was 51.5 for communication, 45.6 for Gross motor, 47.5 for problem-solving, and was 49.1 for personal-social development. However, the mean of total items of fine motor development was 43.5 which is very close

to the cutoff point suggesting monitoring and more involvement in learning activities. Significant correlations were found between BMI and both head circumference ($r = .475$, $p < .01$) and weight ($r = .253$, $p < .01$). Additionally, personal-social skills are significantly related to problem-solving ($r = .553$, $p < .01$) and fine motor skills ($r = .434$, $p < .01$). Maternal factors such as comorbidities showed a strong negative correlation with infants' weight ($r = -0.400^{**}$, $p < 0.01$), while infant factors such as complimentary food and the Child's intake of Vit A showed significant correlation with the child development milestones ($r = 0.424^{**}$, $p < 0.01$).

Conclusion: The study revealed that infants' growth and development were at an acceptable level with some slight variations. Enhancing maternal health services and addressing key developmental indicators are crucial for optimizing child development outcomes in the UNRWA clinics of the Jerusalem Area. The child's growth and development should be frequently monitored. to be able to detect developmental delay at an early stage. It is recommended to study other environmental and hereditary factors that might impact the child's growth and development.

Keywords: **Maternal Health, Child's Growth and Development, UNRWA Clinics, Jerusalem Area.**

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List of Abbreviations

1	UNRWA	United Nations Relief &Works Agency for Palestinian Refugees in the Near East
2	MOH	Ministry of Health
3	MCH	Maternal and Child Health
4	CHR	Child Health Registration
5	PHC	Primary Health Care
6	WB	West Bank
7	WHO	World Health Organization
8	CBC	Complete Blood Count
9	OGTT	Oral Glucose Tolerance Test
10	PCC	Preconception Care
11	BMI	Body Mass Index
12	EBF	Exclusive breastfed infants
13	UNICEF	United Nations Children's Fund
14	UNFPA	United Nations Population Fund
15	LBW	Low Birth Weight
16	ANC	Antenatal Care
17	(ASQ®-3)	Ages & Stages Questionnaires®
18	AOR	Adjusted Odd Ratio
19	ECD	Early childhood development
20	LMIC	low- and middle-income countries

Chapter One

Introduction

1.1 Background

Maternal and child health is a critical health priority for many societies around the world as well as in Palestine. The Palestinian Ministry of Health is working continuously, through the National Sexual and Reproductive Health Strategy, to improve the quality of Maternal health services and to promote children's health during the first 5 years of life (Leone et al., 2019). During infancy, which typically refers to the first year of life, a child experiences rapid growth and development across multiple domains, including physical, cognitive, social, and emotional development (Bornstein, 2014). Screening tests are important tools for identifying infants and children who may be at risk for growth and development delays or disabilities, allowing for early intervention and support (Faruk et al., 2020). Therefore, public health initiatives can play a crucial role in promoting healthy child growth and development by ensuring that screening tests are accessible to all children, providing education and support to parents and caregivers, identifying and addressing the needs of children who may be at risk for growth and development delays or disabilities
(Ertem et al., 2018).

However, an infant's health can be largely affected by several maternal and Infant factors which can influence the child's growth and development, lifelong health, well-being, and ability to thrive (Mittel et al., 2017). These maternal and infant factors are known to affect 43% of children younger than 5 years (Pasricha & Drakesmith, 2016). The Maternal factors include maternal health and lifestyle, maternal nutrition, prenatal care, and gestational age, while the infant factors include neonatal health conditions and birth weight (Adugna &

Worku, 2022). Further, a combination of socioeconomic, environmental, nutritional, and social factors during pregnancy and the first years of life can largely influence the Infant's growth and development (Rocha et al., 2021). These factors include low maternal level of schooling, suboptimal breastfeeding, poverty, and lack of responsive caregiving in both low and high-income countries (Ertem et al., 2018). Birth outcomes with high risk including prematurity and low birth weight (< 2500 gm) have been reported to be associated with development and growth delays and adverse growth and development outcomes (Rocha et al., 2021). Moreover, early childhood experiences, such as the quality of caregiving and early learning experiences, can also have a significant impact on infant growth and development. Nurses working with children have a unique role because of the developmental immaturity and vulnerability of the children. They can promote health maturation as physical, emotional, and intellectual development within the context of the family. It is noteworthy that screening tests for infant growth and development can help promote their health and ensure optimal growth and development in adulthood. Therefore, understanding the factors that are associated with infants' growth and development status is important to inform effective screening tools for growth and development and to recommend interventions that might support the infant's health in Palestine. It can also help identify high-risk infants and provide targeted interventions to support their needs.

1.2 Problem Statement:

The follow-up screening and care of the infants is crucial for ensuring the optimal growth and development of children in the early years of life. Adequate maternal health and nutrition, as well as proper care during pregnancy and childbirth, can have a significant impact on a child's growth and development. Similarly, providing appropriate care and support for infants, including proper nutrition, hygiene, and responsive caregiving, can promote healthy growth and development and help to prevent the onset of health problems and growth and development delays.

Despite the critical importance of monitoring children's growth and development, there is a lack of comprehensive and accurate data on the growth and development of Palestinian children. This poses a significant challenge for healthcare providers in following effective strategies and using suitable screening tools to address the growth and development

milestones of children. These milestones include the children's personal and social aspects, communication, gross and fine motor development as well as their problem-solving efforts. Previous studies reported some interconnected factors that can have a direct or indirect impact on childhood growth and development as nutritional condition, maternal health, and exposure to infection (Al belbeisi et al; 2018). Moreover, biological factors—such as an infant's sex, birth weight, birth order, birth interval, and heredity—as well as social factors (family structure and cohesion), economic status, cultural behaviors, and norms may all have a significant impact on the child's growth and development (Nguyen et al., 2013). However, the relationship between some maternal health conditions, birth conditions of the infant, and infants' growth and development in the first year of life has not been studied in Palestine. Therefore, this study is to assess the growth and development of infants. Further to assess the maternal and infant factors associated with the growth and development of the infants in the UNRWA clinics in the Jerusalem Area

1.3 Justification and significant of the study:

Currently, the World Health Organization (WHO) has identified improving maternal and child health as one of its key goals, to reduce the burden of disease and mortality rates associated with pregnancy, childbirth, and through early childhood development (WHO, 2020).

In recent decades there has been a growing awareness and commitment to protecting children's health and fostering their development. Scientists like Sigmund Freud and his psychoanalytic theory, Jean Piaget, the founder of cognitive development theory, and Erik Erikson, who introduced psychosocial theory, along with other researchers, established the conceptual foundation for understanding the cognitive, emotional, and social significance of childhood, as well as the roles played by family and community forces (Gluckman, Hanson, & Buklijas, 2010). Considering the child's health as an important indicator of family and community health, with emphasis on the child's growth and development can lead to better outcomes in the individual health during adulthood life. Therefore, It is important to monitor the child's growth and development in the first years of life. It is also recommended that children should be involved in early learning activities with their parents and other caregivers. Children should also receive responsive and high-quality services. Comprehensive measures should be applied by the communities to reduce the maternal and infant risk factors that might affect growth and development delays, chronic diseases, and

socio-emotional, and cognitive abilities of the children during the first years of their life (WHO,2022).

Early childhood development was given an important focus by the United Nations Children's Fund (UNICEF). It introduced an important mission in promoting and protecting the rights and well-being of children worldwide (Clark et al., 2020). Several strategies were introduced by UNICEF to incorporate the social, emotional, cognitive, language, and motor development in nutrition and healthcare services of children such as including developmental milestones on growth cards (UNICEF, 2022). This multidimensional nature of child development is considered a holistic approach which is essential to support children's overall well-being and potential (UNICEF, 2022). The interconnectedness of these dimensions means that each aspect of a child's development can have a profound impact on the others. For example, a child's physical health and nutrition can influence their cognitive development, while their social interactions can affect their emotional well-being. Recognizing these interconnections underscores the importance of addressing all aspects of a child's development comprehensively. To our knowledge, few published studies focused on the growth and development of Palestinian children in Gaza, with limited work on this topic in the Jerusalem area. Extending these findings with a different sample of infants and their mothers is an important effort.

Monitoring children's growth and development is an important tool for identifying and addressing children's health and ensuring that they receive appropriate interventions and care at the family and community level. However, the data recorded about the growth and development of Palestinian children is scarce, which hinders the development of effective strategies for addressing the growth and development delay of children. Healthcare providers need to prioritize monitoring the child's growth and development and identify the maternal and infant risk factors associated with growth and development delay among Palestinian children. The implementation of comprehensive monitoring systems and the use of evidence-based approaches are crucial to addressing the underlying factors contributing to growth and development. Appropriate interventions should be applied accordingly (Ministry of Health, 2019). In this study, the researcher is going to assess the growth and development of the infant. Further to assess the maternal and infant factors associated with the growth and development of the infant in the UNRWA clinics in the Jerusalem Area. Further, the study will evaluate the child's development through the use of the Age & Stage scale that assesses

the child's communication abilities, gross motor, fine motor, personal social development, and problem-solving efforts. The age and stage questionnaire (ASQ BR Phases Questionnaire) was developed and used by (Squires & Bricker 2009).

1.4 Purpose of study:

To assess the growth and development of the infants. Further to assess the maternal and infant factors associated with the growth and development of the infants in the UNRWA clinics in the Jerusalem Area.

1.5 Research Questions:

1. What is the level of the infant's growth related to (weight, height, head circumference, and BMI), in the UNRWA clinics in the Jerusalem Area?
2. What is the level of the infant's development related to (communication, gross motor, fine motor, personal social development, and problem-solving efforts) during the first year of life), in the UNRWA clinics in the Jerusalem Area?
3. What are the Maternal factors of the participating mothers of infants such as (Age, educational level, income, place of residency, occupation, comorbidities, family planning, and others), in the UNRWA clinics in the Jerusalem Area?
4. What are the infant factors of the participating infants such as (Gender, gestational age, infant birth conditions, nutritional supplements, going to nursery, and others), in the UNRWA clinics in the Jerusalem Area?
5. Is there an association between the growth level and the developmental milestones of the infant in the UNRWA clinics in the Jerusalem Area?
6. Is there an association between the infant's growth and the maternal and infant factors in the UNRWA clinics in the Jerusalem Area?
7. Is there an association between infant development and the maternal and infant factors in the UNRWA clinics in the Jerusalem Area?

1.6 Definition of terms

UNRWA: The United Nations Relief and Works Agency for Palestine Refugees in the Near East. The UNRWA centers are classified as follows: South area, Jerusalem Area, and North area.

Jerusalem Area of the UNRWA health care centers is composed of nine major health centers that serve the Palestinian refugees five days per week, and three health points that work just for two days per week. The major healthcare centers are (Jerusalem Shafat, Al-Amari, Kalandia, AL-Jalazon, Biddo, Deir Ammar, Ein AL-Sultan, and Aqbat Jaber) while the health points are (Bodros, Beit Our, Ein Arik, and AL-Auja). This study was conducted in only five clinics including (Al-Amari, Kalinda, Al-Jalazoun, Biddu, and Deir Ammar clinics).

Growth: Growth is a physical maturation increasing the size or numbers of the body tissues and its various organs. Growth stage begins from the moment of fertilization of the egg and continues through the embryonic stage inside the womb and after birth during the childhood stage until the end of the adulthood stage Physical growth refers to the increases in height, weight, and other body changes that happen as kids mature (WHO,2006).

Development: It is the process of functional, physiological maturation of the body. It is the progressive increase in skills and capacity to function. Development is considered one of the most important vital processes that occur in the childhood stage, (UNICEF,2020). With the gradual acquisition of functions and skills with age, development is not only about the acquisition of motor skills such as crawling, sitting, walking, and running but also about the acquisition of social, emotional, psychological, and intellectual skills.

Infancy: is the period from birth through the completion of the 12th month of life, it is considered a critical period of rapid physical growth and cognitive and emotional development. Mmaintaining the normal growth of the child during this period is a highly important issue. It sets the foundation for long-term health and reduces the risk of chronic diseases (Thomson et al., 2018).

1.7. Maternal factors:

Age of the mother: falls under maternal considerations. When it comes to maternal factors affecting growth and development, mother age is the most crucial component.

Income status: Is defined as cash or in-kind revenues for an individual or household within a period that reflects individual financial status. It also includes direct benefits, or transfers, received from the state (Brain, 2015).

place of residency: refers to the name of the locality in which the person spends most time of his time during the year, also means the place where the family of any person permanently resides (Lawinsider, 2020).

Educational level: refers to the highest level of education that a person has completed. Successful completion of a level of education refers to the achievement of the learning objectives of that level, typically validated through the assessment of acquired knowledge, skills, and competencies (Camp, 2001).

Occupation: An activity or task with which one occupies oneself; usually specifically the productive activity, service, trade, or craft for which one is regularly paid; a job. The act, process, or state of possessing a place (countable and uncountable, plural occupations) (Wikipedia, 2018).

Occupation refers to the kind of work done during the reference period by the employed person, or the kind of work done previously if unemployed, irrespective of the Economic Activity or the employment status of the person. Occupations are grouped together mainly on the basis of the similarity of skills required to fulfill the tasks and duties of the job (Cambridge Dictionary, 2020).

Comorbidities: the fact that people who have a disease or condition also have one or more other diseases or conditions (CDC, 2020).

1.8 Maternal comorbidities:

1.Diabetes Mellitus: a disease in which the body cannot control the level of sugar in the blood (Mayo Clinic 2024).

2.Endocrine (hypo/hyper thyroids): a condition in which the thyroid gland does not produce enough thyroid hormone, leading to heart problems, problems with nerve function in the hands and feet, and mental health issues such as depression (WHO, 2019b). Question number in the survey will assess hypothyroidism: Do you have hypothyroidism?

3.**High blood pressure**: a medical condition in which your blood pressure is extremely high (Cambridge Dictionary 2024).

4. Hemoglobin level g/dl is a condition in which the body has insufficient amounts of red blood cells, which can't carry enough oxygen for the body to function normally. It is generally defined according to hemoglobin levels, which may vary according to many factors, most importantly age, gender, and ethnicity. Any level below 13 g/dl for males and below 12 g/dl for females is considered abnormal. Hemoglobin levels of less than 11 g/dl at any time during pregnancy are considered abnormal. Once anemia is recognized, the possibility of iron deficiency should be considered (Abu-Ouf, 2015).

1.8 Study boundaries:

Place: This study was conducted in the following UNRWA healthcare clinics in the Jerusalem area (Al-Amari, Kalinda, Al-Jalazoun, Biddu, and Deir Ammar).

Population :All children at one-year-old (Completed 10 months to 12 months) and their mothers who registered at UNRWA health care centers.

Time: This study will be conducted in a three months duration starting from December /2023 to February/2024.

1.9 The expected outcome:

The study of maternal and infant factors (characteristics of the mothers and child's characteristics) and their association with the growth and development of the child at one year old of life is Crucial. It is expected to provide insights into the factors that influence early childhood growth and development, which in turn can affect a child's long-term health, well-being, and success. Understanding the impact of factors such as maternal age, nutrition, breastfeeding, education, and others can help healthcare professionals and policymakers develop effective strategies to promote healthy growth and development in infants and address potential risk factors that may hinder growth and development. Additionally, research in this area can help parents and caregivers better understand the importance of early childhood growth and development and how they can support their child's growth and development during the critical first year of life.

Chapter Two

Literature Review

2.1 A child’s growth and development in the first year of life

Early childhood Growth and development: are influenced by periconceptional factors, including as the mother's pre-pregnancy nutritional state and her energy and nutrient consumption. (Glickman and Pinal, 2003).

Several studies have attributed the intrauterine growth retardation, low birthweight, preterm birth, child mortality, childhood stunting to the maternal sociodemographic characteristics as well as the nutritional and psychosocial issues of the mother. However, the young women who get married at the adolescent age and who get pregnant early are also at increased risk of having such

outcomes (Gibbs et al., 2012).

Young pregnant women might be less likely to go to school leaving them dependent on a minimum income to support their family. As adolescence is a period of significant growth for the pregnant mother, it could affect the fetus's needs for important nutrients (Duplessis, Bell, & Richards, 1997; Markovitz et al., 2005). Therefore, Interference with fetal nourishment could increase the risk of fetal growth and cause adverse birth outcomes (Abu-Saad & Fraser, 2010; Leary, 2005). The prevalence of chronic maternal malnutrition might lead to adverse consequences for both 2.3the mother and the fetus, which might prolong malnutrition through generations (United Nations, 1993).

Growth and development lead to maturity, which is the completion of the formation of body parts and organs, such as the heart, lungs, muscles, bones, and nerves, and reaching their

maximum size, children differ greatly in the speed and rate of their growth and maturity, internal and external factors (UNRWA,2020).

Globally the growth standards and growth charts for children are considered diagnostic tools used to track and evaluate the nutritional health of newborns and young children. The standards identify children who may require particular health services or public health responses. Children who are not developing normally, are underweight, or at risk of becoming overweight, require much support from health, ministries. They also need the attention of medical offices, clinics, and other healthcare facilities (Thomson et al., 2018).

A study was conducted with 965 Palestinian children: 494 males and 471 females living in the Gaza Strip, the West Bank, and East Jerusalem. Violent war, conflicts and traumatic conditions have an impact on the psychological health, trauma and traumatic conditions experienced by the Palestinian population living in the occupied territories and war-torn environments in which the lands have been exposed to continuous acts of violence. Traumatic experiences in childhood can lead to symptoms of trauma and poor mental health, especially when children are exposed to war and political violence. Despite the great interest in child exposure to trauma, the results of the study revealed a positive correlation and high validity for the assessing traumatic events within the Palestinian context (Veronese et al.,2024).

A clinical study that included a birth cohort from hospitals in Porto, Brazil. The IVAPSA birth cohort is a promising research platform that can contribute to knowledge of the relationship between perinatal events and their consequences on the early lives of children. This phenomenon. The design and methods described the environmental impact on the perinatal period, differences in the first six months of life and demonstrated that perinatal events may affect the health of the fetus for mothers with different medical backgrounds, high blood pressure, diabetics, smokers, data on economic, social and health care. Maternal and nutritional factors, which concludes that early behavioral, neurochemical, and metabolic alterations determine long-term pathological outcomes. Future perspectives for the IVAPSA birth cohort include following these children until at least 5 years of age (Bernardi et al.,2012).

2.2 Infant factors Associated with the child's growth and development

The risk factors existing in the fetus and neonatal period would affect neonatal development or their later life with growth (Danso et al ,2023). The primary risk factor is gene

interruption, any risks from hereditary, fetus generation, infection, or environmental change may be due to gene interruption. This will affect the children since birth who may deliver with poor APGAR scores. However, early initiation of breastfeeding and use of the kangaroo method of care can improve the child's growth to an acceptable level (Yan Wang, 2016). Breastfeeding is considered the best source of nutrition for most infants. Also, breastfeeding involves benefits for both mother and infant such as; reducing the risk for certain health conditions. (CDC, 2020). Breast milk should be used exclusively by newborns from birth through the first six months of life for optimal health, and for promoting the child's growth, and development. As infants grow and become more active beyond the first six months of life, breast milk alone falls short of meeting the whole nutritional requirements - a deficit that widens with the infants' and young children's age. Complementary nutrition is crucial in bridging these gaps (Abeshu et al, 2016).Complementary feeding is the process of transition from exclusive breastfeeding to family foods and it starts when breast milk alone is no longer sufficient to meet the nutritional requirements of infants; so other foods and liquids are needed, along with breast milk. This process typically covers the period from 6-24 months of age (Capra et al, 2024). Guidelines of the WHO/UNICEF Between the years 1990-1998 the WHO recommended the introduction of solid food from 4-6 months, and then it changed to "around 6 months". In 1998 a review of the current scientific knowledge concerning complementary feeding was published by WHO/UNICEF recommending that introduction of solid food should not start before 6 months of age with continuation of breastfeeding till 2 years of age or beyond (WHO/ UNICEF, 1998; PAHO/WHO, 2003; WHO, 2002).

Child Nutrition is probably the most important factor affecting the healthy development and growth of an infant. A well-balanced diet full of vitamins, minerals, proteins, carbohydrates, and fats gives a child's body what it needs for healthy development and growth.

Malnutrition among children is an important issue that affects their growth and development. It refers to two major categories of diseases. One is "undernourishment," which includes wasting (low weight for height/height), being underweight (low weight-for-age), and having nutritional deficiencies (lack of important vitamins and minerals). the opposite is obese, (WHO, 2016).

Malnutrition can lead to deficiency disorders, which have a significant impact on a child's growth and development. However, overeating can also lead to obesity and a host of long-term health problems, including diabetes and heart problems, it affects the growth and development of the child by how it interacts with the foods. Giving the child proper nutrition

allows for the vitamins and energy needed to function and grow, and also ensures optimal brain development (Dilazep et al., 2018).

Nutritional supplementation is essential for metabolism and neurological functioning. Loss of nutritional supplements resulting from deficiencies in Iron and vitamins might change the metabolism and might cause dysfunction of the neurotransmitters and myelination (Global Nutrition Report, 2021). All children should be provided with iron and vitamin A Supplementation starting at 6 months of age these supplements continue until they are five years old year. Once the child reaches 6 months of age, they should be checked for anemia that if present can adversely affect their growth and development (UNRWA Technical Instruction Series, 2020).

In a case-control study, many factors were found to influence the growth and development of the children. The most significant factors were infections and gastroenteritis that affected the children. The study also assessed the characteristics that distinguish malnourished children (weight-for-age) from those who were adequately fed in the second six months of life. There was a significant association between early termination of breastfeeding and malnourishment of the child. (Meriem et al., 2020).

Data reported by UNICEF in 2016, revealed that one of the major public health problems is low birth weight (2500g), which increased the percentage of newborns with growth and development delays. Throughout infancy and the first years of infancy, they remain, on average, smaller than normal children. Low weight in the third trimester of pregnancy in underweight and undernourished mothers leads to lower average birth weights in infants (UNICEF Field Office, 2016).

2.3 The nurse's role in caring for children

Nurses working with children play a crucial role in providing the health care needs for healthy and sick children, and involving parents in the caring process. Perry et al, (2022) indicates that nurses can accomplish the following role when caring for children:

-Care provider

Nurse uses the nursing process in all aspects of children's care. They are able to identify children's needs, assessing health requirements, preparing and implementing nursing procedures, and analyzing the results of intervention.

-Health education

Health education is critical to promoting and maintaining children's health. It is the nurses responsibility to provide parents with important information about nutrition, immunization, accident prevention, sanitation, birth spacing, and oral rehydration therapy.

-Counselor

Counseling helps parents communicate issues, strengthens bond with children, and explores child's health, focusing on various aspects of the child's condition.

- Coordinator

The nurse should work with other team members to ensure child care, prevent duplication, and provide crucial care, while also understanding the child's parents' needs.

- Healthcare planner

Nurses can be involved in government decision-making related to child's health, understanding community and hospital policies. They can work with the health issues affecting children, while maintaining their role in developing efficient health plans.

- **Researcher**

Nurses who prioritize children's health can identify and follow evidence-based practices, aiding in future advancements in child health services and advancing their professional and personal careers

-Advocator

Children's health advocacy, promoting their rights and urging parents to prioritize child care.

- Social worker

A pediatric nurse addresses societal health issues affecting children by collaborating with social service organizations or referring them to child welfare organizations for appropriate assistance.

- **Manager**

The Nurse can manage the pediatric care in hospitals and communities, ensuring optimal health and prognosis for children.

- **Nursing consultant**

Pediatric nurses can advise parents and families on maintaining health and preventing childhood illnesses by creating a self-care environment and assisting children in taking control of their lives.

-School health nurse

Pediatric nurses monitor school children's health, diet, vaccination status, and growth, participate in health education programs, and address social and academic adjustment issues.

They prioritize the wellbeing of children and their families, delivering evidence-based care, family-centered, atraumatic, and culturally focused care. They promote healthy lifestyle choices and set an example for others.

2.4 Maternal factors associated with the child's growth and development

A mother's health during pregnancy plays an important role in a child's health, especially during infancy. Also, there is evidence to suggest that a lack of nutritional supplements in the mother during pregnancy reduces fetal stores and iron stores in the newborn (UNRWA Technical Instruction Series, 2020). Iron supplements are given to pregnant women to provide adequate iron to meet pregnancy requirements by the UNRWA Guidelines for Prevention and Treatment of Micronutrient Deficiencies. All pregnant women are provided with iron and folic acid supplementation. (UNRWA Technical Instruction Series, 2020).

Maternal nutrition also plays an important role in the development and growth of the fetus. Although great efforts have been directed towards defining nutritional requirements, suboptimal nutrition during pregnancy remains a significant problem for mothers and fetuses with intrauterine growth retardation and low birth weight (Dolinoy& Huang &Jirtle, 2007). Further, Children of families with more than three children as typically four or even more are more likely to be stunted, underweight, and wasted. (Hien and Kam, 2008).

A retrospective study was conducted in an urban area in the northern region of Ghana that displays the relative contribution of maternal and child factors to child development among children aged 6-12 months. The study found an association between a child's development and maternal anthropometry, infant feeding Practices, and child morbidity (Mahama Saaka& Irene Abaah,2015).

According to the World Health Organization report in 2020, biologically determined traits of parents can negatively affect a child's growth and development. These traits include nutrition, poverty, home environment, parental behavior throughout pregnancy and after birth, environment, and genes, nutritional deficiencies, lactation, and poor feeding procedures (WHO, 2020). Therefore, it was recommended that infants in the first year of life should receive more attention from healthcare providers to protect their health.

A retrospective study was conducted in the Gaza Strip, Palestine by Albelbisi (2018), that aimed to determine the growth patterns of children under the age of two. The study focused on the effect of poor nutrition, adequate pre- and post-natal care, and breastfeeding on the child's growth. It was reported that consequences for infants in a resource-limited environment can lead to stunting among children. It also concluded that appropriate

complementary feeding practices are important at this age, and timely micronutrient supplementation or food can improve health nutrition and health of these children.

A cross-section by Venancio et al., (2022). in Ceará, Brazil, aimed to identify contexts, environments, care and nurturing. Factors associated with early childhood development. Predictor study determines whether a child is on the right track in development. The relationship between breastfeeding experience and cognitive development has been confirmed. Those who were breastfed, participated in stimulating activities, and owned books had a greater chance of achieving their developmental milestones. Societal and economic factors are important in determining a child's development and increasing the likelihood that the child will achieve his or her full developmental potential.

In contrast, children in this group, who are enrolled in early childhood programs, use screens for two or more hours each day. Poverty, unemployment, inability to purchase toys and low income can lead to financial hardship and family stress, factors associated with lower ECD scores in this study. (Venancio et al., 2022).

In a study by Rocha et al.,(2021) in Ceará, Brazil. aimed to assess the relationship between child development and pregnancy-related factors such as (iron and folic acid supplementation, and smoking), and neonatal factors such as (low birth weight (LBW), age pregnancy, newborn care interventions, and breastfeeding in the first hour of life). Results showed that receiving folic acid supplements during pregnancy had lower outcomes in fine motor and problem-solving (p-values < 0.05). An association was also found between not initiating breastfeeding within the first hour after birth and the low total motor, interpersonal, and social development score (p-values < 0.05). Therefore, early integrated interventions to prevent adverse pregnancy and neonatal outcomes
may improve the growth and development outcome of the child (Rocha et al., 2021).

The study Nguyen et al., (2012) studies comparing urban and rural communities in area of Hanoi Vietnam, aimed to compare urban and rural areas concerning children's growth during the first two years of life. The results of this study support the hypothesis that the differences are rather drastic in maternal education and economic conditions lead to malnutrition of mothers and children is caused in turn low birth weight and growth. The importance of utilizing health care and breastfeeding are two areas which will need further exploration

Results showed that children in urban areas grow faster than children in rural areas and there was an association between child's growth and mother's education as well as other family resources. There were positive associations between antenatal care (ANC) visits and infant development. A positive association was found between infants' growth and early initiation of breastfeeding in the first hour of life. However, the social and economic conditions were not statistically significantly associated with growth.

The study of Das et al., (2020) documented delays in language and motor growth and development in formula-fed infants. Breastfeeding is usually protective, but not if the mother is deficient in factors that affect her and her newborn's health. It included that breast milk provides the infant with all the energy and nutrients it needs in the first months of its life, and continues to provide approximately half of the child's nutritional needs or more during the second half of the first year of its life, and up to a third during the second year of its life.

The study by Sinno et al., (2018) revealed that a mother's education is an important maternal indicator that might impact the child's growth and development. The study confirmed that the mother's education remains an important determinant of child development. It also showed that gender and place of residence are not related to child development.

A study that was conducted In Bhutan, examined the factors affecting the growth and development of children in the first 1000 days of life. Results indicated that the mother's health during pregnancy plays an important role in infants' health, especially after delivery and with lactation. Other characteristics of the mother during pregnancy such as the mother's nutritional status, maternal health, and recurrence of infection are important variables and lead to a deterioration in the growth and development of the newborn (Pem D, 2015). This can indirectly influence childhood growth and development.
Moreover, biological factors - such as infant sex, birth weight, birth order, birth interval, and heredity might indirectly impact the child's growth and development. In addition, some social factors might affect a child's development as family structure and cohesion, economic status, cultural norms, and behaviors.

Wendy et al., (2006) identified a link between early full-time breastfeeding and an increase in health issues in the child. It also focused on antenatal visits doctor visits, and maternal assessments of the infant's health at four weeks. Results revealed an increase in the weight

and height of these infants. These results were restricted to infants weighing more than 2500 g at birth., and are found to be in line with the physiologically plausible notion that early postnatal nutrition is connected with weight and length gain and health concerns in infancy.

UNICEF, 2020 report indicated that Infants and children in the first years of life should receive more attention for their health. Studies should focus on the factors that influence an infant's growth and development to promote the gradual acquisition of functions and skills with age. It also emphasized that a child's development is not only about the acquisition of motor skills such as crawling, sitting, walking, and running, but also about the acquisition of social, emotional and psychological, and intellectual skills.

As the data (UNICEF Field Office, 2016) included in the report showed a clear relationship between family conditions and the child's diet, child growth and development is influenced by nutritional factors. Maternal and child nutrition are closely linked from conception to weaning. The nutrition of the breastfeeding mother and the nutrition of the infant are intertwined and as a result, the diet of pregnant and lactating mothers is crucial.
Prenatal growth and development are also influenced by the mother's age. A baby born with chromosomal abnormalities, miscarriage, and infertility are all very likely if the mother's age is between 30 and 40 years (Sinno et al., 2018).

The study conducted by Siyang, (2023) was a prospective, longitudinal study that examined the effects of education, knowledge, beliefs, and behavior of the mother and the child's cognitive and behavioral outcomes. The mother's knowledge of child development and concepts of child-rearing on the quality of the home environment and its impact on the child's cognitive and behavioral outcomes. It was found that Edge at 12 months is significantly related to the quality of the home environment. Maternal characteristics were associated with both maternal knowledge and behavior and lower levels of motherhood. There is no relationship between child characteristics including birth weight (Siyang, 2023).

large-scale retrospective study between maternal, child, and neonatal factors delves into the relationship between breastfeeding and various aspects of infant health and development that influence measures of newborn growth in the first month of life and demonstrated the significant influence of male gender, vaginal delivery, and breastfeeding. Normality on

newborn growth standards, the study revealed a marked disparity between the sexes in male newborns

Higher compared to females. Various child feeding practices, nutrition and nutritional supplementation were revealed, suggesting that these variables interact in a complex way to influence measures of newborn growth. (Yazdiani et al., 2024).

This study evaluates progress in early childhood development (ECD) opportunities across The Palestinian governorates under Israeli occupation from 1995 to 2014. In the governorates of this study, the indicators of early childhood development that were evaluated fall into three categories: children's access to health care, nutrition, and cognitive development activities of sufficient quality, as childhood development is governed in the various Palestinian governorates. For varying degrees of security. These are basic human rights that should be available to all children without exception. The Palestinian Demographic Surveys 1995-2014 cover a variety of indicators related to children's health, nutrition, ability to live, and cognitive and psychological development. On the living conditions of children and their mothers. The effects of the occupation and military attacks on the Palestinian economy and workforce demonstrated the existing economic difficulties, security risks, and the inefficiency of institutions that services Basic health, adequate nutrition and adequate quality primary education are basic human rights that should be made available to all children without exception (Vladimir, (2016)

A clinical study that included a birth cohort from hospitals in Porto, Brazil. The IVAPSA birth cohort is a promising research platform that can contribute to knowledge of the relationship between perinatal events and their consequences on the early lives of children. This phenomenon. The design and methods described the environmental impact on the perinatal period, differences in the first six months of life and demonstrated that perinatal events may affect the health of the fetus for mothers with different medical backgrounds, high blood pressure, diabetics, smokers, data on economic, social and health care. Maternal and nutritional factors, which concludes that early behavioral, neurochemical, and metabolic alterations determine long-term pathological outcomes. Future perspectives for the IVAPSA birth cohort include following these children until at least 5 years of age (Bernardi et al., 2012).

The study by Vladimir, (2016) aims to track Palestinian children's living conditions and opportunities for life-long achievement at different time periods under the ongoing Israeli occupation of Palestine. The study was evaluated under three broad categories: children's access to health care, Nutrition and a variety of cognitive development activities for preschoolers. Indicators assessed for children's prenatal health included maternal prenatal care and delivery of the child Get enough visits to health centers during pregnancy. Full immunization by the age of one year, newborns and infants.A balanced diet, which is important for nutritional as well as physical and mental supply, helps the development and functioning of children's brains, nervous systems, and children's anthropometric status. Indicators of cognitive development included children's enrollment in nursery and pre-primary schools(Vladimir, 2016).

WHO Handbook of Development Guidelines, (2020). The critical importance of enabling children to make the best start in life during the first three years of life includes prevention and treatment Environmental health All infants and children receive responsive care. The health sector has a role in monitoring and supporting child development care related to reproductive, maternal, newborn and child health, including Nutrition and mental health have a direct impact on the child's development (cognitive, linguistic, social, emotional and motor). Psychosocial interventions should be integrated to support the mother's psychological state to avoid anxiety and emotional difficulties and developmental services. Focus on child development (cognitive, linguistic, social, emotional and motor); exclusive breastfeeding, child growth height and weight including low birth weight (WHO,2020).

Mercedes de Onis (2017), researched the importance of healthy growth and development in infants and young children as essential for achieving their full physical and mental potential. Child growth is recognized globally as a primary indicator of child well-being, with international targets addressing stunting, wasting, and overweight in children under five. Poor growth has severe consequences, including increased mortality, morbidity, and impaired cognitive development, with long-term impacts on adult body size, work performance, reproductive health, and chronic disease risk. The chapter reviews growth assessment concepts, indicators, and standards, describes the extent and geographic distribution of growth retardation in developing countries, outlines the health and social consequences, and reviews interventions to promote healthy growth and development.

Grace Branjerdporn, Pamela Meredith, Jenny Strong, Jennifer Garcia (2016) researched the associations between maternal-fetal attachment and infant developmental outcomes. Their systematic review aimed to determine how maternal-fetal attachment might influence a range of developmental outcomes in infants under two years old, such as social-emotional behavior, cognition, motor skills, language, and adaptive behavior. The study found some evidence suggesting that lower maternal-fetal attachment is related to suboptimal developmental outcomes. However, due to the limited and low-quality studies available, these results should be interpreted with caution. The authors concluded that more rigorous research is needed to fully understand these associations and guide future clinical practice.

García Cruz et al. (2017) investigated the factors associated with stunting among children aged 0 to 59 months in the central region of Mozambique. This case-control study identified several socio-demographic, health, and environmental determinants of stunting, such as birth weight, mother's education, maternal occupation, rural living, family size, cooking with charcoal, housing conditions, breastfeeding duration, and timing of complementary feeding. The study highlighted the need for nutritional intervention programs that consider these determinants to improve the nutritional status of children in Mozambique.

Alexessander Couto Alves et al. (2019) conducted a genome-wide association study (GWAS) on longitudinal growth traits to uncover different genetic factors influencing infant, child, and adult BMI. The study found that genetic factors influencing BMI in childhood significantly overlap with those in adulthood, with some genetic variants affecting BMI as early as four to six years old. However, the genetic makeup for peak BMI during infancy was distinct, indicating that different genetic factors control BMI at various stages of development. These findings are crucial for informing the timing and targets of obesity prevention strategies.

Kassandra L. Harding, Victor M. Aguayo, Patrick Webb (2018) explored factors associated with wasting among children under five years old in South Asia. Using data from national surveys in Bangladesh, India, the Maldives, Nepal, Pakistan, and Afghanistan, the study identified various determinants of wasting, including younger age, maternal low BMI, later birth order, male gender, maternal illiteracy, short maternal stature, lack of improved water source, and household poverty. The study suggested that pre-conception, pregnancy, and early postpartum periods are critical windows for tackling child wasting. It also emphasized

that effective interventions to prevent both stunting and wasting need to be scaled up urgently to achieve the Sustainable Development Goals targets.

Carolin Junge, Susan Garthus-Niegel, Kari Slinning, Carolin Polte, Tone Breines Simonsen & Malin Eberhard-Gran (2016) researched the impact of perinatal depression on children's social-emotional development in a longitudinal population study. The study aimed to investigate if maternal depression at different time points during the perinatal period impacts children's social-emotional development at 2 years of age. Participants were 1,235 women who gave birth at Akershus University Hospital in Norway. Maternal depressive symptoms were assessed using the Edinburgh Postnatal Depression Scale at pregnancy week 32 and at 8 weeks and 2 years postpartum. Children's social-emotional development at 2 years of age was assessed using the Ages and Stages Questionnaire: Social-Emotional. Multivariate analyses showed that social-emotional problems in the child 2 years after birth were strongly associated with maternal depression at pregnancy week 32 (adjusted odds ratio (aOR) 3.4; 95% CI 1.4–8.0), depression at 8 weeks postpartum (aOR 3.8; 95% CI 1.7–8.6), and depression at both time points (aOR 3.7; 95% CI 1.5–10.1). The findings indicate that pre- and postnatal depression each bear an independent, adverse impact on children's social-emotional development.

Jeanie L. Cheong et al. (2017) explored the association between moderate and late preterm birth and neurodevelopment and social-emotional development at age 2 years. This longitudinal cohort study found that, compared with term-born children, children born moderate and late preterm are delayed in cognitive, language, and motor development. They also have poorer social competence at 2 years' corrected age. The study suggests that developmental surveillance is important given the risk of developmental delay in moderate and late preterm children.

Steven J. Howard & Edward Melhuish (2016) developed an Early Years Toolbox (EYT) for assessing early executive function, language, self-regulation, and social development. The EYT offers substantial advantages for early assessment of these domains. Results from a large-scale administration of this toolbox to 1,764 preschool and early primary school students indicated very good reliability, convergent validity with existing measures, and developmental sensitivity. Preliminary norms are presented, showing a clear developmental trajectory across half-year age groups. The accessibility of the EYT, as well as its advantages

over existing measures, offers considerably enhanced opportunities for objective measurement of young children's abilities to enable research and educational applications.

Ulf Liszkowski (2006) presented a theoretical framework on infant pointing, addressing different sublevels of human communication and respective levels of social–cognitive understanding involved in developmentally simpler forms of human communication. The literature on infant pointing was reviewed to evaluate current hypotheses and empirical evidence. Intentional communication requires a sender who chooses to execute a behavior with the goal of affecting a recipient. The communicative goal of affecting a recipient's body involves simply a manipulation of another's body from afar. Different theoretical positions and the lack of unequivocal empirical evidence have given rise to different interpretations of infant pointing when it has just emerged.

Marc H. Bornstein & Catherine S. Tamis-LeMonda (2022) studied the activities and interactions of mothers and their firstborn infants in the first six months of life, focusing on covariation, stability, continuity, correspondence, and prediction. Activities of primiparous mothers and infants were observed at 2 and 5 months of age during naturalistic interactions at home. Generally, mothers' activities did not positively covary at either age, nor did those of infants. Some maternal activities were stable in this time period; some developmentally increased, and some developmentally decreased. Infants' activities were unstable, but most increased over time. Specific mother and infant activities corresponded, and over time mothers and infants influenced one another in specific ways. The study highlighted that infants are flexible and plastic in their behavioral repertoires and are influenced by their mothers, while mothers are somewhat consistent but also adapt to the behaviors of their infants.

Shaymaa Naseef Ained (2022) studied the development of emotional awareness in children aged 9-11 years. The study aimed to understand the differences in emotional awareness according to age and gender among 90 children. The researcher adopted the Emotional Awareness Scale by Rieffe et al. (2024) after translating and adapting it to the Iraqi environment. The scale consists of 24 items distributed across 6 domains. The study found that emotional awareness develops significantly at age 10 and is influenced by gender. The researcher concluded with several recommendations and suggestions for further studies.

Saaka and Abaah (2015) This study investigates predictors associated with infant length-for-age Z-score (LAZ) among children aged 6-12 months in Tamale, Ghana. The study uses a retrospective cohort design with systematic random sampling to select participants from postnatal care services. The analysis identifies maternal height, birth weight, and infant feeding practices as significant predictors of LAZ. An increase in weight-for-length Z-score (WLZ) is linked to a decrease in LAZ for both 6-8 months and 9-12 months age groups. The study finds varying effects of birth weight and maternal height on LAZ depending on the child's age, concluding that LBW babies may grow faster in length between 6-8 months, whereas non-LBW babies show faster growth from 9-12 months.

Sinno et al. (2015) This study examines factors affecting child development in Lebanon using the Ages and Stages Questionnaire (ASQ). The results indicate that maternal education is a key predictor of child development, similar to findings in Western populations. Gender and place of residence also play significant roles. Although bilingualism is associated with higher developmental scores, it is not a significant predictor. The study highlights the importance of parental responsiveness, enrichment activities, and family companionship in linking socioeconomic status with child development. It underscores the need for more research on cultural specifics affecting early child development in the MENA region.

Pem (2016) This paper reviews factors impacting early childhood growth and development, focusing on the first 1000 days of life. It identifies five main contributing factors: nutrition, parenting, parent behavior, environmental conditions, and social and cultural factors. The review emphasizes that poor nutrition, inadequate parental behaviors, and environmental risks hinder child development. Timely interventions during the first 1000 days are crucial for maximizing developmental potential, with the aim of improving cognitive, social, and emotional outcomes. The paper highlights the need for targeted interventions to address these factors, especially in developing countries like Bhutan.

Boggs et al. (2019) This study evaluates early child development (ECD) measurement tools for use in low- and middle-income countries (LMIC). The study assesses 61 tools for their accuracy and feasibility, focusing on those measuring multiple developmental domains, including cognition, for children under 2 years. Out of the tools, 27 met the criteria for detailed review. Recent population-level tools rated highly for reliability, cultural adaptability, and administration time, while individual-level tools varied in effectiveness,

with lower scores for accessibility and training. The study calls for further research to develop better tools for monitoring ECD in routine LMIC health services.

Thakur et al., (2024) study the role of mineral nutrients other than iron in pregnancy: under recognized opportunities to improve maternal/fetal outcomes: a literature review. This study reviews the significance of various mineral nutrients during pregnancy for improving maternal and fetal outcomes. It highlights that deficiencies in micronutrients can exacerbate pregnancy-induced anemia and lead to adverse outcomes such as premature birth, low birth weight, fetal growth restriction, and preeclampsia. Nutritional supplements are emphasized as crucial in combating these deficiencies and reducing negative pregnancy outcomes.

Reck et al., (2018) explore maternal avoidance, anxiety cognitions and interactive behaviour predicts infant development at 12 months in the context of anxiety disorders in the postpartum period. This longitudinal study examines the impact of maternal anxiety disorder on infant growth and development at 12 months. Infants of anxious mothers showed significantly lower language scores, although cognitive development was not significantly different. The study emphasizes the importance of considering maternal interaction behaviors to prevent negative outcomes in infant development.

Maleta et al., (2003) investigate timing of growth faltering in rural Malawi. This prospective cohort study in rural Malawi tracked 767 children from birth to three years old. It found significant growth faltering, with children being shorter and lighter compared to the general population. Factors contributing to growth faltering included suboptimal weaning, breastfeeding practices, and intestinal infections. The study underscores the need for improved nutritional and health interventions in low-income regions.

Çetinkaya and Conk, (2009) examine growth and development of twelve-month infants in central Malatya, Turkey. This cross-sectional study evaluates the growth and development of twelve-month-old infants and the impact of maternal knowledge on these aspects. Results indicate the crucial role of parents, especially knowledgeable mothers, in responding to children's needs and monitoring their growth and development. The study highlights the need for well-educated parents and effective healthcare support.

Anderson et al., (1999) conduct a meta-analysis on breastfeeding and cognitive development. This analysis found that breastfed children scored significantly higher in cognitive development and cognitive abilities compared to formula-fed children. The benefits of breastfeeding on cognitive function were observed to increase gradually over time.

Kavle et al., (2016) study factors associated with early growth in Egyptian infants: implications for addressing the dual burden of malnutrition. This longitudinal study followed infants from birth to one year in Egypt and found that growth patterns indicated decreased length-for-age and increased weight-for-height scores from 6 to 12 months. The study highlights the dual burden of stunting and overweight issues due to nutritional transitions and poor diet.

Hosseini et al., (2014) examine child weight growth trajectory and its determinants in a sample of Iranian children from birth until 2 years of age. This study followed 606 children and identified factors such as sex, birth status, feeding status, exposure to passive smoking, and family health history as significant determinants of growth trajectories. The study found that boys and breastfed infants had higher growth rates in the first six months.

Jomaa et al., (2022) explore food consumption patterns and nutrient intakes of infants and young children amidst the nutrition transition: the case of Lebanon. This national survey characterized food consumption patterns and highlighted the need for increased intake of fortified meats, unsweetened cereals, fruits, and vegetables among infants. The study points to alarming nutrient intake patterns and the necessity of addressing these early in life.

ESPGHAN Committee on Nutrition, (2008) provide a commentary on complementary feeding: a commentary by the ESPGHAN Committee on Nutrition. This study recommends a gradual introduction of solids during complementary feeding to prevent malnutrition and deficiency. It emphasizes exclusive breastfeeding for approximately six months and advises against the early or late introduction of complementary foods to reduce the risk of allergies and other health issues.

2.5 Theories of child's growth and development

Sigmund Freud

The theory suggests that a child's development is affected by the different environments that they encounter during their life, including biological, interpersonal, societal, and cultural factors.

The first five years of life are the most important: where the basic and unchangeable personality is formed. The past has great influences on the child's growth and development in dealing with internal and external relationships with things, adaptive functions and coping methods.

The principles of this theory included the three forces of the psychological system - the id, the ego, and the superego (Freud, 1949).

The id: It is the subconscious, and contains everything that is inherited, everything that is present at birth, and instincts. Biological and environmental factors contribute to the process of developing a child's psychological structure

The ego: It is conscious and responsible for controlling the id's requirements and instincts, being aware of stimuli, and acting as a link between the id and the outside world.

The superego: It is responsible for limiting gratification and represents the influence of others, such as parents, teachers, and role models. It also represents the influence of ethnic, societal, and cultural traditions (Freud, 1949).

The libidinal stages: From dependency to emotional self-reliance and the adult relationship

Towards physical independence from sucking to rational eating

From urination and pollution to urination and bladder control

From irresponsibility to responsibility in managing the body

From selfishness to companionship

From the body to the game and from play to work

Each stage has six other stages (Freud, 1949).

Oral stage (from birth to two years of age):

Young children at this stage feel a feeling of pleasure from the process of sucking and putting things in their mouths. Children at this stage suck anything they pick up even if it does not provide them with any feeling of required nutrition. The ego has not yet arrived and the child is still unable to distinguish his body from His mother's body.

Freud believed that if the child is not satisfied in the oral stage, he may not develop to the more mature stages that follow. Such a person is said to be a stunted person in terms of psychosexual development. Freud believed that such people would be incapable of personal love for the surrounding world. (to other people) and remains firmly limited to achieving pleasure with the lips and treating people as objects.

The child may want to repeat the sucking process even in cases where he does not feel hungry because this process constitutes pleasure and satisfaction of an intrinsic desire.

Fixation on the oral stage leads to the emergence of behavioral problems and psychological disorders in the individual, such as overeating, smoking, excessive chatter, thumb sucking, nail biting, and alcoholism. It also leads to the emergence of manic depression and mental illness (Boeree, 2006).

Erickson Theory

It combines the biological elements of Freud and social influences of Sullivan and the first to include adulthood as a stage of growth (Sacco, R. G. 2013).

Outcome of the resolution of each stage can be positive or negative and will affect the individual's life and identity. The adult no longer serves as role model for their children; thus, families depend more on mutual regulation than on the traditions of elders (Boddington & Eulalee, 2009). Culture is the interplay of outcomes and children's play helps resolve conflict or crisis. For each stage, there are tasks to achieve, problems to solve and abilities to develop. Outcome of the resolution of each stage can be positive or negative and will affect the individual's life and identity (Sacco, R. G. 2013).

The adult no longer serves as a role model for their children; thus, families depend more on mutual regulation than on the traditions of elders (Sacco, R. G. 2013).

Table 3.1: Stages of Erickson Theory

Stage One: Oral Sensory	**Ages:** Birth To 12-18 Months	**Conflict:** Trust vs Mistrust
Stage Two: Muscular Anal	**Ages:** 18 Months To 3 Years	**Conflict:** Autonomy vs Doubt
Stage Three: Locomotor	**Ages:** 3 To 6 Years	**Conflict:** Initiative vs Guilt
Stage Four: Latency	**Ages:** 6 To 12 Years	**Conflict:** Industry vs Inferiority
Stage Five: Adolescence	**Ages:** 12 To 18 Years	**Conflict:** Identity vs Role Confusion

Stage Six: Young Adulthood	**Ages:** 19 To 40 Years	**Conflict:** intimate vs isolation
Stage Seven: Middle Adulthood	**Ages:** 40 To 65 Years	**Conflict:** Generativity vs Stagnation
Stage Eight: Maturity	**Ages:** 65 to Death	**Conflict:** Ego Integrity vs Despair

Stage One: Oral Sensory Ages: Birth To 12-18 Months Trust vs Mistrust

According to Erikson, a general sense of confidence is the cornerstone of a healthy personality. A child with basic inner confidence sees the social world as a safe and stable place and sees people as compassionate and reliable. Erikson believes that the extent to which young children can gain trust in others and the world depends on the quality of the mother's care for them. If we treat the child well and feed him with satisfaction and affection, this develops confidence and security in him, and on the contrary, he loses security and confidence. This stage corresponds to Freud's oral stage (Jones et al.,2022).

Piaget's theory

Jean Piaget was famous for his theories of cognitive development, which were among the important topics, a person develops from the beginning of his formation until his death and changes physically and mentally, and his development passes through stages characterized by clear and specific characteristics and characteristics, and all of these stages are interconnected and overlapping together (Boddington & Eulalee, 2009). not only in the field of psychology, but also for all educational fields (Piaget, J. 1978). His theory of cognitive development provided support and applied ideas in learning and teaching, which made that theory a distinguished scientific work, so it is It is important to point out the most important features and characteristics of Piaget's theory of cognitive development (Piaget, J. 2013).

Cognitive characteristics of the child according to Piaget:

Self-centeredness: It is a mental state in which the child is unable to distinguish reality from imagination, the self from the object, and the ego from things in the outside world. The child looks at the things surrounding him through his own world, and from his own perspective based on his cognitive plans and mental abilities.

Animism: which is the child giving life and feelings to all inanimate and moving things. Everything seems to him to be equipped with life and feeling, such as when he treats his doll as a living being.

Artificial: The child thinks that natural things are man-made, so they are affected by his desires and actions. Realism: The child perceives things through their apparent effect, or their tangible physical results, and does not link them to their real causes, as he is satisfied with the tangible action and accepts it without searching for the reason.

Piaget's stages of cognitive development

The first stage is the sensorimotor stage, and this stage begins from the birth of the child until he is only two years old. Piaget pointed out that the first two years of the child constitute a distinct level in human development. According to Piaget, the main achievement during this stage is the realization that things exist independently of... His mind, that is, realizing that things exist even if he does not see them, and this stage requires the ability to form a mental representation, that is, a mental diagram of the thing (Feldman, D. H. (2004).

Sensorimotor stage (0-2 years)

* This stage extends from birth until approximately the end of the second year and represents the early picture of the infant's mental activity. Learning occurs mainly in this period through sensations and manual manipulations, which are innate, involuntary reflexive actions such as the phenomenon of sucking, and then gradually transform into voluntary behavior (Robbie Case,1973).

*The child becomes able to move towards a specific goal, grasp things, or imitate sounds and movements, through improving his ability to coordinate his various senses, as a kind of visual, audio-visual, tactile synergy occurs, as the child gradually learns to grasp the things he sees, and look at the sources of the sounds he hears, and eventually becomes This stage enables one to achieve good sensory-motor coordination, which enables him to perform bodily movements with relative ease and accuracy(Robbie Case,1973).

*At this stage, the child learns to distinguish stimuli and almost at the end of it acquires the idea of the stability or (permanence) of things, as the existence of things is no longer linked to his sensory perception of them. Things exist even if he does not perceive them sensoryly. The development of the plan for the survival of things becomes clear through the child's search for things that are not present in his visual field (Robbie Case,1973).

*At the end of this stage, the child begins to acquire language and becomes capable of some activities or behavioral patterns that enable him to reach some goals, which indicates that he has acquired knowledge of the existence of some systems for the environment in which he lives, but his thinking is still initially limited to direct sensory experiences and actions. The movement associated with it, he does not represent his goals through internal perceptions or fantasies, but rather through the apparent actions and behavioral patterns that he can perform (Robbie Case,1973).

The second stage is the pre-operational stage, between 2 and 7 years. At this stage, children begin to understand the world symbolically and their use of language increases, but the children's cognitive abilities remain limited. This stage is also characterized by the fact that the child sees the world from his own perspective and what is consistent with himself (Oogarah et al., 2020). The child can only focus on one aspect of the problem, and cannot identify the problem. Children also give life to inanimate objects, believing that they are real (Feldman, D. H. (2004).

The third stage is the stage of material operations, between the ages of 7 and 11. At this stage, concepts such as self-centeredness disappear due to interaction with friends and siblings who have different ideas. According to Piaget, this stage is a major turning point in the child's cognitive development because it represents the beginning of logical thinking (Oogarah et al., 2020). Or practical, meaning that the child can perceive things internally in his mind.

The fourth and final stage is the stage of abstract operations from 12 years and above. In this stage, the child can think abstractly. This stage also witnesses the emergence of scientific thinking and the formulation of abstract theories and hypotheses when facing any problem (Oogarah et al., 2020).

Child movement:

The child begins to move while he is still a fetus in his mother's womb, and his movements are limited to rotating in the womb and directing light kicks towards what surrounds him. After birth, he begins to learn new movements during his interaction with his environment

and surroundings, and he also appears new levels of motor development as he grows older. which enables him to move, move, grasp and explore objects.

Motor stages of child development:

- **New born:** Turning the head and bending the legs and arms towards his body, while keeping the fists closed and opening them when he experiences a sudden reflex action.
- **4 weeks:** Raise the head and move it in both directions and upward, holding the head in the raised position for only a few seconds.
- **6 weeks:** Raise the head at a sharp angle, and hold this position for a longer period, with the fists open for most of the time.
- **8 weeks:** Raising the head upwards, especially while sitting or carrying, and feeling the movement of the hands.
- **12 weeks**: Keeping the head elevated for a longer period of time. He also turns to his hands and tries to catch something if it touches his hand.
- **16 weeks:** Looking carefully at the external environment, with the ability to move and control both legs and arms at the same time.
- **20 weeks:** More precise control of head movement, with the ability to hold objects, direct them toward the mouth, and bite them.
- **24 weeks:** The muscles in the arms and legs become stronger, making him able to hold a bottle of milk and other heavier toys.
- **28 weeks**: Sitting without assistance, raising the body off the ground in a position of lying on the stomach, and controlling the muscles of the hands more precisely and moving objects from one hand to another.
- **32 weeks**: Trying to move by shaking the body to the sides, trying to catch things and hitting them on the ground, and first attempts to stand.
- **36 weeks:** Standing and balancing by leaning on solid objects, and moving from one point to another by crawling or crawling.
- **40 weeks:** Crawling and changing position from sitting to lying, beginning to move the torso towards the sides while sitting. He also has the ability to place things on top of each other.
- **44 weeks:** Full movement with feet raised while sitting, clapping with both hands, and putting toys in the box.

- **48 weeks:** Successful attempts to walk by holding on to a solid, stable object, with one hand impossible to hold.
- **One year:** Walking with parental assistance, extending the hand towards the food and trying to put it in the mouth (Feldman ,2004).

2.6 UNRWA clinics and the provided services

In this section, we will provide an overview of the UNRWA Health services, which include preventive and curative primary health care to Palestine refugees in its five fields of operations (West Bank, Gaza, Jordan, Syria, and Lebanon). UNRWA is a United Nations agency established by the General Assembly in 1949 and mandated to provide humanitarian assistance and protection. Since 1948 Palestinian people have been displaced and in need of a great deal of support for more than seventy years. UNRWA helps them achieve their full development and humanitarian potential. services. It provides a lot of services in the fields of education, health care, relief, social services, protection, infrastructure, camp improvement, and microfinance, Emergency aid UNRWA is funded almost entirely through voluntary contributions until a just and lasting solution is reached for their campaign.

The number of Palestinian refugees registered in the Agency's areas of operations UNRWA reached more than 5,9. Currently, UNRWA has a network of 141 health centers distributed as follows (43 in the West Bank, 22 in Gaza, 25 in Jordan, 24 in Syria, and 27 in Lebanon) 7 million or more total patient visits annually. These health centers provide many health services to beneficiaries, focusing on many health programs such as maternal and child health, which include (pre-pregnancy care, antenatal care, post-natal care, family planning, infant and child care, and vaccinations), prevention, and treatment. Non-communicable diseases (especially diabetes and hypertension). Further mental, psychological, and social support program aims to address and enhance the psychological well-being of individuals and their communities. In addition to a wide range of general outpatient care.

Maternal and child health Services provided on MCH at UNRWA clinics

The Maternal services provided at UNRWA include Maternal Health and family planning, Preconception care, antenatal care, and Postpartum care. The services that are provided for children include Vaccination, monitoring the child's growth, and plotting the results in the growth chart. Monitoring the child's growth is carried out during the immunization visits

which equals a total of 6 visits in the 1st year of life. These visits are taken as follows: At birth, then during the first month, second month, fourth month, six months, and at 12 months of age. In the 2nd year, the child's visits to the UNRWA clinics became every three months, they took a vaccine at the age of 18 months. Afterward, the child's visit becomes every six months until the child is 5 years old.

Birth weight and feeding practices, women's nutrition and health, household sanitation, and poverty are considered the most significant determinants of stunting and poor linear growth and development in children under two years of age (Das et al.,2020). Therefore, the child's development is also monitored through assessing nutritional aspects, and Gross motor development.

Maternal services at UNRWA clinics, provide an antenatal care service which is defined as a comprehensive antepartum care program that involves a coordinated approach to medical care and psychological support that optimally begins before conception and extends throughout the antepartum period. Regular monitoring is done to improve the quality of antenatal care and reduce maternal and perinatal mortality and pregnancy complications. In recent years, WHO has issued a new guideline on antenatal care that increases the number of contacts a pregnant woman has with health providers throughout her pregnancy from four to eight contacts (UNICEF ,2016). Pregnant women at UNRWA clinics will undergo investigations, including a Complete Blood Count (CBC), Fasting blood sugar and oral glucose tolerance test (OGTT), and Urine screening test for albumin and sugar. These investigations will be carried out during the first antenatal care visit and at 24 weeks of gestation.

Spacing pregnancies and having access to family planning services are essential components of maternal and child health services at the UNRWA clinics. Properly spaced pregnancies and family planning can significantly contribute to the success of pregnancy. Specific nutrition interventions are also emphasized by focusing on the basic health and social conditions of the women living in the camp, city, or urban area.

2.7 Immunizations schedule provided at UNRWA:

Schedule of compulsory vaccinations for children from one day to 18 months old Children from the age of one day to one and a half years are given free compulsory vaccinations in UNRWA's clinics. Vaccinations are distinguished by their safety, security, and follow-up. Vaccination coverage reaches 100% in Palestine. The child receives a schedule of compulsory vaccinations, which is followed up by doctors and nurses in the units. UNRWA also conducts vaccination campaigns to maintain an environment free of epidemic diseases. The schedule for routine childhood vaccinations is also adjusted according to the Palestinian Ministry of Health and the World Health Organization.

Table 3.2: UNRWA's Immunization Schedule In- West Bank & Gaza (2023)

Age	Vaccine	Dose	Route	Site	Course
At birth/First registration	- BCG - HEP-B	0.05ml 0.5 ml	Intradermal Intramuscular	Left upper arm Lateral aspect of thigh	Single dose First dose
1 month	- IPV	0.5 ml	Subcutaneous	Left upper arm	First dose
2 months	- IPV - OPV - PENTA (DPT& HIB& HEP-B) - PCV - ROTA	0.5 ml 2drops 0.5 ml 0.5 ml 5drops	Subcutaneous Oral Intramuscular Intramuscular Oral	Left upper arm Mouth Lateral aspect of thigh Lateral aspect of thigh Mouth	Second dose First primary First primary First primary First primary
4 months	- OPV - PENTA (DPT& HIB& HEP-B) - PCV - ROTA	2drops 0.5 ml 0.5 ml 5drops	Oral Intramuscular Intramuscular Oral	Mouth Lateral aspect of thigh Lateral aspect of thigh Mouth	Second primary Second primary Second primary Second primary
6 months	- OPV - PENTA (DPT& HIB& HEP-B) - ROTA	2drops 0.5 ml 5drops	Oral Intramuscular Oral	Mouth Lateral aspect of thigh Mouth	Third primary Third primary Third dose
12 months	- MMR (Measles & Mumps & Rubella) - PCV	0.5 ml 0.5 ml	Subcutaneous Intramuscular	Left upper arm Lateral aspect of thigh	First dose Third dose
18 months	- MMR (Measles & Mumps & Rubella) - DPT - OPV	0.5 ml 0.5 ml 2drops	Subcutaneous Intramuscular Oral	Left upper arm Lateral aspect of thigh Mouth	Booster Booster Booster
6 years (school entry)	- TD - OPV	0.5 ml 2drops	Intramuscular Oral	Lateral aspect of thigh Mouth	Booster Booster
15 years (third preparatory)	- Td	0.5 ml	Intramuscular	Left upper arm	Booster

2.8 Summary of the reviewed literature

Most of the Reviewed studies were about child growth and development in different countries. The maternal and infant factors were also studied using different study designs as case control studies, systematic reviews, and qualitative and quantitative approaches. The previous studies showed a variable result as the impact of Nutrition, iron supplements, and breastfeeding on the child's Growth and development. The researcher also added the health care services provided at the UNRWA MCH clinics and the immunization schedule was also added.

However, the complex situation in the Palestinian context showed the impact of the political conflict on the children's growth and development in a study that was conducted in Gaza. Children in Gaza were stunted due to the lack of nutritional supplements and also were emotionally affected by post-traumatic stress syndrome. No studies were found in the literature specifically addressing the growth and development of children in the Jerusalem area of the UNRWA clinics. This highlights a significant gap in local research, as existing studies on child growth and development often focus on developed countries or other marginalized groups but rarely address the specific situation among children in Palestine.

Chapter Three

Conceptual framework

3.1 Introduction:

A conceptual framework is a structure that the researcher believes can best explain the natural progression of the phenomenon to be studied (Camp, 2001). Further, a conceptual framework can help researchers to see the variables of the study, it provides researchers with a general framework for data analysis, and it is essential in the preparation of a research proposal using cross-sectional design. The conceptual framework also summarizes the major dependent and independent variables in the research, and it gives direction to the study (Camp, 2001).

It describes the relationship between the main concepts of a study. The framework makes it easier for the researcher to specify and define the concepts within the problem that the researcher wants to study, (Luse, Mennecke& Townsend, 2012). It is also helpful in encouraging and promoting a theory that would be useful to practitioners in the field (Adom& Hussein, 2018).

Figure (1): Framework of current study including dependent and independent variables:

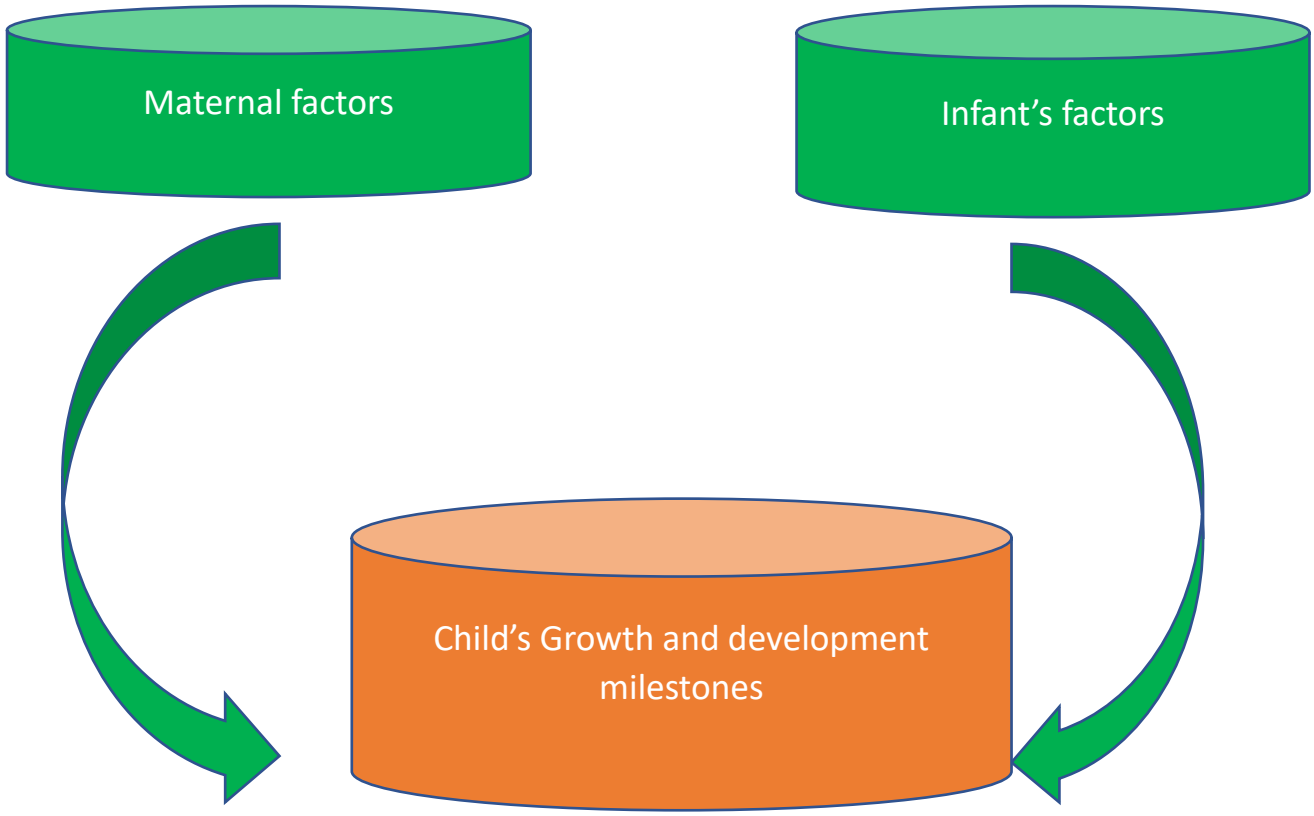
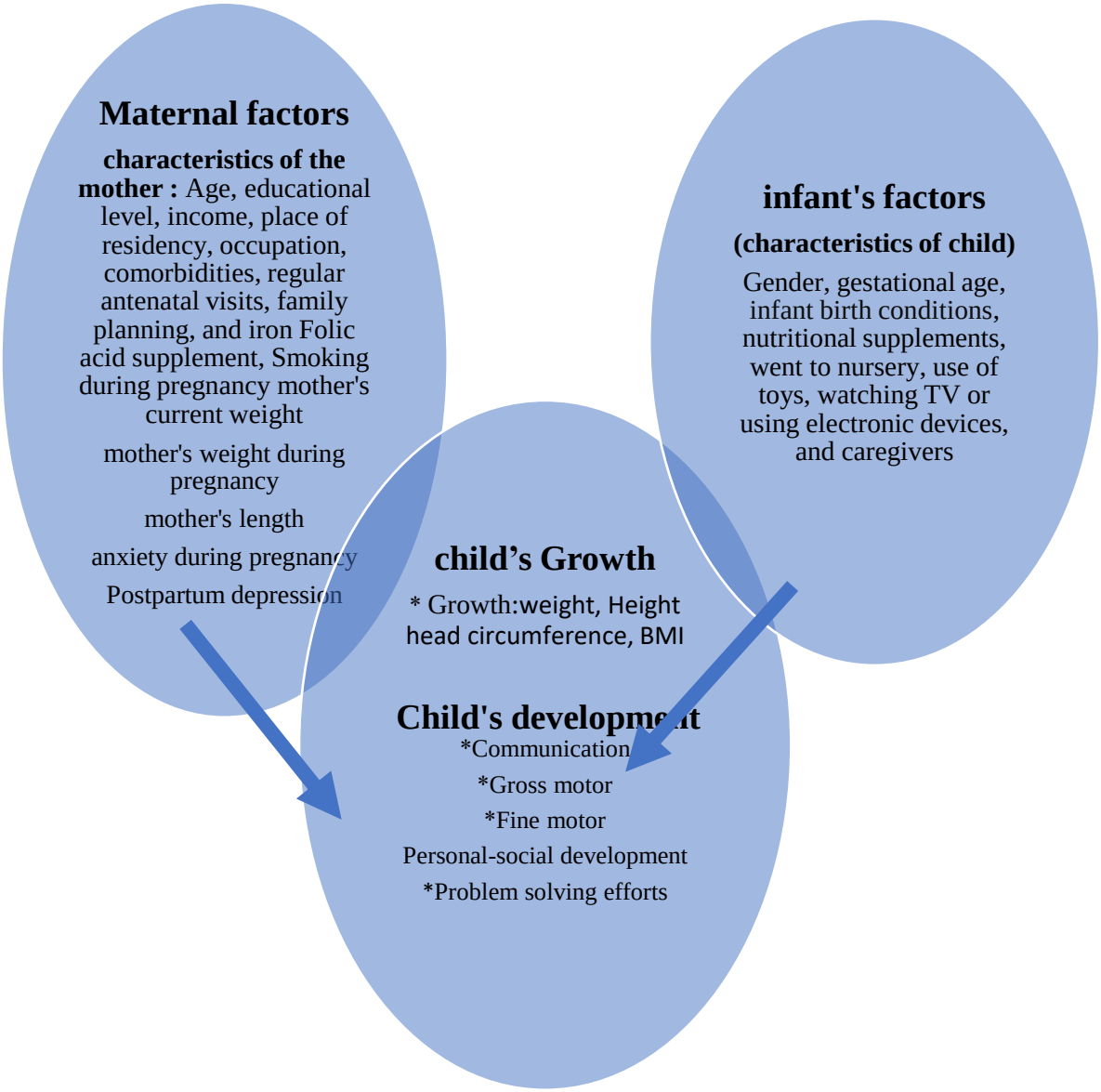


Figure (2): The conceptual framework summarizes the Maternal and Infant factors that are associated withthe child's growth and development



3.2 Variables

Operational definition of the study variables

3.2.1. Independent variables:

3.2. 1.1 Maternal factors: In the current study, maternal factors were measured by asking the mothers about their general characteristics including age, income, place of residency, educational level, and occupation. They were asked if they have comorbidities and the duration of illness such as (Gestational DM, Hypertension, thyroid, anemia, and mental illness), number of antenatal visits during pregnancy was also recorded. These questions are included in **part one** of the self-administered questionnaire that was used in this study (Appendix 1).

3.2.1.2 Infant factors: In the current study, infant factors were measured by recording certain information about the one-year-old child. This information was necessary to evaluate the child's development and was taken from the child's records or by asking the mother of each child. The required information includes the child's Gender, gestational age, infant birth conditions, nutritional supplements, going to nursery or not, use of toys, watching TV or using electronic devices, and who are the caregivers. The questions of infant factors are included in **part two** of the self-administered questionnaire that was used in this study (Appendix 1).

3.2.2 Dependent variables:

3.2.2.1 Child growth measures: In the study, the researcher examined children's growth measures such as (weight in kg, height in cm, and head circumference in cm). However, the BMI was calculated directly by the equation that is suggested by the WHO. The equation of BMI was previously entered and programmed by the UNRWA information system to be used in calculating BMI for all infants. The researcher and the trained staff who work at the UNRWA clinics were eligible to take these measures for the participating infants see **part three** of the questionnaire (Appendix 1).

3.2.2.2 Child developmental milestones: This study investigated the developmental milestones of participated infants. The development milestones that were evaluated include (communication, gross motor, fine motor, personal social development, and problem-solving efforts). The researcher used the Ages and Stages Questionnaire (ASQ BR Phases Questionnaire) to evaluate the child's development see **Part Four** of the questionnaire (Appendix 1).

Chapter Four

Research Methodology

4.1 Introduction

This chapter describes the study methodology which includes the study design, study population, type of sample, Eligibility criteria, distribution of the study sample according to the sociodemographic variables, study setting, tools of the study, data collection, data analysis, validity and reliability, and ethical consideration.

4.2 Study design:

A cross-sectional study design was used for this study, to assess the growth and development milestones and the associated maternal and neonatal factors among infants in different UNRWA healthcare clinics in the Jerusalem area .

4.3 Target Population of the Study:

The target population of this study includes all infants (completed 10 months to completed 12 months) and their mothers who register at UNRWA health care centers during the first month after delivery. The total number of infants who were born from (February /2023 to April /2023) and registered at the selected UNRWA clinics was 300 infants. These numbers were taken from the selected clinics including Al-Amari, Kalinda, AL-Jalazon, Biddo, and Deir Ammar clinics. The number of mothers and their children in this study was taken from the registration files in the MCH maternal and child health, and CHR child health registration of the selected UNRWA clinics. Permission to get the number of children was taken from

the head nurse of the selected clinics. Further, the researcher herself is a nurse who works at the UNRWA clinics. These infants are expected to reach one year (completed 10 months to completed 12 months) at the time of the study which is expected to be in (December /2023 to February /2024). The total number of infants in the CHR and their mothers in the MHR in the five UNRWA clinics is presented in (table 1.4).

Table 4.1: The number of children who are expected to complete 10 months to completed 12 months through the three months period of the study (December /2023 to February /2024).

The five UNRWA clinics	Sample of infant		Total
Al-Amari	Fep/2023	24	96 infants
	Mar/2023	41	
	Apr/2023	31	
Kalandia	Fep/2023	15	71 infants
	Mar/2023	22	
	Apr/2023	34	
AL-Jalazon	Fep/2023	25	79 infants
	Mar/2023	17	
	Apr/2023	37	
Biddo	Fep/2023	16	27 infants
	Mar/2023	7	
	Apr/2023	4	
Deir Ammar	Fep/2023	11	27 infants
	Mar/2023	6	
	Apr/2023	10	
Total		300 infants	

4.4 Sampling method and sample size:

The sample of this study was convenient. Convenience sampling involves selecting participants based on their availability and willingness to participate. This study specifically targeted infants born from February 2023 to April 2023, whose mothers were willing to participate.

However, convenient sampling indicates that the researcher will select participants according to their accessibility and proximity (Elfil & Negida, 2017) which may introduce bias into the study results and limit generalizability to the entire population.

The sample size was calculated at the beginning of this study by using the online sample size calculators (Raosoft, 2012; Survey System, 2012), to achieve the estimated number with a statistical significance (0.05 error margin). The sample size was calculated according to the total number in the five UNRWA clinics which was 300 and the number of convenient sample was 169 infants.

4.5 Eligibility Criteria

4.5.1 Inclusion Criteria:

- Children in the first year of life (completed 10 months to complete 12 months) who register for vaccination and growth monitoring, from the selected UNRWA clinics Including Al-Amari, Kalinda, AL-Jalazon, Biddo, and Deir Ammar clinics)

4.5.2. Exclusion Criteria:

- Infant with chronic physical disease or congenital malformation.
- Infants with hormonal or hereditary diseases should be excluded.
- Infants with intellectual disability and syndromes.
- Infant with low birth weight,
- Premature infants.

4.6 Study setting:

This study was conducted in the Jerusalem area which includes the following clinics (Al-Amari, Kalandia, Al-Jalazon, Biddo, Deir Ammar). These health centers offer many health services to their beneficiaries as they focus on many health programs like maternal and child health which includes, preconception care, antenatal care, postnatal care, family planning, infant and child care, and vaccinations. In addition, it provides services for the prevention

and treatment of non-communicable diseases, mainly Diabetes and Hypertension, and mental and psychosocial support programs. These services are provided for the Palestinian refugees five days per week. The following paragraphs provide a short description of each clinic:

Al Amary Clinic: The camp covers a land area of 0.93 square kilometers, more than 10,500 refugees are registered, and most of the dwellings are separated by an area of less than half a meter; Which makes ventilation inside the camp very weak. It contains one health center that provides primary health care including reproductive health, infant and child care, immunizations, screening and medical check-ups, and treatment x-ray department and a dentist is working per week. Al Amary Clinic is the largest clinic serving the center. It contains three doctor's rooms, a laboratory with three employees, and sometimes four pharmacies with three employees, a registration department with three clerks, two maternity rooms with three midwives, a nursing officer, an assistant in the children's department, four nurses, and in the elderly department, three nurses, with a department for eye examinations for patients with non-communicable diseases. The emergency room has two nurses for examinations and emergency cases and a psychologist who follows up on cases of violence and provides psychological health counseling.

Two male and female schools. The female primary school operates on a double-shift system. The main problems are high unemployment, lack of empty spaces, overcrowded schools, and poor ventilation.

AL-Jalazon clinic: Jalazone camp was established in 1949 it sits on 0.253 sq km, with an estimated population density of 51,383 per sq km, Jalazone has three schools: a boys' school, a girls' school and a co-educational school, serving 1,737 students, One health center provides primary health care including reproductive health, infant and child care, immunizations, screening, and medical check-ups and treatment. Al-Jalazoun Clinic is also one of the large clinics. It contains three rooms for doctors, a laboratory with three employees, a pharmacy with two employees, a registration department with two clerks, and a maternity department where there is a midwife and a nursing officer, who are also assisted in the children's department by four nurses, and in the elderly department by two nurses for non-disease patients. Infectious. The emergency room has two nurses for examinations and emergency cases a psychologist working per week who follows up on cases of violence and provides mental health consultations, and a dentist is working per week.

Kalandia clinic: Qalandia refugee camp was established in 1949 on a land area of 0.35 square kilometers, 11 kilometers north of Jerusalem. The main road between Jerusalem and Ramallah passes through the refugee camp.

About 11,000 refugees, registered demographic distribution, and four schools.

One UNRWA health center provides primary health care including reproductive health, infant and child care, immunizations, screening, and medical check-ups and treatment. Kalandia Clinic is also one of the large clinics. It contains two doctors' rooms, a laboratory with three employees, a pharmacy with two employees, a registration department with two clerks, and a maternity department with two midwives and a nursing officer who are also assisted in the children's department by three nurses, and in the elderly department by two nurses for patients who do not have the disease intended. The emergency room has a nurse for examinations and emergency cases a dentist working per week a psychologist working per week who follows up on cases of violence and provides mental health consultations a psychologist who follows up on cases of violence and provides mental health consultations.

Biddo clinic: is also one of the large clinics, with about 12704 refugees, registered demographic distribution. Beddo village is one of the villages located on the northwestern side of the occupied city of Jerusalem. It is about 11 kilometers away from the city of Jerusalem and is 830 meters above sea level. Its total area is about 5,392 dunums. It is surrounded by many lands belonging to Beit Ajza and Al-Habib. And the Prophet Samuel, and Beit Iksa, and Beit Surik, and Al-Qubayba.. four schools.

primary health care including reproductive health, infant and child care, immunizations, screening, and medical check-ups and treatment. It contains two doctors' rooms, a laboratory, a pharmacy a registration department clerks, and a maternity department with two midwives and a nursing officer who are also assisted in the children's department by three nurses, and in the elderly department by two nurses for patients who do not have the disease intended. The emergency room has a nurse for examinations and emergency cases a dentist is working per week and a psychologist working per week who follows up on cases of violence and provides mental health consultations a psychologist who follows up on cases of violence and provides mental health consultations.

Deir Ammar clinic: Deir Ammar camp is located 20 kilometers northwest of the city of Ramallah, close to the village of Deir Ammar. About 2,220 refugees live. The camp covers an area of 0.16 square kilometers, and the population density is estimated at 15,432 people per square kilometer. The health center provides primary health care, including reproductive

health, child care, vaccination, medical examinations, and treatment. Deir Ammar Clinic serves most of the neighboring villages in the area. It contains one doctor, one laboratory, one pharmacy, a registration department with one clerk, a maternity department with a midwife and a nursing officer, a pediatric department with one nurse, and an elderly department, an emergency room nurse, a nurse for examinations and cases. Emergency services, a psychologist who follows up on violence cases and provides mental health consultations twice a week. A dentist is working two days per week., two UNRWA schools provide education services to more than 800 male and female students. Access to Israeli and local labor markets has brought relative economic stability to the camp, while the relative geographical isolation poses difficulty of movement for some residents.

4.7 Instruments of the study:

- This study used a self-administered questionnaire that was designed by the researcher based on the review of previous literature (Leone et al., 2019; Adugna & Worku, 2022; Al belbeisi, et al 2018; Sinno et al., 2018 & Thomson et al., 2018). The Maternal and infant factors included in the questionnaire were primarily based on the findings of previous studies and were validated by three specialists and experts in the field to ensure the content and face validity of the questionnaire. Their comments were invaluable and were considered in modifying the final version of the questionnaire. The questionnaire was also reviewed by a committee from the UNRWA that includes Drs and experts in the research area. All their comments were taken into consideration and the questionnaire was modified accordingly and sent to them to ensure validity. Then we arranged the questionnaire in the form of a logical sequence to facilitate the data collection and was written in English and then translated to Arabic to be easy for the mothers to understand.

The used questionnaire was composed of the following 4 parts:

- **Part One**: Include the questions about Maternal factors.
- **Part Two**: was about measuring the child's growth parameters as weight, height, head circumference, and BMI.
- **Part three:** Include questions about infant factors.
- **Part four**: The Ages & Stages scale that was developed and used in previous studies (Jane Squires & Dione Bricker,2009).

4.8 Data collection:

- The self-administered questionnaire was given to the mothers at the attendance of the researcher or the data collectors. The mothers fulfill the maternal factors and infant factors after signing the consent form and through face-to-face meetings with the researchers to clarify their questions or any unclear statements. The researcher herself is an experienced MCH nurse and she trained some experienced nurses in each clinic to help in assessing infants' growth and development millstones and collecting the data from the infant's mothers. The researcher also referred to the infants' records to confirm the data around infant birth and physical measures at birth. The time of each interview to fill out the questionnaires was between (40 min- 1 hours). Then the researchers measure the growth parameters of each infant as weight, height, and head circumference. After a while, the researcher prepared the infant to assess the developmental milestones according to the ages and stages questionnaire.

4.8.1 Anthropometric assessment:

Infants weight: The weight of each infant was measured on a scale of Kilograms. This scale is checked frequently for its reliability and is often considered convenient, safe, and precise measurements that are found in most of the UNRWA MCH clinics. The scale is located on a stable floor. We Removed the child's clothes and shoes and the child sat in the middle of the scale to ensure the accuracy of the weight.

The infant's height was also measured by the researchers using the Infantometer Height Board. The height of the participating infants was measured while the infant was lying on his back. with his hips, legs, and feet in contact with the base of the scale, and his head in contact with the top of the scale. This process required the presence of the mother or the person accompanying the child.

Infants head circumference of the participating infants was measured using a numbered tape measure.

The researcher extends the tape measure from the of the forehead (frontal bone) to the furthest part at the back of the head (Occiput).

Infants Body Mass Index (BMI): Body mass index of the participating infants was determined after measuring weight and height. By entering these two values into the computerized system, in addition to the child's age, we get the value of the child's BMI

immediately. The computerized system at the UNRWA clinics used the WHO to calculate the BMI of the infants and children. The BMI for infants and toddlers is classified according to the average values determined by the WHO.

The child's development was assessed through the use of the **Ages and Stages Questionnaire (ASQ BR Phases Questionnaire)** that was used by Jane Squires & Dione Bricker. (2009). This questionnaire includes five Milestones (communication, gross motor, fine motor, personal social development, and problem-solving efforts) . Each domain includes 6 items related to the child's developmental milestones.

The researcher evaluated the infant's development by observing and assessing the required items of each milestone. Then the researcher recorded the level of infant achievement and wrote (**YES, SOMETIMES or NOT YET)**. according to the infant's achievement in each Item.

The suggested scores on the Ages and Stages questionnaire were as follows (**YES = 10, SOMETIMES = 5, NOT YET = 0**). The total of each milestone was 60 which is the sum of the child's achievement if it was recorded as YES for all the items. The researcher then added item scores of each milestone and recorded them as the total. The mean score was then taken for all the participated infants and for each milestone. Results were plotted in the specific chart **and the circles on the chart corresponded with the total scores.** (see the chart in the appendix1). The charts identified the areas that is considered within the normal range for each milestones, as well it identifies the cut off point for each **milestone that was as follows: Communication (15.64), Gross motor (21.49), Fine Motor (34.50), Problem solving (27.32) and Personal Social (21.37).**

4.9 Validity and reliability

The used measures for the child's growth were considered valid and reliable for use. The UNRWA health center clinics are always keen to standardize measurements and periodically check measuring tools. The agency frequently follows and examines all the measurements for weight and height. The ASQ is a global screening questionnaire found in Arabic version that is suitable to be used in the Palestinian context. Three experts in the field of child health reviewed the whole instruments including the maternal and infant factors as well as the growth and development and they gave the following comments:

- No major changes were made based on reviewer comments except some wording to make it easier for mothers to understand.
- The researcher conducted a pilot test on 10 infants and their mothers.
- Test-retest reliability was used by having mothers complete ASQ's on the same child within a week interval.

4.10 Pilot study:

A pilot study was conducted before data collection began. The researcher assessed two children and their mothers from each selected UNRWA clinic in Ramallah, to check the mothers' understanding of the questions in the ASQ. To ensure the accuracy of the content. No questionnaire was rejected, and the participating mothers were cooperative with a detailed explanation to the mother about the importance of study for the mother and child, scientific research, and its development. There was sufficient time in conjunction with waiting for the mothers. The questionnaire was easy for the mothers to answer and they faced no difficulty. The nurses of the five clinics were cooperative and in constant contact with every question or assistance.

Among the mothers' comments about the questionnaire is that the questions made them focus on the growth and development of their children and their movements, and they were not paying attention to them during their period of growth and development.

4.11 Ethical approval:

This proposal was submitted to the Ethical Review Board Committee of Al Quds University\ School of Public Health for discussion and approval. Permission to conduct the study will be obtained from the (UNRWA). The study paper contains information about the purpose of the study and data collection methods. It also contains an unofficial constant that the participant has the right to refuse to participate in the study and participation will be anonymous. Ethical considerations will also be taken through data collection, privacy, confidentiality and honesty, and the information will be for the purpose of scientific research only.

Chapter Five

Results

This study aims to evaluate the growth and development of children during the first year of life in UNRWA healthcare clinics in the Jerusalem area- central region. Further, to assess various factors related to the child's growth and development, such as demographic characteristics related to the mother's and child's conditions along with other relevant characteristics. Data was analyzed by the statistical software Statistical Package for Social Sciences (SPSS). Both descriptive and analytical (inferential) results of the current study are presented in this chapter. The descriptive analysis is used to describe the variables of the study sample as Frequencies, Means, and standard deviation, maximum and minimum values. The analytical results investigate the relationship between the study's independent and dependent variables.

5.1 Level of the child's growth in the first year of life

Question one: What is the level of the infant's growth related to (weight, height, head circumference, and BMI), in the UNRWA clinics in the Jerusalem Area?

Table 5.1 The mean and SD of Children's growth at UNRWA Clinics in the Jerusalem Area (N=187)

Measures of the child's growth	Mean (SD)
Weight of the child (KG)	10.9 Kg (7.03)
Height of the child (Cm)	73.2 cm (10.11)
Head circumference (Cm)	46.2 cm (5.6)
Body Mass Index (BMI)	18.2 (2.4)

Table 5.1 presents the descriptive statistics for various child growth metrics, encompassing the current weight, height, head circumference, and BMI for both boys and girls. The sample size (N) for each metric is consistent at 187, ensuring a substantial dataset for analysis. The mean values for these metrics provide a central tendency measure. The mean of the children's weight was 10.9 kg. The mean height of the participating children was 73.2 cm. The mean head circumference stands at 46.2 cm. The mean of the calculated BMI was 18.2. For weight, height, head circumference, and BMI, the standard deviations are 7.03, 10.11, 5.6, and 2.4 respectively. These values of SD indicate the variability around the mean.

5.2 Level of the child's development in the first year of life

Question two: What is the level of the infant's development related to (communication, gross motor, fine motor, personal social development, and problem-solving efforts) during the first year of life, in the UNRWA clinics in the Jerusalem Area?

To examine this question and achieve the associated objective, the researcher conducted descriptive statistics (standardized cutoff point and mean). The mean values for the child's development were calculated in terms of communication, gross motor skills, fine motor skills, personal social development, cognition, and problem-solving efforts for each child.

Table 5.2 The mean of the infants's developmental milestones including (communication, gross motor, fine motor, personal social development, Cognition, and problem-solving efforts)

Child's Development Milestones	Cutoff point	Mean	Note
Communication	15.64	5 1.5	It is above the cutoff point, and the baby's development appears to be near the total score =60
Gross_Motor	21.49	45.6	It is above the cutoff point and the baby's development appears to be near the total score =60
Fine_motor	34.50	43.5	It is considered close to the cutoff. Provide learning activities and monitor the development of fine motor
Problem-Solving	27.32	47.52	It is above the cutoff point and the baby's development appears to be near the total score =60
Personal -Social	21.73	49.1	It is above the cutoff point and the baby's development appears to be near the total score =60

Table 5.2 provides descriptive statistics for various aspects of children's developmental milestones. The analysis reveals the following:

1. Communication: The mean score for communication (Mean = 51.5) is above the cutoff point, suggesting that most children's communication skills are developing as expected. This indicates that children in this sample are meeting or exceeding developmental milestones in communication.

2. Gross Motor: The average score for gross motor skills (Mean = 45.56) is also above the cutoff point. This suggests that children's gross motor development, which includes large muscle movements such as running and jumping, is progressing appropriately.

3. Fine Motor: The mean score for fine motor skills (Mean = 43.5) is close to the cutoff point. This suggests that while most children are nearly meeting the developmental expectations for fine motor skills, they may need additional support. Recommendations include providing targeted learning activities to enhance fine motor skills and closely monitoring the child's progress.

4. Problem-Solving The average score in problem-solving (Mean = 47.52) is above the cutoff point, indicating that children are performing well in this area of development. This suggests that their ability to think critically and solve problems is developing as anticipated.

5. Personal _Social: The mean score for personal and social development (Mean = 49.1) is above the cutoff, showing that children's social skills and personal development are on track. This includes interactions with others, self-regulation, and understanding social norms.

- For communication, gross motor, problem-solving, and personal-social development, the scores indicate that development is proceeding as expected. However, for fine motor development, it is advisable to implement additional learning activities and maintain regular monitoring to ensure that children continue to make progress in this area.

5.3 Assessing the Maternal factors of the infants

Question 3: What are the Maternal factors of the participating mothers of infants such as (Age, educational level, income, place of residency, occupation, and other maternal factors such as -comorbidities, family planning etc), in the UNRWA clinics in Jerusalem Area?

Table 5.3.1 Distribution of the frequency and percentage of Socio-demographic characteristics of the mothers of the participated children (N=187)

Variables	Values	Frequency	Percentage
Age of the mother (in years)	Less than 20	23	12.30%
	20-30	119	63.60%
	More than 30	45	24.10%
	Total	187	100.00%
Age of the father (in years)	Less than 30	74	39.60%
	30-40	94	50.30%
	More than 40	19	10.20%
	Total	187	100.00%
Educational level of the mother	Primary	6	3.20%
	Preparatory	13	7.00%
	Secondary	62	33.20%
	Diploma	39	20.80%
	Bachelor's	58	31.00%
	Postgraduate studies	9	4.80%
	Total	187	100.00%
Educational level of the father	Primary	11	5.90%
	Preparatory	30	16.00%
	Secondary	86	46.00%
	Diploma	19	10.20%
	Bachelor's	38	20.30%
	Postgraduate studies	3	1.5%
	Total	187	100.00%
Mother Occupation	Yes	67	35.80%
	No	120	64.20%
	Total	187	100.00%
Father Occupation	Yes	161	86.10%
	No	26	13.90%
	Total	187	100.00%
Place of residency	camp	85	45.50%
	village	36	19.30%
	City	66	35.30%
	Total	187	100.00%
Family monthly income (shekels):	less than2000 NIS	54	28.90%
	2000 -3500 NIS	77	41.20%
	more than 3500 NIS	56	29.90%
	Total	187	100.00%
Number of children, including the current child	One	82	43.90%
	Two	34	18.20%
	three and more	71	38.00%
	Total	187	100.00%

Table 5.3.1 provides an overview of the socio-demographic characteristics of the mothers of the participating children (n=187). The majority of mothers are aged between 20 and 30 years (63.6%), with a smaller proportion being either under 20 (12.3%) or over 30 (24.1%). Fathers tend to be slightly older, with most falling in the 30-40 age range (50.3%). Educational levels vary, with nearly a third of mothers holding a bachelor's degree (31%) and a significant portion having completed secondary education (33.2%). In contrast, fathers are more likely to have secondary education (46%) or higher. Employment rates are higher among fathers (86.1%) compared to mothers (35.8%). The residency distribution indicates that a significant portion of the families live in camps (45.5%), followed by cities (35.3%) and villages (19.3%). Family income shows a varied distribution, with most families earning between 2000 and 3500 NIS (41.2%). Additionally, nearly half of the families have only one child (43.9%), while 38% have three or more children.

Table 5.3.2: Frequency and percentage of the other maternal factors such as - comorbidities, and family planning for the studied maternal factors of the participating mothers (N= 187)

Variables	Values	Frequency	Percentage
Did the mother receive preconception care?	Yes	128	68.40%
	No	59	31.60%
	Total	187	100.00%
Did the mother receive care and follow-up during pregnancy?	Yes	162	86.60%
	No	25	13.40%
	Total	187	100.00%
How many visits does the mother make to the pregnancy follow-up service?	2-4	41	21.90%
	4-6	35	18.70%
	6-8	111	59.40%
	Total	187	100.00%
Did the mother receive postpartum care?	Yes	148	79.10%
	No	39	20.90%
Did the mother receive family planning before becoming pregnant with the current child?	No, she did not use any contraception	116	62.00%
	1 years ago, before delivery	35	18.70%
	2 years ago, before delivery	15	8.00%
	3 years ago, before delivery	21	11.20%
	Total	187	100.00%
Was there any complication during the pregnancy of this infant?	Gestational hypertension	15	8.00%
	Gestational diabetes	14	7.50%
	Chronic urinary tract infection	1	0.50%
	Enteric infection	1	0.50%
	Maternal depression	12	6.40%
	Others Specify	10	5.30%
	Non	134	71.70%
	Total	187	100.00%
Maternal iron supplementation during pregnancy	Yes	176	94.10%
	No	11	5.90%
	Total	187	100.00%
Folic acid supplementation during pregnancy	Yes	174	93.00%
	No	13	7.00%
	Total	187	100.00%
Smoking during pregnancy	Yes	62	33.20%
	No	125	66.80%
	Total	187	100.00%
Did you suffer from anxiety during pregnancy?	Yes	64	34.20%
	No	123	65.80%
	Total	187	100.00%
Did you suffer from postpartum depression?	Yes	36	19.30%
	No	151	80.70%
	Total	187	100.00%

Table 5.3.2 showed that the majority of mothers (68.4%) received preconception care, indicating a proactive approach to maternal health before pregnancy. Additionally, a significant proportion (86.6%) received care and follow-up during pregnancy, ensuring maternal well-being and monitoring throughout gestation. Regarding the number of visits to pregnancy follow-up services, most mothers (59.4%) attended 6-8 visits, suggesting consistent engagement with prenatal care services.

Furthermore, a substantial portion (79.1%) received postpartum care, highlighting the importance of maternal health post-delivery. In terms of family planning, the majority of mothers did not use contraception before becoming pregnant with the current child, indicating varied approaches to family planning among participants.

Complications during pregnancy were reported by a subset of mothers, with gestational hypertension (8.0%) and gestational diabetes (7.5%) being among the notable complications documented. Maternal supplementation during pregnancy was prevalent, with the vast majority receiving iron (94.1%) and folic acid (93.0%) supplementation, reflecting adherence to recommended prenatal care practices. Notably, a proportion of mothers reported smoking during pregnancy (33.2%), while others experienced anxiety (34.2%) and postpartum depression (19.3%), highlighting potential maternal health challenges during the perinatal period. This indicates that anxiety during pregnancy is relatively common among mothers and may impact both maternal and child health.

Table 5.3.3 Frequency and percentage of the physical parameters (weight and height) and comorbidities of the participating mothers (N= 187)

Variables	Values	Frequency	Percentage
Characteristics of the mother Co-morbidities؟	Hypertension chronic	10	5.30%
	Diabetes chronic	6	3.20%
	Anemia	18	9.60%
	Asthma chronic	2	1.10%
	Cancer	4	2.10%
	Heart diseases	5	2.70%
	Mental disorders chronic	7	3.70%
	Chronic urinary tract infection	15	8.00%
	Endocrine (hypo/hyper thyroids)	12	6.40%
	Non	108	57.80%
	Total	187	100.00%
The mother's current weight	Lowest thru 50 KG	6	3.20%
	50.1-60	47	25.10%
	60.1-70	57	30.50%
	70.1-80	43	23.00%
	80.1-90	19	10.20%
	More than 90	15	8.00%
	Total	187	100.00%
Mother's weight during pregnancy	**50.1-60**	**11**	**5.90%**
	60.1-70	**45**	**24.10%**
	70.1-80	**67**	**35.80%**
	80.1-90	**38**	**20.30%**
	More than 90	**26**	**13.90%**
	Total	**187**	**100.00%**
Mother's length	**Lowest thru 160**	**73**	**39.00%**
	160-170	**99**	**52.90%**
	more than 170	**15**	**8.00%**
	Total	**187**	**100.00%**

Table 5.3.3 This table shows that a notable number of the participating mothers 57.80% had no chronic health conditions, while others faced health issues like chronic hypertension (5.30%), anemia (9.60%), and thyroid disorders (6.40%). This highlights the presence of various health challenges among a portion of the mothers.

5.4 Assessing the infant factors

Question 4: What are the characteristics of the participating children including (Gender, gestational age, infant birth conditions, nutritional supplements, going to nursery, watching TV or using electronic devices, and caregivers) in five UNRWA clinics in the Jerusalem Area?

Table 5.4 A-Frequency and percentage of infant's characteristics

Variables	Values	Frequency	Percentage
Gender	Male	83	44.40%
	Female	104	55.60%
	Total	187	100.00%
Height at birth in cm	47 cm- 48 cm	42	22.5%
	49cm- 50cm	114	60.9%
	51cm- 52cm	28	14.9%
	54 cm	3	1.6%
	Total	187	100.00%
Birth weight in KG (Kilogram)	Lowest thru 2.5	11	5.90%
	(2.51-2.99) KG	51	27.30%
	(3.0-3.50) KG	94	50.30%
	More than 3.51	31	16.60%
	Total	187	100.00%
Pregnancy period in weeks	37-40 weeks	148	79.10%
	After 40 weeks	39	20.90%
	Total	187	100.00%
Daily caregiver for the boy/girl You can choose more than one answer	the mom	166	88.80%
	Dad	18	9.60%
	Grandma and Grandpa	3	1.60%
	Total	187	100.00%

Table 5.4 B-Frequency and percentage of infant's characteristics

Variables	Values	Frequency	Percentage
Went to nursery?	Yes	20	10.70%
	No	167	89.30%
	Total	187	100.00%
Watching TV or using electronic devices, smart iPhone, and tablet?	Yes	86	46.00%
	No	101	54.00%
	Total	187	100.00%
Did the infant have any disease at birth?	Yes	0	0%
	No	187	100%
	Total	187	100.00%
Did the infant have exclusive breast feeding for 6 months?	Yes	91	48.70%
	No	96	51.30%
	Total	187	100.00%
Is the baby still breastfeeding?	Yes	63	33.70%
	No	124	66.30%
	Total	187	100.00%
How old was the when breastfeeding was stopped?	1.-3 months	41	21.9 %
	3-6 months	66	35.3%
	7-9 months	20	10.7%
	10-12 months	52	27.8.%
	➢ 12	8	4.3.%
	Total	187	100.00%
At what age were complementary foods introduced to the child?	LESS THAN 6	123	65.80%
	6-11	64	34.20%
	Total	187	100.00%
If the child is given complementary foods What complementary foods are provided? (You can choose more than one answer)	Infant formula	93	49.7
	Animal milk	2	1.1
	Fruits	42	22.5
	Vegetables	28	15.0
	Carbohydrates	12	6.4
	Yogurt	6	3.2
	Water	4	2.1
	Total	187	100.0
How many meals of complementary food	Less than 4 times	135	72.20%
	4 times and more	52	27.80%
	Total	187	100.00%
Did the infant receive vitamin A? (One capsule is given to the child every 6 months until the age of 5 y)	Yes	145	77.50%
	No	42	22.50%
	Total	187	100.00%
Did the infant receive iron?	Yes	162	86.60%
	No	25	13.40%
	Total	187	100.00%

Table 5.4 provides a comprehensive breakdown of the characteristics of the participating children (n=187). The gender distribution is slightly skewed, with 55.6% of the children being female and 44.4% male. Birth height shows considerable variation, with the majority

of children (60.9%) measuring 49 -50 cm at birth, followed by 22.5% at 47-48 cm., 51-52 cm (14.9 %), and only 3 were born with a height of 54 cm (1.6%).

When it comes to birth weight, most infants fell within the 3.0-3.5 kg range (50.3%). About 27.3% of the children weighed between 2.51 and 2.99 kg, while 16.6% weighed more than 3.51 kg, and a small proportion (5.9%) weighed 2.5 kg or less. The pregnancy period was predominantly between 37-40 weeks (79.1%), with 20.9% of the children born after 40 weeks.

The daily caregiver was overwhelmingly the mother (88.8%), with fathers (9.6%) and grandparents (1.6%) playing smaller roles. A significant majority of the children did not attend nursery (89.3%). Regarding screen time, 54.0% of the children did not watch TV or use electronic devices, while 46.0% did.

Health-wise, 33.7% of the children had a disease at birth, and 48.7% were exclusively breastfed for the first six months. However, 51.3% did not receive exclusive breastfeeding for this period, and by the time of the study, 66.3% were no longer being breastfed. The age at which breastfeeding stopped varied, with 21.9% ceasing at 3 months, and 35.3% at 6 months. Smaller percentages 4.3% continue to breastfeed after 12 months.

Complementary foods were introduced to most children before six months (65.8%), with the remaining 34.2% introduced to complementary foods between 6-11 months. The most common complementary food was infant formula (49.7%), followed by fruits (22.5%), vegetables (15.0%), carbohydrates (6.4%), yogurt (3.2%), water (2.1%), and animal milk (1.1%). In terms of meal frequency, 72.2% of the children received fewer than four meals of complementary food per day, while 27.8% had four or more meals. High rates of supplementation were observed, with 77.5% of children receiving vitamin A and 86.6% receiving iron.

5.5 potential association between infants' growth & development and with Maternal and Infant factors

Question 5: Is there an association between the growth level and the developmental milestones of the infant in the UNRWA clinics in the Jerusalem Area?

Table 5.5. Correlations between the infant's growth parameters and developmental milestones include (communication, gross motor, fine motor, personal social development, and problem-solving efforts)

variables	CW	H	HC	BMI
Com	0.003	-.163*	-0.103	0.046
GM	0.081	-.155*	-0.027	0
FM	-0.056	-0.101	-0.083	-0.021
PS	0.015	-0.143	0.009	0.053
PSoc	0.033	-.157*	-0.103	0.046

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Abbreviations: CW: The current weight of the child/girl, H: The height of the boy/girl

HC: Head circumference of the boy/girl. BMI: BMI male/female, Com: Communication

GM: Gross Motor, FM: Fine Motor, PS: Problem Solving, PSoc: Personal Social

Table 5.5 The correlation matrix reveals several significant relationships between the developmental and physical characteristics of children. Notably, BMI is positively correlated with both head circumference ($r = .475$, $p < .01$) and current weight ($r = .253$, $p < .01$), indicating that higher BMI is associated with greater head circumference and weight. Communication skills are strongly correlated with problem-solving ($r = .428$, $p < .01$) and fine motor skills ($r = .317$, $p < .01$), suggesting that these developmental areas are interconnected. Additionally, personal-social skills are significantly related to problem-solving ($r = .553$, $p < .01$) and fine motor skills ($r = .434$, $p < .01$), underscoring the role of motor and cognitive abilities in social development. However, some physical attributes like height show a negative correlation with communication ($r = -.163$, $p < .05$) and gross motor

skills (r = -.155, p < .05), indicating potential inverse relationships that merit further investigation.

Question six: Is there an association between the infant's growth, and the maternal and infant factors?

Table 5.6.1 Correlations between the level of infants' growth (weight, height, head circumference, BMI), and the maternal factors

Variable	CW	H	HC	BMI
PC	0.071	0.01	-0.027	0.094
PF	0.033	-0.164*	0.037	0.079
V	0.095	0.03	-0.08	0.011
PP	0.04	-0.079	-0.095	0.05
FP	-0.063	0.031	0.067	0.004
C	0.019	-0.046	-0.12	0.067
MC	-0.400**	-0.016	-0.082	-0.354**

CW: The current weight of the infant - H: The height of the infant - HC: Head circumference of the infant- BMI: Body Mass Index PC: preconception care - PF: follow-up during pregnancy- V: number of visits in pregnancy PP: postpartum care?- FP: family planning before becoming pregnant C: complication during the pregnancy of this infant?- MC: mother Co-morbidities-

Table 5.6 Reveals significant relationships between child growth metrics and various maternal factors. The matrix highlights several key findings: The correlation between the child's current weight (CW) and BMI (0.253**) is statistically significant, indicating that a higher BMI is associated with increased weight. Additionally, head circumference (HC) shows a strong positive correlation with BMI (0.475**), suggesting that larger head circumference is related to higher BMI. Preconception care (PC) exhibits a significant positive correlation with the number of visits to pregnancy follow-up services (V) (0.558**) and postpartum care (PP) (0.558**), indicating that better preconception care is associated with more frequent follow-up and postpartum care. Maternal co-morbidities (MC) are significantly negatively correlated with child growth metrics such as weight (CW) (-0.400**) and BMI (-0.354**), suggesting that the presence of co-morbidities in mothers is associated with poorer child growth outcomes.

Table 5.6. 2 Correlations between the level of infants' growth and the other maternal factors

variable	W_C	H_C	HC_C	BMI_C	PCC	ANC	VIS	PNC	FP
COM	0.019	-.046-	-.120-	0.067	0.001	-.026-	-.083-	0.069	-.115-
COM_M	-.400-**	-.016-	-.082-	-.354-**	0.028	.183*	-.160-*	0.095	0.068
IRON	-.061-	0.056	-.031-	-.073-	0.075	0.035	-.031-	0.039	0.099
FOLIC	-.020-	0.03	-.057-	-.020-	0.086	-.046-	-.073-	0.015	0.125
SMOKE	0.108	0.119	0.067	0.052	-.060-	-.191-**	0.128	-.114-	-.150-*
W_M	0.028	0.089	0.103	0.044	-.025-	0.113	-.055-	-.025-	0.113
PW_M	0.024	0.093	.170*	0.113	0.04	.184*	-.044-	0.016	0.083
L_M	-.020-	0.032	.158*	0.099	0.066	0.119	-.114-	0.005	.189**
ANX	-.047-	-.037-	-.084-	-.081-	-.044-	0.018	-.042-	-.074-	-.024-
DEP	0.024	-.065-	-.070-	0.037	-.077-	-.007-	0.074	0.017	0.101

W_C: Weight of Child H_C: Height of ChildHC_C: Head Circumference of Chil BMI_C: Body Mass Index of ChildPCC: Preconception Care ReceivedANC: Antenatal Care ReceivedVIS: Number of Antenatal VisitsPNC: Postnatal Care ReceivedFP: Family Planning Before PregnancyCOM: Complications During PregnancyCOM_M: Comorbidities of MotherIRON: Iron Supplementation During PregnancyFOLIC: Folic Acid Supplementation During PregnancySMOKE: Smoking During PregnancyW_M: Mother's Current WeightPW_M: Mother's Weight During PregnancyL_M: Mother's HeightANX: Anxiety During Pregnancy DEP: Postpartum Depression

Table 5.6.2 presents the correlation matrix between infant growth levels and various maternal factors. Notable findings include that the Body Mass Index (BMI_C) has a strong positive correlation with the Head Circumference (HC_C) ($r = 0.475^{**}$, $p < 0.01$), indicating a robust relationship. Preconception Care Received (PCC) shows a significant positive correlation with Postnatal Care Received (PNC) ($r = 0.558^{**}$, $p < 0.01$), suggesting a strong association between preconception care and postnatal care. Similarly, Antenatal Care Received (ANC) is positively correlated with PNC ($r = 0.533^{**}$, $p < 0.01$), highlighting the relationship between antenatal care and postnatal care.

Conversely, Comorbidities of Mother (COM_M) has a strong negative correlation with Weight of Child (W_C) ($r = -0.400^{**}$, $p < 0.01$), suggesting that maternal comorbidities are associated with lower infant weight. Smoking during Pregnancy (SMOKE) shows a significant negative correlation with PCC ($r = -0.191^{**}$, $p < 0.01$), indicating that smoking may negatively impact preconception care.

Some correlations, such as those between Complications During Pregnancy (COM) and Weight of Child (W_C) ($r = 0.019$), are not statistically significant, indicating no meaningful

relationship. Overall, the table reveals several significant relationships between maternal factors and infant developmental indicators, offering insights into how maternal health and behaviors may influence child development. **However, The Chi-Square test was used to examine the relationship between the infant's characteristics and the child's growth and development**.: Results revealed no significant association between the infant's growth parameters and the studied infant characteristics indicated by the Chi-Square test ($p > 0.05$).

Question 7. Is there an association between the infant's development and the maternal and infant factors in the UNRWA clinics in the Jerusalem Area?

To examine the correlation between the maternal factors and the development of the child in five UNRWA clinics in the Jerusalem area, we use the Pearson correlation coefficient after determining the frequency and ratios for each of the studied factors.

Table 5.7. Correlations matrix for the level of development and the maternal factors

Variables	Weight (A)	Weight (B)	Height (C)	Anxiety (A)	PostDep (PD)	Com	GM	FM	PS	PSoc
Weight (A)	1	-0.025	0.066	-0.044	-0.077	-0.034	0.133	-0.008	-0.033	0.075
Weight (B)	-0.025	1	0.119	0.018	-0.007	-0.016	0.160*	-0.032	0.021	-0.084
Height (C)	0.066	0.119	1	-0.042	0.074	0.012	-0.047	0.087	0.072	0.132
Anxiety (A)	-0.044	0.018	-0.042	1	-0.077	-0.034	0.13	0.05	0.103	0.071
PD	-0.077	-0.007	0.074	-0.077	1	-0.016	0.034	0.037	0.160*	0.141
Com	-0.034	-0.016	0.012	-0.034	-0.016	1	0.235**	0.317**	0.428**	0.381**
GM	0.133	0.160*	-0.047	0.13	0.141	0.235**	1	0.145*	0.093	0.117
FM	-0.008	-0.032	0.087	0.05	0.037	0.317**	0.145*	1	0.362**	0.434**
PS	-0.033	0.021	0.072	0.103	0.160*	0.093	0.362**	0.362**	1	0.553**
PSoc	0.075	-0.084	0.132	0.039	0.141	0.381**	0.117	0.434**	0.553**	1

Table 5.7 shows that infants' communication (Com) is significantly correlated with fine motor skills (FM) ($r = 0.317$, $p < 0.01$), gross motor skills (GM) ($r = 0.235$, $p < 0.01$), and personal-social skills (PSoc) ($r = 0.381$, $p < 0.01$), indicating that better communication abilities are linked with stronger motor and social skills in children. Furthermore, personal-social skills (PSoc) are positively correlated with problem-solving (PS) ($r = 0.553$, $p < 0.01$) and fine motor skills (FM) ($r = 0.434$, $p < 0.01$), emphasizing the interconnectedness of these developmental domains. The table suggests that various maternal factors, such as prenatal and postpartum care, along with child developmental characteristics like communication and motor skills, play crucial roles in a child's overall development.

5.8 The Chi-Square Test was used to examine the relationship between the infant characteristics and child's growth and development.

Results revealed a significant association between the type of complementary food and the Childs intake of Vit A with the child's developmental millstones. For the other studied variables related to the infant characteristics as (Gender, went to nursery, have a disease …. etc.). the analysis revealed no significant relations with the child's growth or development indicated by the Chi-Square test ($p > 0.05$) as the following analysis:

1. **Did the infant have any disease at birth?** The analysis indicates no significant association between the presence of disease at birth and the developmental stages of the infant (W1) ($p > 0.05$).
2. **Did the infant have exclusive breastfeeding for 6 months?** There is no significant relationship observed between exclusive breastfeeding for six months and the developmental stages of the infant (W1) ($p > 0.05$).
3. **Is the baby still breastfeeding?** The analysis reveals no significant association between the duration of breastfeeding and the developmental stages of the infant (W1) ($p > 0.05$).
4. **How old was the baby when breastfeeding was stopped?** The chi-square tests show no significant relationship between the age at which breastfeeding was stopped and the developmental stages of the infant (W1) ($p > 0.05$).
5. **At what age were complementary foods introduced to the child?**

There was no significant association found between the age at which complementary foods were introduced to the child and their developmental stages (W1) ($p > 0.05$).

6. **If the child is given complementary foods, what complementary foods are provided?**

The types of complementary foods provided showed significant variation between different stages of child development (W1) ($p < 0.05$), with differences observed particularly in the provision of infant formula, fruits, vegetables, and carbohydrates.

7. **Did the infant receive vitamin A?**

The administration of vitamin A to infants showed a significant association with their developmental stages (W1) ($p < 0.05$), indicating differences in the provision of vitamin A across different stages of child development.

8. **Did the infant receive iron?**

There was no significant association found between the administration of iron to infants and their developmental stages (W1) ($p > 0.05$).

Chapter six

Discussion

6.1 Introduction

This chapter offers a detailed discussion of the study's results. It includes a critical analysis of previous research, comparing the study's findings with those of earlier literature. Additionally, this chapter presents recommendations and draws conclusions based on the study's findings.

The research focuses on the growth and development of children during their first year of life in UNRWA healthcare clinics in the Jerusalem area -central region. The study aims to evaluate child growth and development within the first year and investigate factors associated with child growth and development, such as demographic characteristics related to the mother and child, among other attributes.

6.2 Discussion of results according to the first question

Question one: What is the level of the infant's growth related to (weight, height, head circumference, and BMI), in the UNRWA clinics in the Jerusalem Area?

The result summarizes the descriptive statistics for child growth metrics, including weight, height, head circumference, and BMI for 187 boys and girls. The mean weight was 10.9 kg, mean height was 73.2 cm, mean head circumference was 46.2 cm, and mean BMI was 18.2.

The standard deviations were 7.03 for weight, 10.11 for height, 5.6 for head circumference, and 2.4 for BMI, indicating the variability around these means.

The descriptive statistics indicate that the infants attending UNRWA clinics in the Jerusalem area show average growth metrics within expected ranges, though there is notable variability. The mean weight, height, head circumference, and BMI are slightly below global standards for this age group. The result of the study aligns most closely with the findings of García Cruz et al. (2017), which explored factors associated with stunting in children and emphasized the importance of socio-demographic, health, and environmental determinants in child growth. Similar to the findings in the Jerusalem area, where children's growth metrics are slightly below global standards, García Cruz et al.'s study suggests that contextual factors like maternal education, living conditions, and nutrition significantly impact child growth, leading to outcomes like stunting or reduced growth rates.

This could be influenced by several factors specific to the Palestinian context, such as economic hardships, limited access to diverse and nutritious foods, and the psychological stress experienced by families in this region. In contrast, the study by Mercedes de Onis (2017) emphasizes the global recognition of child growth as a primary well-being indicator and highlights severe consequences of poor growth, such as stunting and impaired development. However, while de Onis advocates for global targets and interventions, the specific regional challenges observed in your study might not be fully addressed by the general framework she discusses.

Kassandra L. Harding, Victor M. Aguayo, Patrick Webb (2018) also found factors associated with wasting among children, emphasizing maternal health, socio-economic status, and gender as key determinants. This study’s findings correlate with your results, as both suggest that regional socio-economic conditions contribute to suboptimal growth, but your study's specific context might require more localized interventions to address these issues effectively.

Additionally, the healthcare resources available through UNRWA clinics might be constrained, affecting regular monitoring and early intervention for growth issues. The variability in the data suggests that while some children are meeting growth expectations, others may be lagging, highlighting the need for targeted nutritional and healthcare support.

As Grace Branjerdporn et al. (2016) explored the impact of maternal-fetal attachment on infant development, which, although relevant to developmental outcomes, does not directly address growth metrics like weight, height, or BMI, and thus might not be as directly comparable to your study's results.

6.3 Discussion of results according to the second question

Question two: What is the level of the infant's development related to (communication, gross motor, fine motor, personal social development, and problem-solving efforts) during the first year of life, in the UNRWA clinics in the Jerusalem Area?

The results indicate that infants in UNRWA clinics in the Jerusalem area are showing good development in most areas. Communication, gross motor skills, problem-solving, and personal-social development all scored above the expected levels, suggesting that children in this region are achieving significant growth in these areas despite socio-economic challenges.

However, fine motor skills were close to the cutoff point, indicating that while most children are nearly meeting the developmental expectations, there may be a need for additional support and targeted activities to help them improve in this area.

These findings reflect the unique socio-economic context of the Palestinian region and align with the literature. Mercedes de Onis (2017) emphasized the critical role of early childhood development in determining long-term outcomes, particularly in regions with challenging conditions. Similarly, García Cruz et al. (2017) highlighted the impact of socio-demographic factors on child development, noting that factors such as maternal education, living conditions, and access to health services play a significant role in shaping developmental outcomes.

In the context of the Jerusalem area, the results suggest that while children are generally on track in their development, continuous monitoring and support, especially in fine motor skills, are essential to ensure they reach their full potential. This also underscores the importance of targeted interventions that consider the local socio-economic factors to promote healthy child development in similar settings.

6.4 Discussion of results according to the third question

Question 3: What are the Maternal factors of the participating mothers of infants such as (Age, educational level, income, place of residency, occupation, and other maternal factors as comorbidities, family planning etc), in the UNRWA clinics in the Jerusalem Area?

The results provide a comprehensive overview of maternal factors related to child growth and development. The data reveal that the mothers in the sample have an average current weight, weight during pregnancy, and height, with noticeable variability among individuals. Most mothers engaged in preconception care and received substantial prenatal and postpartum care, demonstrating a proactive approach to their health and the health of their children.

A significant number of mothers attended multiple prenatal visits, indicating regular use of pregnancy follow-up services. However, many did not use contraception prior to their current pregnancy, showing a range of family planning practices. Some mothers experienced complications during pregnancy, including gestational hypertension and diabetes.

Maternal adherence to supplementation guidelines was high, with most receiving iron and folic acid. Challenges were also noted, as a notable proportion of mothers reported smoking, anxiety, and postpartum depression during the perinatal period, highlighting areas for potential improvement in maternal health care.

The analysis of maternal factors related to child growth and development reveals several important insights. The participating mothers exhibited a range of characteristics in terms of their current weight, weight during pregnancy, and height, reflecting diversity within the sample. Most mothers were proactive in their health care, engaging in preconception care and consistently utilizing prenatal and postpartum services. This approach indicates a strong commitment to maternal and child health.

These studies underscore the critical role of maternal health, both physical and mental, in influencing child growth and development.

The results of Carolin Junge et al. (2016) are closest to the findings related to the second question. This study investigated the impact of perinatal depression on children's social-emotional development, focusing on the challenges associated with maternal mental health

during pregnancy and the postpartum period. Similar to the current results, this study highlighted significant issues related to maternal mental health, including anxiety and postpartum depression, which are also noted in the data for the mothers in the Jerusalem area.

Regarding family planning, many mothers did not use contraception before their current pregnancy, suggesting varied practices and perhaps a lack of pre-pregnancy planning for some. Complications during pregnancy, such as gestational hypertension and diabetes, were reported among some mothers, indicating that maternal health issues can impact both prenatal and postnatal care.

Additionally, Jeanie L. Cheong et al. (2017), which explored the effects of moderate and late preterm birth on neurodevelopment and social-emotional development, shares some similarities. This study emphasizes the importance of monitoring and addressing health challenges during the perinatal period, aligning with the need for improved maternal care and addressing complications reported in the current results.

The high rates of adherence to iron and folic acid supplementation underscore a positive adherence to recommended prenatal practices. Nonetheless, challenges remain, as a considerable number of mothers reported smoking, experiencing anxiety, and dealing with postpartum depression. These issues highlight critical areas where maternal health interventions could be improved to better support both mothers and their children in the Jerusalem area.

6.5 Discussion of results according to the fourth question

Question 4: What are the characteristics of the participating infants including (Gender, gestational age, infant birth conditions, nutritional supplements, going to nursery, watching TV or using electronic devices, & caregivers) in five UNRWA clinics in the Jerusalem area ?

The data reveals a relatively balanced gender distribution among the children, with slightly more females (55.6%) than males (44.4%). At birth, heights varied, with 50 cm being the most common, observed in about one-third of the cases, followed by 49 cm. Birth weights

ranged widely, with 3.00 kg being the most frequent weight, representing 15.5% of the sample. Most pregnancies lasted between 37 and 40 weeks, although some ended earlier or later. The primary caregivers for most children were their mothers, while a small number were cared for by fathers or grandparents. Nursery attendance was low, with only a small percentage of children enrolled, and nearly half of the children engaged in screen time activities.

The data shows that a third of infants were diagnosed with a disease at birth, while two-thirds were not. In terms of breastfeeding, nearly half of the infants were exclusively breastfed for six months, with the same proportion still breastfeeding currently.

The results outlined align most closely with several studies from the provided literature like García Cruz et al. (2017) - This study explored factors associated with stunting among children, highlighting the importance of early nutritional practices and health interventions. It underscores the significance of timely introduction of complementary foods and the impact of breastfeeding practices, which is relevant to the observed results regarding breastfeeding and complementary food introduction.

For those who stopped breastfeeding, the most common ages of cessation were six and twelve months. Complementary foods were introduced to most children before six months, with infant formula, fruits, and vegetables being the most common. Most children received fewer than four meals of complementary food. Additionally, a high percentage of infants received vitamin A and iron supplementation according Kassandra L. Harding, Victor M. Aguayo, Patrick Webb (2018) study which looked into factors associated with wasting in children, including nutritional practices and the timing of food introduction. It resonates with the findings on complementary foods and nutritional supplements.

The results provide a detailed overview of the characteristics of participating children. Gender distribution was relatively balanced, with a slight majority of females. At birth, the most common height was 50 cm, and the most frequent birth weight was 3.00 kg. as Pem (2016) results early childhood growth and development emphasizes the role of nutrition, parenting, and timely interventions. It supports the importance of exclusive breastfeeding, timely introduction of complementary foods, and appropriate supplementation, which align with the results on breastfeeding practices and nutrient supplementation.

Most pregnancies were within the typical range of 37 to 40 weeks, with some variations. The majority of children were cared for by their mothers, with minimal nursery attendance and moderate engagement in screen time.

A third of the infants had a disease at birth. Nearly half were exclusively breastfed for six months and continued breastfeeding, while those who ceased breastfeeding did so primarily at six or twelve months. Complementary foods were introduced before six months for most children, with common types including infant formula, fruits, and vegetables. Most children had fewer than four meals of complementary food and received vitamin A and iron supplementation.

6.6 Discussion of results according to the fifth question

Question 5: Is there an association between the growth level and the developmental milestones of the infants in the UNRWA clinics in the Jerusalem Area?

The analysis of child development metrics shows average values for weight, height, head circumference, and BMI, with variability around these averages measured. The developmental milestones for communication, gross motor skills, problem-solving, and personal-social development are generally progressing as expected. Fine motor skills are near the cutoff, indicating a need for additional learning activities and monitoring in this area.

Correlations between growth metrics and developmental milestones reveal that improvements in communication are linked with better gross motor and fine motor skills, as well as overall development. Progress in gross motor skills is similarly associated with advancements in communication and fine motor skills, highlighting the interconnected nature of physical and cognitive development.

The study shows that height negatively affects developmental milestones, and suggests that as children's height increases, children may be delayed in reaching these milestones In the Palestinian context, several factors may explain these results: First, environmental constraints can significantly affect children's development. Environments that support child development may not be found in conflict or limited environments like Jennifer Garcia (2016) results. For example, difficulties in obtaining adequate and nutritious food can

impede overall progress. Second, nutrition plays an important role in development. Children who hang around can experience nutritional deficiencies that can affect their ability to meet developmental milestones. According to Jennifer Garcia (2016) in areas where food security is a concern, malnutrition can delay physical and cognitive development. Third, access to health care is another important factor. Children in resource-limited settings may not receive needed medical and developmental assessments, potentially delaying achievement of developmental goals, limited access to health care may affect participation early and supportive. Additionally, economic and social circumstances can also affect children's development. Families experiencing financial difficulties may struggle to create a supportive environment for their children to grow up, affecting their ability to reach developmental milestones in a timely manner. Finally, psychosocial factors such as stress and trauma from ongoing conflict can affect emotional and cognitive development. Children exposed to such situations may experience developmental delays due to the psychological effects of their environment. In the Palestinian the observed negative effect of altitude on developmental milestones may be related to several factors. Malnutrition common in areas facing socio-economic challenges and conflicts can lead to increased child height with corresponding improvements in other development areas especially in rural or conflict affected areas can hamper access to health a limited availability may prevent detection and intervention when development is delayed. Economic challenges and ongoing conflict further exacerbate these issues, limiting families' ability to provide optimal conditions for children's growth and development. Furthermore, the lack of a structured early childhood education program means that children may miss out on important learning opportunities needed to support their developmental milestones. Addressing these challenges requires targeted interventions to improve nutrition, health care, and education resources and to address socio-economic and conflict-related stressors the width has decreased.

The correlation matrix shows significant relationships between children's developmental and physical characteristics. BMI is positively correlated with both head circumference and weight, indicating that higher BMI is associated with greater head circumference and weight. Communication skills are strongly linked to problem-solving and fine motor skills, while personal-social skills are significantly related to problem-solving and fine motor abilities, highlighting the interconnectedness of these developmental areas. However, height negatively correlates with communication and gross motor skills, suggesting inverse relationships that need further exploration, these indicators highlight the critical role of

monitoring child growth at different stages of infancy and early childhood to ensure standardized and reliable assessments, enabling early detection of potential developmental issues. This analysis, conducted with a sample size of 187, emphasizes the interconnected nature of different growth parameters at birth.

The findings align with Reck et al. (2018), who studied the impact of maternal anxiety disorders on infant development at 12 months. They found that maternal anxiety can negatively influence language development, underscoring the significant role maternal mental health plays in child growth and development. This supports the idea that maternal factors, including psychological well-being, are crucial in the early stages of a child's life.

While the current findings and the studies mentioned above align, Hosseini et al. (2014) present a slightly different perspective. They found that while breastfeeding initially led to higher growth rates up to six months, other infants caught up and even surpassed the growth rate post-six months.

This suggests that while maternal factors like breastfeeding have a strong initial impact, other postnatal factors, such as diet and environment, also play a significant role as the child grows older. This contrasts with the current study's emphasis on maternal factors being crucial up to 12 months, indicating the need to consider a broader range of influences on child development.

In the context of the Palestinian area, particularly within the UNRWA clinics in Jerusalem and the broader West Bank, these findings have significant implications. Kavle et al. (2016) further supports these findings by discussing the dual burden of malnutrition in Egyptian infants, emphasizing how maternal nutrition and feeding practices significantly influence infant growth patterns. They observed that suboptimal weaning and breastfeeding practices, along with micronutrient deficiencies, led to growth faltering, similar to how maternal factors impact growth indicators in the current study.

The variability in maternal health and access to prenatal care within this region reflects the broader socio-economic and political challenges that can affect child development. For instance, socio-economic instability, restricted access to healthcare, and varying levels of maternal education and nutrition can all impact the outcomes observed in this study.

Similarly, Thakur et al. (2024) highlight the importance of maternal nutrition, particularly micronutrients other than iron, in pregnancy for improving maternal and fetal outcomes. This study correlates with the finding that maternal health directly impacts birth height and weight, reinforcing the idea that adequate maternal nutrition is essential for optimal fetal growth and development. Micronutrient deficiencies, as discussed by Thakur et al., can lead to adverse outcomes such as low birth weight and fetal growth restriction, which align with the positive correlation between birth height and weight found in the current study.

Maternal mental health, as emphasized by Reck et al. (2018), could be particularly relevant in a region experiencing ongoing conflict and stress, affecting both psychological well-being and developmental outcomes in children. Similarly, the findings of Thakur et al. (2024) on maternal nutrition are crucial, given that access to adequate and diverse nutrition can be limited in conflict zones or economically disadvantaged areas.

In conclusion, the current study underscores the critical role of maternal factors in child growth and development, particularly in the first year of life. The findings are supported by several studies emphasizing maternal health, nutrition, and psychological well-being. However, it is essential to recognize that postnatal factors also contribute to child development, as suggested by conflicting studies. Therefore, comprehensive prenatal and postnatal care, including addressing maternal health, nutrition, and environmental factors, is vital for optimizing child growth and development outcomes in the Palestinian context.

6.7 Discussion of results according to the sixth question

Question 6: Is there an association between the infant's growth, and the infant factors and maternal factors?

. The correlation matrix highlights several important relationships between child growth metrics and maternal factors. It shows that higher BMI is significantly associated with increased child weight and larger head circumference, reflecting a strong link between these physical attributes. Additionally, better preconception care correlates positively with more frequent pregnancy follow-up and postpartum care, suggesting that improved care before conception is linked to better ongoing maternal care. Conversely, maternal co-morbidities are negatively associated with child growth metrics, indicating that health issues in mothers could adversely affect their children's growth. Maternal iron supplementation is positively

correlated with folic acid supplementation but negatively correlated with anxiety during pregnancy and postpartum depression, suggesting that iron supplements might help reduce these mental health concerns. Finally, the strong correlation between maternal weight during pregnancy and current weight highlights the stability of maternal weight across different stages.

The correlation matrix results offer valuable insights into how maternal factors influence child growth metrics in the Palestinian context. The significant positive correlations between child BMI, weight, and head circumference highlight the interconnected nature of these physical attributes. In Palestine, where health resources can be limited, these findings emphasize the importance of monitoring and addressing growth metrics early to ensure children achieve optimal development.

The strong link between preconception care and both pregnancy follow-up and postpartum care underscores the critical role of comprehensive maternal health services. This aligns with the research of Grace Branjerdporn et al. (2016), which suggests that improved maternal care can positively influence developmental outcomes in children. In the Palestinian context, where access to consistent healthcare can be challenging, improving preconception care could lead to better management throughout pregnancy and more effective postpartum support.

The negative correlation between maternal co-morbidities and child growth metrics reveals that health complications in mothers can adversely affect their children's growth. This finding resonates with the study by García Cruz et al. (2017), which highlights how maternal health issues impact child development. Addressing maternal health issues, particularly in regions like Palestine where chronic conditions and healthcare access are significant concerns, is crucial for improving child growth outcomes.

Iron and folic acid supplementation are positively correlated, and both show negative correlations with anxiety and postpartum depression. This suggests that adequate nutritional support can mitigate some mental health challenges, a finding consistent with Thakur et al. (2024), which emphasizes the benefits of micronutrient supplementation. For Palestinian mothers, ensuring access to these supplements could improve both physical and mental health outcomes.

Finally, the strong correlation between maternal weight during pregnancy and current weight indicates stability in weight trends. This aligns with findings from Saaka and Abaah (2015), which highlight the importance of maternal weight monitoring. In summary, these findings underscore the need for targeted maternal and child health interventions in Palestine to improve overall child development outcomes and address specific regional challenges.

5.8 Discussion of results according to the seventh question

Question 7. is there an association between the infant's development and the infant and maternal factors in the UNRWA clinics in the Jerusalem Area?

. The correlation matrix reveals significant links between maternal factors and child developmental outcomes. Preconception care is strongly associated with both prenatal and postpartum care, indicating that comprehensive maternal care positively impacts child development. Family planning also shows a moderate positive correlation with postpartum care, highlighting its importance in maternal health.

Conversely, prenatal care negatively correlates with the number of visits and smoking, suggesting that fewer prenatal visits and smoking may lead to less favorable outcomes.

For child development, communication skills are positively correlated with fine motor, gross motor, and personal-social skills, indicating that better communication is linked to stronger motor and social abilities. Additionally, personal-social skills are related to problem-solving and fine motor skills, showing the interconnected nature of these developmental areas. Overall, maternal care and child developmental characteristics play crucial roles in a child's growth.

The correlation matrix highlights key relationships between maternal factors and child developmental outcomes, shedding light on how various aspects of maternal care and child development are interconnected. Preconception care's strong correlation with both prenatal and postpartum care underscores the importance of comprehensive maternal health services. This finding aligns with Grace Branjerdporn et al. (2016), which indicates that improved maternal care can enhance developmental outcomes in children. This suggests that in the

Palestinian context, where healthcare access can be inconsistent, strengthening preconception and prenatal care could significantly benefit child development.

The moderate positive correlation between family planning and postpartum care suggests that effective family planning contributes to better postpartum care. This is consistent with Sinno et al. (2015), which highlights the impact of maternal planning on child development. For Palestinian families, ensuring effective family planning services could improve maternal and child health outcomes.

Conversely, the negative correlation between prenatal care and factors such as the number of visits and smoking suggests that fewer prenatal visits and maternal smoking are associated with less favorable child development outcomes. This is supported by García Cruz et al. (2017), which indicates that inadequate prenatal care and maternal health issues adversely affect child growth. Addressing these concerns in Palestine, where smoking and limited prenatal visits can be prevalent, is crucial for improving child developmental outcomes.

In terms of developmental outcomes, the positive correlations between communication skills and fine motor, gross motor, and personal-social skills indicate that better communication abilities are linked with stronger development in these areas. This finding is supported by Thakur et al. (2024), which emphasizes the interconnectedness of developmental skills. Additionally, the strong link between personal-social skills and problem-solving further reinforces the idea that these developmental domains are interrelated. Improving communication and motor skills early on could foster overall development, aligning with findings from Çetinkaya and Conk (2009), which stress the importance of motor skills in early childhood development.

Overall, these results highlight the critical role of comprehensive maternal care and early developmental support in promoting optimal child development. In the Palestinian context, addressing gaps in maternal care and focusing on developmental milestones can significantly enhance child growth and well-being.

The correlation matrix reveals several significant associations between infant developmental outcomes and maternal factors. Notably, the Body Mass Index of the child (BMI_C) shows a strong positive correlation with Head Circumference of the child (HC_C) ($r = 0.475$, $p <$

0.01), indicating that higher BMI is associated with a larger head circumference. This aligns with Alexessander Couto Alves et al. (2019), who found similar patterns in their genetic studies on BMI and growth metrics.

Preconception Care Received (PCC) is strongly correlated with Postnatal Care Received (PNC) ($r = 0.558$, $p < 0.01$), suggesting that better preconception care is linked to more comprehensive postnatal care. This supports findings from Grace Branjerdporn et al. (2016), which emphasize the benefits of comprehensive maternal health services for child development. Similarly, Antenatal Care Received (ANC) also correlates positively with PNC ($r = 0.533$, $p < 0.01$), reinforcing the importance of continuous maternal care throughout pregnancy and after birth.

Conversely, maternal comorbidities (COM_M) have a strong negative correlation with Child Weight (W_C) ($r = -0.400$, $p < 0.01$), indicating that health issues in mothers are linked to lower infant weight. This finding is consistent with García Cruz et al. (2017), which highlights the adverse effects of maternal health conditions on child growth. Additionally, Smoking During Pregnancy (SMOKE) negatively correlates with PCC ($r = -0.191$, $p < 0.01$), suggesting that smoking may impair the effectiveness of preconception care, as also noted by Pem (2016).

Some correlations, such as between Complications During Pregnancy (COM) and Child Weight (W_C) ($r = 0.019$), are not statistically significant, indicating no meaningful relationship. Overall, these findings underline the importance of maternal health and behaviors in influencing child development, aligning with broader research on the impact of maternal factors on early childhood outcomes.

6.9 Conclusion

In conclusion, the study underscores the significant impact of maternal health and care on child growth and developmental outcomes. The positive correlations between various developmental metrics and the robust relationship between BMI and head circumference emphasize the interconnected nature of child growth indicators. The influence of comprehensive preconception, antenatal, and postnatal care on child development is evident, reinforcing the importance of holistic maternal healthcare at the UNRWA Maternal Child Health centers. Conversely, maternal comorbidities, preconception care, and smoking during pregnancy negatively affect child weight and highlight areas for targeted interventions.

Addressing these factors in other areas in Palestine with emphasis on maternal healthcare and early assessment of child's growth and development can foster better developmental outcomes for children, ultimately contributing to their overall well-being and future potential

6.10 Recommendations

Based on the findings, it is important to enhance maternal health education by emphasizing the benefits of preconception care and overall health planning before conception by these recommendations

- Emphasize the benefits of preconception care and overall health planning to improve maternal health and potentially benefit child development.

- Develop care models that include preconception, prenatal, and postnatal care to address factors influencing long-term outcomes for both mother and child.

- Focus on regular monitoring of growth indicators, providing nutritional support, and addressing developmental concerns early on.

- Address factors such as access to healthcare services, socio-economic status, and living conditions in the Palestinian context, as these can significantly impact child development.
- Support research and data collection to explore the impact of various maternal and infant health interventions on child growth, with a focus on specific community needs and challenges.

Based on the findings and their alignment with previous research, the following recommendations are proposed for the UNRWA clinics in the Jerusalem Area:

1. Strengthen preconception, antenatal and postnatal care programs to ensure comprehensive maternal health services. This includes increasing access to regular health check-ups and interventions to improve overall maternal health, which is crucial for positive child development outcomes.

2. Develop targeted interventions to manage and treat maternal comorbidities effectively. This can help mitigate their negative impact on infant weight and overall development. Regular screening and management of chronic conditions should be integrated into maternal health care practices.

3. Implement programs to reduce smoking during pregnancy. Providing education and support for smoking cessation can improve preconception care outcomes and reduce associated risks.

4. Ensure that maternal nutrition, including adequate intake of essential nutrients like iron and folic acid, is a priority. Nutritional guidance and supplementation should be a key component of maternal health care to support healthy fetal growth and development.

5. Regularly assess and monitor children's developmental milestones, particularly in communication, motor skills, and social development. Early detection of delays or issues can prompt timely interventions to support optimal development.

6. Raise awareness among expectant and new mothers about the importance of consistent care throughout pregnancy and postpartum. Emphasizing the benefits of continuous care can encourage adherence to health recommendations and improve outcomes for both mothers and infants.

7. Use the insights from these findings to inform public health policies and practices related to maternal and child health. Ensure that policies are based on evidence and address the identified needs and gaps in maternal and child care.

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Appendices

Appendix's number (1)

Questionner in Arabic

عزيزتي المشاركة نموذج الموافقة

تقوم هذه الدراسة على جمع البيانات من أجل البحث في دراسة نمو و تطور الأطفال خلال السنة الأولى من العمر في عيادات الرعاية الصحية التابعة للأونروا في الضفة الغربية –منطقة الوسط. وتهدف هذه الدراسة الى تقييم نمو وتطور الطفل في السنة الأولى من العمر ودراسة العوامل المرتبطة بنمو الطفل وتطوره مثل الخصائص الديمغرافية المتعلقة بالأم والطفل وغيرها من الخصائص. تجرى هذه الدراسة كمتطلب أكاديمي من اجل الحصول على درجة الماجستير في الصحة العامة من جامعة القدس أبو ديس. نتائج واستنتاجات هذه الدراسة ستساعد في تحسين صحة الطفل. ستكون مدة المقابلة مع الام حوالي 20 دقيقة لأخذ المعلومات اللازمة من الام ثم ستقوم الباحثة بأجراء فحص للطفل من اجل تقييم نموه وتطوره. ومدة فحص نمو وتطور الطفل 20 دقيقة. سيتم توفير السرية الكاملة للام والطفل والسماح للام بالانسحاب من الدراسة في الوقت الذي تطلب فيه الانسحاب من الدراسة.

لا داعي لذكر اسم الأم أو الطفل هذه الدراسة ممولة ذاتيا سيتم استخدام النتائج للبحث فقط

قبل البدء بأخذ المعلومات هل لديك أي استفسار او سؤال حول موضوع البحث؟

توقيع الموافقة على المشاركة في الدراسة : .....

توقيع من أجريت معه المقابلة.....

التاريخ: .....

يوافق المستجيبون على إجراء المقابلات: نعم لا

أشكركم جزيل الشكر على مشاركتكم ويرجى الاتصال مع الباحثة على الهاتف المرفق في حال احتياجكم لاي استفسار.....

اسم الباحثة : منال ناطور التلفون: 0566909086

اسم المشرفة : د. مها نحال التلفون :0599727444

القسم الأول من الاستبيان: يشتمل القسم الأول من الاستبيان على جزئين من الأسئلة

الجزء الأول: يشمل العوامل الديموغرافية والاجتماعية للأم مثل العمر والدخل ومكان الإقامة والمستوى التعليمي والمهنة

الجزء الثاني: يشمل الحالة الصحية للام والأمراض المصاحبة للحمل وغيرها بما في ذلك مرض السكري الحملي وارتفاع ضغط الدم والغدة الدرقية وفقر الدم والأمراض العقلية والسمنة.

1س	**عمر الأم بالسنوات عند الحمل بالطفل الحالي**	**.....**
2س	**عمر الاب بالسنوات عند الحمل بالطفل الحالي**	**.....**
3س	**تعليم الام**	**☐ ابتدائي ☐ إعدادي** **☐ ثانوي ☐ دبلوم** **☐ بكالوريوس ☐ دراسات عليا**
س4	**تعليم الاب**	**☐ ابتدائي ☐ إعدادي** **☐ ثانوي ☐ دبلوم** **☐ بكالوريوس ☐ دراسات عليا**
س5	**عمل الام**	**☐ نعم ☐لا**
س6	**عمل الاب**	**نعم ☐ لا☐**
س7	**مكان الاقامة**	**مخيم ☐** **قرية ☐** **المدينة☐**
س8	**الدخل الشهري للأسرة)بالشيكل)**	**2000> شيكل☐** **3500-2000 شيكل☐** **3500> شيكل☐**
س9	**عدد الاولاد بما فيهم الطفل الحالي**	**1 ☐** **2 ☐** **3+☐**

الجزء الثاني **1. الحالة الصحية للام قبل واثناء الحمل وما بعد الولادة**		
س1	**هل تلقت الام خدمة رعاية ما قبل الحمل؟**	**☐ نعم** **☐ لا**
س 2	**هل تلقت الام رعاًية ومتابعة خلال فترة الحمل ؟**	**☐ نعم** **☐ لا**
س 3	**كم عدد زًيارات الام لخدمة متابعة الحمل؟**	**☐ 4-2** **☐ 6-4** **☐8-6**
س4	**هل تلقت الام خدمة رعاية ما بعد الولادة ؟**	**☐ نعم ☐ لا**
س5	**هل تلقت الام وسيلة تنظيم الاسرة قبل الحمل بالطفل الحالي؟؟**	**☐ لا، لم تستعمل أي وسيلة منع حمل** **☐ 1سنة قبل الميلاد** **☐2 سنة قبل الميلاد** **☐3 سنة قبل الميلاد**
س6	**هل حدثت أي مضاعفات أثناء حمل هذا الرضيع؟**	**ارتفاع ضغط الدم أثناء الحمل☐** **سكري الحمل☐** **عدوى المسالك البولية المزمنة☐** **عدوى معوية☐** **اضطرابات النزيف☐** **اكتئاب الأمهات☐** **أخرى (حدد.....** **لا يوجد.....**
س7	**هل تعاني الام من امراض مزمنة؟**	**ارتفاع ضغط الدم المزمن☐** **داء السكري المزمن☐** **فقر دم☐** **مشكلة في الكلى☐** **الربو المزمن☐** **سرطان☐** **أمراض القلب☐** **الاضطرابات النفسية المزمنة☐** **عدوى المسالك البولية المزمنة☐** **الغدد الصماء (نقص السكر / فرط نشاط الغدة الدرقية)☐** **أخرى ، حدد .....** **لا يوجد.....**
	عوامل الحمل الغذائية2-	
س1	**مكملات الحديد الأم أثناء الحمل**	**نعم ☐** **لا☐**
س2	**مكملات حمض الفوليك أثناء الحمل**	**نعم ☐** **لا☐**

س3	هل تدخن الام ؟	نعم ☐ لا☐ إذا كانت الإجابة بنعم ، فعدد السجائر اليومية .....
س4	Aوزن الام حاليا Bوزن الام اثناء الحمل Cطول الام	....
س5	هل عانيت من القلق اثناء الحمل ؟	نعم ☐ لا☐
س6	هل عانيت من اكتئاب بعد الولادة ؟	نعم ☐ لا☐

القسم الثاني: من الاستبيان: يتكون من جزئيين

الجزء الأول: يبحث في العوامل والخصـائص المتعلقة بالطفل بشـكل عام مثل العمر و الجنس وعمر الطفل حسـب أسـابيع الحمل بالإضـافة الى السـؤال عن مقدم الرعاية للطفل وذهابه إلى الحضـانة ومشاهدته للتلفاز وغيرها.

الجزء الثاني: يبحث بالمعلومات اللازمة عن تغذية الطفل سـواء رضـاعة طبيعية او أغذية تكميلية بالإضافة الى تناوله مكملا الأغذية من الحديد والفيتامينات.

الجزء الأول: عوامل متعلقة بالطفل **تاريخ الميلاد: ___/___/_____ الجنس ذكر ☐ انثى☐**		
	الطول عند الميلاد:_____سم	**الوزن عند الميلاد:_____كيلوغر**
س 1	**فترة الحمل بالأسابيع**	**ما قبل ≥ 37☐ أسبوع** **37-40☐ أسبوع** **بعد فترة ≤ 40☐ أسبوع**
س 2	**مقدم الرعاية اليومية للطفل / الطفلة** **يمكن اختيار أكثر من جواب**	**الأم☐** **أب☐** **الجد والجدة☐** **آخر**
س3	**هل يذهب إلى الحضانة؟**	**نعم ☐** **لا☐**
س4	**مشـاهدة التلفاز أو اسـتخدام الأجهزة الإلكترونية أو الأيفون الذكي أو التابلت؟**	**نعم ☐** **لا☐**
الجزء الثاني : معلومات عن تغذية الطفل		
س1	**هل كان الرضـيع يعاني من أي مرض عند الولادة؟**	**نعم ☐** **لا☐**

س2	هل حصــل الرضــيع على الرضــاعة الطبيعية الحصرية لمدة 6 أشهر؟	نعم ☐ لا☐
س3	هل لايزال يتلقى الرضيع رضاعة طبيعية	نعم ☐ لا☐
س4	كم كان عمر الطفل عندما توقفت الرضـــاعة الطبيعية الحصرية؟	.....
س5	في أي سن تم تقديم أغذية تكميلية للطفل؟	≤ 6☐ اقل 11-6☐
س6	اذا تم إعطاء الطفل أغذية تكميلية ما هي الأغذية التكميلية المقدمة؟ (يمكن اختيار أكثر من إجابة)	حليب أطفال☐ حليب الحيوان☐ الفاكهة☐ خضروات☐ الكربوهيدرات☐ زبادي☐ ماء☐ حدد.....
س7	كم عدد وجبات الطعام التكميلية التي يتناولها الطفل ؟	أقل من 4☐ مرات ☐ 4مرات او اكثر
س 8	هل تلقى الرضيع فيتامين A ؟ (كبســولة تعطى للطفل كل 6 شــهور لعمر 5سنوات)	نعم ☐ لا☐
س 9	هل يتناول الرضيع الحديد؟	نعم ☐ لا☐

القسم الثالث من الاستبانة: ويشمل تقييم نمو الطفل من حيث قياس وزن الطفل ومؤشر كتلة الجسم.

الجزء الثالث: تقييم نمو الطفل حاليا		
س 1	وزن الطفل / الطفلة حاليا	(كيلوغرام) .....
س 2	طول الطفل / الطفلة	..... (سم)
س3	محيط الرأس الطفل / الطفلة	.....(سم)
س 4	BMI الطفل / الطفلة	..... (سم)

القسم الرابع من الاستبانة: وهو استخدام النسخة الثالثة من مقياس (العمر والمرحلة) للأطفال في السنة الأولى من العمر حيث يشتمل هذا المقياس على تقييم تطور الطفل من ناحية التواصل والتطور الاجتماعي وتنمية الطفل الشخصية الاجتماعية وقدرة الطفل على حل المشكلات وحركة الجسم الدقيقة والكبيرة

ملخص معلومات ASQ-3 عن الطفل في السنة الأولى من العمر

استبيان تطور نمو الطفل العاطفي والاجتماعي لعمر 12 شهر الأسئلة التالية حول النشاطات التي يقوم بها طفلك، بعض هذه الأنشطة قام بها طفلك والبعض الآخر لم يقم بها بعد. الرجاء وضع (X) على الخيار الذي يظهر قيام طفلك بهذا العمل		
التواصل والتطور الاجتماعي12 اشهر		
ASQ12-1	☐	هل ينطق طفلك بكلمتين مماثلتين مثل: "با با"، "د ادا" او " غا غا":
		1. نعم | 2 .احيانا | 3. ليس بعد
ASQ12-2	☐	اذا طلبت من طفلك أن يقوم بحركة دون تمثيلها له، فهل يقوم بها مثل: التصفيق او التلويح او مع السلامة:
		1. نعم | 2. احيانا | 3. ليس بعد
ASQ12-3	☐	هل يقوم طفلك بالاستجابة لمطلب واحد مثل: "تعال هنا" او "اعطيني" او ضع اللعبة مكانها":
		1. نعم | 2. احيانا | 3. ليس بعد
ASQ12-Q4	☐	هل ينطق طفلك بثلاث كلمات مثل: "ماما، بابا، تاتا:
		1. نعم | 2. احيانا | 3. ليس بعد
ASQ12-5	☐	عندما تسال: اين اللعبة او ألكرة هل يشير طفلك اليها:
		1.نعم | 2. احيانا | 3. ليس بعد
ASQ12-6	☐	اذا اراد طفلك شيء هل يقول لك ويشير الى الغرض الذي يريده:
		1.نعم | 2.احيانا | 3.ليس بعد
ASQ12-7	☐	هل يحب طفلك اللعب مع الاطفال الاخرين:
		1.نعم | 2.احيانا | 3.ليس بعد

ASQ12-8	☐	**هل يحب طفلك اللعب مع الاطفال الاخرين ولكن كما يلعبون وبدون تنافس:**
		1.نعم 2.أحيانا 3.ليس بعد
ASQ12-9	☐	**هل يحب طفلك ان يقلد الاطفال الاخرين في طريقة لعبهم:**
		1.نعم 2.احيانا 3.ليس بعد
ASQ12-10	☐	**عندما تعقدي يديك وتطلبي اللعبة من طفلك، هل يوافق على اعطاءك اياها:**
		1.نعم 2.احيانا 3.ليس بعد
ASQ12-11	☐	**عندما تقومي بالباس طفلك، هل يقوم بمد يده حال دخول يديه في كم القميص:**
		1.نعم 2.احيانا 3. ليس بعد
ASQ12-12	☐	**عندما تعقدي يديك وتطلبي اللعبة من طفلك، هل يقوم باعطاءك اياها في يديك:** **1.نعم 2. احيانا 3. ليس بعد**
ASQ12-13	☐	**عندما تقومي بالباس طفلك، هل يقوم بوضع قدمه في حذائه:**
		1. نعم 2.احيانا 3. ليس بعد
ASQ12-14	☐	**هل يقوم طفلك بركل الكرة اليك لتعيديها بدورك اليه:** **1..نعم 2. احيانا 3 . ليس بعد**
ASQ12-15	☐	**هل يلعب طفلك بالدمية او أي شئ اخر ويقوم باحتضانها؟** **1.نعم 2. احيانا 3 . ليس بعد**
الادراك عند الطفل12 اشهر		
ASQ12-16	☐	**هل يفهم طفلك معنى كلمة "لا"، "تعال"، "انظر":** **1.نعم 2. احيانا 3. ليس بعد**
ASQ12-17	☐	**هل يرغب طفلك في التحرك باستقلالية دون مساعدتك؟** **1 1 1 نعم 2 . احيانا 3. ليس بعد**
القدرة على حل المشكلات12 اشهر		
ASQ12-18	☐	**عندما يحمل طفلك لعبة صغيرة في يديه، هل يقوم بضربها في كلتا يديه :** **1.نعم 2. احيانا 3. ليس بعد**
ASQ12-19	☐	**هل ينظر طفلك بانتباه أو يحاول ان ياخذ كسرة خبز او أي شئ من داخل قنينة شفافة :** **1 . نعم 2. احيانا 3. ليس بعد**
ASQ12-20	☐	**بعد ان يراك تضعين لعبة صغيرة تحت ورقة او ملابس، هل يجدها طفلك ؟** **1 . نعم 2. احيانا 3. ليس بعد**
ASQ12-21	☐	**بعد ان تضعي لعبة صغيرة في وعاء، هل يقوم طفلك بتقليدك بوضع اللعبة في الوعاء حتى لو لم ينجح بذلك:** **1 . نعم 2. احيانا 3. ليس بعد**
ASQ12-22	☐	**هل يقوم طفلك برمي لعبتين صغيرتين بالتوالى داخل علبة:** **1 . نعم 2. احيانا 3. ليس بعد**

ASQ12-23	☐	**بعد ان تقومي بالخربشة على ورقة ذهابا وايابا، هل يقوم طفلك بتقليدك وبتكرار ذلك:** **1. نعم 2. احيانا 3. ليس بعد**
المهارات الحركية العادية 12أشهر		
ASQ12-24	☐	**إذا كان الطفل واقفا وممسكا بالأثاث، هل ينحني إلى أسفل ويلتقط لعبة من الارض ثم يعود إلى وضع الوقوف؟**
		1. نعم 2.احيانا 3.ليس بعد
ASQ12-25	☐	**أثناء الامساك بالأثاث، هل ينحنى للاسفل بتحكم (من دون الوقوع أو التعثر)؟**
		1. نعم 2. احيانا 3. ليس بعد
ASQ12-26	☐	**هل يمشي طفلك بجانب الأثاث متمسكا به بيد واحدة فقط؟**
		1. نعم 2. احيانا 3. ليس بعد
ASQ12-27	☐	**اذا قمت بامساك طفلك من يديه لمساعدته على التوازن ، هل يأخذ عدة خطوات دون التعثر أو السقوط؟ (إذا كان طفلك يمشي بالفعل وحده، بمناسبة "نعم "لهذا البند).**
		1. نعم 2. احيانا 3. ليس بعد
ASQ12-28	☐	**عندما تمسكي طفلك بيد واحده لمساعدته على التوازن، هل يأخذ عدة خطوات للامام؟ (إذا كان طفلك يمشي بالفعل وحده، ضع علامة "نعم" لهذا البند).**
		1.نعم 2.احيانا 3.ليس بعد
ASQ12-29	☐	**هل يقف طفلك في منتصف الغرفة بنفسه ويخطى عدة خطوات إلى الأمام؟**
		1.نعم 2.احيانا 3.ليس بعد
المهارات الحركية الدقيقة 12 أشهر		
ASQ12-30	☐	**بعد محاوله واحده او اثنتين، هل يلتقط طفلك خيط بالسبابة و الابهام؟ (من الممكن ان يكون الخيط متصل باللعبه).**
		1.نعم 2.أحيانا 3.ليس بعد
ASQ12-31	☐	**هل تلتقط طفلتك كسرة خبز أو رقائق الذرة برأس الابهام او بالاصبع؟ من الممكن ان تريح يديها او ذراعها على الطاوله اثناء المحاوله.**
		1.نعم 2.أحيانا 3.ليس بعد
ASQ12-32	☐	**هل يضع طفلك لعبة صغيرة دون اسقاطها ثم يرفع يده عنها؟**
		1.نعم 2.احيانا 3.ليس بعد
ASQ 12 33	☐	**بدون ان تريح يديها او ذراعها على الطاوله، ، هل تلتقط طفلتك كسرة خبز أو رقائق الذرة برأس الابهام او بالاصبع؟**
		1.نعم 2.احيانا 3.ليس بعد
ASQ12 34	☐	**هل يرمي طفلك لعبه صغيره بتحريك يديه للامام ؟ (إذا كان يستطيع اسقاطها بسهوله ، ضع علامة "ليس بعد" لهذا البند).**

		1..نعم	**2. احيانا**	**3. ليس بعد**
ASQ12-35	☐	**هل يساعدك طفلك على قلب صفحات الكتاب؟ (وقد ترفع أنت الصفحة له لقلبها).**		
		1. نعم	**2.احيانا**	**3.ليس بعد**

Appendix number (2)

Questioner in English:

Consent form

Dear Madam:

This study is based on collecting data in order to research the study of the growth and development of children during the first year of life in UNRWA health care clinics in the Jerusalem area - central region. This study aims to evaluate the growth and development of the child in the first year of life and study the factors related to the child's growth and development, such as demographic characteristics related to the mother and child and other characteristics. This study is conducted as an academic requirement in order to obtain a master's degree in public health from Al-Quds Abu Dis University. The results and conclusions of this study will help improve child health. The duration of the interview with the mother will be about 20 minutes to obtain the necessary information from the mother. Then the researcher will conduct an examination of the child in order to evaluate his growth and development. The duration of the child's growth and development examination is 20 minutes. Complete confidentiality will be provided to the mother and child and the mother will be allowed to withdraw from the study at the time she requests withdrawal from the study.

There is no need to mention the name of the mother or the child. This study is self-funded.

The results will be used for research only

Before starting to collect information, do you have any inquiries or questions about the research topic?

Signing consent to participate in the study: .....

Signature of the interviewee.....

the date: .....

Respondents agree to be interviewed: Yes No

Thank you very much for your participation, and please contact the researcher on the attached phone if you have any questions.....

Name of researcher: Manal Natour Phone: **0566909086**

Supervisor name: Dr. Maha Nahal Phone: **0599727444**

The first part: is on social demographic factors and general characteristics of the mother including age, income, place of residency, educational level, occupation, and comorbidities including Gestational DM, Hypertension, thyroid, anemia, mental illness, and obesity.

Interviews Questionnaire

1- Maternal social demographic factors			
Q1	The mother's age in years when she became pregnant with the current child	……	
Q2	The father's age in years when he conceived the current child	……	
Q3	Mother Education	☐ Primary ☐ Preparatory ☐ Secondary ☐ Diploma ☐ Bachelor's ☐Postgraduate studies	
Q4	Father Education	☐ Primary ☐ Preparatory ☐ Secondary ☐ Diploma ☐ Bachelor's ☐Postgraduate studies	
Q5	Mother Occupation	Yes ☐ No ☐	
Q6	Father Occupation	Yes ☐ No ☐	
Q7	Place of residency	City ☐ village ☐ camp ☐	
Q8	Family monthly income (shekels):	> 2000 NIS ☐ 2000 -3500 NIS ☐	

		< 3500 NIS ☐	
Q9	Number of children, including the current child	1 ☐ 2 ☐ +3 ☐	

2-Maternal factors 1- the mother's health condition before, during pregnancy, and after childbirth			
Q1	Did the mother receive preconception care?	☐ Yes ☐ No	
Q2	Did the mother receive care and follow-up during pregnancy?	☐ Yes ☐ No	
Q3	How many visits does the mother make to the pregnancy follow-up service?	2-4 ☐ 4-6 ☐ 6-8 ☐	
Q4	Did the mother receive postpartum care?	Yes ☐ No ☐	
Q5	Did the mother receive family planning before becoming pregnant with the current child?	No, she did not use any contraception☐ 1 years ago, before delivery ☐ 2 years ago, before delivery ☐ 3 years ago, before delivery ☐	
Q6	Was there any complication during the pregnancy of this infant?	Gestational hypertension ☐ Gestational diabetes ☐ Chronic urinary tract infection ☐	

		Enteric infection ☐ Bleeding disorders ☐ Maternal depression ☐ Others Specify……	
Q7	characteristics of the mother Co-morbidities؟	Hypertension chronic ☐ Diabetes chronic ☐ Anemia ☐ Kidney problem ☐ Asthma chronic ☐ Cancer ☐ Heart diseases ☐ Mental disorders chronic ☐ Chronic urinary tract infection ☐ Endocrine (hypo/hyper thyroids) ☐ Other, specify.....	
2-	Nutrition Pregnancy Factors		
Q1	Maternal iron supplementation during pregnancy	Yes ☐ No ☐	
Q2	Folic acid supplementation during pregnancy	Yes ☐ No ☐	

Q3	Smoking during pregnancy	Yes ☐ No ☐ if yes, number of daily cigarettes ……..	
Q4	A -The mother's current weight B-Mother's weight during pregnancy C- Mother's length	…….. …….. ……	
Q5	Did you suffer from anxiety during pregnancy?	Yes ☐ No ☐	
Q6	Did you suffer from postpartum depression?	Yes ☐ No ☐	

The second part of the questionnaire: consists of two parts

Section one: examines the factors and characteristics related to the child in general, such as age, gender, and the child's age according to the weeks of pregnancy, in addition to asking about the child's caregiver, his going to nursery, his watching television, and others.

Section two: examines the necessary information about the child's nutrition, whether breastfeeding or complementary foods, in addition to consuming iron and vitamins.

Part One: Factors related to the Infant Date of birth: ___/___/_____ Sex: Male ☐ Female ☐			
	Height at birth CM: …….	Infant birth weight in KG (Kilogram) …….	
Q1	Pregnancy period in weeks	☐ Before ≤ 37 weeks ☐ 37-40 weeks ☐ After a period of ≥ 40 weeks	
Q2	Daily caregiver for the boy/girl You can choose more than one answer	☐ the mom ☐ dad ☐ Grandma and Grandpa Other	
Q3	Went to nursery?	Yes ☐ No ☐	

Q4	Watching TV or using electronic devices, smart iPhone, tablet?	Yes ☐ No ☐	
	Part Two: Information about child nutrition		
Q1	Did the infant have any disease at birth?	Yes ☐ No ☐	
Q2	Did the infant have exclusive breast feeding for 6 months?	Yes ☐ No ☐	
Q3	Is the baby still breastfeeding?	Yes ☐ No ☐	
Q4	How old was the when breastfeeding was stopped?	…….	
Q5	At what age were complementary foods introduced to the child?	≤ 6 ☐ 6-11 ☐	
Q6	If the child is given complementary foods What complementary foods are provided? (You can choose more than one answer)	Infant formula ☐ Animal milk ☐ Fruits ☐ Vegetables ☐ Carbohydrates ☐ Yogurt ☐ Water ☐ Specify……	

Q7	How many meals of complementary food the child has	Less than 4 times 4 times and more	
Q8	Did the infant receive vitamin A? (One capsule is given to the child every 6 months until the age of 5 years)	Yes ☐ No ☐	
Q9	Did the infant receive iron?	Yes ☐ No ☐	
	-The third section of the questionnaire: It includes assessing the child's growth in terms of measuring the child's weight and body mass index.		
	- Part Three: Evaluating the child's current development		
Q1	The current weight of the child/girl	..... (Kg)	
Q2	The height of the boy/girl	……CM	
Q3	Head circumference of the boy/girl	……CM	
Q4	BMI boy/girl	……CM	

Section three: Age & Stage scale to assess development of the infant including: communication, gross motor, fine motor, problem solving and personal social.

Date ASQ completed: ……. Date of birth: ___/___/_____				
1- ASQ Infant including Communication- Communication and social development 12 months				
Q1	Does your baby make two similar sounds, such as “ba-ba,” “da-da,” or “ga-ga”? (The sounds do not need to mean anything.)	YES	SOMETIMES	NOTYET
Q2	If you ask your baby to, does he play at least one nursery game even if you don’t show him the activity yourself (such as “bye-bye,” “Peeka- boo,” “clap your hands,” “So Big”)?	YES	SOMETIMES	NOTYET
Q3	Does your baby follow one simple command, such as “Come here,” “Give it to me,” or “Put it back,” without your using gestures?	YES	SOMETIMES	NOTYET
Q4	Does your child say three words such as: “Mama, Papa, Tata.”	YES		
Q5	When you ask, “Where is the ball (hat, shoe, etc.)?” does your baby look at the object? (Make sure the object is present. Mark “yes” if she knows one object.)	YES	SOMETIMES	NOTYET
Q6	When your baby wants something, does he tell you by pointing to it?	YES	SOMETIMES	NOTYET
Q7	Does your child like to play with other children:	YES	SOMETIMES	NOTYET

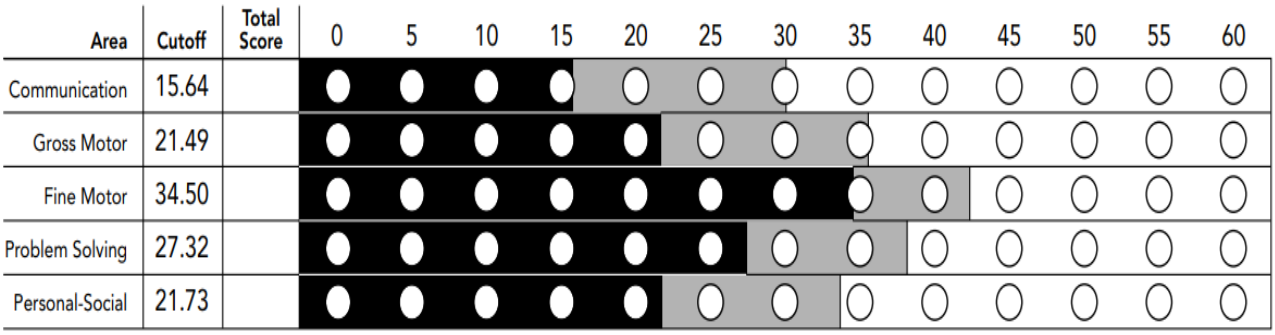
Q8	Does your child like to play with other children, but as they play and without competition:	YES	SOMETIMES	NOTYET
Q9	Does your child like to imitate other children in the way they play?	YES	SOMETIMES	NOTYET
Q10	When you hold out your hand and ask for his toy, does your baby offer it to you even if he doesn't let go of it? (If he already lets go of the toy into your hand, mark "yes" for this item.)	YES	SOMETIMES	NOTYET
Q11	When you dress your baby, does she push her arm through a sleeve once her arm is started in the hole of the sleeve?	YES	SOMETIMES	NOTYET
Q12	When you hold out your hand and ask for his toy, does your baby let go of it into your hand?	YES	SOMETIMES	NOTYET
Q13	When you dress your baby, does she lift her foot for her shoe, sock, or pant leg?	YES	SOMETIMES	NOTYET
Q14	Does your baby roll or throw a ball back to you so that you can return it to him?	YES	SOMETIMES	NOTYET
Q15	Does your baby play with a doll or stuffed animal by hugging it?	YES	SOMETIMES	NOTYET
	Cognition in a 12-month-old child	YES	SOMETIMES	NOTYET
Q16	Does your child understand the meaning of "no", "come", "see":	YES	SOMETIMES	NOTYET
Q17	Does your child want to move independently without your help?	YES	SOMETIMES	NOTYET
Ability to solve problems 12 months				

Q18	When holding a small toy in each hand, does your baby clap the toys together (like "Pat-a-cake")?	YES	SOMETIMES	NOTYET
Q19	Does your baby poke at or try to get a crumb or Cheerio that is inside a clear bottle (such as a plastic soda-pop bottle or baby bottle)?	YES	SOMETIMES	NOTYET
Q20	After watching you hide a small toy under a piece of paper or cloth, does your baby find it? (Be sure the toy is completely hidden.)	YES	SOMETIMES	NOTYET
Q21	If you put a small toy into a bowl or box, does your baby copy you by putting in a toy, although she may not let go of it? (If she already lets go of the toy into a bowl or box, mark "yes" for this item.)	YES	SOMETIMES	NOTYET
Q22	Does your baby drop two small toys, one after the other, into a container like a bowl or box? (You may show him how to do it	YES	SOMETIMES	NOTYET
Q23	After you scribble back and forth on paper with a crayon (or a pencil or pen), does your baby copy you by scribbling? (If she already scribbles on her own, mark "yes" for this item.)	YES	SOMETIMES	NOTYET
Normal motor skills 12 months				
Q24	While holding onto furniture, does your baby bend down and pick up a toy from the floor and then return to a standing position?	YES	SOMETIMES	NOTYET

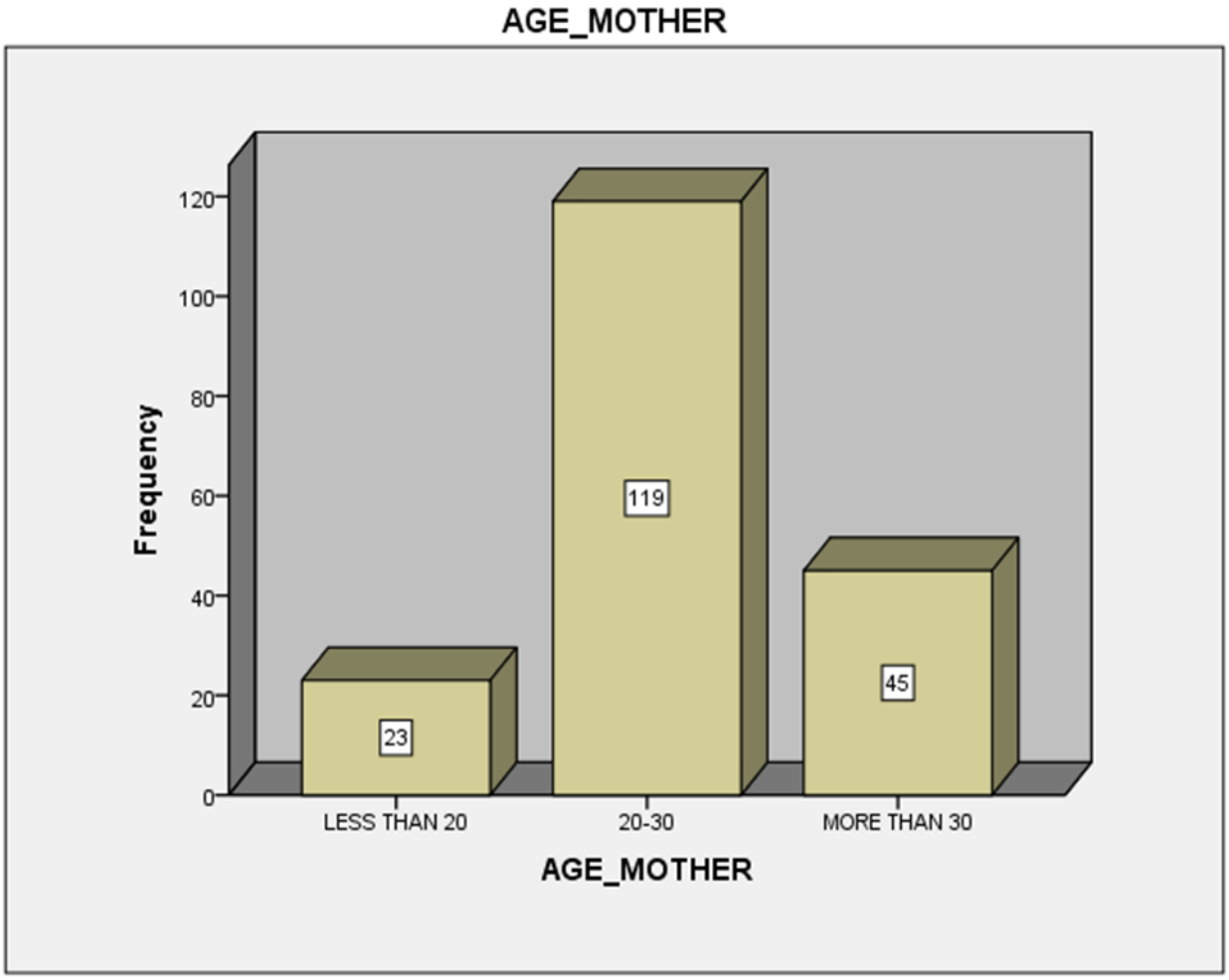
Q25	While holding onto furniture, does your baby lower herself with control (without falling or flopping down)?	YES	SOMETIMES	NOTYET
Q26	Does your baby walk beside furniture while holding on with only one hand?	YES	SOMETIMES	NOTYET
Q27	If you hold both hands just to balance your baby, does he take several steps without tripping or falling? (If your baby already walks alone, mark “yes” for this item.)	YES	SOMETIMES	NOTYET
Q28	When you hold one hand just to balance your baby, does she take several steps forward? (If your baby already walks alone, mark “yes” for this item.)	YES	SOMETIMES	NOTYET
Q29	Does your baby stand up in the middle of the floor by himself and take several steps forward?	YES	SOMETIMES	NOTYET
Fine motor skills 12 months				
Q30	After one or two tries, does your baby pick up a piece of string with his first finger and thumb? (The string may be attached to a toy	YES	SOMETIMES	NOTYET
Q31	Does your baby pick up a crumb or Cheerio with the tips of her thumb and a finger? She may rest her arm or hand on the table while doing it	YES	SOMETIMES	NOTYET
Q32	Does your baby put a small toy down, without dropping it, and then take his hand off the toy?	YES	SOMETIMES	NOTYET

Q33	Without resting her hands or arm on the table, does your child pick up a piece of bread or cornflakes with her thumb or finger?	YES	SOMETIMES	NOTYET
Q34	Does your child throw a small toy by moving his hands forward? (If he can drop it easily, mark “Not Yet” for the item.)	YES	SOMETIMES	NOTYET
Q35	Does your child help you turn the pages of the book? (You may raise the page for him to turn it.)	YES	SOMETIMES	NOTYET

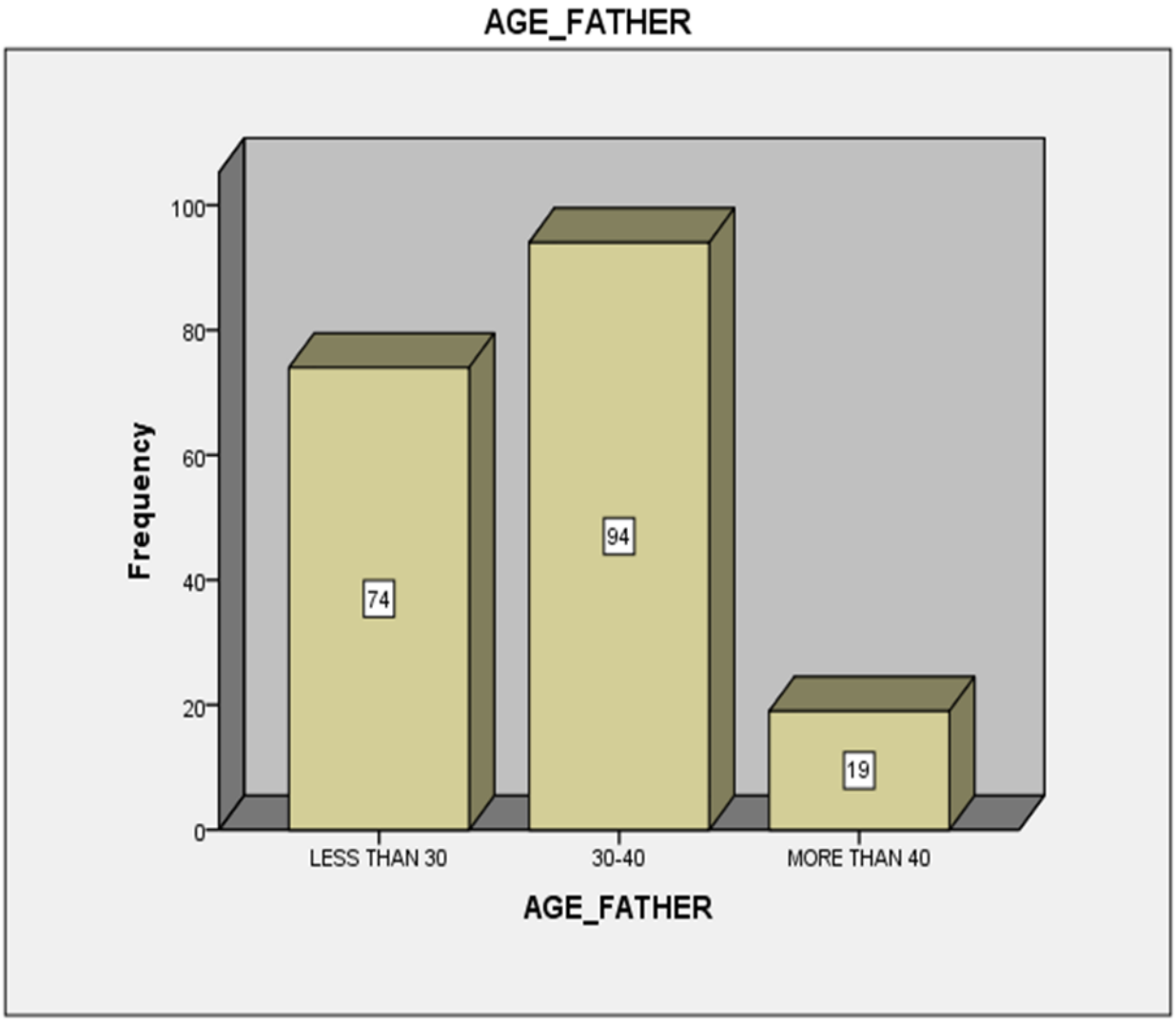
1- SCORE AND TRANSFER TOTALS TO CHART BELOW: See ASQ-3 User’s Guide for details, including how to adjust scores if item responses are missing. Score each item (YES = 10, SOMETIMES = 5, NOT YET = 0). Add item scores, and record each area total. In the chart below, transfer the total scores, and fill in the circles corresponding with the total scores.



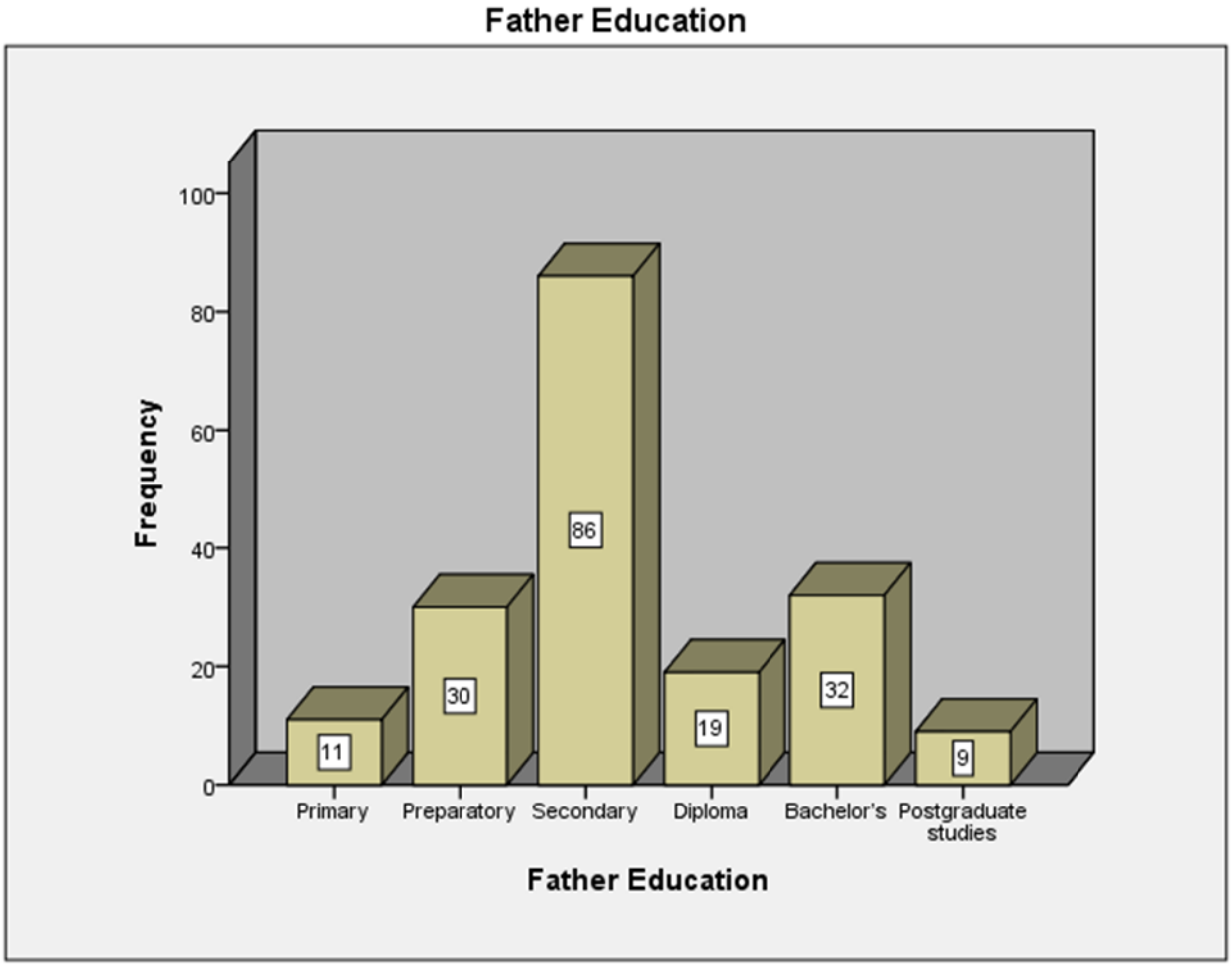
Figures 1: Distribution for mothers' age



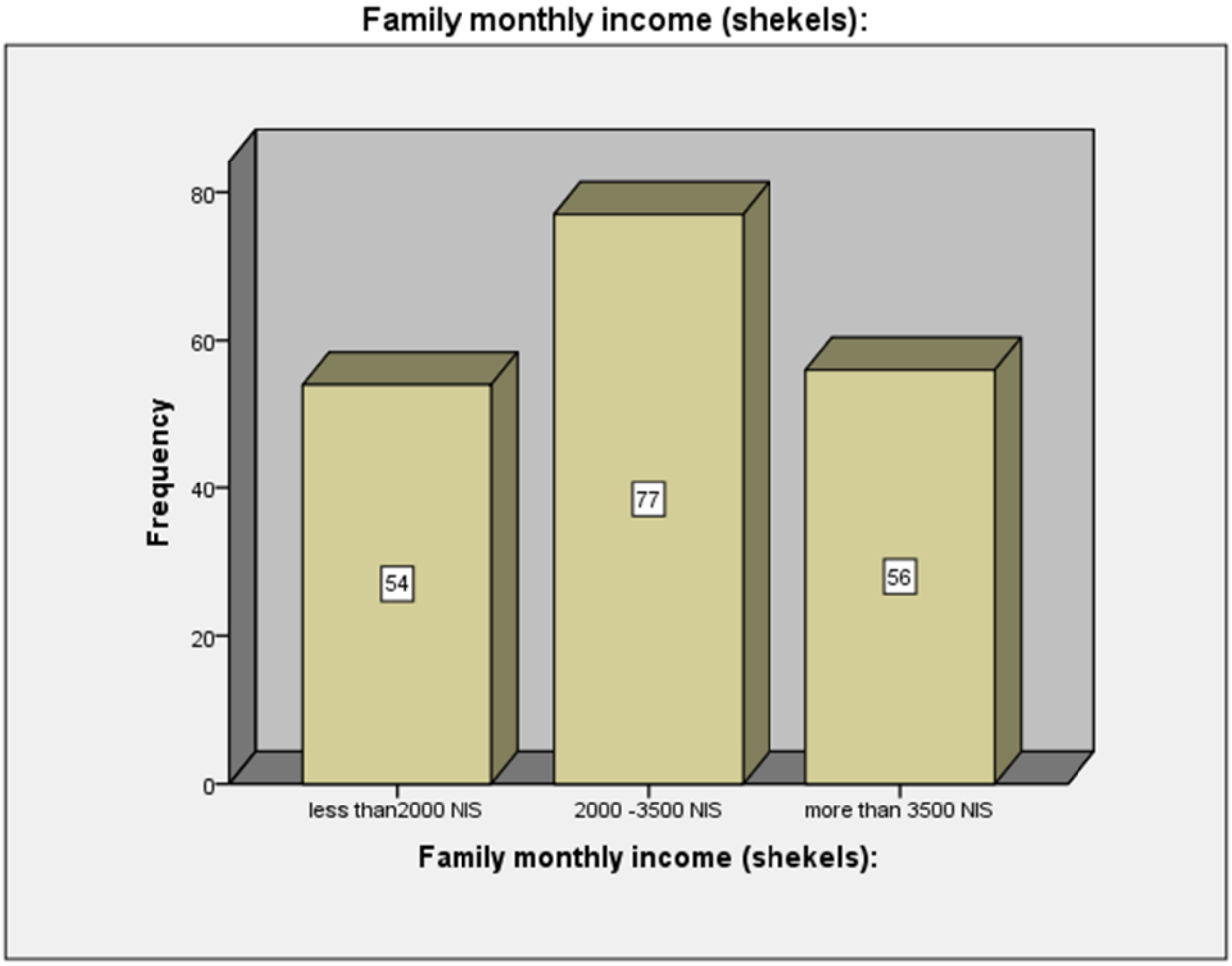
Figures 2: Distribution for fathers' age



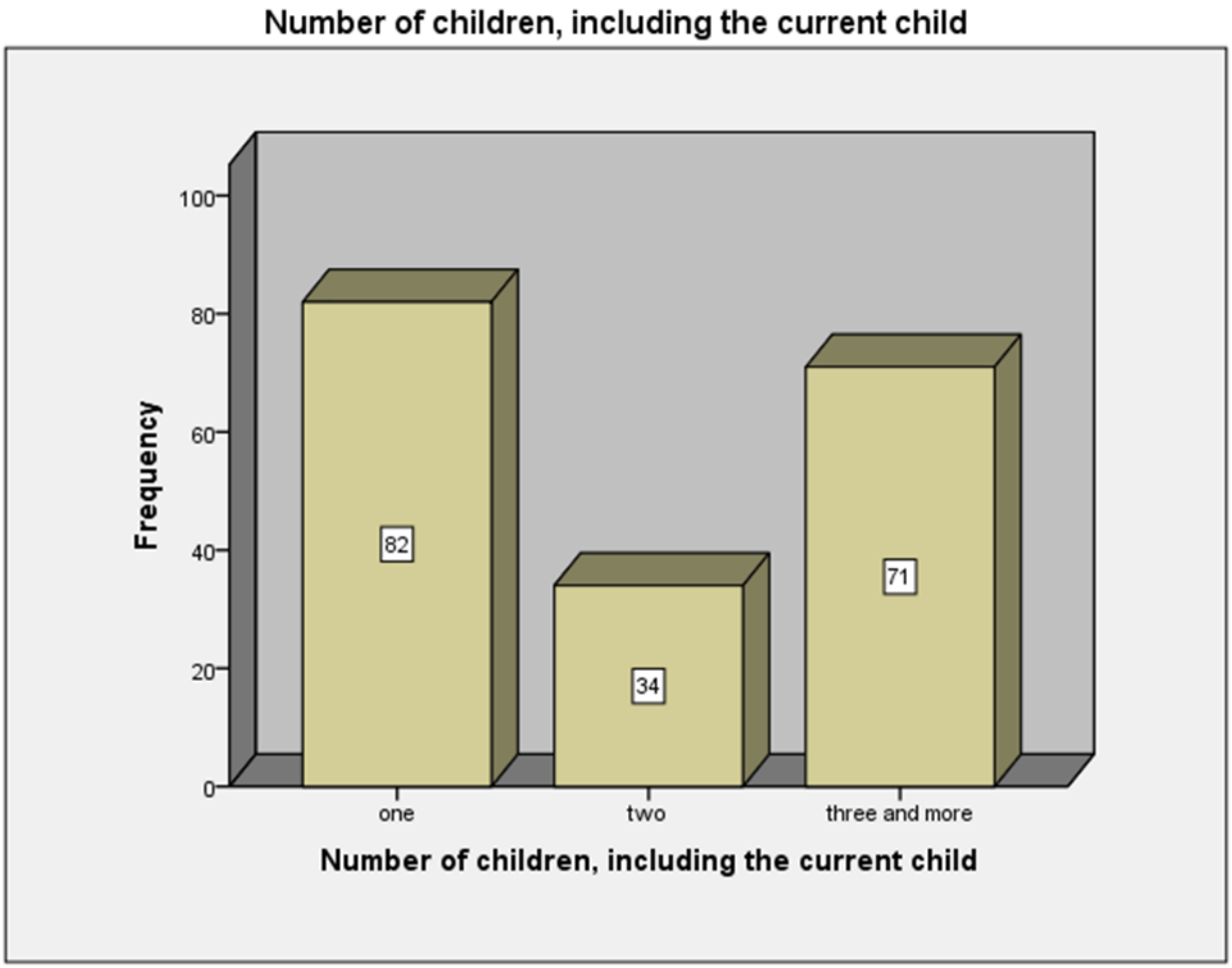
Figures 3: Distribution for fathers' education



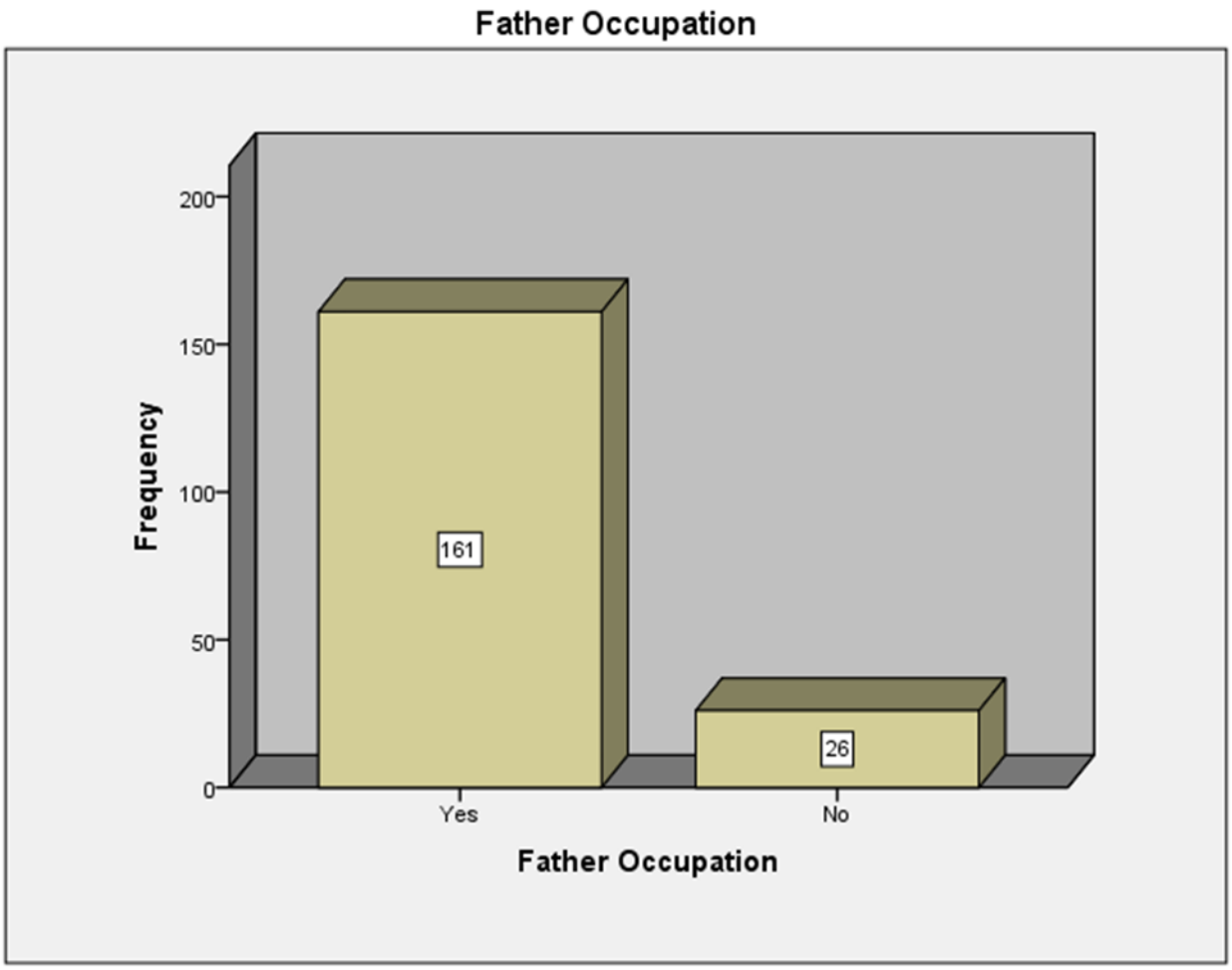
Figures 4: Distribution for Family monthly income (shekels)



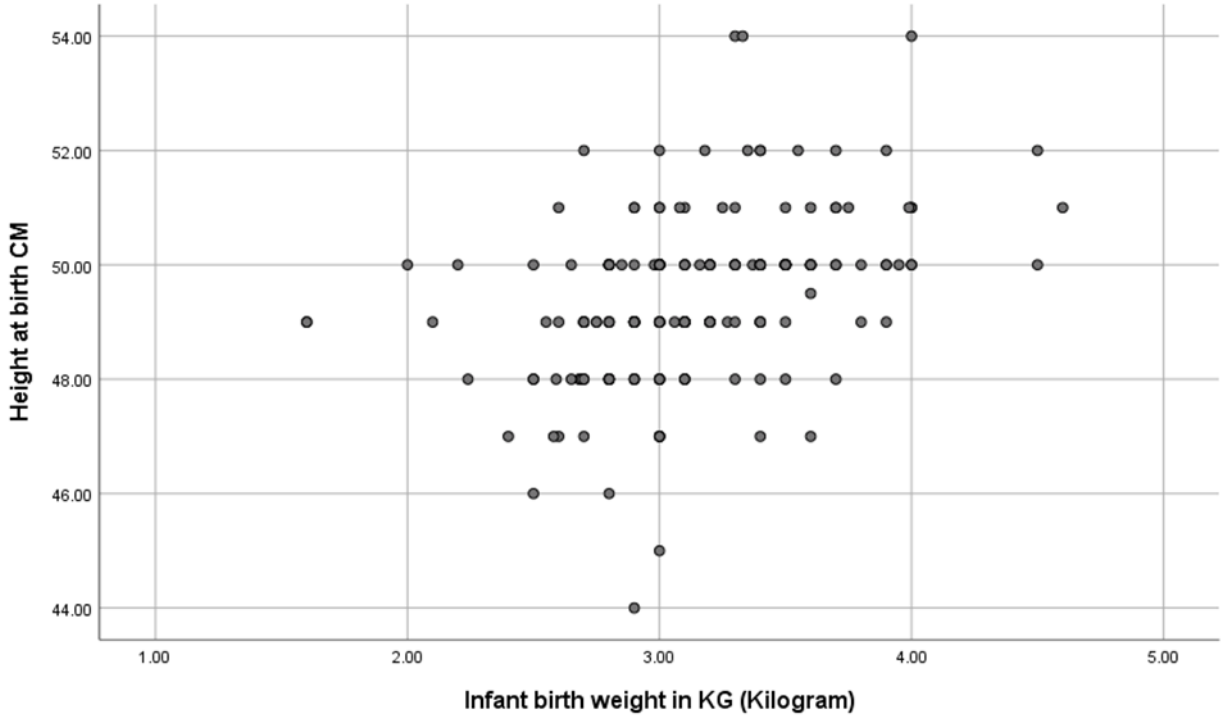
Figures 5: Distribution for Number of children, including the current child



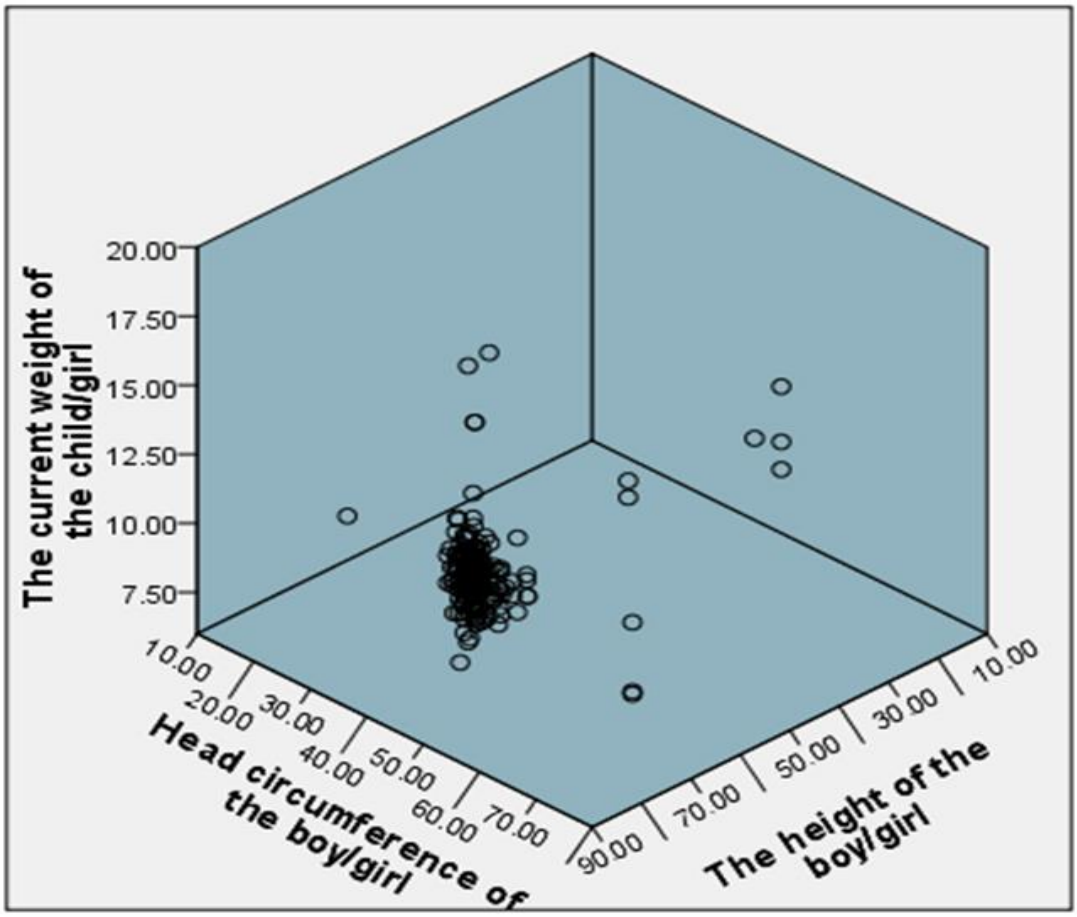
Figures 6: Distribution for Father Occupation



Figures 7: Relationship between Height at birth (in centimeters) and Infant birth weight (in kilograms) was examined using Pearson correlation coefficient and scatter plot



Figures 8: Distribution of (child growth variable)



Al-Quds University جـامـعـة الـقـدس

Jerusalem القدس

School of Public Health كلية **الصحة العامة**

التاريخ : 2023/6/15

عزي زتي الطال بة منال الناطور المحترمة

برنامج ماجستير الصحة العامة

الموضوع: موافقة لجنة اخلاقيات البحث العلمي

قامت اللجنة الفرعية لأخلاقيات البحث التابعة لكلية الصحة العامة بم ارجعة مشروع الرسالة بعنوان: " **Maternal and neonatal factors associated with infant growth and development in UNRWA health care clinics in Ramallah, West Bank**" المقدم من)مشرف البحث/ د. (. مهى نحال

يعتبر مش روعك مستوف يا لمتطلبات أخلاق يات البحث في جامعة القدس .

نتمنى لكم كل التوفيق في تسيير المشروع.

ملاحظة: في حالة الحاجة الى موافقة من اللجنة المركزية في الجامعة، تستطيع التقدم باستخدام هذه الموافقة على ال اربط .https://research.alquds.edu/en/ethics/48-how-to-apply.html

رئيسة اللجنة الف رعية لاخلاقيات البحث

كلية الصحة العامة د .نهى الش ريف

نسخة/ أعضاء لجنة ا لبحث

نسخة/ الملف

بسم الله الرحمن الرحيم

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Jerusalem
School of Public Health

جامعة القدس
القدس
كلية الصحة العامة

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حضرة الدكتور عدنان قرمش المحترم
مدير برنامج الصحة وكالة الغوث/ الضفة الغربية

الموضوع: تسهيل مهمة للطالبة منال الناطور

تحية طيبة وبعد،،
تقوم الطالبة منال الناطور، برنامج ماجستير الصحة العامة/ كلية الصحة العامة/ جامعة القدس، لاعداد بحث رسالة ماجستير بإشراف الدكتورة مها نحال وبعنوان:

"العوامل المرتبطة بالأم والرضيع مع نمو الطفل وتطوره عند عمر السنة في عيادات الوكالة/ منطقة الوسط"

وهي بحاجة الى تقييم معالم النمو والتطور لدى الأطفال والعوامل التي تؤثر عليها في عيادات الوكالة في منطقة الوسط، وذلك عن طريق توزيع استبانة على الأمهات المراجعات لعيادات الوكالة في منطقة الوسط، لذا نرجو من حضرتكم السماح للطالبة بتوزيع الاستبانة على عينة الدراسة ليتسنى لها استكمال اجراءات البحث. علما بان المعلومات ستكون سرية ولاغراض البحث العلمي فقط.

شاكرين لكم حسن تعاونكم،،،

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العوامل المرتبطة بالأم والطفل والمرتبطة بنمو وتطور الرضيع في عيادات الأونروا في منطقة القدس

إعداد: منال شحادة مصطفى ناطور
إشراف: د. مها نحال

المخلص

المقدمة: تشكل صحة الأم ورفاهيتها، بما في ذلك التغذية والصحة العقلية والوصول إلى خدمات الرعاية الصحية، الأساس الأولي لمسار النمو والتطور عند الاطفال. تلعب عوامل الرضيع مثل وزن الولادة وممارسات الرضاعة الطبيعية وحالة التحصين، دورًا حاسمًا أيضًا في تشكيل نمو الطفل وتطوره. من خلال دراسة هذه العناصر، يمكن لمقدمي الرعاية الصحية وصناع السياسات تحديد الفئات السكانية المعرضة للخطر بشكل أفضل، وتصميم التدخلات، وإنشاء سياسات تعزز النتائج الصحية العادلة..
الهدف: تقييم نمو وتطور الطفل البالغ من العمر عامًا واحدًا. علاوة على ذلك، تقييم عوامل الأم والرضيع المرتبطة بنمو وتطور الطفل البالغ من العمر عامًا واحدًا في عيادات الأونروا في منطقة القدس..
المنهجية: استخدمت الدراسة تصميمًا مقطعيًا. يتكون السكان المستهدفون من الرضع والأمهات المسجلين في مراكز الرعاية الصحية التابعة للأونروا في منطقة القدس. تم استخدام طريقة أخذ العينات الملائمة. كان حجم العينة 169 رضيعًا وأمهاتهم. تشكلت أدوات الدراسة من استبيان لتقييم مراحل نمو الرضيع. بالإضافة إلى ذلك، قام الباحث بإجراء قياسات الأنثروبومترية للرضع لتقييم نمو الرضع من حيث (الوزن، الطول، محيط الرأس) بالإضافة الى قياس مؤشر كتلة الجسم حسب المعادلة المقترة من وزارة الصحة العالمية للأطفال في هذا العمر. تم تقييم الخصائص الاجتماعية والديموغرافية للأمهات وكذلك العوامل المتعلقة بالرضيع والأم باستخدام استبيان منظم بناءً على مراجعة الأدبيات. تم ضمان صحة أدوات الدراسة من خلال الالتزام بالإجراءات الموحدة واستخدام أداة موثوقة ومكيفة للسياق الفلسطيني. تم جمع البيانات من قبل الباحث والممرضات المدربات وذلك عن طريق تواجدهم وجهاً لوجه مع الأمهات اللائي طُلب منهن أيضًا ملء الاستبيان...

النتائج: كانت درجات النمو البدني للرضع في هذه الدراسة ضمن النطاق الطبيعي لأعمارهم. كان متوسط وزن الرضيع 10.9

.(SD 2.4) 18.2 ومؤشر كتلة الجسم(SD 5,6 46.2سم (ومحيط الرأس (SD 10.1))، والطول 73.2 سم(SD7.03كجم

أظهرت الدرجات الإجمالية لبنود المعالم التنموية للرضع نطاقًا طبيعيًا وأعلى من نقطة القطع عند مقارنتها بالمخطط المحدد لاستبيانات الأعمار والمراحل. كان متوسط الدرجات الإجمالية للبنود 51.5 للتواصل، و45.6 للمهارات الحركية الإجمالية، و47.5 لحل المشكلات، و49.1 للتطور الاجتماعي الشخصي.، ولكن بالنسبة لمتوسط البنود الإجمالية للتطور الحركي الدقيق 43.5 وهو قريب جدًا من نقطة القطع مما يشير إلى الحاجة للمراقبة والمزيد من المشاركة في أنشطة التعلم.

(r = .475, p < .01)لقد اشارت الدراسة الى وجود ارتباطات ذات دلالة إحصائية بين مؤشر كتلة الجسم ومحيط الرأس

. .(r = .253, p < .01) وأيضا هناك ارتباط مع الوزن بدلالة إحصائية

بالإضافة إلى ذلك اشارت الدراسة الى ارتباط المهارات الاجتماعية الشخصية للأطفال بشكل كبير مع قدرة الطفل على حل (r = .434, p < .01) ومع المهارات الحركية الدقيقة r= .553, p < .01.المشكلات

. وقد أظهرت نتائج الدراسة وجود ارتباطا سلبيًا قويا بين العوامل الأمومية مثل الأمراض المصاحبة للام مع وزن الطفل

. في حين أظهرت العوامل المتعلقة بالرضع مثل الطعام التكميلي وتناول الطفل لفيتامين الف− r = ** 0.400، p < 0.01، r = 0.424 **p < 0.01 ارتباطًا مهمًا بمراحل نمو الطفل

الخلاصة: كشفت الدراسة أن نمو وتطور الرضع كان عند مستوى مقبول مع بعض الاختلافات الطفيفة. إن تحسين خدمات صحة الأم ومعالجة المؤشرات التنموية الرئيسية أمر بالغ الأهمية لتحسين نتائج نمو الطفل في عيادات الأونروا في منطقة القدس. يجب مراقبة نمو الطفل وتطوره بشكل متكرر. لتكون قادرًا على اكتشاف تأخر النمو في مرحلة مبكرة. يوصى بدراسة العوامل البيئية والوراثية الأخرى التي قد تؤثر على نمو الطفل وتطوره.

الكلمات المفتاحية: صحة الأم، نمو وتطور الطفل، عيادات الأونروا، منطقة القدس .