Deanship of Graduate Studies

Al-Quds University

Knowledge, Attitude, and Health Seeking Action Related to Obstetric Danger Signs among Postpartum Women in the Gaza Strip

Abdelrahman Ihab Jamal Hammouda

M. Sc. Thesis

Jerusalem- Palestine

1446 / 2024

Knowledge, Attitude, and Health Seeking Action Related to Obstetric Danger Signs among Postpartum Women in the Gaza Strip

Prepared By**:**
Abdelrahman Ihab Jamal Hammouda

Bachelor of Science in Nursing- Al-Azhar University, Gaza

Supervisor: Dr. Ahmed A. Najim

A Thesis Submitted in Partial Fulfillment of Requirements for the Degree of Master of Maternal and Child Health Nursing at the Faculty of Health Professions - Al-Quds University

1446 / 2024

Al-Quds University

Deanship of Graduate Studies

MCH Nursing Program/Nursing Department

Thesis Approval

Knowledge, Attitude, and Health Seeking Action Related to Obstetric Danger Signs among Postpartum Women in the Gaza Strip

Prepared by: Abdelrahman Ihab Jamal Hammouda
Registration No.: 22112215

Supervisor: Dr. Ahmed A. Najim

Master thesis submitted and accepted. Date: 9/12/2024
The names of signatures of the examining committee members are as follows:

1. Head of committee: Dr. Ahmed Najim Signature……
2. Internal examiner: Dr. Hamza Abed Eljawad Signature……
3. External examiner: Dr.Khalil Shueb Signature……

Jerusalem- Palestine

1446/ 2024

Dedication

For the loving, bright candle, my mother

For the crown of my head, glory and pride, my father

My brother, Dr. Mohammed

For my five sisters, Asmaa, Rjaa, Fatima, Jommana and Saba (my brother's wife)

For my sisters' husbands, Saleh Hammouda and Mr Marwan Aljamal and his father Najde Aljamal

For my sisters' sons and daughters (Dania, Khalil, Najde, Tala, and Mohanad)

For my dear paternal and maternal uncles and aunts, I would like to mention in particular the head of the family, my uncle Waheeb Hammouda (Abo Jamal)

To the souls of my grandfather Jamal Hammouda and Mohammed Alloush and grandmother Fatima and Halema

For the martyrs of the Palestinian revolution: President Yasser Arafat (Abo Ammar), My uncle Majde Hammouda (Abo Omar), My aunt Majeda Hammouda, and My martyr cousin Mohanad Hammouda

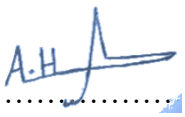
For the martyrs of this war, My cousin martyr Major Jamal Hammouda, My aunt's husband, Mr Ahmed Adel Hammouda, and my aunt's husband, Jaber Alloush

For my cousins, relatives, friends, and colleagues

For all those interested in science and education, I dedicate this effort and research

Declaration

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

Signed: 

Abdelrahman Ihab Jamal Hammouda

Date: 9/12/2024

Acknowledgement

First and foremost, I want to thank Allah, who guided me in completing this research and reaching this level of education.

I want to express my profound thanks and appreciation to everyone who contributed with me in word or deed to complete this research. I want to mention Dr. Ahmed Najim, who had the honour of supervising this research from beginning to end; his manners, kindness, guidance, and comments enriched this research in value and Knowledge.

I also express my profound thanks to the maternal and child health nursing staff at Al-Quds University, especially Dr. Hamza Abd AL Jawad and Dr. Hatem Aldebakhe, for their continuous guidance and great support.

Also, I would like to thank the experts who evaluated the study tool.

Also, I want to express my deep thanks and gratitude to my midwife sister Fatma and Dr. Saba (my brother's wife) for their efforts in data collection.

I also acknowledge Dr. Samira Abo Alshiekh for her effort in statistical analysis and great guidance.

I want to thank RN. Mohammed Alqanoua for his great support and guidance, and I would like to thank Dr. Atef Alqanoua for his help with grammar, writing, and pronunciation.

And thanks are extended to my colleagues in the maternal and child health nursing program.

Thank you all

With my appreciation and respect

Abdelrahman Hammouda

Abstract

Background: The maternal mortality rate (MMR) remains at an unacceptably high level, with many deaths potentially preventable. The study aimed to assess the knowledge, attitudes, and health-seeking actions related to obstetric danger signs (ODS) and associated factors among postpartum women attending postnatal care in the Gaza Strip. **Materials and Method**s: An analytical cross-sectional study was conducted over 20 months, from March 2023 to October 2024. The study included 383 women who had recently given birth and attended governmental primary health care (PHC) centres for BCG vaccination or postpartum (within 42 days after delivery) care, regardless of the place or outcome of delivery. A convenient sampling technique was used, and governmental PHC centres were conveniently selected, with one from each Gaza Strip governorate. Data was collected using an expert-evaluated, structured interview questionnaire, and its reliability was confirmed using Cronbach's alpha coefficients (0.952 for Knowledge and 0.724 for attitude). The data were analyzed using the SPSS program.

Results: The mean age of participants was 26.3 years, and 56% demonstrated adequate Knowledge of ODS. Additionally, 67.1% exhibited positive attitudes, and 65.4% of women who experienced ODS took appropriate health-seeking actions by visiting a healthcare facility. A significant relationship was found between health-seeking action and women's Knowledge, though there was no significant association with their attitudes. Employed women were 4.5 times more likely to have adequate ODS knowledge than unemployed women (OR = 4.49, CI = 1.494–13.514). Husband's education level also impacted women's Knowledge; women whose husbands had secondary education were 3.5 times more likely to have adequate knowledge than those with less-educated husbands (OR = 3.5, P = 0.003, CI = 1.549–7.951), with a stronger association for those whose husbands had higher education (OR = 4.52, P = 0.001, CI = 1.82–11.18). Attending only governmental clinics during antenatal care (ANC) was associated with a 67.2% decrease in the likelihood of being knowledgeable about ODS compared to attending governmental and private clinics (OR = 0.328, CI = 0.152–0.708). The study also identified two factors significantly associated with attitude levels: receiving counselling during ANC visits about the benefits of delivering in a healthcare facility ($\chi^2 = 4.733$, $p = 0.03$) and the place of delivery, with women delivering in governmental hospitals more likely to exhibit positive attitudes than those delivering in private hospitals ($\chi^2 = 4.951$, $p = 0.026$).

Conclusion: This study highlights the critical role of women's knowledge about ODS in seeking appropriate actions during pregnancy, labour, and postpartum. While most women demonstrated adequate knowledge and positive attitudes, significant gaps remain, particularly influenced by factors such as employment status, husband's education, family size, and the location of healthcare facilities accessed during ANC visits. These findings suggest that improving access to comprehensive maternal health education for women and their families, as well as enhancing counselling services, may be key strategies for improving maternal health outcomes and reducing maternal mortality in the Gaza Strip.

Table of Contents

List of tables

List of figures

List of Annexes

List of Abbreviations

ANC	Antenatal Care
BCG	Bacilli Calmette-Guerin
MMR	Maternal Mortality Rate
MoH	Ministry of Health
NIS	New Israeli Shekel
ODS	Obstetric Danger Signs
PCBS	Palestinian Central Bureau of Statistics
PHC	Primary Health Care Centres
SPSS	Statistical Package for the Social Sciences
UNICEF	The United Nations International Children's Emergency Fund
WHO	World Health Organization

Chapter One
Introduction

1.1 Background

The maternal mortality rate (MMR) remains within an unacceptable range. Globally, approximately 287,000 women died during pregnancy and childbirth in the year 2020. Nearly 95% of all maternal mortality in 2020 occurred in low- and middle-income countries, the majority of which could have been prevented, as reported by the World Health Organization (WHO) (WHO, 2024).

The MMR in Palestine was 47.7 per 100,000 live births in 2021, with 66 maternal deaths (32 in the West Bank and 34 in the Gaza Strip) as reported by the Palestinian Ministry of Health (MoH) (MoH, 2022),

Around the world, obstetric issues account for 80% of maternal mortality. This includes diseases, obstructed and drawn-out labour, bleeding, unsafe abortions, pregnancy-induced hypertension, and other matters (Teshoma et al., 2020).

One of the leading causes of maternal mortality in countries with limited resources is inadequate awareness of obstetric danger signs (ODS) among mothers and their families. Increasing knowledge or understanding of the major ODS is essential to prepare women and their families for early and appropriate decisions and actions if obstetric dangers emerge (Ahmed et al., 2023). However, health-seeking actions were reported to be low among Arab women in Jordan, Saudi Arabia, and Egypt (Al-Matarneh et al., 2023; Maki et al., 2023; Zaki et al., 2021).

According to the Palestinian MoH, the essential factor associated with maternal mortality in Palestine is the occurrence of complications resulting from pregnancy and childbirth, such as bleeding that follows childbirth, infection (usually occurs after childbirth), high blood pressure during pregnancy, unsafe abortion, and the rest of deaths occurs due to exposure during pregnancy to diseases such as anemia (MoH, 2022).

Given the high rate of maternal mortality, the causes of the deaths should be investigated. The researcher has studied how much women know about ODS and their attitudes. The

appropriateness of health-seeking action after symptoms occur was also studied. This will help in planning strategies to meet the needs of women in Gaza regarding ODS.

1.2 Problem Statement

Life-threatening obstetric problems commonly occur in developing countries during labour and the postpartum periods (Bintabara et al., 2017). Obstetrical complications might arise unexpectedly throughout pregnancy (Nkamba et al., 2021). Every year, obstetric complications account for around 80% of maternal deaths worldwide. These complications encompass a variety of serious issues, including obstructed labour, haemorrhage, unsafe abortions, and pregnancy-induced hypertension (Teshoma Regasa et al., 2020). In many countries with limited resources, awareness of these complications as a significant cause of maternal deaths is significantly low (Muktar Ahmed et al., 2023).

In Palestine, the MoH has identified the lack of information regarding the importance of proper care during pregnancy and childbirth as a significant factor contributing to maternal deaths. This knowledge gap often results in inadequate healthcare for women, leading to severe complications such as primary haemorrhage, postpartum infections, gestational hypertension, unsafe abortions, and even deaths caused by conditions that occur during pregnancy, such as anaemia (MoH, 2022).

This research aims to assess women's knowledge and attitudes regarding ODS and the factors that influence them to explore how the lack of information and understanding of ODS contributes to the high rates of maternal mortality in the region. By addressing these challenges, more effective strategies can be developed to meet the needs of women in the Gaza community concerning obstetric complications.

1.3 Justification of the Study

The identification of ODS and their relation to complications during pregnancy would enhance the ability of women, their husbands, and their families to seek timely healthcare. Increasing knowledge and awareness of ODS should be prioritised, as it prepares women and their families to take prompt and appropriate action if ODS occur (Hibstu & Siyoum, 2017).

Delays in seeking and receiving expert care are caused by the lack of knowledge of risk signs and symptoms during pregnancy, labour, and postpartum (Nurgi et al., 2017). According to previously published medical studies, 69% of maternal deaths in Gaza are avoidable. One in every fourth pregnant woman in Palestine is considered high-risk and requires specialised health care during pregnancy (UNICEF, 2019).

In line with the existence of an unacceptable MMR, the absence of a specific protocol for prevention and reduction of the risks of maternal mortality, lack of knowledge of the importance of women receiving necessary care during pregnancy and childbirth according to the MoH, as well as the lack of studies investigating women's knowledge of ODS in Palestine. The research is conducted to assess women's knowledge, attitude, health-seeking actions towards ODS, and associated factors among postpartum women attending ANC in the Gaza Strip, which will contribute to setting recommendations if any information gap is exciting. This may affect health-seeking action positively toward seeking healthcare from a health facility if any symptom has occurred.

1.4 Study Objectives

1.4.1 Study Aim

The study aims to assess knowledge, attitude, health-seeking actions towards ODS, and associated factors among postpartum women attending postnatal clinics in the Gaza Strip.

1.4.2 Specific Objectives of the Study

1. To determine the level of knowledge about ODS among postpartum women.
2. To assess the level of attitude towards ODS among postpartum women.
3. To examine factors affecting knowledge about ODS among postpartum women.
4. To examine factors affecting attitude towards ODS among postpartum women.
5. To determine the appropriateness of health-seeking actions among postpartum women after they faced ODS.
6. To predict factors affecting women's knowledge of ODS.

1.5 Research Questions

1. What is the level of postpartum women's knowledge of ODS?
2. What is the level of postpartum women's attitude related to ODS?

3. Is there a relationship between women's knowledge of ODS and their demographic characteristics?
4. Is there a relationship between women's knowledge of ODS and their obstetric characteristics?
5. Is there a relationship between women's attitudes toward ODS and their demographic characteristics?
6. Is there a relationship between women's attitudes toward ODS and their obstetric characteristics?
7. Is there a relationship between women's knowledge and health-seeking actions when facing ODS?
8. Is there a relationship between women's attitudes and health-seeking actions when facing ODS?
9. What are health-seeking actions among postpartum women after they face ODS?

1.6 Theoretical and Operational Definitions

1.6.1 Obstetric danger signs (ODS)

ODS are clinical indicators or symptoms experienced by a pregnant woman that suggest complications with either her health or the pregnancy (Terefe et al., 2020).

ODS can occur during pregnancy, childbirth, and postpartum. Blurred vision, severe vaginal bleeding, and swollen hands/face are common danger indicators during pregnancy. Common danger indications during childbirth include severe vaginal bleeding, retained products of concept tissue/retained placenta, convulsions, and prolonged labour (>12 hours). Fever, severe vaginal bleeding, and foul-smelling vaginal discharge are among the most significant danger indicators during postpartum.

1.6.2 Women's knowledge related to ODS

Knowledge is "a collection of experience, appropriate information and skilled insight which offers a structure for estimating and integrating new experiences and information" (Mohajan, 2016).

The researcher operationally defines knowledge as measured by the total score obtained by the study participants on their understanding of the ODS questionnaire.

1.6.3 Attitude of women related to ODS

Eagly and Chaiken (1993, p. 1) define an attitude as “a psychological tendency expressed by evaluating a particular entity with some degree of favour or disfavour”.

The researcher operationally defines attitude as measured by the total scores obtained by study participants on the questionnaire regarding their attitude toward ODS.

1.6.4 Health Seeking Action of Women Related to ODS

Health-seeking action refers to the actions made by individuals who believe they have a health condition or are ill to locate a suitable solution (Haileamlak, 2018).

The researcher operationally defines health-seeking activity as the total scores of study participants on the questionnaire reporting their actions towards addressing ODS.

1.6.5 Postpartum Women

The postpartum phase commences promptly following childbirth and lasts up to six weeks (42 days) (WHO, 2022).

The researcher operationally defines the postpartum phase as commencing promptly following childbirth and women who visit the postnatal clinic for up to six weeks (42 days).

Chapter Two

Conceptual Framework and Literature Review

2.1 Conceptual framework

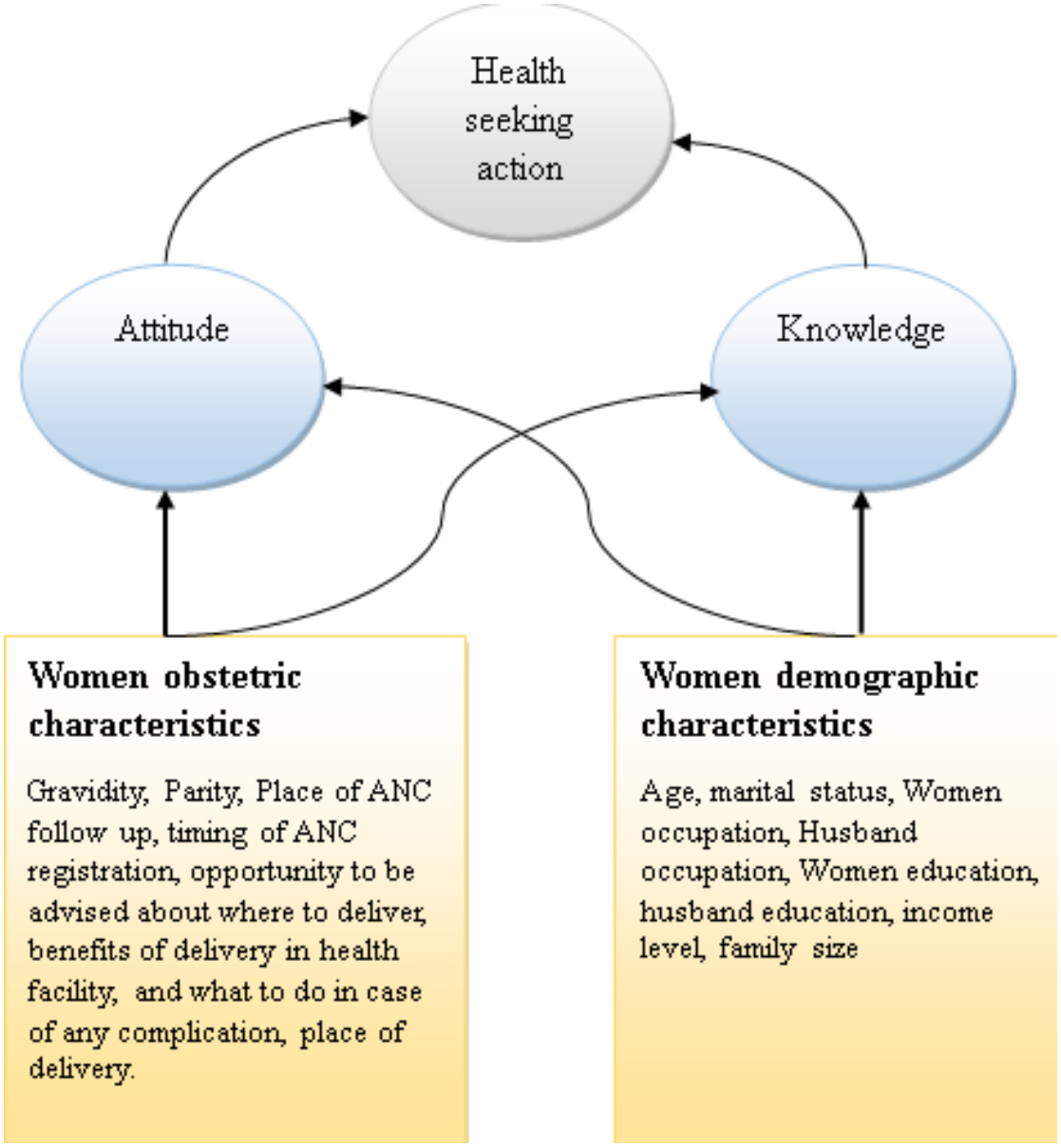


Figure (2.1): Conceptual framework: Self-developed

The conceptual framework specifies several independent variables hypothesised to determine women's knowledge and attitudes towards ODS and their consequent health-

seeking actions. Demographic characteristics, obstetric characteristics, and health-seeking actions are the three primary categories into which these variables can be classified.

2.1.1 Demographic Characteristics

Demographic factors are critical social and economic contexts influencing women's knowledge and comprehension of health issues such as ODS. Among these factors are age, Education level, husband's education level, Income and occupation, and Family size.

2.1.2 Obstetric Characteristics

A woman's knowledge and readiness to seek appropriate healthcare after experiencing ODS are directly influenced by obstetric factors. These factors are related to her reproductive health history and access to maternity care. They include gravidity and parity, the site of ANC follow-up, the timing of ANC registration, opportunities for counselling, the delivery location, and the benefits of giving birth in a healthcare facility.

2.1.3 Health-Seeking Action

The relationship between health-seeking actions and women's knowledge and attitudes is essential to this framework. The information women possess and their attitudes toward ODS significantly affect their health-seeking behaviour, specifically how they respond to health issues during pregnancy, childbirth, and the postpartum period.

2.1.4 Knowledge of ODS

The framework suggests that women with a more thorough understanding of obstetric ODS are likelier to seek help from a healthcare facility. They recognise the importance of professional care and are more proactive in obtaining assistance from healthcare providers.

2.1.5 Attitude

The framework suggests that improved attitudes and enhanced knowledge can positively influence women's health-seeking actions. For example, women who understand the risks associated with homebirths or the benefits of institutional care are significantly more likely to deliver in a healthcare facility. Similarly, women with a positive attitude towards healthcare services are more likely to seek prompt assistance when they observe any signs of ODS.

In conclusion, this conceptual framework highlights the intersection of demographic and obstetric factors that affect women's knowledge, attitudes, and actions regarding ODS. Understanding these relationships enables the development of targeted interventions to improve maternal health outcomes.

2.2 Literature Review

2.2.1 Background

This chapter comprehensively explores the key variables and concepts central to the study, specifically focusing on knowledge, attitude, and health-seeking actions related to ODS among postpartum women. It begins with precise definitions of the study variables and relevant concepts to clearly understand the research framework. Subsequently, an in-depth review of previous studies in the field is presented. The review encompasses global, regional, and local perspectives, ensuring a holistic understanding of the subject matter. This approach allows for identifying knowledge gaps and contextualising findings within the unique socio-cultural and healthcare context of the Gaza Strip.

2.2.2 Definition of ODS

ODS are any symptoms the woman experiences that place her pregnancy at risk. Symptoms include loss of consciousness, prolonged vomiting, severe chronic stomach pain, vaginal haemorrhage, swelling of the face, digits, and feet, blurred vision, fits of pregnancy, severe recurring frontal headache, and high-grade fever (Terefe et al., 2020). Therefore, pregnancy danger signs are the symptoms that should serve as early danger signs for both the mother and the fetus, requiring immediate medical attention (Wassihun et al., 2020).

ODS are divided into three categories: throughout pregnancy, during childbirth, and postpartum. Common danger signs during pregnancy include vaginal bleeding, blurred vision, and swollen hands and face. Common danger signs during childbirth include severe vaginal bleeding, prolonged labour (>12 hours), retained products of conception, and convulsions. Significant danger signs during the postpartum period include foul-smelling vaginal discharge, severe vaginal bleeding, and fever (Regasa et al., 2020). To lower the chances of maternal and fetal death, it is critical to recognise these symptoms to receive prompt medical attention (Emeh et al., 2021).

2.2.3 Importance of identifying ODS during postpartum.

Numerous disorders that cause maternal mortality and contribute to prenatal deaths can have abrupt and severe onsets, and they are often unexpected. Thus, awareness of the early danger signs of obstetric problems is a crucial first step for seeking a suitable and prompt referral for obstetric and newborn care (Asfaha et al., 2022). However, lack of information

concerning ODS leads to delayed requesting and getting qualified medical services. Thus, it is critical to identify these danger signs as soon as possible to prevent delays in seeking medical care (Regasa et al., 2020).

If mothers fail to notice the dangerous symptoms of pregnancy, pregnancy itself, the developing baby, or the mother herself may suffer negative consequences. Among the negative impacts are the following: heavy bleeding, for example, can cause anaemia, the mother's death, or an infection that infects the fetus through an early rupture of the membranes caused by amniotic fluid leaking from the vagina. If left untreated, this may result in vaginal bleeding, premature pregnancy termination, and morbidity and death in the fetus or newborn. Premature births and neonatal fatalities can be caused by maternal hypertension or fever. These newborns may die later from lack of access to proper treatment (Asfaha et al., 2022).

2.2.4 A global perspective on maternal morbidity and mortality related to ODS

According to the WHO, 287,000 women lost their lives in 2020, both during and after getting pregnant and giving birth. In 2020, low- and lower-middle-income nations accounted for about 95% of the total maternal mortality, the majority of which could have been prevented (WHO, 2024). Maternal death after childbirth has highly detrimental effects on the family, especially on the children who are left without a caregiver and has an adverse effect on the economy and societies of the countries in which they occur. If women with danger signs can recognise and seek proper emergency obstetric treatment, the majority of maternal fatalities can be prevented. There are direct and indirect reasons for maternal mortality. Direct obstetric problems, such as severe postpartum haemorrhage, infections following delivery, unsafe induced abortions, hypertensive disorders throughout pregnancy, and obstructed labour, are responsible for over 85% of mother fatalities globally. Maternal death might have been prevented if the woman and her family had recognised the danger signs and sought prompt medical care, a high-quality hospital could have been found, and transportation could have been conveniently accessed (Wassihun et al., 2020).

2.2.5 The significance of receiving medical care and early detection of danger signs.

Maternal mortality can be prevented by receiving qualified medical attention before, during, and after childbirth. If women experiencing problems can recognise and seek out the necessary emergency obstetric treatment, it can mean what stands between life and death.

The use of qualified personnel during low-risk deliveries and urgent maternal health care in complicated situations in low-income countries can be improved by being aware of ODS as well as being birth-prepared. More knowledge and awareness are required to reduce the time it takes to get to a medical facility and seek treatment. In addition to being equipped to identify pregnancy-related danger signs, the community and women must also be able to respond immediately and effectively if problems occur (Nyfløt & Sitras, 2018).

2.2.6 Knowledge of ODS

2.2.6.1 Definition of Knowledge of ODS

The degree to which a pregnant woman utilises her awareness of the symptoms and signs of pregnancy difficulties to help the mother and family seek medical attention right away is known as the woman's Knowledge of maternal danger signs. High rates of maternal and newborn death occur in undeveloped nations because of a group of factors, including mothers' ignorance and a lack of access to and quality of health care (Yunitasari et al., 2023).

Magesa et al. (2023) established three categories of knowledge for ODS: adequate knowledge, poor knowledge, and no knowledge. Women who reported four or more risk signs during pregnancy were classified as having sufficient knowledge, those who noted one to three danger signs as having poor knowledge, and those who did not mention any danger symptoms as having no knowledge.

Knowledge of ODS is defined operationally in various forms within different studies. Bolanko et al. (2021) considered a pregnant woman to have a good understanding of these signs if, during each of the three phases of pregnancy, labour/birth, and postpartum, she mentioned at least two of the danger signs on her own. If not, she was considered to have poor knowledge of these signs. Regasa et al. (2020) regarded a woman as knowledgeable if she could recall at least five essential danger signs without prompting throughout the three stages of childbirth (pregnancy, labour, and postpartum).

2.2.6.2 Review of studies assessing women's knowledge of ODS globally, regionally and locally.

Wassihun et al. (2020) evaluated the knowledge of ODS in Ethiopia by asking questions about pregnancy and childbirth-related risk signs. Overall, 40.5% of the responders had a high knowledge level of ODS. Similarly, other community-based studies in Northwest Ethiopia showed that 39% of the respondents were aware of ODS (Mihret & Wondimu,

2023). In the same line with the above studies, in Tigray, the northernmost regional state in Ethiopia, 42% showed a high degree of knowledge regarding ODS, according to Asfaha et al. (2022).

Another study reported a lower level of knowledge among pregnant women in South Ethiopia, as 16.8% of the respondents were knowledgeable about ODS in the three phases, with at least one in each phase (Regasa et al., 2020). Likewise, in North Delhi, India, Bej's (2020) study showed that the women's level of knowledge of ODS is inadequate, as only 17% were found to be knowledgeable about ODS.

Compared with the above studies, a higher percentage of women (66.3%) had good knowledge of ODS, according to a survey by Koovimon et al. (2023) in Thailand. Furthermore, Olatoye et al. (2022) study in Osun State in Nigeria showed that 62.3% of surveyed women had an excellent knowledge of ODS throughout pregnancy. According to Mekonnen et al. (2022), a more significant proportion of women (72%) in Aman Town, Pakistan, were aware of ODS throughout pregnancy, 70.1% were aware of ODS after childbirth, and around half of women (51%) were aware of postpartum ODS.

In Arab countries, a recent study conducted in Riyadh, Saudi Arabia, aimed to investigate pregnant women's knowledge of maternity issues. It showed that approximately 45.5% knew the danger signs that could arise during pregnancy, delivery, or after delivery (Maki et al., 2023). Another study conducted in Jordan showed that nearly 41% of the participants knew enough about ODS in pregnancy (Al-Matarneh et al., 2023).

In Palestine, a study conducted by Elsous et al. (2022) evaluated the level of knowledge that women in the Gaza Strip possess regarding ODS. The results indicated that women had adequate knowledge about ODS during pregnancy, labour, and postpartum. In particular, most of the study participants (82.6%) had sufficient knowledge of ODS that may manifest during pregnancy. Additionally, approximately 71% of the participants had adequate knowledge regarding ODS during labour. Moreover, over two-thirds (68.1%) of them were found to have sufficient knowledge regarding ODS that may manifest during the postpartum period.

2.2.6.3 Most Common ODS Reported by women in different studies.

A study conducted in Ethiopia showed that vaginal haemorrhage was the most frequently reported danger sign in pregnancy (64.7%), followed by absent or reduced fetal movements

(386.6%) (Wassihun et al., 2020). Also, haemorrhage was the most frequently reported danger sign during labour (60%), followed by decreased or nonexistent fetal movements (28.1%). Furthermore, the two most frequently reported danger signs during the postpartum period were postnatal fever and postnatal haemorrhage (63.3%). In Thailand, vaginal haemorrhage was the most frequently mentioned ODS during pregnancy and labor (Koovimon et al., 2023).

Iliyasu et al. (2019) evaluated pregnancy-related danger indications in Kano, Northern Nigeria. Convulsions (44.5%), haemorrhage from the vagina (76.8%), and severe abdominal distress (34.8%) were the most frequently reported ODS during pregnancy. Severe haemorrhage (77.8%), convulsions (55.5%), and loss of attention (38.3%) were the most prevalent intrapartum risk indicators. Severe bleeding (80.5%), convulsions (42.0%), and fever (28.5%) were the most prevalent danger indicators during the postpartum period.

Similarly, vaginal haemorrhage (82.5%) was the most frequent danger sign during pregnancy, according to Kumar et al. (2019) hospital-based study in New Delhi, and heavy bleeding was the only danger sign determined by women in the postpartum period (59.9%). Only 7.1% recognized convulsions as a dangerous sign of pregnancy.

John and George's study in India (2020) also reported that the majority (92%) of participants knew that bleeding from the vagina was a danger sign, 85% knew that a lack of adequate fetal movements was an alert sign too, 75% knew that the abdominal pain was dangerous, 68% knew that vomiting frequently was an alert sign, while only 41% knew that seizures were a danger sign.

In the same line with the above studies, Elsous et al. (2022) study showed that the most reported maternal danger sign during pregnancy was vaginal bleeding (71.4%) and severe abdominal pain (69.6%). Additionally, the common danger signs that the mother reported during labour include vaginal haemorrhage (87.1%), prolonged labour (lasting more than 12 hours) (63.2%), and high-grade fever (60.7%). Furthermore, 96.6% of the surveyed women recognized severe vaginal haemorrhage as a danger sign during the postpartum period, while 77.1% of them identified high-grade fever post-delivery as a danger sign.

2.2.6.4 Source of Information about ODS for Pregnant Women

The data regarding ODS for pregnant women can be derived from various sources. Zaki et al. (2021) study at Al Mansoura City in Egypt showed that around 46.7% of the study participants obtained information about ODS from their families, relatives, or friends. Additionally, around 34.7% of the participants relied on obstetricians and nurses as a source of maternal knowledge regarding ODS. Furthermore, 11.6% of women used the media/internet to obtain ODS-related information and 7% used books as a source for information on ODS.

In Elsous et al.'s (2022) study, participants similarly used different sources to gain information regarding ODS during pregnancy, labour, and postpartum. Self-reading was the most named source of information by the surveyed women, followed by information gained from health facility education and, finally, information from family members, especially the ladies' mothers and mothers-in-law.

According to Mihret and Wondimu (2023), most women said they had received advice on maternal issues; 91.2% said they had received related information at their antenatal care (ANC) visits in health centres, thus demonstrating a major dependence on direct healthcare providers. Additional information sources include television (15.25%) and radio (1.69%).

2.2.7 Factors Influencing Knowledge Levels

2.2.7.1 Sociodemographic and Economic Factors

Many noticeable correlations between respondents' knowledge of ODS and a range of socio-demographic and economic characteristics were reported via different studies, as shown below:

1. Age

As shown in the Regasa et al. (2020) study, women's knowledge of ODS was strongly associated with their age. Additionally, Bolanko et al.'s (2021) study showed that maternal age was strongly associated with ODS knowledge. Further, Emeh et al.'s (2021) study showed that older women were more knowledgeable than their younger counterparts. Furthermore, several studies emphasized that maternal age strongly predicted improved ODS knowledge (Koovimon et al., 2023; Mihret & Wondimu, 2023; Maki et al., 2023).

2. Educational attainments for women and their husbands

The educational status of a mother is directly correlated with her knowledge of ODS. Those who had received formal education demonstrated a significantly higher level of knowledge than those who did not (Wassihun et al., 2020). Similarly, Regasa et al. (2020) found that the mother's education level was significantly correlated with her knowledge of ODS. Additionally, Ahmed et al. (2023) conducted a study in Somaliland that demonstrated a significant correlation between the educational level of women and their partners and their awareness of pregnancy-related danger signs.

3. The occupations of women and their spouses, Salary per month

Employment status also impacts knowledge. In contrast to housewives, respondents employed by governmental organizations had a greater level of knowledge, indicating that their profession may affect their ability to access education or knowledge (Wassihun et al., 2020). Other studies demonstrated that women's knowledge about ODS was correlated with the average monthly income and maternal occupation (Bolanko et al., 2021; Regasa et al., 2020).

2.2.7.2 Obstetric-Related Factors

1. Gravity and Parity

A strong correlation between the knowledge of ODS and the gravidity and parity state of women was found in previous research (Regasa et al., 2020). Multigravidity and multiparity were found to be associated with an increase in maternal knowledge of ODS. The study conducted by Bolanko et al. (2021) also demonstrated a significant correlation between the knowledge of ODS and each of parity and gravidity. Elsous et al. (2022) also confirmed that the number of births was correlated with maternal knowledge of danger signs in Palestine. Furthermore, the number of ODS that the women identified was significantly elevated in multigravida women (Nkamba et al., 2021). In contrast to the studies, Wulandari & Laksono (2020) demonstrated that grand multiparous women were less likely to possess better knowledge than primiparous women.

2. ANC Follow-Up, Place and Number of Visits

The understanding of danger signs of pregnancy was strongly correlated with women's ANC attendance, follow-up, and the total number of ANC visits (Regasa et al., 2020). Similarly, other studies mentioned that knowledgeability about ODS was substantially associated with

the number of ANC visits, as attending ≥ 4 ANC visits increased women's awareness of ODS (Nabugwere et al., 2022; Uwiringiyimana et al., 2022; Kaewkiattikun et al., 2019). Additionally, the timing of starting ANC was a strong determinant of women's knowledge of ODS. According to Emeh et al. (2021) study, the women who started their ANC earlier during the first or second trimester were more knowledgeable than their counterparts who started the ANC visits later. The number of ODS the women recognized was greatly increased in mothers visiting a private medical centre for ANC and in mothers who adhered to ANC appointments regularly (Nkamba et al., 2021).

3. Place of Delivery

The place of delivery is another important factor influencing women's knowledge levels of ODS. Compared to women who gave birth at home, those who gave birth in medical facilities showed a much higher knowledge of ODS (Wassihun et al., 2020). Furthermore, delivering a baby in a medical institution was significantly related to the knowledge of danger signs during birth (Oguntunde et al., 2021). Asfaha et al. (2022) also discovered that the birth location was a reliable predictor of maternal knowledge of ODS.

2.2.7.3 Service-related Characteristics

Women's awareness of ODS is impacted when they visit medical institutions to use maternal health services by different factors. According to Geleto et al. (2019) systematic review in Ethiopia, women who had previously given birth at a hospital, who went to an institution for ANC services, and who expressed satisfaction with the service were found to be more knowledgeable of ODS than those who had not previously used the services. Additionally, women who travelled more than 30 minutes to get health services were shown to have less knowledge of ODS.

2.2.8 Attitudes Towards ODS

2.2.8.1 Definitions of Attitude towards ODS

Pregnant women's attitude toward ODS is defined as the thoughts and ideas that they have about danger signs that suggest potential problems during pregnancy, labour, and postpartum time. A positive attitude is the woman's desire to acknowledge these signs and seek prompt medical attention. While a negative attitude means their denial or ignorance of the importance of these ODS. Mekonnen. (2018) operationally defined a woman with a positive attitude towards ODS when she correctly answered questions about attitude and scored

higher than the mean value, while participants whose answers about attitude scored below the mean values were considered to show a negative attitude towards ODS.

Al-Matarneh et al. (2023) study in Jordan used 11 items on the attitudes questionnaire that were arranged on a Likert scale with four points, with the choices being "strongly disagree", "disagree", "agree", and "strongly agree". The results of all the items on the attitude questionnaire were added up to determine the overall score, which varied from 11 to 44. A higher score indicates favourable attitudes about ODS during pregnancy. The grading standards were applied for the overall score: 11–22 represented poor attitudes, 22.1–33 represented middle attitudes, and 33.1–44 represented positive attitudes.

Another study in Egypt conducted by Abdelhalim et al. (2023) used an instrument which consists of eight items to assess how women respond and behave in relation to these ODS. Responses are scored on a three-point Likert scale, which ranges from always, sometimes, and never. The range for the rating system was 0–16. Women who scored > = 8 were regarded to have a positive attitude toward ODS, while those who scored below were considered to show a negative attitude towards ODS.

2.2.8.2 Comparative studies of attitudes toward ODS and its determinants in different cultural contexts

Regarding women's attitude towards ODS, in Gununo City, Southern Ethiopia, 51.9% of survey participants scored higher than the mean, indicating a positive attitude as illustrated by Adema and Edamo (2020). Similarly, 52.7% of the study participants in Osun State, Nigeria, showed a favourable attitude towards ODS.

Another study in Ethiopia showed a higher percentage of women (72.6%) showed a positive attitude and opinions towards ODS (Mekonnen, 2018). In Kerala, India, John and George, (2020) study results showed a higher proportion of pregnant women (91%) demonstrating a positive attitude towards ODS. Even a higher proportion of the surveyed women (96.6%) showed a positive attitude towards ODS as reported in Regasa et al. (2020) study.

In Minia City, Egypt, most pregnant women (89.5%) were found to have a favourable attitude regarding ODS (Abdelhalim et al., 2023). Also, in Jordan, another study by Al-Matarneh et al. (2023) showed that the participants' attitudes towards ODS were favourable.

Several factors affect women's attitudes toward ODS. According to Al-Matarneh et al.'s (2023) study, there are considerable disparities in pregnant women's attitudes towards ODS,

which are connected to the mother's educational level. The women with a diploma and above showed higher positive attitudes toward ODS. The results also showed a substantial association between views toward ODS and gravidity and parity. Notably, views regarding ODS were more favourable among women who had a significant number of pregnancies and births.

2.2.9 Health-Seeking Behavior Related to ODS

2.2.9.1 The concept of health-seeking behaviour and its relevance in maternal healthcare.

Health-seeking behaviour related to ODS refers to the actions a woman takes in terms of her health following the identification of a danger sign during her pregnancy, labour, and postpartum periods.

These actions include self-care/treatment, consulting a friend or relative, consulting a traditional birth attendant /healer, and contacting a trained medical professional in a health facility. Actions related to healthcare-seeking were classified as appropriate, visiting a health facility, or inappropriate, including doing nothing, consulting a friend or relative, or self-medication (Regasa et al., 2020). Khanom et al. (2019) similarly demonstrated that pregnant women took different steps to reduce the risks associated with pregnancy. The majority of them engaged in self-care activities, spoke with friends or family, contacted a traditional healer, and at least went to a medical facility when they had danger during their pregnancy.

2.2.9.2 Comparative studies of Health Seeking Actions related to ODS and their barriers in different cultural contexts

According to Regasa et al. (2020), 24.6% of the participants reported having encountered ODS in their previous pregnancy. Most women who encountered ODS (91.3%) underwent treatment at a medical facility. Similarly, the use of a medical centre in case of facing issues during pregnancy or delivery that may harbour potential risk was noted as a prominent behaviour in the study of Balde et al. (2021) in Guinea. Additionally, Nkencho, (2022) study in Metropolis, Nigeria, showed that 99.6% of the participants reported that they would go to the closest hospital if they encountered ODS.

In southwest Ethiopia, Yosef and Tesfaye (2021) found that 72.7% of mothers showed excellent health-seeking habits when experiencing pregnancy danger signs. Gesese et al.

(2023) study showed that 77.8% of the participants sought proper medical care by going to a hospital when experiencing ODS.

In Arab countries, many studies showed a lower percentage of women who took appropriate health-seeking behaviour when experiencing ODS. For instance, In Egypt, Zaki et al. (2021) study showed that only 34.7% of pregnant women took appropriate health behaviour when they recognised ODS. Additionally, in Jordan, less than half (45.7%) of women who faced ODS during pregnancy sought medical attention, according to Al-Matarneh et al. (2023). In Saudi Arabia also, Maki et al. (2023) study revealed that only 53% of women took appropriate action in response to potential ODS.

ODS and the factors that encourage or prevent women from seeking care are important determinants of maternal health outcomes, especially in countries with limited resources. According to Regasa et al. (2020) study, the main barrier inhibiting women from seeking medical facilities advice when facing ODS is poor knowledge of these signs, reported among 92.3% of participants. The second most common barrier was reported to be the distance between the women's residence place and the health facility, which was mentioned by 23.1%, and the same percentage of women reported that difficulty in transportation also constitutes the main barrier for seeking hospital care. Lastly, 15.4% of participants reported a lack of funds as the main barrier to seeking medical care when needed.

2.2.10 Relationship between knowledge, attitude and health-seeking behaviour towards ODS.

Understanding the relationship between knowledge, attitude, and health-seeking behaviour regarding ODS is important in proposing strategies to improve women's health. It is indicated that a woman's knowledge of ODS significantly influences her health-seeking behaviour. A study in Egypt conducted by Abdelhalim et al. (2023) demonstrated a significant relationship between pregnant women's knowledge levels and their attitudes towards ODS. Similarly, Regasa et al. (2020) study showed that when women faced ODS, most mothers (98.2%) who knew enough about them showed excellent practice by seeking timely medical assistance. This implies that if pregnant women see the danger signs, they can reduce the initial delay in seeking care. In contrast to the above results, a study by Olatoye et al. (2022) in Osun State, Nigeria revealed no significant relationship between respondents' attitudes and knowledge of ODS.

Chapter Three

Materials and Methods

3.1 Study Design

The researcher used an analytical cross-sectional design. The cross-sectional design allows the researchers to look at numerous characteristics at once and provides information about what is happening in a population (Cherry, 2022). The design entails examining data from a population at a particular point in time. The main strength of the cross-sectional design is easy to conduct, quick, and inexpensive (Wang & Cheng, 2020).

3.2 Study Population

The study population consists of women who have given birth and have received the BCG (bacilli Calmette-Guerin) vaccine or have completed the postpartum period (42 days after delivery), irrespective of the location and outcome of the delivery. The participants are distributed among the goveorates of Gaza, as illustrated in Table (3.1) below.

3.3 Sample Size and Sampling Process

The total number of women who gave birth in 2022 was 56,614, divided among the governorates, as illustrated in Table (3.1). The number is estimated to be the same in the year 2023. The sample size was determined using the Raosoft software program, which yielded a sample of 377, as illustrated in Annex (1).

Table 3.1 :Distribution of the number of births by governorate during the year 2022

Governorate	**Number of births during the year 2022**
North Gaza	10,351
Gaza	20,892
Middle zone	7,631
Khan Younis	10,976
Rafah	6,764
Total	**56,614**

The researcher increased the sample to 390 to account for the potential of nonrespondents. The data was collected using a convenient sample while adhering to the proportions outlined in Table (3.2).

Table 3.2:Proportionate sample for each governorate

Governorates	Percentage	Number of samples
North Gaza	18.05%	70
Gaza	36.16%	141
Middle zone	13.70%	54
Khan Younis	19.59%	76
Rafah	12.50%	49
Total	100%	390

3.4 Study Setting

Data were collected in the primary health care centres (PHCs) in the Gaza Governorates. The researcher conveniently selected one PHC centre in each governorate. These centres, namely are Abo Shbak Center in North Gaza Governorate, Shohadaa Al Remal Center in Gaza Governorate, Deir Al Balah Center at Deir Al-Balah Governorate, Shohadaa Khan Younis Center in Khan Younis Governorate, and Shohadaa Rafah Center at Rafah Governorate.

3.5 Study Period

The research must be conducted from March 2023 and finished by October 2023, but the research was conducted over 20 months, starting in March 2023 and finishing by October 2024. This, due to the Gaza war, resulted in disruptions that necessitated an extension of the overall timeline of the study, even though data collection was completed as scheduled before the conflict. In particular, the conflict disrupted the researchers' capacity to work on the thesis as electrical cuts and limited internet access delayed the writing and analysis phases.

3.6 Eligibility Criteria

3.6.1 Inclusion criteria

- Women who have given birth attended the BCG. vaccine or women who visited postnatal and family planning care until the postpartum period ended (42 days after delivery), irrespective of place and outcome of delivery.

3.6.2 Exclusion Criteria

- Women who cannot participate in the study due to severe health complications during the postpartum period.
- Women with communication barriers, such as language barriers, that would impede their participation in the study.
- Women who are mentally unable or do not provide informed consent.

3.7 Instruments of the Study

For data collection, the researcher developed an interviewing questionnaire after reviewing the relevant studies (Al-Matarneh et al., 2023; Gesese et al., 2023; Elsous et al., 2022; Manandhar et al, 2022; Abu-Shaheen et al., 2020; Teshoma Regasa et al., 2020). The English version of the questionnaire (Annex 2) and The Arabic version (Annex 3) are divided into six main parts. First, women's demographic characteristics include age, marital status, educational status, occupation, husband's education, husband's occupation, family income, and family size. Second, obstetric characteristics of women include parity, gravidity, ANC follow-up, place of ANC women received, gestational age at the time of starting ANC, opportunity to have advice, and place of delivery. Third, information related to the healthcare service. Fourth, knowledge about ODS in three periods, pregnancy (9 signs), childbirth (4 signs), and postpartum period (4 signs). In this section, women were also asked about the source of their information. Fifth, health-seeking actions women take after they face ODS. Sixth, Women's attitude about the ODS was examined in nine statements.

3.8 Validity of the Questionnaire

Experts in the study's field participated in the questionnaire's evaluation (Annex 4) to analyze all the questionnaire's components and determine how relevant they were to the study's objectives. The expert's comments were considered, and modifications were made accordingly.

Table 3.3: Cronbach's alphas coefficients for the scales

Scale	Number of items	Cronbach's alpha coefficients
Knowledge Score	17	0.952
Attitude Score	9	0.724
Total	26	0.915

Table (3.3) displays the reliability analysis of the survey instrument. The Cronbach's alpha coefficient for the knowledge domain was 0.952. Initially, the attitude domain had a low reliability score. After applying the "Cronbach's alpha if item deleted" test, the researcher omitted four statements from the attitude domain, resulting in an improved Cronbach's alpha of 0.724.

The overall Cronbach's alpha for the questionnaire was 0.915, indicating a high internal consistency across both dimensions and confirming the reliability of the instrument used in this study.

3.9 Pilot Study

Before the data collection began, a pilot study administered the questionnaire to 5% of the study sample (20 participants). The pilot study was beneficial in determining where the instrument could elicit consistent information regarding the knowledge and perception of danger signs in pregnancy. Minor adjustments were made, such as rephrasing certain statements to ensure they were more comprehensible to the participants. The sample used in the pilot study was incorporated into the final analysis.

3.10 Data Collection Procedure

The researcher independently gathered the data by administering an interviewing questionn aire. Each questionnaire is accompanied by a consent form (Annex5). The consent form delineated the study's objectives and guaranteed voluntary participation. Respondents are entitled to withdraw at any point during the data collection process. The time allocated for each questionnaire was between 10 and 15 minutes.

3.11 Statistical Analysis

The data entry process involved the input of acquired data into Microsoft Excel. Subsequently, the dataset was exported to the Statistical Package for the Social Sciences (SPSS, version 25) software program for further analysis. Before conducting the analysis, comprehensive data quality checks were performed to identify any missing or erroneous values. Following dataset validation, appropriate codes and labels were assigned to variables to facilitate their interpretation.

To initiate the analysis, a detailed descriptive analysis was conducted to examine the study participants' sociodemographic, obstetric, and service-related characteristics. The quantitative variables were described using mean and standard deviation, whereas the categorical variables were described using frequencies and percentages.

The total scores for knowledge were determined by assigning one point to each correct response in the 17 ODS during the three periods: pregnancy, labour, and postpartum. Women were classified as having adequate knowledge if they knew at least five ODS, with at least one sign in each period. This cut in value was considered in a previous related study (Teshoma Regasa et al., 2020). The mean score was employed to classify the attitude score as either positive or negative, whereas those above or equal to the mean score were classified as having a positive attitude. This is consistent with its application in a comparable study (Shibeshi et al., 2024). Health-seeking action was deemed appropriate if a woman sought medical attention at any health facility upon experiencing an obstetric danger sign; conversely, it was classified as inappropriate if she did not seek healthcare from any healthcare facility. This classification was employed in similar research (Gesese et al., 2023; Teshoma Regasa et al., 2020).

Continuous variables (age, family size, gravidity, parity) were recoded into categorical variables to investigate the associations with the scores. Age was categorized into < 18, 18-25, 26-35, and > 35. Family size was categorized into < 5 members and > = 5 members. The Parity variable was categorized into three categories: Primipara for those delivered one time, Multipara for those delivered 2 to 5 times, and Grand Multipara for those delivered more than 5 times. Also, the gravidity variable was categorized into three categories: Primigravida for those delivered one time, Multigravida for those delivered 2 to 5 times, and Grand Multigravida for those delivered more than 5 times. Chi-square tests of independence were employed to analyze the associations between knowledge and attitude with sociodemographic and obstetric characteristics. Also, the test was used to examine the relationship between health-seeking action and women's knowledge and attitude.

Furthermore, multivariate logistic regression analysis was employed to explore relationships more comprehensively and identify predictors of the knowledge score. Variables that showed a significant result in the bivariate analysis were entered into the regression model. The confidence interval was considered at 95% and a p-value of < 0.05 is statistically significant.

3.12 Scientific Rigor

The researcher used rigorous procedures throughout data collection and analysis, including:

- A validated questionnaire was used to measure knowledge, attitude, and health-seeking action by reducing potential measurement bias. The researcher himself collected data to ensure uniform procedures.
- Proper sampling size was employed to ensure representativeness of the population and generalizable to the broader population.
- Rigorous inclusion and exclusion criteria were established to prevent selection bias and ensure that the sample accurately reflects the target population.
- A standardized procedure and double-entry data verification were used to reduce errors in data recording.
- Reliability analysis was used to ensure internal consistency of knowledge and attitude domains.
- A multivariate regression model was used to adjust for potential confounding variables such as age, socioeconomic, and obstetric characteristics.

3.13 Ethical and Administrative Considerations

Before starting the study, the researcher obtained approval from Al Quds University to carry out the study (Annex 6), ethical approval from the Helsinki Committee (Annex 7), and admin approval from the MoH (Annex 8). In addition, voluntary participation and confidentiality of information were maintained through a consent form signed by the study participants (Annex 5).

3.14 Study Limitations and Challenges

- One of the primary limitations of this study is the potential for recall bias, particularly among postpartum women reporting their experiences with ODS during pregnancy. As the data relies on self-reported actions and experiences, there may be inaccuracies or inconsistencies in how participants remember and report their actions or decisions. This could affect the data's reliability, particularly in assessing the health-seeking actions taken during pregnancy.
- The ongoing Gaza war significantly affected the study's timeline, extending the data collection period beyond the planned schedule. The unstable political situation led to

additional logistical challenges, requiring more resources and increasing the overall cost of the research. Frequent electricity cuts and unstable internet connectivity further complicated the completion of the writing process.

Chapter Four

Results and Discussion

This chapter presents the study findings. These findings answer the research questions formulated in the introductory chapter regarding the level of participants' knowledge, attitude, and health-seeking action regarding ODS among postpartum women in the Gaza Strip. Then, we interpret the main results and compare them with the findings from previously published studies in the literature.

4.1 Descriptive Analysis

Table 4.1: Sociodemographic characteristics of the study participants

Variable	**Categories**	**N (%)**
Age	Mean ± SD (Min-Max)	26.3 ± 5.1 (16-43)
Age categories	< 18 years	20 (5.2)
	18-25 years	172 (44.9)
	26-35 years	175 (45.7)
	> 35 years	16 (4.2)
Education	Preparatory and less	21 (5.5)
	Secondary education	184 (48)
	Higher education	178 (46.5)
Occupation	Not employed	344 (89.8)
	Employed	39 (10.2)
Husband education	Preparatory and less	44 (11.5)
	Secondary education	173 (45.2)
	Higher education	166 (43.3)
Husband occupation	Have a work	308 (80.6)
	Do not have a work	74 (19.4)
Monthly income	< 1974 NIS	272 (71.0)
	1974- 2470 NIS	90 (23.5)
	> 2470 NIS	21 (5.5)
Family size	Mean ± SD (Min- Max)	4.9 ± 1.6 (2-12)
Family size categories	< 5 members	175(54.7)
	> = 5 members	208 (54.3)

NIS: New Israeli Shekel

Three hundred eighty-three postpartum women participated in this study. Tables (4.1) demonstrate the participants' sociodemographic characteristics. Women's mean age is 26.3 years (16-43). The majority lie in the 16-25 years and 26-35 years, 44.9% and 45.7%, respectively. A large percentage (89.8%) are not employed, while the vast majority (80.6%) of their husbands have a job. Nearly half of the participants (48%) have finished secondary school, and a large percentage (46.5%) have degrees in higher education. Similarly, husband education levels vary, with 11.5% having preparatory schooling and less, 45.2% with secondary education, and 43.3% holding higher education levels. Most participants (71%) have a monthly income of less than 1974 NIS. A smaller percentage (23.5%) with monthly income between 1974 and 2470 NIS. This might indicate economic challenges among the study's demographic, as most live below the deep poverty line (1974 NIS) as previously determined by the Palestinian Central Bureau of Statistics (PCBS, 2017).

The average family has 4.9 members, ranging from 2 to 12. Families with five individuals or more comprise the majority (54.3%), followed by those with less than 5 members (45.7%), indicative of some extended family structures or larger immediate family sizes.

Table 4.2: Obstetric characteristics of the study participants

Variable	**Categories**	**N (%)**
Gravidity	Mean ± SD (Min- Max)	3.5 ± 2.1(1-14)
Categories of gravidity	Primigravida	69(18)
	Multigravida	256(66.9)
	Grand Multigravida	58(15.1)
Parity	Mean ± SD (Min-Max)	2.9 ± 1.7 (1-12)
Categories of Parity	Primipara	103(26.9)
	Multipara	252(65.8)
	Grand Multipara	28(7.3)
ANC follow-up attendance	Yes	380 (99.2)
	No	3 (0.8)
Place of ANC	Governmental Hospital/ Clinic	215 (56.2)
	Private hospital/ Clinic	51 (13.3)
	Both governmental and private centres	117 (30.5)
Timing of ANC registration	First Trimester	352 (91.9)
	Second Trimester	26 (6.8)
	NA	5 (1.3)
Opportunity to be advised/counselled during ANC visits (Multiple response question)	Where to deliver	191 (50.1)
	Benefits of delivering at the health facility/hospital	145 (37.9)
	What to do in case of any complication	317 (82.8)
Place of delivery	Governmental hospital	320 (83.6)
	Private hospital	53 (13.8)
	NA	10 (2.6)

NA: Not available data

Table (4.2) demonstrates an overview of the ANC and delivery-related characteristics of the study participants. Most women were multigravida (66.9%) and multipara (65.8%). The vast majority (99.2%) have received ANC follow-up. In line with Nassar, the study (2018)

showed similar results, as 98.5% of its participants had four ANC visits or more. This suggests a strong healthcare system or public awareness regarding the importance of ANC among the study's demographic.

Regarding the place of ANC, the majority (56.2%) utilized governmental clinics, while a notable proportion (30.5%) accessed governmental and private centres. The percentage is comparable to that registered by Nassar's (2018) study, which showed 83.1% of pregnant women utilizing governmental clinics for ANC follow-up. This might indicate that while government clinics are the primary source of care, many also seek supplemental care or services in private settings.

Participants' gestational age at their first ANC visit varies, but the majority (91.9%) registered during the first trimester. This is a positive indicator, as early initiation of ANC is often associated with better maternal and neonatal outcomes, as previously reported (Puthussery et al., 2022). In addition, the community or the healthcare system effectively promotes early registration.

During ANC visits, a significant percentage of women received counselling on where to deliver (50.1%), the benefits of delivering at a health facility/hospital (37.9%), and what to do in case of any complications (82.8%). This is crucial as it prepares expecting mothers to respond promptly and appropriately to unforeseen challenges.

Regarding the place of delivery, the majority (83.6%) delivered at governmental hospitals. This reflects trust in the public healthcare system and might also indicate economic factors or ease of access. Only a minority (13.8%) selected private hospitals, which could be due to various reasons, including perceived quality of care, financial considerations, or proximity of the place of delivery to the woman’s residency place.

The findings indicate that the participants highly prioritize and access ANC, strongly emphasising early registration during pregnancy. The public healthcare system plays a pivotal role in providing both ANC and delivery services, but there's also a noteworthy reliance on the private sector for ANC. Counselling during ANC visits is substantial, emphasizing preparedness for delivery and potential complications.

Table 4.3: Obstetric characteristics of the study participants Service-related informations

Question	Categories	Responses N (%)
How much time do you take to reach the nearest health centre?	Less than one hour	359 (93.7)
	More than one hour	24(6.3)
What means of transport do you use to go to the health centre?	On foot	40 (10.4)
	By taxi	343(89.6)
How many antenatal visits did you make during your last pregnancy?	Three visits	6(1.6)
	Four visits	37(9.7)
	More than four visits	338(88.2)
	NA	2 (0.5)
How much time did you spend with the healthcare provider during the last visit?	Less than 5 minutes	8(2.1)
	5-10 minutes	148(38.7)
	11-20 minutes	172(44.9)
	21-30 minutes	51(13.3)
	31-40 minutes	4(1)
Were you given time to ask questions?	Yes	382 (99.7)
	No	1(0.3)
If you become pregnant again, would you attend antenatal care at the same health centre?	Yes	379(98.9)
	No	4(1.1)
Give reasons for your answer to the above question	Because the quality of services is very good	374(97.6)
	Because the quality of services is very poor	6(1.6)
	NA	3 (0.8)

Table (4.3) shows the descriptive data related to the ANC service characteristics. The vast majority of the respondents (93.7%) need less than one hour to reach the nearest health centre, suggesting that they enjoy excellent accessibility to healthcare. Such proximity indicates that this demographic has minimal geographic barriers, promoting timely and regular ANC.

Regarding the means of transportation to the health centre, 89.6% used a taxi, whereas only 10.4% went on foot. This could indicate the convenience or affordability of taxis. The

minimum number of ANC visits among the respondents was three visits, with the majority of the participants, 88.2%, reported having more than four ANC visits, and 9.7% reported having four visits. The percentage is similar to that reported by Nassar's (2018) study, as 98.5% of its participants had four ANC visits or more. This result highlights a positive trend in awareness about the importance of ANC. The consistent finding across both studies suggests that most women in the region recognize the value of regular ANC visits during pregnancy. Also, it may indicate a strong emphasis on regular visits by the healthcare system. However, commitment to the ANC follow-up is much better than previous research, which showed that only 10.1% of its participants had attended ANC visits four times as recommended (Imani Ramazani et al., 2023).

The respondents' time spent with healthcare providers during the last ANC visit varied. Most (44.9%) reported spending 11-20 minutes, 38.7% spent 5-10 minutes, and 13.3% spent 21-30 minutes. A minority (2.1%) spent less than 5 minutes, and only 1% spent more than half an hour. Most interactions with healthcare providers during ANC visits are brief but substantive.

Most respondents (99.7%) were given adequate time to ask questions during ANC visits. This suggests that even shorter interactions were high quality and met the patients' needs. All, except three, women of the respondents reported the intention to attend ANC at the same health centre if they become pregnant again, and 97.6% of the women rated the quality of services at the health centre as very good compared to the result of Nassar. (2018) study showed that 92.1% of the pregnant women rated the quality of ANC as excellent. This is a significant indication of the quality and trustworthiness of the care provided.

The findings paint a picture of a healthcare system that is not only accessible but also provides high-quality care. The ease of access, regular ANC visits, and a high service quality rating indicate an effective and trusted ANC service. Furthermore, the overwhelming intention to reuse and recommend the services underscores the positive experiences of the respondents. The system effectively balances time efficiency with quality care, as evidenced by most short yet high-quality interactions.

Table 4.4: Knowledge of ODS among postnatal mothers

Which of the following signs do you believe could potentially indicate a risk during pregnancy?		
Severe headache	246	64.2%
Dizziness and blurred vision	244	63.7%
Excessive vomiting	238	62.1%
Swelling of hands, face	232	60.6%
Vaginal bleeding	212	55.4%
A sudden gush of fluid before labour	209	54.6%
Premature onset of contraction	190	49.6%
Severe, unusual abdominal pain	190	49.6%
Loss of fetal movement	164	42.8%
Which of the following signs could indicate a risk during childbirth?		
Prolonged labor	191	49.9%
Severe vaginal bleeding	166	43.3%
Convulsions	131	34.2%
Retained placenta	54	14.1%
Which signs could potentially indicate a risk during the postpartum period?		
Foul-smelling vaginal discharge	192	50.1%
Severe bleeding following childbirth	167	43.6%
Fever	167	43.6%
Loss of consciousness after childbirth	138	36.0%

Table (4.4) illustrates women's understanding of ODS, highlighting the most recognized signs during pregnancy, labour, and postpartum periods. During pregnancy, the most often reported symptoms are severe headaches, cited by 64.2% of respondents, and blurred vision, reported by 63.7%. Excessive vomiting was reported by 62.1% of the women. Additionally, the hands and face swelling was noted in 60.6% of the patients. Notably, vaginal bleeding and a sudden gush of fluid before labour were reported by 55.4% and 54.6% of participants, respectively.

Consistent with the findings of this study, the findings of previous research indicated that 65% of the participating pregnant women identified vaginal bleeding as a danger sign during pregnancy (Yosef & Tesfaye, 2021). In a prior study, vaginal bleeding was identified as a pregnancy danger sign by 46.5% of participants, followed by hand/face swelling at 39% and severe headache at 14.5% (Dangura, 2020). Further, the predominant danger sign identified by women in a prior study included significant vaginal bleeding (25.2%), blurred vision

(20.6%), and swelling of the hands or face (20.1%) (Bintabara et al., 2017). Furthermore, 71.6% of participants in an additional study identified vaginal bleeding as a danger sign during pregnancy, persistent vomiting was noted by 27.9%, body swelling by 25.1%, persistent headaches by 33.8%, fluid leakage from the birth canal by 43.6%, and a foul vaginal odour by 21.5% (Adema & Edamo, 2020). Furthermore, vaginal bleeding was identified as a prevalent indicator of pregnancy complications in another study, affecting 49.6% of participants, followed by fever at 19.6%, severe abdominal discomfort at 11.9%, and hypertension at 10.8%. The least acknowledged indicators of pregnancy complications included extended labour, significant vaginal bleeding, and cervical pain (Osegi et al., 2022).

Among Saudi women, 21.1% reported that they knew about swollen hands or faces, 15.3% reported severe vaginal bleeding, and 13.9% reported blurred vision (Abu-Shaheen et al., 2020).

Prolonged labour was recognized as the most common danger sign during childbirth, noted by 49.9% of women. This signifies a moderate comprehension of possible challenges that may arise during childbirth. Subsequently, vaginal bleeding, recognized by 43.3%, signifies an understanding of the risks associated with bleeding during childbirth. Moreover, lesser-recognized signs included convulsions (34.2%) and retained placenta (14.1%), indicating a necessity for heightened awareness of these critical disorders.

In contrast to prior research, vaginal bleeding was identified as a significant danger sign during childbirth by 68.4%, severe headache by 29.4%, fever by 24.6%, and loss of consciousness by 19.7% (Dangura, 2020). In a separate investigation, vaginal bleeding, retained placenta, convulsions, and extended labour were identified in 27.8%, 17.1%, 15.9%, and 14% of cases, respectively (Bintabara et al., 2017). Moreover, significant vaginal bleeding was the most often reported ODS during labour among the women in another study, but convulsions and loss of consciousness were cited infrequently (Imani Ramazani et al., 2023).

In the postpartum period, foul smell vaginal discharge was the most often reported symptom, acknowledged by 50.1% of participants, indicating awareness of potential infections following childbirth. Severe bleeding and fever were recognized by 43.6% of women, reflecting a moderate understanding of postpartum haemorrhage. Ultimately, 36% of women reported experiencing loss of consciousness after childbirth, reflecting a moderate awareness of critical postpartum danger indicators. The findings indicate that while numerous women recognize standard ODS, there is a necessity for improved understanding, particularly

regarding lesser-known yet equally dangerous symptoms such as convulsions and retained placenta.

In contrast to similar studies, the predominant obstetric disorders identified by women during the postpartum period were vaginal bleeding (16%), severe headache (8.6%), convulsions (6.2%), and foul-smelling vaginal discharge (8.9%) (Dangura, 2020). In a separate study, severe vaginal bleeding, high temperature, and foul smell were the most often identified ODS, reported by 25.9%, 15.2%, and 14.3% of participants, respectively (Bintabara et al., 2017). Further, 25.8% of women identified vaginal bleeding as a prevalent danger sign throughout the postpartum period. Only 2.3% and 1.4% reported foul-smelling vaginal discharge and prolonged fever, respectively (Imani Ramazani et al., 2023). Furthermore, 26.3% of the participants reported that they knew about foul-smelling vaginal discharge, while 11.9% reported knowledge of high fever (Abu-Shaheen et al., 2020).

Overall, these comparisons underscore the need for enhanced, targeted health education initiatives focusing on under-recognized but severe ODS across all stages of pregnancy, childbirth, and postpartum. Addressing these gaps is vital to ensuring comprehensive maternal health knowledge and better health outcomes.

As shown in Figure (4.1), out of the 383 participants, 56.1% were able to spontaneously mention at least five ODS in the three phases, with at least one in each phase, and thus were considered to have adequate knowledge of ODS during pregnancy, childbirth, and postpartum periods.

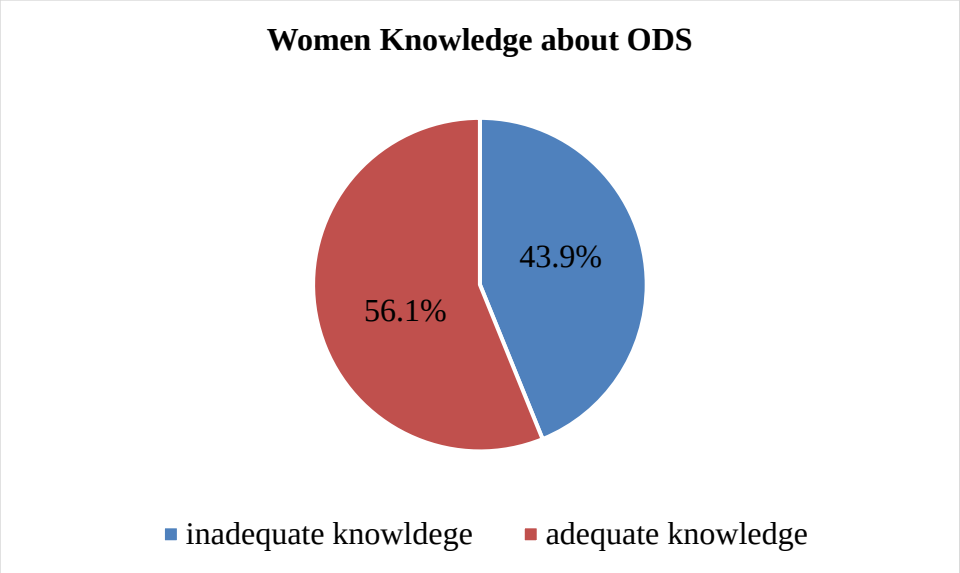


Figure 4.1: Descriptive analysis of knowledge categories

A comparative analysis of findings from various studies on women's knowledge of ODS reveals significant disparities in knowledge levels across different contexts and groups. In this study, 56.1% of participants demonstrated adequate knowledge, which is approximately in line with the values reported by Osegi et al. (2022) and Adema and Edamo (2020), which were 45.8% and 55.8%, respectively. In contrast, the results of Bintabara et al. (2017), indicated that only 25.2% of women could recognize at least five ODS, and Teshoma Regasa et al. (2020), where 32.3% demonstrated comparable knowledge, the findings of this study reveal a notable enhancement. This disparity may reflect variations in healthcare infrastructure, literacy levels, or cultural attitudes towards maternal health issues among areas. From the researcher's viewpoint, these findings highlight the significance of context-specific interventions in enhancing maternal health knowledge. It also indicates the necessity for continuous education and assistance initiatives, especially in areas with diminished knowledge levels.

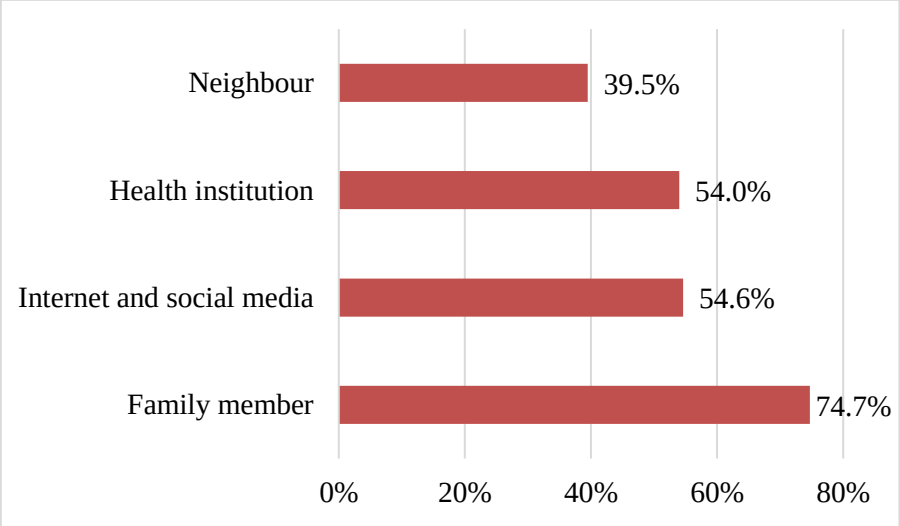


Figure 4.2: Sources of information (multiple responses)

The sources of information regarding pregnancy danger signs are diverse, as demonstrated in Figure (4.2). Notably, 74.7% of respondents reported acquiring this information from family members. This implies that the dissemination of maternal health knowledge is significantly influenced by cultural and familial discourse. It may also suggest a robust tradition of intergenerational knowledge transmission, in which elder family members impart their collective wisdom and experiences to the younger generation. This indicates that discussions among colleagues or local community members and close-knit community connections serve as a means of disseminating information regarding pregnancy-related

issues. Additionally, 54% rely on health institutions as their primary source of information. The data also suggests a significant reliance on structured healthcare establishments for guidance during pregnancy through trust and dependence. Furthermore, 39.5% of respondents identified neighbours as a source of information. This indicates that formal health campaigns, community health initiatives, or direct interactions with healthcare providers are crucial in educating expectant mothers about potential risks. Interestingly, health organizations are closely matched in terms of influence by the internet and social media platforms, as 54.6% of respondents cite them as sources of information. This suggests that digital platforms have become increasingly influential in the recent era. It underscores the significance and scope of digital media in health awareness campaigns and the growing reliance of contemporary mothers on online resources for information and guidance.

Although traditional sources of information, such as family and community, continue to be the most prevalent, formal channels, such as health organizations and modern digital platforms, are also making significant progress in educating women about the danger signs during pregnancy. This diverse array of sources can assist in disseminating critical health information by providing a more comprehensive and extensive reach.

There are clear discrepancies in the way women are informed about pregnancy danger signs when our results are compared to the existing literature. Tamang et al. (2021) discovered that 77.0% of women identified nurses and midwives as their primary source of information, indicating a significant reliance on them. On the other hand, Okour et al. (2012) observed that healthcare providers and relatives were favoured equally, with 26.9%. Our findings are more consistent with those of Okour et al. (2012), underscoring the dual importance of healthcare personnel and family members in disseminating critical maternal health information. The diminished influence and accessibility of media and digital channels during the 2012 study by Okour et al. are likely the reasons for the absence of digital platforms. This reflects the changing nature of information dissemination over the years. Additionally, in another study, 68.5% of the participating women received information about ODS from health professionals, while 13.8% received it from family and friends (Osegi et al., 2022).

Table 4.5: Descriptive analysis of attitude-related questions related to ODS

Attitude questions	SD	D	N	A	SA	mean
I agree with the importance of knowing ODS	1 (0.3)	1 (0.3)	0 (0)	15 (3.9)	366 (95.6)	4.94
I agree that ODS are preventable.	1 (0.3)	0 (0)	10 (2.6)	14 (3.7)	358 (93.5)	4.90
I feel confident in my ability to recognize ODS.	2 (0.5)	52 (13.6)	25 (6.5)	27 (7)	277 (72.3)	4.37
Promptly seeking medical help is crucial when encountering ODS.	0 (0)	3 (0.8)	7 (1.8)	22 (5.7)	351 (91.6)	4.88
I think it is necessary to educate pregnant women about the potential danger signs they may experience.	0 (0)	1 (0.3)	7 (1.8)	20 (5.2)	355 (92.7)	4.90
I feel comfortable discussing ODS with healthcare providers.	0 (0)	2 (0.5)	6 (1.6)	27 (7)	348 (90.9)	4.88
I am motivated to learn more about ODS to protect my and my baby's health.	0 (0)	2 (0.5)	10 (2.6)	19 (5)	352 (91.9)	4.88
I will take proactive measures to prevent and address ODS.	0 (0)	5 (1.3)	12 (3.1)	31 (8.1)	335 (87.5)	4.82
Early recognition and appropriate management of ODS can improve pregnancy outcomes.	0 (0)	1 (0.3)	2 (0.5)	22 (5.7)	358 (93.5)	4.92

SA: Strongly agree, A: agree, N: Neutral, D: Disagree, SD: Strongly disagree

Table (4.5) illustrates the distribution of women's responses to attitude-related questions regarding ODS among women. Most participants strongly agree with the importance of knowing ODS, with 95.6% (mean = 4.94) agreeing that understanding these signs is crucial. Similarly, 93.5% strongly agree that ODS are preventable (mean = 4.90), and 91.6% believe that seeking medical help promptly when encountering ODS is essential (mean = 4.88).

A high percentage of women also feel confident in recognizing ODS, with 72.3% expressing strong agreement (mean = 4.37). Additionally, 92.7% strongly agree that educating pregnant women about potential ODS is necessary (mean = 4.90). Women also feel comfortable discussing ODS with healthcare providers, with 90.9% strongly agreeing (mean = 4.88). Overall, the responses reflect a strong positive attitude towards recognizing and addressing ODS, with most women showing a proactive stance on preventing and managing these signs.

The study respondents were categorized into a positive attitude for those who scored more than or equal to the mean and a negative attitude for those who scored less than the mean. Figure (4.3) shows that 67.1% of the women showed a positive attitude towards ODS, while 32.9% exhibited a negative attitude towards ODS.

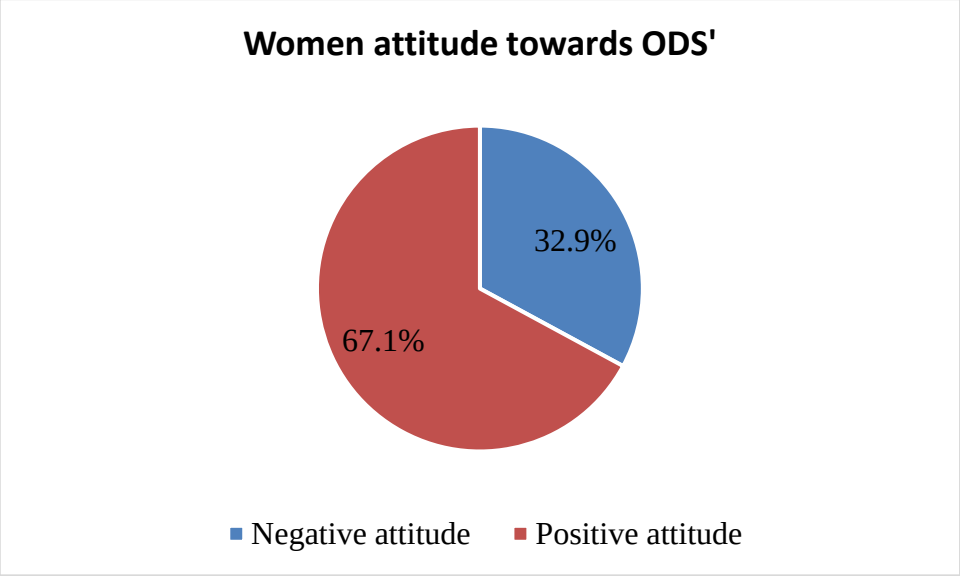


Figure 4.3: Attitude towards ODS categories

In contrast to previous research, the attitude of women towards ODS in this study is more optimistic, as evidenced by their 51.9% positive attitude in Adema and Edamo (2020) and 35.4% in an additional study (Osegi et al. 2022).

Table 4.6: Descriptive analysis of knowledge and attitude scores

Variable	**Mean± SD**	**Min- Max**
Knowledge	8.2 ± 6.2	0-17
Attitude	43.51 ± 2.7	27-45

Table (4.6) demonstrates the descriptive analysis of the knowledge and attitudes towards ODS scores. The mean of participants' knowledge is 8.2 (0-17), whereas the mean for their attitude towards ODS is 43.5 (27-45).

Table 4.7: Descriptive analysis of health-seeking action when facing ODS

Health seeking action related questions	**Responses**	
	N	**%**
Have you ever faced any ODS in your last pregnancy?		
Yes	133	34.7
No	250	65.3
Which of the following ODS have you faced during pregnancy? (n=133), multiple response analysis		
Vaginal bleeding	3	2.8%
A sudden gush of fluid before labour	6	4.5%
Severe headache	27	20.3%
Dizziness and blurred vision	25	18.8%
Excessive vomiting	19	14.3%
Swelling of hands, face	10	7.5%
Loss of fetal movement	2	1.5%
Premature onset of contraction	5	3.8%
Severe, unusual abdominal pain	3	3%
Which of the following ODS have you faced during childbirth?		
Severe vaginal bleeding	3	2.3%
Prolonged labor	14	10.5%
Convulsions	2	1.5%
Retained placenta	4	3%
Which of the following ODS have you faced during the postpartum period?		
Severe bleeding following childbirth	4	3%
Loss of consciousness after childbirth	3	2.3%
Fever	6	4.5%
Foul-smelling vaginal discharge	12	9%
Which of the following actions did you choose when faced with the ODS in your last pregnancy?		
Nothing	0	0%
Consulted a friend/relative	30	22.6%

Table 4.7: Descriptive analysis of health-seeking action when facing ODS Continued...

Health seeking action related questions	**Responses**	
	N	**%**
Self-care/treatment	4	3%
Consulted a traditional healer	6	4.5%
Went to a health facility	87	65.4%
Choose more than one action	6	4.5%
Upon visiting a health facility, kindly indicate the duration in hours or days that transpired before you sought the assistance of a healthcare provider or arrived at the designated healthcare facility.		
1- 4 Hrs	110	82.7
5-8 Hrs	13	9.8
One day	8	6.0
Two days and more	2	1.5
Which of the following factors contribute to the delay in seeking healthcare (Multiple response analysis)		
Lack of awareness about obstetric danger sign	100	75.2%
The Health Centre is far	21	15.8%
Lack of money	55	41.4%
Lack of transportation	23	17.3%
No one encourages me	12	9%

Tables (4.7) demonstrate descriptive data regarding health-seeking actions in response to ODS. Approximately 35% (n=133) of women reported experiencing ODS during their last pregnancy, which is considered high if compared to previous research that showed 14.5% (n=77) have an ODS (Yosef & Tesfaye, 2021).

Also, in another study, 9.7 % of the participated women have experienced ODS during pregnancy (Adema & Edamo, 2020). In addition, 24.6% of women have experienced ODS (Teshoma Regasa et al., 2020).

The most common signs include severe headache (20.3%), dizziness, blurred vision (18.8%), and excessive vomiting (14.3%). Other signs such as swelling of hands and face (7.5%), vaginal bleeding (2.8%), a sudden gush of fluid before labour (4.5%), premature onset of contraction (3.8%), and severe unusual abdominal pain (3%) were also encountered. During childbirth, some respondents reported experiencing ODS, such as prolonged labour (10.5%),

and in the postpartum period, common signs were encountered, including foul-smelling vaginal discharge (9%), fever (4.5%) and severe bleeding (3%).

The study participants demonstrated a variety of responses with respect to the actions they took when they faced ODS. Approximately 65.4% of respondents reported going to a healthcare facility, 22.6% reported consulting a friend or relative, 4.5% reported seeking a traditional healer consultation, and 3% reported practising self-care and treatment. The remaining 4.5% of respondents reported taking more than one action. In contrast, most women (72.7%) sought medical attention after the occurrence of ODS (Yosef & Tesfaye, 2021). Additionally, the overwhelming majority (91.3%) of women who participated in a previous study visited a healthcare facility after experiencing ODS (Teshoma Regasa et al., 2020).

Women's actions were categorized as either appropriate, which entails visiting a health facility, or inappropriate, which involves taking no action, consulting a friend or relative, resorting to self-medication, or taking more than one action. Figure (4.4) demonstrates that 65.4% of respondents implemented appropriate health-seeking action when confronted with ODS, while 34.6% responded inappropriately.

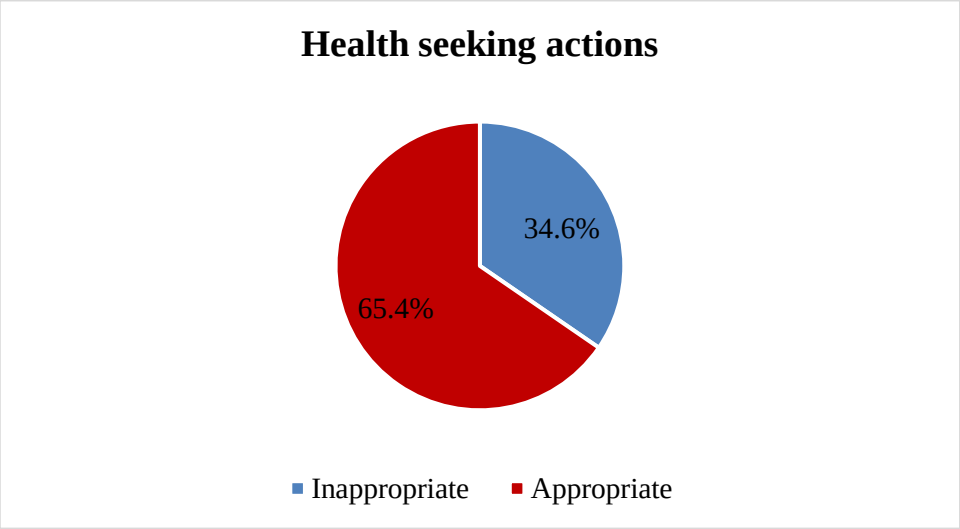


Figure 4.4: Health Seeking Action among women

Compared with similar research, most participating women (85.4%) seek medical care and consider their actions appropriate (Adema & Edamo, 2020).

Among those seeking healthcare at a facility, the majority (82.7%) sought assistance from a healthcare provider or arrived at the designated healthcare facility within 1-4 hours, while only 1.5% delayed seeking care for two days or more. Participants were also asked about

barriers to seeking healthcare, with 75.2% mentioning a lack of awareness about ODS as the primary barrier. The second most common barrier reported was a lack of money (41.4%). In contrast, other factors, such as lack of transportation and the distance to health centres, were reported by 17.3% and 15.8% of respondents, respectively.

The finding is comparable to that of previous research, which showed that 71% of the women who did not seek medical care following the occurrence of ODS as a reason of perceived it as harmless (71%) and Lack of money (23%) (Yosef & Tesfaye, 2021).

In another research, reasons for not seeking medical care were poor knowledge about ODS (92.3%), Distance away from a healthcare facility (23%), and lack of transportation and money (15.4%) (Teshoma Regasa et al., 2020).

The consistent lack of awareness and financial limitations across studies highlight the need for targeted interventions. Addressing the lack of awareness through comprehensive health education and ANC counselling is crucial while alleviating the financial barriers can be done by providing financial assistance, subsidies for maternal care, and improving access to affordable healthcare services. Specific programs targeting these barriers in the Gaza Strip could significantly improve maternal health outcomes.

4.2 Bivariate Analysis

Table 4.8: Relationship between knowledge and sociodemographic variables

Variable	Knowledge			χ^2	P-value
	Inadequate N (%)	Adequate N (%)	Total N (%)		
Age					
< 18 years	14(70)	6(30)	20(100)	13.586	0.004*
18-25 years	84(48.8)	88(51.2)	172(100)		
26-35 years	67 (38.3)	108 (61.7)	175(100)		
> 35 years	3(18.8)	13(81.3)	16 (100)		
Women Occupation					
Not Employed	163 (47.4)	181(48.7)	344(100)	16.994	0.000*
Employed	5 (12.8)	34 (87.2)	39(100)		
Husband Occupation					
Not Employed	39 (52.7)	35(47.3)	74 (100)	2.835	0.092
Employed	129(41.9)	179(58.1)	308(100)		
Women Education					
Preparatory or less	14(66.7)	7(33.3)	21(100)	11.959	0.003*
Secondary	91(49.5)	93(50.5)	184(100)		
Higher education	63(35.4)	115(64.6)	178(100)		
Husband Education					
Preparatory or less	33(75)	11(25)	44(100)	26.597	0.000*
Secondary	81(46.8)	92(53.2)	173(100)		
Higher education	54(32.5)	112(67.5)	166 (100)		
Income level					
< 1974 NIS	136(50.4)	134(49.6)	270(100)	14.6	0.001*
1974- 2490 NIS	27(30)	63(70)	90(100)		
> 2490 NIS	5(23.8)	16 (76.2)	21(100)		
Family size					
< 5 members	97(55.4)	78(44.6)	175 (100)	17.5	0.000*
>=5 members	71(34.1)	137(65.9)	208 (100)		

*Statistically significant

Table (4.8) shows the bivariate analysis results examining the relationship between knowledge of ODS among postpartum women in the Gaza Strip and various sociodemographic variables. The bivariate analysis indicates that age, employment status, women's education, husband's education, income, and family size significantly influence knowledge levels.

First, it is notable that age significantly influences knowledge level ($\chi^2 = 13.586$, $p = 0.004$). Specifically, participants under 18 exhibit the lowest degree of knowledge (30%) compared to other age groups, and the percentage of knowledgeable women increases as age increases. This association is consistent with the literature, showing older women are more knowledgeable than their younger counterparts (Imani Ramazani et al., 2023; Al-Matarneh et al., 2023; Yosef & Tesfaye, 2021). This suggests that age-related life experience and greater exposure to healthcare systems contribute to improved knowledge of ODS.

Second, the participants' employment status is significantly linked with increased knowledge ($\chi^2 = 16.99$, $p = .000$). Most employed women (87.2%) showed adequate knowledge scores regarding ODS. The occupation also showed a statistically significant association with women's knowledge in other studies (Al-Matarneh et al., 2023; Bintabara et al., 2017). Further, being unemployed is associated with lower knowledge about ODS among Saudi women (Abu-Shaheen et al., 2020). This consistency across regions emphasizes how employment may enhance access to health information, contributing to better maternal knowledge.

Third, higher education levels also significantly correlate with better knowledge for women's education ($\chi^2 = 11.96$, $p = .003$) for husbands' education ($\chi^2 = 26.597$, $p = .000$). Consistent with our findings, previous related studies showed that women's and husbands' education was associated with knowledge (Al-Matarneh et al., 2023; Yosef & Tesfaye, 2021; Bintabara et al., 2017). The consistency across multiple studies highlights that education remains a critical determinant for health awareness.

Fourth, participants with lower income levels (< 1974 NIS) are more likely to have inadequate knowledge (50.4%), while those with higher incomes (>2490 NIS) exhibit a greater likelihood of having adequate knowledge (76.2%). Similarly, higher income was associated with higher knowledge about ODS in previous research (Yosef & Tesfaye, 2021). Financial resources may universally enhance access to healthcare information.

Fifth, family size was also identified as a significant factor that affects the women's knowledge of ODS ($\chi^2 = 17.5$, $P < 0.001$) as the percentage of knowledgeable women increases as the number of family members increases. The finding is consistent with the findings among Jordanian women, which showed that women with family members more than five have a higher knowledge about ODS than those with less than five family members (Okour et al., 2012). The larger family size suggests that women in such households may have encountered more health-related experiences, leading to greater awareness of maternal health issues.

While these findings align with much of the existing research, it is noteworthy that certain sociodemographic factors (Marital Status, husband occupation) did not show a significant impact in this study (p-values > 0.05), which may differ from findings in other regions. These variations could be due to differences in healthcare systems, cultural factors, or outreach efforts specific to the Gaza Strip, warranting further investigation.

Table 4.9: Relationship between knowledge and participants' obstetric characteristics

Variable	Knowledge			χ2	P-value
	inadequate N (%)	adequate N (%)	Total N (%)		
Gravidity					
Primigravida	36 (52.2)	33(47.8)	69(100)	5.858	0.053
Multigravida	114(44.5)	142(55.5)	256(100)		
Grand Multigravida	18(31)	40(69)	58(100)		
Parity					
Primipara	60(58.3)	43(41.7)	103(100)	14.172	0.001*
Multipara	101(40.1)	151 (59.9)	252(100)		
Grand Multipara	7(25)	21(75)	28(100)		
Place of a follow-up					
Governmental clinic	104(48.4)	111(51.6)	215(100)	12.446	0.002*
Private clinic	28(54.9)	23(45.1)	51 (100)		
Both governmental & private clinic	36(30.8)	81(69.2)	117 (100)		
Timing of ANC registration					
First trimester	59 (44.3)	200(55.7)	359(100)	0.406	0.524
Second trimester	7(36.8)	12(63.2)	19(100)		
Opportunity to be advised/counselled during ANC visits (where to deliver)					
Yes	73(38.2)	118(61.8)	191(100)	5.929	0.052
No	95(49.7)	96(50.3)	191(100)		
Opportunity to be advised/counselled during ANC visits (Benefits of delivering at the health facility/hospital)					
Yes	63(43.4)	82(56.6)	145(100)	0.016	0.898
No	105(44.1)	133(55.9)	238 (100)		
Opportunity to be advised/counselled during ANC visits (What to do in case of any complication)					
Yes	129(40.7)	188(59.3)	317(100)	7.508	0.006*
No	39(59.1)	27(40.9)	66(100)		
Place of delivery					
Governmental hospital	140(43.8)	180 (56.3)	320(100)	0.952	0.329
Private hospital	27(50.9)	26(49.1)	53 (100)		

*Statistically significant

Table (4.9) shows the analysis of obstetric characteristics and their impact on maternal knowledge of ODS. The results revealed three significant associations. First, it is remarkable that parity exhibited a significant relationship with knowledge levels ($\chi^2 = 14.17$, p =.001). Participants who were primiparas demonstrated higher proportions of inadequate knowledge compared to their counterparts.

The findings are consistent with that of Imani Ramazani. (2023) that showed those who delivered more than twice, were more likely to be aware of ODS than other women. Also, the same results were derived among Jordanian women (Al-Matarneh et al., 2023).

Second, the place of ANC follow-up also played a crucial role ($\chi^2 = 12.44$, p = 0.002), as participants attending governmental and private clinics displayed higher knowledge levels (69.2% adequate knowledge). Third, the opportunity for counselling during ANC visits regarding what to do in case of complications also significantly impacted knowledge levels ($\chi^2 = 7.508$, p =.006). In contrast, the timing of ANC registration, Gravidity, and the place of delivery did not show a statistically significant relationship with knowledge of ODS.

Table 4.10: Relationship between attitude and participants' sociodemographic variables

Variable	Attitude			$\chi 2$	P-value
	Negative N (%)	Positive N (%)	Total N (%)		
Age					
< 18 years	10(50)	10(50)	20(100)	3.150	0.369
18-25 years	53(30.8)	119(69.2)	172(100)		
26-35 years	57(32.6)	118(67.4)	175(100)		
> 35 years	6(37.5)	10(62.5)	16(100)		
Occupation					
Not employed	114(33.1)	230(66.9)	344(100)	.089	0.765
Employed	12(30.8)	27(69.2)	38(100)		
Husband occupation					
Not employed	23(31.1)	51(68.9)	74(100)	.150	0.698
Employed	103(33.4)	205(66.6)	308(100)		
Education					
Preparatory and less	9(42.9)	12(57.1)	21(100)	1.622	0.444
Secondary education	63(34.2)	121(65.8)	182(100)		
Higher education	54(30.3)	124(69.7)	174(100)		
Husband Education					
Preparatory and less	10(22.7)	34(77.3)	44(100)	4.130	0.127
Secondary education	65(37.6)	108(62.4)	173(100)		
Higher education	51(30.7)	115(69.3)	166(100)		
Income level					
< 1974 NIS	92(34.1)	178(65.9)	270(100)	0.826	0.662
1974- 2490 NIS	26(28.9)	64(71.1)	90(100)		
> 2490 NIS	7(33.3)	14(66.7)	21(100)		
Family size					
< 5 members	82(32.9)	167(67.1)	249(100)	0.000	0.985
< = 5 members	44(32.8)	90(67.2)	134(100)		

Table (4.10) shows the bivariate analysis results that examine the relationship between attitudes towards ODS among postpartum women in the Gaza Strip and various

sociodemographic variables. The analysis revealed that none of the studied variables showed a statistically significant association.

Similarly, another study showed that mothers' attitudes towards ODS were not significantly ($P > 0.05$) associated with the age of the women, socioeconomic status, ANC visits, and time to the nearest health facility (Nkencho et al., 2022).

In contrast, the result is inconsistent with a previous study's finding that revealed significant differences in the participants' attitude total scores related to the educational level, with higher educated women having more positive attitudes (Al-Matarneh et al., 2023).

Table 4.11: Relationship between attitude and participants' obstetric characteristics

Variable	Attitude			$\chi 2$	P-value
	Negative N(%)	Positive N (%)	Total N(%)		
Gravidity					
Primigravida	25(36.2)	44(63.8)	69(100)	1.100	0.577
Multigravida	85(33.2)	171(66.8)	256(100)		
Grand Multigravida	16(27.6)	42(72.4)	58(100)		
Parity					
Primipara	38(36.9)	65(63.1)	103(100)	1.134	
Multipara	80(31.7)	172(68.3)	252(100)		0.567
Grand Multipara	8(28.6)	20(71.4)	28(100)		
Place of a follow-up					
Governmental clinic	68(31.6)	147(84.4)	215(100)		
Private clinic	18(35.3)	33(64.7)	51(100)	.378	0.828
Both governmental & private clinic	40(34.2)	77(65.8)	117(100)		
Timing of ANC registration					
First trimester	120(34.1)	232(65.9)	352(100)	3.8	0.0530.263
Second trimester	4(15.4)	22(84.6)	26(100)		
Opportunity to be advised/counselled during ANC visits (Where to deliver)					
Yes	54(28.3)	137(71.7)	191(100)	4.334	0.115
No	71(37.7)	119(62.3)	191(100)		
Opportunity to be advised/counselled during ANC visits (Benefits of delivering at the health facility/hospital)					
Yes	38(26.2)	107(73.8)	145(100)	4.733	0.03*0.030*
No	77(37)	150(63)	238(100)		
Opportunity to be advised/counselled during ANC visits (What to do in case of any complication)					
Yes	99(31.2)	218(68.8)	317(100)	2.318	0.128
No	27(40.9)	39(59.1)	66(100)		
Place of delivery					
Governmental hospital	101(31.6)	219(68.4)	320(100)	4.951	0.026*
Private hospital	25(47.2)	28(52.8)	53(100)	4.951	0.026*

*Statistically significant

Table (4.11) analyses obstetric characteristics and their influence on women's attitudes towards ODS. The results revealed two factors that showed a significant association. First, it is remarkable that having the opportunity to be counselled during ANC visits about the benefits of delivering at the health facility/hospital exhibited a statistically significant association with attitude levels ($\chi^2 = 4.733$, $p = 0.03$). Participants who were counselled demonstrated higher proportions of positive attitudes toward ODS compared to their counterparts (73.8% vs 63%). Second, the place of delivery was found to have a significant relationship with attitudes ($\chi^2 = 4.951$, $p=.026$) as higher proportions of those who delivered at governmental hospitals exhibited a positive attitude compared to those who delivered at private hospitals.

A different result was reported in another study as there is an association between women's attitudes toward ODS and each of parity and gravidity in that women with multi-para and multigravida have more positive attitudes if compared to those with primipara and multipara, respectively (Al-Matarneh et al., 2023). The only variable that showed a significant association with the attitude of the Jordanian women regarding ODS was the number of ANC visits, as those having four ANC visits or more showed a more positive attitude (Nkencho et al., 2022). However, the current study could not examine this relationship as most women (97.9%) have four ANC visits or more.

Table 4.12: Relationship between knowledge, attitude, and health-seeking actions towards ODS

Variable	Categories	Health seeking action			Chi	p-value
		Inappropriate	Appropriate	Total		
Knowledge	Inadequate	40 (74.1)	14(25.9)	54(100)	62.657	0.00*
	Adequate	6(7.6)	73(92.4)	79(100)		
Attitude	Negative	20(37.7)	33(62.3)	53(100)	0.386	0.534
	Positive	26(32.5)	54(67.5)	80(100)		

*Statistically significant

Table (4.12) presents the relationship between knowledge and attitudes towards ODS and the health-seeking action taken by women when facing danger signs. The results showed that knowledge had a statistically significant relationship with the health-seeking action (χ^2 = 62.657, p = 0.00). Specifically, 92.4% of women with adequate knowledge took appropriate health-seeking actions when facing ODS. This relationship emphasizes the importance of improving women's knowledge of ODS to empower them to take the appropriate actions in case a danger sign has occurred.

Similarly, 67.5% of women who had positive attitudes towards ODS took appropriate health-seeking actions when facing ODS. However, this relationship didn't show a statistically significant association.

4.3 Multivariate Analysis

Table 4.13: Prediction model of knowledge

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1[a]	Age, Ref. < 18 years			1.628	3	0.653			
	18-25 years	-1.028	0.954	1.162	1	0.281	0.358	0.055	2.319
	26-35 years	-0.652	0.784	0.692	1	0.406	0.521	0.112	2.422
	> 35 years	-0.784	0.757	1.075	1	0.300	0.456	0.104	2.011
	Occupation, Ref. Not employed	1.502	0.562	7.149	1	0.007*	4.493	1.494	13.514
	mother Education, Ref. Preparatory and less			0.368	2	0.832			
	Secondary education	0.322	0.534	0.365	1	0.546	1.381	0.485	3.930
	Higher education	0.295	0.583	0.257	1	0.612	1.343	0.429	4.208
	Husband education, Ref. Preparatory and less			11.057	2	0.004*			
	Secondary education	1.256	0.417	9.056	1	0.003	3.510	1.549	7.951
	Higher education	1.508	0.463	10.622	1	0.001	4.517	1.824	11.185
	Average monthly family income, Ref. < 1974 NIS			1.946	2	0.378			
	1974- 2470 NIS	-0.449	0.661	0.462	1	0.497	0.638	0.175	2.330
	> 2470 NIS	-0.738	0.639	1.335	1	0.248	0.478	0.137	1.672
	Family size, Ref. < 5 members	0.874	0.339	6.665	1	0.010*	2.397	1.234	4.654
	Parity Ref. primipara			0.144	2	0.930			
	Multipara	0.048	0.347	0.019	1	0.891	1.049	0.531	2.070
	Grand multipara	0.239	0.646	0.136	1	0.712	1.270	0.358	4.507
	Place of Antenatal visits, Ref. both governmental and private centers			8.129	2	0.017*			
	Private hospital/ Clinic	-0.406	0.271	2.239	1	0.135	0.666	0.392	1.134
	Governmental Hospital/ Clinic	-1.114	0.392	8.059	1	0.005	0.328	0.152	0.708
	Opportunity to be advised/counselled during ANC visits Benefits of delivering at the health facility/hospital, Ref. Yes	-0.518	0.300	2.977	1	0.084	0.596	0.331	1.073
	Constant	-0.066	1.221	0.003	1	0.957	0.936		

*Statistically significant, OR: Odds ratio

The logistic regression analysis, as illustrated in Table (4.13), is intended to predict the factors that affect women's knowledge of ODS. Independent variables that were identified through significant associations in bivariate analysis were incorporated into this model. The Hosmer-Lemeshow test was employed to evaluate the model's goodness-of-fit, resulting in a chi-square value of 9.69 and a p-value of 0.287. The model's adequate fit to the data is indicated by the non-significant p-value, which means no statistically significant differences between the predicted and observed knowledge frequencies ($p > 0.05$). Additionally, the Nagelkerke R^2 value of 0.240 indicates that the model explains 24% of the variability in women's knowledge of ODS among the eight variables examined: Occupation, mother's education, husband's education, average monthly family income, family size, parity, place of ANC visits, and the opportunity for counselling during ANC visits. Four significant predictors of knowledge are identified in the analysis.

Women's occupation was initially identified as a significant predictor (P = 0.007). While maintaining all other variables constant, employed women demonstrated a 4.5-times increase in the likelihood of having adequate knowledge of ODS compared to unemployed women (OR = 4.49, CI = 1.494–13.514). This finding emphasises the influence of employment on women's knowledge, which may be associated with access to educational resources and exposure to healthcare information in work environments.

Secondly, the husband's educational level substantially impacted women's knowledge (P=0.004), holding all other variables constant. Husbands with secondary education are associated with an increase in their wife knowledge 3.5 times if compared to those having preparatory school or less (OR = 3.5, P = 0.003, CI = 1.549–7.951). This association was more significant among husbands with higher education (OR = 4.52, P = 0.001, CI = 1.82–11.18) as it was associated with a 4.5 times increase in the odds of women having adequate knowledge of ODS. This implies that the husband's educational background may significantly influence women's health literacy, most likely because of household knowledge-sharing dynamics.

Third, family size significantly predicted women's knowledge about ODS (P=0.010), holding all other variables constant. Women with a family size of fewer than five members had a 2.4 times greater increase in knowledge than those with a family of five members or more (OR=2.39, CI: 1.234- 4.654).

Fourth, the location of the ANC follow-up was also a significant predictor (P = 0.017), holding all other variables constant. The likelihood of being knowledgeable about ODS decreased by 67.2% among women who exclusively attended governmental clinics compared to those who participated at governmental and private clinics during ANC visits (OR = 0.328, CI = 0.152–0.708). This finding may indicate discrepancies in the quality of educational and counselling services offered in various healthcare environments.

Our findings align with previous research by Regasa et al. (2020), who identified occupation, educational status, and ANC follow-up as critical determinants of knowledge. The link between increased ANC visits and more excellent knowledge of ODS and the association between governmental employment and higher knowledge levels is consistent with our findings on the importance of occupational status and healthcare access.

Additionally, Shibeshi et al.'s (2024) results underscore the importance of education and employment. Women between the ages of 26 and 35 who held government positions and had completed secondary education were likelier to possess adequate knowledge of ODS. These results are consistent with our research on husbands' education and occupation, emphasising the significance of education in developing health-related knowledge.

Conversely, our findings are different from those of specific studies. For instance, Ahmed et al. (2023) discovered that women whose husbands had primary school education were more knowledgeable than those whose spouses held higher degrees. This discrepancy may be due to the function of education, cultural norms, or contextual differences in healthcare systems across various regions.

In addition, the findings do not align with the results of Imani Ramazani et al. (2023), who identified multiparity as a predictor of women's knowledge of ODS. In addition, Manandhar and Tamang (2022) found no statistically significant correlation between knowledge scores and demographic variables, including age and educational status. This discrepancy may be attributable to differences in the size of the sample, the location of the study, or specific cultural influences that influence women's knowledge differentially across various populations.

Overall, this investigation contributes to the evidence that women's knowledge of ODS is significantly influenced by higher education, occupation, family size, and healthcare accessibility.

Chapter Five

Conclusion and Recommendations

5.1 Conclusion

The objective of this study was to assess the knowledge, attitude, and associated factors of postpartum women who attend ANC in Gaza City concerning obstetric danger. In addition, women seeking actions were also studied to know the appropriateness of their actions when ODS occurred. The research demonstrated that 56.1% of women had adequate knowledge, while 67.1% exhibited a positive attitude. The study also showed that only 65.4% of women who experienced ODS took the appropriate action by seeking healthcare from a healthcare facility. Four variables function as predictors that influence women's knowledge of ODS. These include the woman's occupation, her husband's educational level, family size, and the ANC follow-up location.

This study contributes to the existing knowledge on maternal health by identifying four critical variables as significant predictors of women's health-seeking action about ODS. It offers a concentrated list of factors that policymakers and healthcare providers should consider when developing interventions to enhance maternal health outcomes.

5.2 Recommendations

Based on the study results, the researcher recommends the following:

5.2.1 Recommendations for Policymakers

1. To conduct nationwide or region-specific awareness programs targeting pregnant and postpartum women to improve knowledge about less-recognized ODS, particularly convulsions and retained placenta. These programs could include community outreach, multimedia campaigns, and integration with existing ANC and postnatal services.
2. ANC providers should be encouraged to offer structured education on ODS at every visit. This education should include not just common signs but also lesser-known ones. Interactive and practical methods, such as group discussions or visual aids, could be used to engage women.
3. Policies could encourage male participation in ANC visits or dedicated sessions on pregnancy complications to raise awareness within the family unit.
4. To implement community-level interventions that leverage existing social networks, including older family members and community leaders, to transmit knowledge on ODS. This approach acknowledges the critical role of intergenerational knowledge sharing and community ties, making ODS education more culturally relevant and accessible.

5.2.2 Recommendations for women

1. Women should be encouraged to register early for ANC and attend all scheduled visits to receive timely and accurate information on ODS.
2. Women knowledgeable about ODS should share this information with other women in their communities, especially those with less access to formal healthcare.
3. Women should actively request more information from their healthcare providers during ANC visits. Developing a proactive attitude toward learning and asking questions can empower women to make informed decisions.

5.2.3 Recommendations for Further Research

1. Research how male partner involvement can influence maternal health outcomes, specifically regarding knowledge transmission and support for health-seeking

behaviours. This could help in developing targeted interventions for husbands or male relatives.

2. Further studies should examine the financial barriers preventing women from seeking care when facing ODS. This could include qualitative research to understand women's perceptions of cost, access to financial resources, and the impact of economic constraints on maternal health decisions.
3. Investigate the cultural factors that influence the transmission of maternal health knowledge within families and communities. Understanding intergenerational and community knowledge-sharing can help inform culturally sensitive health education strategies.
4. Conduct longitudinal studies on the impact of community-based interventions to raise awareness about ODS. This research could assess whether community-driven initiatives, such as peer education or elder-led discussions, effectively improve knowledge and health-seeking action over time.

References

Abdelhalim, N., Osman, H., El Gelany, S., & Abdelhafez, A. (2023). Knowledge and Attitude of Pregnant Women Regarding Danger Clinical Features of Pregnancy. Minia Scientific Nursing Journal, 013(1), 2–8. https://doi.org/10.21608/msnj.2023.185003.1047

Abu-Shaheen, A., Heena, H., Nofal, A., Riaz, M., & AlFayyad, I. (2020). Knowledge of obstetric danger signs among Saudi Arabian women. BMC Public Health, 20, 1-6.

Adema, B., & Edamo, W. (2020). KAP on Obstetrics Danger Signs of Pregnancy Among ANC Attending Pregnant Mother in Gununno Health Center, Gununo Town, Wolaita Zone, Southern Ethiopia April: 2019. Journal of Family Medicine and Health Care, 6(3), 91. https://doi.org/10.11648/j.jfmhc.20200603.17

Ahmed, A., Nuh, A., & Hassan, H. (2023). Knowledge of Obstetric Danger Signs and Associated Factors among Pregnant Women Attending Antenatal Care in Hargeisa Town Health Institutions, Somaliland: A Cross-sectional Study. Research Square (Research Square). https://doi.org/10.21203/rs.3.rs-2293168/v1

Al-Matarneh, B. M., Al-khawaldeh, O. A., & Alsaraireh, A. M. (2023). Knowledge, attitudes and practices regarding obstetric danger signs among Jordanian pregnant women attending antenatal clinics in Jordan. Central European Journal of Nursing and Midwifery, 14(2), 860–868. https://doi.org/10.15452/cejnm.2022.13.0021

Asfaha, B., Gebremariam, S., Gebremariam, G., & Weldemariam, A. (2022). Knowledge about Obstetric Danger Signs and Related Factors in Reproductive-Age Women in the Southeast Zone of Tigray, 2021: A Cross-Sectional Study. International Journal of Reproductive Medicine, 2022, 1–10. https://doi.org/10.1155/2022/7346618

Balde, M., Diallo, A., Touré, A., Soumah, A., Sall, A., Camara, S., Balde, O., Diallo, R., & Barry, A. (2021). Women's Knowledge and Attitudes about Complications during Pregnancy and Childbirth in Guinea. Open Journal of Obstetrics and Gynecology, 11(10), 1291–1305. https://doi.org/10.4236/ojog.2021.1110120

Bej, P. (2020). Knowledge, attitudes and practices among pregnant women about antenatal care, danger signs during pregnancy and adopting family planning methods. Journal of Preventive Medicine and Holistic Health, 4(1), 10–15. https://www.jpmhh.org/article-details/6832

Bintabara, D., Mpembeni, R. N., & Mohamed, A. A. (2017). Knowledge of obstetric danger signs among recently delivered women in Chamwino district, Tanzania: a cross-sectional study. BMC pregnancy and childbirth, 17, 1-10.

Bolanko, A., Namo, H., Minsamo, K., Addisu, N., & Gebre, M. (2021). Knowledge of obstetric danger signs and associated factors among pregnant women in Wolaita Sodo town, South Ethiopia: A community-based cross-sectional study. SAGE Open Medicine, 9, 205031212110011. https://doi.org/10.1177/20503121211001161

Dangura, A. D. (2020). Knowledge about childbirth and postpartum obstetric danger signs and associated factors among mothers in Dale district, Southern Ethiopia. BMC pregnancy and childbirth, 20(1), 340.

Eagly, A.H. & Chaiken, S. (1993). The psychology of attitudes. Fort Worth, TX: Harcourt Brace Jovanovich.

Elsous, A., El-Oka, D., Abo-Namos, F., Jnead, A., & Abu-Ajwaa, E. (2022). Assessing Awareness of Maternity Danger Signs and its Associated Factors among Women Benefited from Antenatal Care Services in the Gaza Strip, Palestine. Women. Health. Bull, 9(3), 123–131. https://doi.org/10.30476/WHB.2022.95008.1176

Emeh, N., Atem, N., Humphrey, A., Gilbert, N., & Landis, C. (2021). Antenatal care and determinants of obstetric danger sign awareness of immediate postpartum women at Buea Regional Hospital, Cameroon. Pan African Medical Journal, 38. https://doi.org/10.11604/pamj.2021.38.247.20977

Geleto, A., Chojenta, C., Musa, A., & Loxton, D. (2019). WOMEN's Knowledge of Obstetric Danger signs in Ethiopia (WOMEN's KODE): a systematic review and meta-analysis. Systematic Reviews, 8(1). https://doi.org/10.1186/s13643-019-09797

Gesese, S. S., Mersha, E. A., & Balcha, W. F. (2023). Knowledge of danger signs of pregnancy and health-seeking action among pregnant women: a health facility-based cross-sectional study. Annals of Medicine and Surgery, 85(5), 1722-1730.

Haileamlak, A. (2018). What Factors Affect Health Seeking Behavior? In Ethiopian Journal of Health Sciences (Vol. 28, Issue 2, p. 110). https://doi.org/10.4314/ejhs.v28i2.1

Iliyasu, Z., Galadanci, H., Abdurrahim, A., Jibo, A., Salihu, H., & Aliyu, M. (2019). Correlates of Obstetric Risk Perception and Recognition of Danger Signs in Kano, Northern Nigeria. Annals of Global Health, 85(1). https://doi.org/10.5334/aogh.376

Imani Ramazani, B. E., Mabakutuvangilanga Ntala, S. D., Katuashi Ishoso, D., & Rothan-Tondeur, M. (2023). Knowledge of Obstetric Danger Signs among Pregnant Women in the Eastern Democratic Republic of Congo. International Journal of Environmental Research and Public Health, 20(8), 5593.

John, N., & George, A. (2020). Knowledge, attitude and practices for antenatal care, danger signs of pregnancy and family planning among pregnant women in a rural area of Kerala, India. International Journal of Community Medicine and Public Health, 8(1), 201. https://doi.org/10.18203/2394-6040.ijcmph20205693

Kaewkiattikun, K., & Lekbornvornwong, T. (2019). Awareness of Obstetric Danger Signs and Associated Factors among Pregnant Women Attending Antenatal Care at the Faculty of Medicine Vajira Hospital. Vajira Medical Journal: Journal of Urban Medicine, 63(2), 75–84. https://he02.tci-thaijo.org/index.php/VMED/article/view/211576

Kendra Cherry. (2022). How Do Cross-Sectional Studies Work? Medically Reviewed by Steven Gans, MD. https://www.verywellmind.com/what-is-a-cross-sectional-study-2794978

Kendra Cherry. (2022). How Do Cross-Sectional Studies Work? Medically Reviewed by Steven Gans, MD. https://www.verywellmind.com/what-is-a-cross-sectional-study-2794978

Khanom, H., Setara B., Barua, P., Khatun, S., Khatun, F., Hossain, S., Hasan, M., Bala, S., & Sultana, N. (2019). Assessment of Level of Knowledge and Attitude on Danger Signs among the Multipara Pregnant Mothers Attending for ANC in Gynae Outpatient Department at Universal Medical College & Hospital, Dhaka. https://www.researchgate.net/profile/Habiba-Khanom-

Koovimon, P., Kaikaew, K., Mahoree, K., & Bumphenkiatikul, T. (2023). Knowledge of obstetric danger signs and associated factors among pregnant women attending antenatal care services at Thai community hospitals. F1000Research, 12, 851–851. https://doi.org/10.12688/f1000research.131267.2

Kumar, A., Yadav, G., Zutshi, V., & Bodat, S. (2019). Knowledge about obstetric danger signs among pregnant women attending antenatal clinic in a tertiary care hospital of Delhi: a cross-sectional study. International Journal of Reproduction, Contraception, Obstetrics and Gynecology, 8(9), 3738. https://doi.org/10.18203/2320-1770.ijrcog20193808

Magesa, R., Sungwa, E., & Mwakanyamale, A. (2023). Assessment of knowledge on the danger signs of pregnancy among pregnant women at Sinza Palestina Hospital in Ubungo Municipality, Tanzania. Tanzania Journal of Health Research. https://dx.doi.org/10.4314/thrb.v24i4.15

Maki, J., Dagestani, H., Aldokhail, L., Alaradi, L., & Albalawi, M. (2023). Awareness of Obstetric and Delivery Complications Among Saudi Pregnant Women in Riyadh, Saudi Arabia. Cureus, 15(5), e39630. https://doi.org/10.7759/cureus.39630

Manandhar, N., & Tamang, M. (2022). Knowledge regarding obstetric danger signs among mothers attending antenatal clinic at Scheer Memorial Adventist Hospital, Banepa, Kavre. Nepal Journals Online, 24(2), 91-95.

Mekonnen, O., Alelign, Z., Adugnaw, E., & Neges, K. (2022). Assessment of Knowledge, Attitude and Practices on Birth Preparedness and Complication Readiness among Pregnant Women attending Antenatal Follow at Mizan-Tepi University Teaching Hospital, Southwest Ethiopia. https://doi.org/10.21203/rs.3.rs-1699626/v1

Mekonnen, T. (2018). Assessment of Knowledge and Attitude towards Obstetric Danger Signs During Pregnancy among Pregnant Mothers Attending Antenatal Care in Mizan Aman Public Health Facilities, Bench Maji Zone, Southwest Ethiopia. Journal of Gynecology and Women's Health, 11(3). https://doi.org/10.19080/jgwh.2018.11.555813

Mihret, M., & Wondimu, H. (2023). Assessment of Knowledge about Obstetric Danger Signs and Associated Factors among Pregnant Women in Debre Tabor Town, Northwest Ethiopia. Journal of Pregnancy, 2023, 1–7. https://doi.org/10.1155/2023/1475500

Mohajan, H. (2016). Knowledge is an essential element in the present world. International Journal of Publication and Social Studies. Available online at https://mpra.ub.uni-muenchen.de/83041/

Mukhtar Ahmed, A., Mohamed Nuh, A., & Khalif Hassan, H. (2023). Knowledge of Obstetric Danger Signs and Associated Factors among Pregnant Women Attending Antenatal Care in Hargeisa Town Health Institutions, Somaliland: A Cross-sectional Study. https://doi.org/10.21203/rs.3.rs-2293168/v1

Nabugwere, R., Mbalinda, S., & Ayebare, E. (2022). Knowledge of postnatal danger signs and associated factors among first-time mothers at Tororo General Hospital, Uganda. African Journal of Midwifery and Women's Health, 16(4), 1–9. https://doi.org/10.12968/ajmw.2021.0057

Nassar, A. (2018). Factors Influencing the Quality of Antenatal Care at Governmental Clinics in Gaza Strip. *Unpublished Master Thesis*. Al-Quds University, Al-Quds, Palestine

Nkamba, D., Wembodinga, G., Bernard, P., Ditekemena, J., & Robert, A. (2021). Awareness of obstetric danger signs among pregnant women in the Democratic Republic of Congo: evidence from a nationwide cross-sectional study. BMC Women's Health, 21(1). https://doi.org/10.1186/s12905-021-01234-3

Nkencho, O. (2022). Knowledge and Attitude of Pregnant Women towards Obstetric Danger Signs amongst Those Attending Antenatal Clinic in Yenagoa Metropolis, South-South, Nigeria. International Journal of Women's Health and Wellness, 8(2), 139. https://doi.org/10.23937/2474-1353/1510139

Nurgi, S., Tachbele, E., Dibekulu, W., & Wondim, M. A. (2017). Knowledge, Attitude and Practice of Obstetric Danger Signs during Pregnancy in Debre Berhan, Ethiopia. Health Science Journal, 11(6). https://doi.org/10.21767/1791-809x.1000533

Nyfløt, L., & Sitras, V. (2018). Strategies to reduce global maternal mortality. Acta Obstetricia et Gynecologica Scandinavica, 97(6), 639–640. https://doi.org/10.1111/aogs.13356

Oguntunde, O., Nyenwa, J., Yusuf, F., Dauda, D., Salihu, A., & Sinai, I. (2021). Factors associated with the knowledge of obstetric danger signs, and perceptions of the need for obstetric care amongst married young women in northern Nigeria. African Journal of Primary Health Care & Family Medicine, 13(1). https://doi.org/10.4102/phcfm.v13i1.2557

Okour, A., Alkhateeb, M., & Amarin, Z. (2012). Awareness of danger signs and symptoms of pregnancy complications among women in Jordan. International Journal of Gynecology & Obstetrics, 118(1), 11-14.

Olatoye, A., Olatoye, A., & Afolabi, E. (2022). Knowledge and Perception of Obstetric Danger Signs among Pregnant Women Attending Antenatal Clinics in Selected Health Facilities, Ile-Ife, Osun State: A Cross-Sectional Study. https://www.researchgate.net/publication/360630354_Knowledge_and_Perception_of_Obstetric_Danger_Signs_among_Pregnant_Women_Attending_Antenatal_Clinics_in_Selected_Health_Facilities_Ile-Ife_Osun_State_A_Cross_Sectional_Study

Osegi, N., Eguvbe, A. O., & Adam, V. Y. (2022). Birth Preparedness and Complication Readiness amongst Antenatal Attendees in Yenagoa, South-South, Nigeria. Journal of Health and Medical Research, 4(5), 001-005.

Palestinian Central Bureau of Statistics. Poverty Profile in Palestine, 2017. Accessed on 2.8.2024 retrieved from https://www.pcbs.gov.ps/Document/pdf/txte_poverty2017.pdf?date=16_4_2018_2. PCBS

Palestinian Ministry of Health. (2022). Annual Health Report Palestine 2021. PHIC. Ramallah, Palestine: MoH.

Puthussery, S., Tseng, P., Sharma, E., Harden, A., & Leah, L. (2022). Late antenatal care initiation and neonatal outcomes in an ethnically diverse maternal cohort. European Journal of Public Health, 32(Supplement_3), ckac130-243.

Regasa, M., Markos, J., Habte, A., & Upashe, S. (2020). Obstetric Danger Signs: Knowledge, Attitude, Health-Seeking Action, and Associated Factors among Postnatal Mothers in Nekemte Town, Oromia Region, Western Ethiopia—A Community-Based Cross-Sectional Study. Obstetrics and Gynecology International, 2020, 1–8. https://doi.org/10.1155/2020/6573153

Reinisch, J. Daniel, C. & Li, W. (2016). Getting a valid survey response from 662 plastic surgeons in the 21st century. Annals of Plastic Surgery, 76(1), PP. 3-5.

Shibeshi, K. A., Lemu, Y. K., Gebretsadik, L. A., Gebretsadik, A. M., & Morankar, S. (2024). Sex Disparities: Couple's Knowledge and Attitude Towards Obstetric

Danger Signs and Maternal Health Care: in Rural Jimma Zone of Ethiopia. International Journal of Women's Health, 987-1007.

Story, D. & Tait, A. (2019). Survey research. Anesthesiology, 130(2), PP. 192-202.

Tamang, S. T., Dorji, T., Yoezer, S., Phuntsho, T., & Dorji, P. (2021). Knowledge and understanding of obstetric danger signs among pregnant women attending the antenatal clinic at the National Referral Hospital in Thimphu, Bhutan: a cross-sectional study. BMC Pregnancy and Childbirth, 21(1), 1-9.

Terefe, N., Nigussie, A., & Tadele, A. (2020). Prevalence of Obstetric Danger Signs during Pregnancy and Associated Factors among Mothers in Shashemene Rural District, South Ethiopia. Journal of Pregnancy, 2020, 1–7. https://doi.org/10.1155/2020/6153146

Teshoma Regasa, M., Markos, J., Habte, A., & Upashe, S. P. (2020). Obstetric Danger Signs: Knowledge, Attitude, Health-Seeking Action, and Associated Factors among Postnatal Mothers in Nekemte Town, Oromia Region, Western Ethiopia—A Community-Based Cross-Sectional Study. Obstetrics and Gynecology International, 2020(1), 6573153.

UNICEF. (2019). Mapping and Assessment of Maternal, Neonatal and Young Children Health Care Services in Gaza Strip, State of Palestine. Accessed in 9.9.2024 retrieved from https://www.unicef.org/sop/media/1351/file/MNCH%20Gaza%20Mapping%20report.pdf

Uwiringiyimana, E., Manirambona, E., Byiringiro, S., Nsanzimana, A., Uhawenayo, N., Ufitinema, P., Bayizere, J., Moreland, P., Meharry, P., & Ntasumbumuyange, D. (2022). Pregnant women's knowledge of obstetrical danger signs: A cross-sectional survey in Kigali, Rwanda. PLOS Global Public Health, 2(11), e0001084. https://doi.org/10.1371/journal.pgph.0001084

Wang, X., & Cheng, Z. (2020). Cross-sectional studies: strengths, weaknesses, and recommendations. Chest, 158(1), S65-S71.

Wassihun, B., Negese, B., Bedada, H., Bekele, S., Bante, A., Yeheyis, T., Abebe, A., uli, D., Mohammed, M., Gashawbez, S., & Hussen, E. (2020). Knowledge of obstetric danger signs and associated factors: a study among mothers in Shashamane town,

Oromia region, Ethiopia. Reproductive Health, 17(1). https://doi.org/10.1186/s12978-020-0853-z

World Health Organization. (2022). WHO recommendations on maternal and newborn care for a positive postnatal experience. Accessed in 9.9.2024 retrieved from https://www.who.int/publications/i/item/9789240045989

World Health Organization. Maternal Mortality. (2024). Accessed in 7.9.2024 retrieved from https://www.who.int/news-room/fact-sheets/detail/maternal-mortality

Wulandari, R., & Laksono, A. (2020). Determinants of knowledge of pregnancy danger signs in Indonesia. PLOS ONE, 15(5), e0232550. https://doi.org/10.1371/journal.pone.0232550

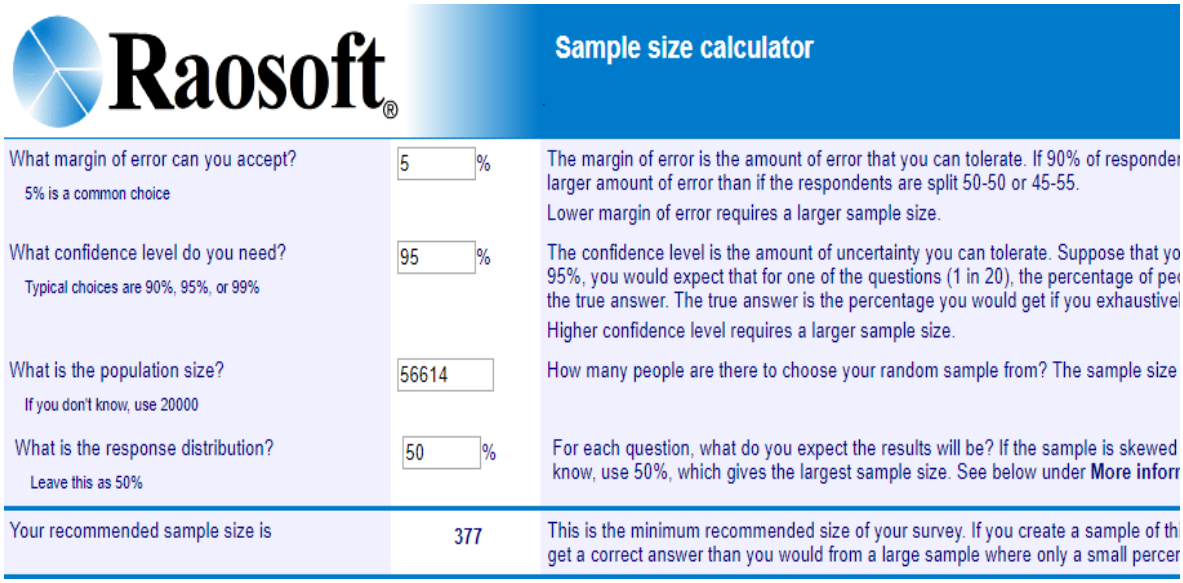
Yosef, T., & Tesfaye, M. (2021). Pregnancy danger signs Knowledge and health-seeking behaviour among reproductive age women in southwest Ethiopia. Women's Health, 17, 174550652110632. https://doi.org/10.1177/17455065211063295

Yunitasari, E., Matos, F., Zulkarnain, H., Kumalasari, D., Kusumaningrum, T., Putri, T., Yusuf, A., & Astuti, N. (2023). Pregnant woman awareness of obstetric danger signs in developing country: systematic review. BMC Pregnancy and Childbirth, 23(1). https://doi.org/10.1186/s12884-023-05674-7

Zaki, A., Fouad, S., & khedr, N. (2021). Assessment of Knowledge and Practices Of Pregnant Women Toward Danger Signs Of Pregnancy. Mansoura Nursing Journal, 8(1), 13–32. https://doi.org/10.21608/mnj.2021.179792

Annexes

Annex 1: Sample size calculation



Raosoft®

Sample size calculator

What margin of error can you accept? 5% is a common choice	5 %	The margin of error is the amount of error that you can tolerate. If 90% of responde larger amount of error than if the respondents are split 50-50 or 45-55. Lower margin of error requires a larger sample size.
What confidence level do you need? Typical choices are 90%, 95%, or 99%	95 %	The confidence level is the amount of uncertainty you can tolerate. Suppose that yo 95%, you would expect that for one of the questions (1 in 20), the percentage of pe the true answer. The true answer is the percentage you would get if you exhaustivel Higher confidence level requires a larger sample size.
What is the population size? If you don't know, use 20000	56614	How many people are there to choose your random sample from? The sample size
What is the response distribution? Leave this as 50%	50 %	For each question, what do you expect the results will be? If the sample is skewed know, use 50%, which gives the largest sample size. See below under **More inforr**
Your recommended sample size is	377	This is the minimum recommended size of your survey. If you create a sample of th get a correct answer than you would from a large sample where only a small percer

Annex 2: Questionnaire, English version

Part 1: Socio-demographic Characteristics

No.	Question	Choice answers
1.	Age	in years_____
2.	Marital Status	1. Married 2. Divorced 3. Widowed
3.	Occupation	1. Housewife 2. Employed 3. Not employed
4.	Husband occupation	1. Employed 2. Not employed
5.	Educational status of the mother	1. Primary education 2. Secondary education 3. Higher education
6.	The educational status of the father	1. Primary education 2. Secondary education 3. Higher education
7.	Average monthly family income	1. Above 2490 NIS 2. Between 1974-2490 NIS (Poverty) 3. Below 1974 NIS (Absolute Poverty)
9.	Family size (including mother and father)	_____

Part 2: Obstetric Characteristics

No.	Questions	Choice of answers
10	Gravida	_____
11	Para	_____
12	Have you attended an ANC follow-up when you were pregnant?	1. Yes 2. No ***(skip to Q no. 16)***
13	Place of Antenatal visits	1. Governmental Hospital/ Clinic 2. Private Hospital/ Clinic
14	What was the age of pregnancy at your first ANC visit?	_____ In weeks
15	In any of those ANC visits, did you get an opportunity to be advised/counselled on the following? (More than one response is possible)	1. Where to deliver 2. Benefits of delivering at the health facility/hospital 3. What to do in case of any complication
16	Where did you give birth to your last child/birth?	1. Governmental hospital 2. Private hospital

Part 3: Knowledge about Obstetric Danger Sign

No.	Questions	Choice of answers
17	Have you ever heard or had Information about ODS?	1. Yes 2. No
18	If ***(Q17)*** is yes, what does "Obstetric danger sign" mean?	1. Signs that indicate that the pregnant woman or/and the pregnancy and labour have an ailment manifested by such abnormal signs as bleeding, severe headache, etc. 2. Other (specify) ..... 3. Don't know

19	If ***(Q17) is yes***, which danger signs do you know?	**To capture potential danger signs during pregnancy accurately, please indicate which signs you believe could potentially indicate a risk in pregnancy (multiple selections are allowed).** 1. Vaginal bleeding 2. A sudden gush of fluid before labour 3. Severe headache 4. Dizziness and blurred vision 5. Excessive vomiting 6. Swelling of hands, face 7. Loss of fetal movement 8. Premature onset of contraction 9. Severe, unusual abdominal pain **To accurately capture potential danger signs during pregnancy, please indicate which signs you believe could potentially indicate a risk in childbirth (multiple selections are allowed).** 1. Severe vaginal bleeding 2. Prolonged labor 3. Convulsions 4. Retained placenta. **To accurately capture potential danger signs during pregnancy, please indicate which signs you believe could potentially indicate risk in the postpartum period (multiple selections are allowed).** 1. Severe bleeding following childbirth 2. loss of consciousness after childbirth 3. Fever. 4. Foul-smelling vaginal discharge
20	Where did you hear about danger signs during pregnancy?	1. Family member 2. Neighbor 3. Health institution 4. Internet and social media
21	In your opinion, is it important for women to know the danger signs of pregnancy?	1. Yes 2. No 3. Don't know
22	Give reasons for your answer to question ***no. 21***	1. Yes, because they will seek medical care on time 2. No, because the danger signs will go away on their own 3. Other (specify).....

23	What are the risk factors for developing pregnancy complications that you know? (Multiple responses are allowed).	1. Older age (35 years and above) or young mother's age (below 20) 2. Genetic predisposition 3. Preexisting medical condition 4. Other (specify) ..... 5. Don't know
24	Do you know at least three ODS signs that may occur during pregnancy?	1. Yes 2. No
25	Are you aware of the potential risks of not recognizing and addressing ODS?	1. Yes 2. No
26	Have you ever discussed ODS with a healthcare professional?	1. Yes 2. No
27	Do you feel confident in your ability to identify ODS?	1. Yes 2. No
28	Do you know the importance of seeking timely medical attention when experiencing ODS?	1. Yes 2. No
29	Have you received any formal training or education on ODS?	1. Yes 2. No
30	Do you feel adequately informed about the actions to take in the presence of ODS?	1. Yes 2. No
31	Are you aware of any local resources or services available for support and guidance regarding ODS?	1. Yes 2. No

Part 4: Service–Related Information

No.	Questions	Choice of answers
32	How much time do you take to reach the nearest health centre?	1. Less than one hour 2. More than one hour (specify the time) .....
33	What means of transport do you use to go to the health centre?	1. On foot 2. By taxi
34	Did you receive antenatal care during your last pregnancy?	1. Yes 2. No (skip to question ***(no. 40)***
35	How many antenatal visits did you make during your last pregnancy?	1. One visit 2. Two visits 3. Three visits 4. Four visits 5. More than four visits
36	How much time did you spend with the healthcare provider during the last visit?	1. Less than 5 minutes 2. 5-10 minutes 3. 11-20 minutes 4. 21-30 minutes 5. 31-40 minutes
37	Were you given time to ask questions?	1. Yes 2. No
38	If you become pregnant again, would you attend antenatal care at the same health centre?	1. Yes 2. No
39	Give reasons for your answer to question ***(no. 38)*** above	1. Yes, because the quality of services is very good 2. No, because the quality of services is poor 3. Other (specify) .....

Part 5: Health-seeking behaviour

No.	Questions	Choice of answers
40	Have you ever faced any ODS in your last pregnancy?	1. Yes 2. No ***(skip to Q no. 43)***
41	If yes to question ***(no 40),*** which one do you face (Multiple responses are allowed)?	**Danger Signs During Pregnancy** 1. Vaginal bleeding 2. A sudden gush of fluid before labour 3. Severe headache 4. Dizziness and blurred vision 5. Excessive vomiting 6. Swelling of hands, face 7. Loss of fetal movement 8. Premature onset of contraction 9. Severe, unusual abdominal pain **Danger signs during labour and childbirth.** 1. Severe vaginal bleeding 2. Prolonged labor 3. Convulsions 4. Retained placenta. **Danger signs during the postpartum period** 1. Severe bleeding following childbirth 2. loss of consciousness after childbirth 3. Fever. 4. Foul-smelling vaginal discharge
42	What were your actions when you faced the ODS in your last pregnancy?	1. Nothing 2. Consulted a friend/relative 3. Self-care/treatment 4 Consulted a traditional healer 5. Went to a health facility 6. Others(specify)_____
43	Upon visiting a health facility, kindly indicate the duration in hours or days that transpired before you sought the assistance of a healthcare provider or arrived at the designated healthcare facility.	1. 1-4 Hrs. 2. 5-8 Hrs. 3. One day 4. Two days 5. More than two days
44	What are the factors contributing to the delay in seeking healthcare?	1. Lack of awareness about obstetric danger sign 2. The Health Center is far 3. Lack of money 4. Lack of transportation 5. No one encouraged me to seek help

Part 6: Attitude toward ODS

Please indicate the degree of your agreement with these statements by putting (√) in the answer that expresses your opinion

No.	Questions	SD	D	N	A	SA
45	Do you agree with the importance of knowing ODS**?**					
46	Do you agree that ODS are preventable?					
47	Do you agree with the idea that mothers who develop ODS should seek help from traditional birth attendants?					
48	Do you agree with the idea that mothers who develop ODS should seek help from other older women?					
49	I feel confident in my ability to recognize ODS.					
50	Promptly seeking medical help is crucial when encountering ODS.					
51	I think it is necessary to educate pregnant women about the potential danger signs they may experience.					
52	I feel comfortable discussing ODS with healthcare providers.					
53	Knowing ODS can help prevent adverse outcomes during pregnancy.					
54	I am motivated to learn more about ODS to protect my health and my baby's health.					
55	I trust healthcare professionals' expertise in identifying and managing ODS.					
56	I will take proactive measures to prevent and address ODS.					
57	Early recognition and appropriate management of ODS can improve pregnancy outcomes.					

Annex 3: Questionnaire, Arabic version

الجزء الأول: الخصائص الاجتماعية والديموغرافية

رقم	السؤال	خيارات الأجوبة
1	العمر	_____ سنة
2	الحالة الاجتماعية	1. متزوجة 2. مطلقة 3. أرملة
3	حالة العمل	1. ربة منزل 2. يعمل 3. لا يعمل
4	حالة العمل للزوج	1. يعمل 2. لا يعمل
5	المستوى التعليمي لدى الأم	1. مستوى ابتدائي أو أقل 2. مستوى ثانوي 3. تعليم عالي
6	المستوى التعليمي لدى الأب	1. مستوى ابتدائي أول أقل 2. مستوى ثانوي 3. تعليم عالي
7	متوسط دخل الأسرة الشهري	1. أكثر من 2490 شيكل 2. بين 1974-2490 شيكل (فقر) 3. أقل من 2490 شيكل (فقر مطلق)
9	حجم الأسرة (يضم الأب والأم)	_____

الجزء الثاني: خصائص الولادة

رقم	السؤال	خيارات الأجوبة
10	عدد مرات الحمل	_____
11	عدد مرات الولادة	_____
12	هل حضرت متابعة الحمل أثناء الحمل الأخير؟	1. نعم 2. لا (انتقل الى سؤال رقم 16)
13	مكان زيارات متابعة الحمل	1. عيادة/مستشفى حكومية 2. عيادة/مستشفى خاص 3.
14	ما هو عمر الحمل في أول زيارة لك لمتابعة الحمل؟	_____ أسبوع

15	في أي من زيارات متابعة الحمل هذه، هل حصلت على فرصة للحصول على النصيحة / المشورة بشأن ما يلي؛ أكثر من رد ممكن	1. مكان الولادة 2. فوائد الولادة في مؤسسة/مستشفى صحي 3. ما يجب القيام به في حالة حدوث أي مضاعفات
16	أين أنجبت أخر طفل لك	1. مستشفى حكومي 2. مستشفى خاص

الجزء الثالث: المعرفة بعلامة خطر الحمل والولادة

رقم	السؤال	خيارات الأجوبة
17	هل سمعت من قبل أو حصلت على معلومات حول علامات خطر الحمل والولادة؟	1. نعم 2. لا
18	إذا كانت إجابة ***(س 17)*** نعم، فما معنى علامات خطر الحمل والولادة؟	1. العلامات التي تدل على أن المرأة الحامل، والحمل، والولادة مصابة بمرض تتجلى في علامات غير طبيعية مثل النزيف والصداع الشديد، وما إلى ذلك 2. أخرى (حدد) ..... 3. لا أعرف
19	إذا كانت إجابة ***(س 17)*** نعم، فما هي علامات الخطر التي تعرفها؟	من أجل التقاط علامات الخطر المحتملة أثناء الحمل بدقة، يرجى الإشارة إلى العلامات التي تعتقد أنها قد تشير إلى وجود خطر أثناء الحمل (يُسمح بالاختيارات المتعددة). 1. نزيف مهبلي 2. تدفق مفاجئ للسوائل قبل المخاض 3. صداع شديد 4. دوار وتشوش الرؤية 5. القيء المفرط 6. تورم في اليدين والوجه 7. فقدان حركة الجنين 8. بداية الطلق قبل الأوان 9. آلام شديدة غير عادية في البطن من أجل التقاط علامات الخطر المحتملة أثناء الحمل بدقة، يرجى الإشارة إلى العلامات التي تعتقد أنها قد تشير إلى وجود خطر أثناء المخاض والولادة (يُسمح بالاختيارات المتعددة). 1. نزيف مهبلي حاد 2. الولادة المطولة 3. التشنجات

		4. احتباس المشيمة. من أجل التقاط علامات الخطر المحتملة أثناء الحمل بدقة، يرجى الإشارة إلى العلامات التي تعتقد أنها قد تشير إلى وجود خطر خلال فترة ما بعد الولادة (يُسمح بالاختيارات المتعددة). 1. نزيف حاد بعد الولادة 2. فقدان الوعي بعد الولادة 3. الحمى. 4. إفرازات مهبلية كريهة الرائحة
20	أين سمعت عن علامات الخطر أثناء الحمل والولادة؟	1. أفراد الأسرة 2. الجيران 3. مؤسسة صحية 4. الانترنت ووسائل التواصل الاجتماعية
21	برأيك، هل من المهم أن تعرف المرأة علامات الخطر للحمل والولادة؟	1. نعم 2. لا 3. لا أعرف
22	اذكر اسباب اجابتك على السؤال رقم. 21	1. نعم، لأنهم سيطلبون الرعاية الطبية في الوقت المحدد 2. لا، لأن علامات الخطر ستختفي من تلقاء نفسها 3. أخرى (حدد) .....
23	ما هي عوامل الخطر التي تعرفينها للإصابة بمضاعفات الحمل والولادة؟	1. كبار السن (35 سنة وما فوق) أو عمر الأم الشابة (أقل من 20) 2. الخصائص الوراثية 3. حالة طبية موجودة مسبقًا 4. أخرى (حدد) ..... 5. لا أعرف
24	هل تعلمين على الأقل ثلاث علامات خطر على الولادة قد تظهر أثناء الحمل؟	1. نعم 2. لا
25	هل أنت على دراية بالمخاطر المحتملة المرتبطة بعدم التعرف على علامات خطر الولادة ومعالجتها؟	1. نعم 2. لا
26	هل سبق لك أن ناقشت علامات خطر الولادة مع أخصائي رعاية صحية؟	1. نعم 2. لا
27	هل تشعرين بالثقة في قدرتك على تحديد علامات خطر الولادة؟	1. نعم 2. لا

28	هل أنت على دراية بأهمية التماس العناية الطبية في الوقت المناسب عند التعرض لعلامات خطر الولادة؟	1. نعم 2. لا	
29	هل تلقيت أي تدريب أو تعليم رسمي حول علامات خطر الولادة؟	1. نعم 2. لا	
30	هل تشعرين بالمعلومات الكافية حول الإجراءات التي يجب اتخاذها في وجود علامات خطر الولادة؟	1. نعم 2. لا	
31	هل أنت على دراية بأي موارد أو خدمات محلية متاحة للدعم والتوجيه فيما يتعلق بعلامات خطر الولادة؟	1. نعم 2. لا	

الجزء الرابع: المعلومات المتعلقة بالخدمة

رقم	السؤال	خيارات الأجوبة
32	كم من الوقت تستغرق للوصول إلى أقرب مركز صحي؟	1. أقل من ساعة 2. أكثر من ساعة (حدد الوقت) _____
33	ما هي وسيلة المواصلات التي تستخدمها للذهاب إلى المركز الصحي؟	1. سيرا على الاقدام 2. بسيارة الأجرة
34	هل تلقيتِ رعاية ما قبل الولادة أثناء الحمل الأخير؟	1. نعم 2. لا (انتقل الى سؤال رقم 40)
35	كم عدد زيارات ما قبل الولادة التي قمت بها خلال حملك الأخير؟	1. زيارة واحدة 2. 2 زيارة 3. 3 زيارات 4. 4 زيارات 5. أكثر من أربع زيارات
36	كم من الوقت قضيت مع مقدم الرعاية الصحية خلال الزيارة الأخيرة؟	1. أقل من 5 دقائق 2. 5-10 دقائق 3. 11-20 دقائق 4. 21-30 دقائق 5. 31-40 دقائق
37	هل أعطيت الوقت لطرح الأسئلة؟	1. نعم 2. لا
38	إذا حملت مرة أخرى، فهل ستحضر الرعاية السابقة للولادة في نفس المركز الصحي؟	1. نعم 2. لا

39	اذكر أسباب إجابتك على السؤال ***رقم (38)*** أعلاه.	1. نعم لان جودة الخدمات جيدة جدا 2. لا لأن جودة الخدمات رديئة 3. أخرى (حدد) _____

الجزء الخامس: السعي لتلقي خدمة صحية

رقم	السؤال	خيارات الأجوبة
40	هل واجهتِ من قبل أي علامات خطر على الولادة في حملك الأخير؟	1. نعم 2. لا (انتقل الى سؤال رقم 46)
41	إذا كانت الإجابة بنعم على السؤال ***(رقم 40)***، فما العلامات التي واجهتها (يُسمح بالإجابات المتعددة)؟	علامات الخطر أثناء الحمل 1. نزيف مهبلي 2. تدفق مفاجئ للسوائل قبل المخاض 3. صداع شديد 4. دوار وتشوش الرؤية 5. القيء المفرط 6. تورم في اليدين والوجه 7. فقدان حركة الجنين 8. بداية الطلق قبل الأوان 9. آلام شديدة غير عادية في البطن علامات الخطر أثناء المخاض والولادة 1. نزيف مهبلي حاد 2. الولادة المطولة 3. التشنجات 4. احتباس المشيمة علامات الخطر خلال فترة ما بعد الولادة 1. نزيف حاد بعد الولادة 2. فقدان الوعي بعد الولادة 3. الحمى. 4. إفرازات مهبلية كريهة الرائحة

42	ما هي أفعالك عندما واجهت علامات خطر الولادة في حملك الأخير؟	1. لا شيء 2. استشار صديق / قريب 3. الرعاية الذاتية / العلاج 4 استشرت معالجًا تقليديًا 5. ذهبت إلى مرفق صحي 6. أخرى (حدد) _____
43	عند زيارة مرفق صحي، يرجى الإشارة إلى المدة بالساعات أو الأيام التي مرت قبل أن تطلب المساعدة من مقدم الرعاية الصحية أو الوصول إلى مرفق الرعاية الصحية المخصص.	1. 1-4 ساعات 2. 5-8 ساعات 3. يوم واحد 4. يومين 5. أكثر من يومين
44	ما هي العوامل التي تساهم في تأخير طلب الرعاية الصحية؟	1. قلة الوعي بعلامة خطر الولادة 2. مركز صحي بعيد 3. قلة المال 4. قلة المواصلات 5. لا أحد يشجعني على طلب المساعدة

الجزء السادس: الاتجاه حول علامات الخطر

يرجى الإشارة إلى درجة موافقتك على هذه العبارات بوضع (√) في الإجابة التي تعبر عن رأيك

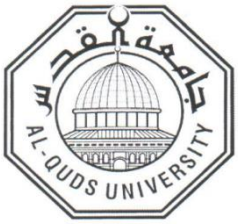
رقم	السؤال	أوافق بشدة	أوافق	محايد	لا أوافق	لا أوافق بشدة
45	هل توافقين على أهمية معرفة علامات الخطر عند الحمل والولادة					
46	هل توافقين على أن علامة الخطر على الحمل والولادة يمكن الوقاية منها؟					
47	هل توافقين على فكرة أن الأمهات اللواتي تظهر عليهن علامات خطر الحمل والولادة يجب أن يطلبن المساعدة من القابلات التقليديات؟					
48	هل توافقين على فكرة أن الأمهات اللواتي تظهر عليهن علامات خطر الحمل والولادة يجب أن يطلبن المساعدة من النساء المسنات الأخريات؟					
49	أشعر بالثقة في قدرتي على التعرف على علامات خطر الحمل والولادة.					

50	أعتقد أن طلب المساعدة الطبية على وجه السرعة أمر بالغ الأهمية عند مواجهة علامات خطر الحمل والولادة.					
51	أعتقد أنه من الضروري توعية النساء الحوامل بعلامات الخطر المحتملة التي قد يتعرضن لها.					
52	أشعر بالراحة عند مناقشة علامات خطر الحمل والولادة مع مقدمي الرعاية الصحية.					
53	أعتقد أن معرفة علامات خطر الحمل والولادة يمكن أن يساعد في منع النتائج السلبية أثناء الحمل.					
54	لدي دافع لمعرفة المزيد عن علامات خطر الحمل والولادة لحماية صحتي وصحة طفلي.					
55	أثق بخبرة المتخصصين في الرعاية الصحية في تحديد علامات خطر الحمل والولادة والتعامل معها.					
56	أنا على استعداد لاتخاذ تدابير استباقية لمنع ومعالجة علامات خطر الحمل والولادة.					
57	أعتقد أن التعرف المبكر والإدارة المناسبة لعلامات خطر الحمل والولادة يمكن أن يحسن نتائج الحمل.					

Annex 4: List of Evaluators

Expert	**Affiliation**
Dr. Hamza Abed Eljawad	Al-Quds University
Dr. Areefa Said Al-Bahri	Islamic University Gaza
Mr. Ali El Khateb	University College of Applied Sciences
Dr. Yousuf Al Jaish	Islamic University Gaza
Dr. Mohammed Lulu	Al-Azhar University
Dr. Mohamed Jerjawi	MoH
Dr. Adham Ahmed	UNRWA
Dr. Marwan Jalambo	Palestine Technical College
Dr. Khalil Shueb	Palestine College of Nursing
Dr. Samira Aboalshiekh	MoH
Dr. Nasser Abo Elnoor	Islamic University Gaza
Dr. Akram Abu Salah	Palestine College of Nursing
Dr. Suha Balousha	MoH

Annex 5: Consent form



استبانة لتقييم علامات خطر الحمل والولادة: المعرفة، والاتجاه، والسعي لتلقي خدمة صحية ذات علاقة بالظواهر الخطرة أثناء الحمل والولادة وما بعدها بين النساء في قطاع غزة

الأمهات الأعزاء

أنا الطالب/ **عبد الرحمن ايهاب حمودة** ، طالب ماجستير تمريض صحة الأم والطفل بكلية المهن الصحية/ جامعة القدس.

إنه لمن دواعي سروري البالغ أن أضع بين يديك هذه الاستبانة الذي تم إعداده بهدف الحصول على بيانات تتعلق بدراستي التي بعنوان: "المعرفة، والاتجاه، والسعي لتلقي خدمة صحية ذات علاقة بالظواهر الخطرة أثناء الحمل والولادة وما بعدها بين النساء في قطاع غزة". لتقييم المعرفة والاتجاه والسعي لتلقي خدمة صحية والعوامل المرتبطة به بين النساء بعد الولادة في قطاع غزة، للحصول على درجة الماجستير من جامعة القدس في تمريض صحة الأم والطفل. لذا يرجى التكرم بتخصيص جزء من وقتك الثمين لملء النموذج المرفق والذي سيستغرق حوالي 10-15 دقيقة، مع مراعاة الدقة في الإجابة على الأسئلة المطروحة، والتي سيكون لها تأثير كبير وفائدة في الوصول إلى نتائج أكثر دقة، مع العلم أن البيانات ستكون سرية وستستخدم لأغراض الدراسة فقط.

شكرا لحسن تعاونكم

الباحث: عبد الرحمن ايهاب حمودة

0592218569

Annex 6: University Approval

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

جامعة القدس
كلية المهن الصحية
دائرة التمريض- غزة

19/8/2023

الأخ الفاضل/ أ. هاني الوحيدي حفظه الله
مدير عام وحدة نظم المعلومات بوزارة الصحة
تحية وبعد:-

الموضوع/ تسهيل مهمة الطالب عبد الرحمن إيهاب جمال حموده

تهديكم إدارة برامج ماجستير التمريض بكلية المهن الصحية بجامعة القدس أطيب التحيات، وأرجو من حضرتكم تسهيل مهمة الطالب لجمع بيانات لدراسته البحثية لماجستير تمريض صحة الأم والطفل بعنوان:

Knowledge, Attitude, and Health Seeking Action Related to Obstetric Danger Signs among Postpartum Women in the Gaza Strip

حيث أداة الدراسة عبر إستبانة مقابلة وعينة الدراسة من السيدات ما بعد الولادة المترددات لتطعيم أطفالهن وعلى وعيادات ما بعد الولادة في مراكز الرعاية الأولية بوزارة الصحة (أبو شباك -شهداء الرمال – دير البلح- شهداء خانيونس- شهداء رفح).

وتفضلوا بقبول فائق الإحترام والتقدير

19/8/2023

د. حمزة محمد عبد الجواد
منسق برامج ماجستير التمريض-غزة
hamjawad1@gmail.com
Tel. +972 8 2644220
Mobile :+972 599 852755

دائرة التمريض
Nursing Department

Tel: 08 2644210+08 2644220
Tel. Fax: 08 2644220

تلفون: 08 2644210+08 2644220
تلفاكس: 082644220

Annex 7: Helsinki Committee Approval

المجلس الفلسطيني للبحث الصحي
Palestinian Health Research Council
تعزيز النظام الصحي الفلسطيني من خلال مأسسة استخدام المعلومات البحثية في صنع القرار
Developing the Palestinian health system through institutionalizing the use of information in decision making

Helsinki Committee
For Ethical Approval

Date: 2023/08/07 **Number:** PHRC/HC/1344/23

Name: Abdelrahman Ihab Hammouda الاسم:

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

نفيدكم علماً بأن اللجنة قد ناقشت مقترح دراستكم (من الناحية الأخلاقية) حول:

Knowledge, Attitude, and Health Seeking Action Related to Obstetric Danger Signs among Postpartum Women in the Gaza Strip

The committee has decided to approve the above mentioned research. Approval number PHRC/HC/1344/23 in its meeting on 2023/08/07

وقد قررت الموافقة على البحث المذكور عاليه
بالرقم والتاريخ المذكوران عاليه

Signature

Member Member

Chairman

Genral Conditions:-

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

Specific Conditions:-

E-Mail:pal.phrc@gmail.com
Gaza - Palestine غزة - فلسطين
شارع النصر - مفترق العيون

Annex 8: Admin Approval

State of Palestine
Ministry of health

دولة فلسطين
وزارة الصحة

السيد : هاني سلطان الوحيدي المحترم

التاريخ:23/08/2023

رقم المراسلة 1342562

مدير عام بالوزارة /الإدارة العامة للوحدات الإدارية المساعدة /وزارة الصحة

السلام عليكم ,,,

الموضوع/ تسهيل مهمة الباحث عبد الرحمن إيهاب جمال حموده

التفاصيل //

السلام عليكم

نهديكم أطيب التحيات ونود منكم تسهيل مهمة الباحث/ة عبد الرحمن إيهاب جمال حموده الملتحق/ة ببرنامج ماجستير تمريض صحة الام والطفل – جامعة القدس ابو ديس في اجراء بحث بعنوان:

Knowledge, Attitude, and Health Seeking Action Related to Obstetric Danger Signs among Postpartum Women in the Gaza Strip

حيث الباحث/ة بحاجة لتعبئة استبانة من عدد من المراجعين في مرافق وزارة الصحة (مراكز الرعاية الاولية في وزارة الصحة (أبو شباك- شهداء الرمال- دير البلح- شهداء خانيونس- شهداء رفح) دون اجراء أي تدخل طبي او سحب عينات دم او الاطلاع على ملفات المرضى ، وبما لا يتعارض مع مصلحة العمل وضمن أخلاقيات البحث العلمي، ودون تحمل الوزارة أي أعباء أو مسئولية، نأمل توجيهاتكم لذوي الاختصاص بضرورة الحصول على الموافقة المستنيرة من المشاركين .

وتفضلوا بقبول التحية والتقدير

ملاحظات /

تسهيل المهمة الخاص بالدراسة أعلاه صالح لمدة 3 أشهر من تاريخه.

يرجى التأكد من توافق الاستبانة/البيانات المرفقة والتي يتم تعبئتها ميدانيا على ان لا يتم أي إضافة او تعديل على الاستبانة المرفقة

يجب اطلاع دائرة البحث الصحي على النتائج قبل النشر

علي حسن البلبيسى
رئيس قسم اداري

التحويلات

- علي حسن عبد القادر البلبيسي(رئيس قسم اداري) ← هاني سلطان ارميح الوحيدي(مدير عام بالوزارة) إجراءاتكم بالخصوص(23/08/2023)

المرفقات

- ادوات لبحث عبد الرحمن إيهاب جمال حموده.pdf

طبعت بواسطة: 800133811

Gaza Tel. (+970) 8-2846949 Fax. (+970) 8-2826295

غزة تلفون. (+970) 8-2846949 فاكس. (+970) 8-2826295

عنوان الدراسة: المعرفة، والاتجاه، والسعي لتلقي خدمة صحية ذات علاقة بالظواهر الخطرة أثناء الحمل والولادة وما بعدها بين النساء في قطاع غزة.

إعداد: عبد الرحمن إيهاب جمال حمودة

إشراف: د. أحمد نجم

الملخص:

الخلفية: لا يزال معدل وفيات الأمهات مرتفعًا بشكل غير مقبول، رغم أن العديد من هذه الوفيات يمكن الوقاية منها. هدفت هذه الدراسة إلى تقييم معرفة النساء واتجاههن وسلوكياتهن في البحث عن الرعاية الصحية المرتبطة بعلامات الخطر التوليدية، بالإضافة إلى استكشاف العوامل المؤثرة على هذه السلوكيات، وذلك بين النساء في فترة ما بعد الولادة اللاتي قمن بمراجعة عيادات الرعاية الأولية في قطاع غزة.

المنهجية: أُجريت دراسة تحليلية مقطعية في مراكز الرعاية الصحية الأولية بمحافظات غزة وشملت الدراسة 383 امرأة حديثة الولادة، ممن حضرن إلى مراكز الرعاية الصحية الأولية لتلقي لقاح الـ BCG أو للرعاية الصحية ما بعد الولادة (خلال 42 يومًا بعد الولادة)، بغض النظر عن مكان أو نتائج الولادة. تم استخدام تقنية العينة الملائمة. تم اختيار المراكز الصحية الحكومية بشكل غير عشوائي، بواقع مركز واحد من كل محافظة في قطاع غزة. تم جمع البيانات باستخدام استبانة مقابلة منظم تم تقييمه من قبل الخبراء، وتأكدت موثوقيته عبر معامل ألفا كرونباخ (0.952 للمعرفة و0.724 للمواقف). تم تحليل البيانات باستخدام برنامج SPSS .

النتائج: بلغ متوسط أعمار المشاركات 26.3 عامًا، و 56% من النساء المشاركات معرفة كافية بعلامات الخطر التوليدية، واعتمدت 74.7% منهن على أفراد الأسرة كمصدر رئيسي للمعلومات. قامت 65.4% من النساء اللواتي تعرضن لهذه العلامات باتخاذ خطوات صحية مناسبة من خلال زيارة مرافق الرعاية الصحية. وُجدت علاقة ذات دلالة إحصائية بين سلوك البحث عن الرعاية الصحية ومعرفة النساء، في حين لم توجد علاقة دالة بين السلوك والاتجاهات. وُجد أن النساء العاملات أكثر عرضة بمقدار 4.5 مرات لاكتساب معرفة كافية بعلامات الخطر التوليدية مقارنة بالنساء غير العاملات .(OR = 4.49, CI = 1.494–13.514) كما تأثر مستوى معرفة النساء بتعليم أزواجهن؛ فالنساء اللواتي كان أزواجهن حاصلين على تعليم ثانوي كانت لديهن فرصة أكبر بمقدار 3.5 مرات لاكتساب معرفة كافية مقارنة باللواتي كان أزواجهن أقل تعليمًا(OR = 3.5, P = 0.003, CI = 1.549–7.951) ، وكانت العلاقة أقوى مع ارتفاع مستوى تعليم الزوج .(OR = 4.52, P = 0.001, CI = 1.82–11.18)

كما أظهرت الدراسة أن النساء اللواتي حضرن فقط العيادات الحكومية خلال زيارات الرعاية السابقة للولادة كن أقل بنسبة 67.2% في اكتساب معرفة كافية حول علامات الخطر التوليدية مقارنة بالنساء اللواتي حضرن عيادات حكومية وخاصة معًا .(OR = 0.328, CI = 0.152–0.708) حددت الدراسة عاملين مرتبطين بشكل كبير بالمواقف الإيجابية: أولاً، تلقي الاستشارة خلال زيارات الرعاية السابقة للولادة حول فوائد الولادة في مرافق صحية($\chi^2 = 4.733$, p = 0.03) ،

وثانيًا مكان الولادة، حيث كانت النساء اللواتي ولدن في المستشفيات الحكومية أكثر إيجابية مقارنة باللواتي ولدن في المستشفيات الخاصة.($\chi^2 = 4.951, p = 0.026$)

الخلاصة: تسلط هذه الدراسة الضوء على الدور الحاسم لمعرفة النساء بعلامات الخطر التوليدية في اتخاذ الإجراءات المناسبة أثناء فترة الحمل، والولادة، وفترة ما بعد الولادة. وعلى الرغم من أن غالبية النساء أظهرن معرفة كافية واتجاهات إيجابية، إلا أن هناك فجوات كبيرة ما زالت قائمة، وتتأثر بشكل خاص بعوامل مثل الحالة الوظيفية، تعليم الزوج، حجم الأسرة، وموقع المرافق الصحية التي يتم زيارتها خلال مواعيد متابعة الحمل. تشير هذه النتائج إلى أن تحسين الوصول إلى تعليم صحي شامل للأمهات وأسرهن، إلى جانب تعزيز خدمات الإرشاد، قد يكونان من الاستراتيجيات الرئيسية لتحسين نتائج صحة الأمهات وتقليل وفيات الأمهات في قطاع غزة.