

**Deanship of Graduate Studies  
Al- Quds University**



**Health Care Providers' Knowledge, Practice and  
Barriers to Newborn and Mother Skin-to-Skin Contact  
in Gaza Strip, Palestine**

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**Thesis approval**

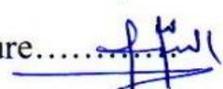
**Health Care Providers' Knowledge, Practice and Barriers to  
Newborn and Mother Skin-to-Skin Contact in Gaza Strip, Palestine**

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**Jerusalem – Palestine**

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## **Dedication**

Firstly, thanks god for the guidance, strength, power of mind, protection and for giving me a healthy life....

I would like to dedicate this study to my beloved husband and thanks for his support, my parents, my children, brothers and sisters for their encouragement to finish this study.

To my supervisor for his continuity and sharing to complete this work at the best view.

I offer to my colleagues in Al Aqsa Martyrs hospital who contributed to the completion of this study.

**Yasmin Ismail Abed Alqader Alhabil**

## **Declaration**

I certify that this thesis submitted for the degree of master, is the result of my own 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:**

A handwritten signature in blue ink, consisting of a horizontal line with a vertical stroke intersecting it near the center, and a small loop at the top of the vertical stroke.

Yasmin Ismail Abed Alqader Alhabil

Date: 26/11/2022

## **Acknowledgment**

First of all, this endeavor would not have been possible without facilitation of God, so praise and thanks be to God for His blessings.

I would like to acknowledge and give greatest thanks to my supervisor **Dr. Hamza Abdeljawad** for his invaluable patience and feedback, his guidance and advise carried me through all the stages of writing my thesis.

I would also like to give special thanks to my husband and my family for their continuous support and their prayers.

Lastly, I'd like to mention midwifery team in labor ward at Al Aqsa hospital for their encouragement and support.

**Yasmin Ismail Abed Alqader Alhabil**

## **Abstract**

Mother-infant skin-to-skin contact (SSC) is placing infant directly on mothers' chest or abdomen immediately after delivery early and should be continuous at least 60 minutes. (SSC) have many benefits for mother and newborn due to stabilization of newborns' temperature, heart rate, respiratory rate and blood glucose level, as well as decrease postpartum hemorrhage and increase oxytocin level for mother. SSC started in Gaza strip since 2017 but faced many challenges and barriers. This study aimed to identify health care providers' (HCP) knowledge, practice and barriers to newborn and mother skin-to-skin contact. The study used descriptive, analytical and cross-sectional design and targeted the health care providers who work at four governmental maternity hospital (Shifa, Tahreer, Aqsa and Emarati). The sample consisted of 267 HCPs (midwives who work in labor rooms were 62, obstetricians 153 and pediatricians 52). The study used self-constructed and administered questionnaire that content validity was done by 7 experts and the reliability of the tool was high as Cronbach alpha was 0.84. Data Analysis was performed using SPSS version 25. The result showed that 35.2% study participants were from Al-Shifa hospital, 28.5% were from Al-Threer, 18,4% were from Al-Aqsa hospital, and 18% were from Al-Emaratee hospital, also 23.2% were midwives, 57.3% were obstetricians, and 19.5% were pediatricians, in addition to 45.3% have an experience less than five years, 14.2% have an experience of 15 years and more. HCPs had very good knowledge about SSC with mean percent 82%, and good practice with mean percent 72%, while 86.1% had training on Early Essential Newborn Care (EENC) and SSC. Midwives had the best practice among HCPs with mean 3.197, also training and work place recorded statically significant relationship with knowledge and practice Main barriers respectively were lack of mothers' awareness, lack of social support and motivation and lack of privacy. According to the result of this study HCPs were not committed to non-urgent separation policy of newborns and thus they need more training on this policy. The study recommended to increase mothers' awareness about the importance of SSC through antenatal visits, maintain privacy, and to decrease the barriers of SSC at the maternity hospitals.

## Table of content

Dedication.....	
Declaration.....	i
Acknowledgment.....	ii
Abstract.....	iii
Table of content.....	iv
List of tables .....	vii
List of figures .....	viii
List of annexes.....	ix
list of abbreviations .....	x
<b>Chapter One: Introduction.....</b>	<b>1</b>
1.1 Background.....	1
1.2 Research Problem .....	2
1.3 Justification of the study .....	3
1.4 Goal of the study.....	4
1.5 Objectives of the study .....	4
1.6 Questions of the study .....	4
1.7 Definitions .....	5
1.7.1 Theoretical Definitions .....	5
1.7.2 Operational definitions: .....	6
1.8 Context of the study .....	7
1.8.1 The state of Palestine .....	7
1.8.2 Hospitals in Gaza Strip .....	7
<b>Chapter Two: Conceptual framework and literature review .....</b>	<b>9</b>
2.1 Conceptual framework.....	9
2.2 Literature review .....	11
2.2.1 Background.....	11
2.2.2 Benefits of skin-to-skin contact .....	11
2.2.3 Accreditation.....	13
2.2.4 Duration of skin-to-skin contact .....	14
2.2.5 Mechanism of skin-to-skin contact.....	15
2.2.6 Worldwide prevalence of SSC.....	15

2.2.7	Palestine prevalence of SSC .....	16
2.2.8	Conditions related to mother-infant SSC implementation.....	17
2.3	Demographic factors of health care providers in relation to knowledge and practice of SSC.....	18
2.4	Barriers and enabling factors of mother-infant SSC.....	19
2.5	Knowledge of health care providers skin-to-skin contact and its effect on practice:.....	23
2.6	Summary .....	25
<b>Chapter Three: Methods and materials .....</b>		<b>26</b>
3.1	Study design.....	26
3.2	Study setting .....	26
3.3	Study population .....	26
3.4	Sample size and sampling method.....	27
3.5	Period of the study .....	27
3.6	Eligibility criteria.....	27
3.6.1	Inclusion criteria .....	27
3.7	Instruments of the study.....	27
3.8	Criteria for measurement .....	27
3.9	Pilot study .....	28
3.10	Validity .....	28
3.11	Reliability .....	31
3.12	Data collection .....	31
3.13	Data entry and analysis .....	31
3.14	Ethical and administrative considerations .....	31
<b>Chapter Four: Results and Discussion .....</b>		<b>32</b>
4.1	Descriptive results .....	32
4.1.1	Sociodemographic characteristics of study participants.....	32
4.1.2	Knowledge about skin-to-skin contact .....	36
4.1.3	Practice of skin-to-skin contact .....	38
4.1.4	Barriers to skin-to-skin contact.....	42
4.1.5	Recommendations of the participants to improve application of skin-to-skin contact (Ranked in order) .....	45
4.2	Inferential results .....	46

4.2.1 Differences in knowledge, practice and barriers to skin-to-skin contact related to sociodemographic factors .....	46
<b>Chapter Five Conclusion and recommendations.....</b>	<b>57</b>
5.1 Conclusion .....	57
5.2 Recommendations.....	58
5.2.1 For policy makers and managers .....	58
5.2.2 For HCPs .....	58
5.2.3 For researchers.....	58
<b>References.....</b>	<b>59</b>
<b>Annexes.....</b>	<b>67</b>

## List of tables

Table (3.1): Numbers of health care providers who work in maternity governmental hospitals:.....	26
Table (3.2a): level of knowledge and practice of skin-to-skin contact .....	27
Table (3.2b): level of barriers to skin-to-skin contact .....	28
Table (3.3a): Correlation between each item and total score of knowledge subscale.....	28
Table (3.3b): Correlation between each item and total score of practice domain .....	29
Table (3.3c): Correlation between each item and total score of barriers domain.....	30
Table (3.4): Cronbache alpha coefficient (knowledge, practice & barriers scale) .....	31
Table (4.1): Distribution of specialty according to gender.....	33
Table (4.2): Socio-demographic characteristics of study participants (n=267).....	34
Table (4.3): Distribution of study participants according to work conditions (n=267).....	35
Table (4.4): Knowledge about skin-to-skin contact (n=267) .....	36
Table (4.5): Practice of skin-to-skin contact (n=267).....	38
Table (4.6): Barriers to skin-to-skin contact (n=267).....	42
Table (4.8a): Differences in knowledge, practice and barriers to skin-to-skin contact related to place of work .....	46
Table (4.8b): Multiple comparisons Post hoc Tukey test for place of work .....	47
Table (4.9): Differences in knowledge, practice and barriers to skin-to-skin contact related to gender .....	47
Table (4.10): Differences in knowledge, practice and barriers to skin-to-skin contact related to age.....	48
Table (4.11a): Differences in knowledge, practice and barriers to skin-to-skin contact related to qualification .....	49
Table (4.11b): Multiple comparisons Post hoc Tukey test for qualification .....	49
Table (4.12a): Differences in knowledge, practice and barriers to skin-to-skin contact related to specialty .....	50
Table (4.12b): Multiple comparisons Post hoc Tukey test for specialty .....	51
Table (4.17b): Multiple comparisons Post hoc Tukey test for presence of criteria for newborn .....	55

## List of Figures

Figure (2.1): Conceptual Framework (self-developed) .....	9
Figure (4.1): Distribution of study participants according to hospital .....	32
Figure (4.2): Distribution of study participants according to gender .....	33

## List of annexes

Annex (1): Questionnaire .....	67
Annex (2): List of experts.....	74
Annex (3): Approval from MoH .....	75
Annex (4): Approval from Al Quds University.....	76
Annex (5): Approval from Helsinki Committee .....	77
Annex (6): Widstroems-9-instenctive-stages-of-neonatal-behavior-during-skin-to-skin- contact .....	78
Annex (7): Non-urgent separation policy .....	79

## List of Abbreviations

<b>AAP</b>	American Academy of Pediatric
<b>ABM</b>	Academy of Breast Medicine
<b>BF</b>	Breast Feeding
<b>EENC</b>	Early Essential Newborn Care
<b>GS</b>	Gaza Strip
<b>HCP</b>	Health Care Provider
<b>KMC</b>	Kangaroo Mother Care
<b>KMM</b>	Kangaroo Mother Method
<b>LBW</b>	Low Birth Weight
<b>MoH</b>	Ministry of Health
<b>NICU</b>	Neonatal Intensive Care Unite
<b>NMR</b>	Neonatal Mortality Rate
<b>PPH</b>	Post-Partum Hemorrhage
<b>PROM</b>	Premature Rupture of Membrane
<b>SCBU</b>	Special Care of Baby Unit
<b>SPSS</b>	Statistical Package for Social Sciences
<b>SSC</b>	Skin to Skin contact
<b>UNICEF</b>	United Nations International Children's Emergency Fund
<b>UNRWA</b>	United Nations Relief and Works Agency for the Palestinian Refugees in the Near East
<b>USA</b>	United States of America
<b>WB</b>	West Bank
<b>WHO</b>	World Health Organization

# Chapter One

## Introduction

### 1.1 Background

The evidence supporting the practice of skin-to-skin contact after birth is strong, indicating multiple benefits for both mother and baby. Skin to skin contact is defined as placing the naked baby on the mother's bare abdomen or chest immediately after birth or less than 10 minutes after birth or soon afterward (WHO, 2017).

Skin to skin contact (SSC) of newborns with their mothers' abdomen immediately after birth is currently recommended for healthy newborns with implementation of maternity care practices that support breast-feeding, World Health Organization (WHO)/United Nations International Children's Emergency Fund (UNICEF) has recommended this intervention.

Steps to Successful Breastfeeding that from the basis of the Baby-Friendly Hospital Initiative states 'Facilitate immediate and uninterrupted skin-to-skin contact and support mothers to initiate breastfeeding as soon as possible after birth (WHO, 2018).

Skin to skin contact is recommended for all mothers and newborns, regardless of feeding or delivery method, immediately after birth (as soon as the mother is medically stable, awake, and able to respond to her newborn) and to continue for at least one hour, as defined by the (Winter & Goldsmith, 2016). Immediate, continuous, and uninterrupted (SSC) of the mother and her newly born infant after birth is recommended, "Unless there are documented medically justifiable reasons for delayed contact or interruption (Brimdyr et al, 2017).

Application of SSC in newborns of intermediate and low risk has great benefit on the risk of admission to the neonatal unit (Agudelo et al., 2020). In addition, SSC infants had higher physiological stability in the hours following birth: heart rate, respiratory rate and oxygen saturation and this practice promotes exclusive breastfeeding from hospital discharge to six months post-delivery (Moore et al., 2016). The risk of dying in the first 28 days of life is 33% higher for newborns who initiated breastfeeding 2–23 hours after birth, and more than twice as high for those who initiated 1 day or longer after birth, compared to newborns who were put to the breast within the first hour after birth (Smith et al., 2017).

Skin to skin contact has great benefits for mother and child due to promotes mother and child interaction and decrease risk of maternal depression and bonding problems (Mehler et al., 2020). In addition, SSC has major benefit for mother's life due to decrease postpartum hemorrhage (PPH) (Saxton et al., 2015). A recent systemic review study found SSC decreased the duration of third stage of labor (Karimi et al., 2019).

Numerous research have been conducted on nurses' knowledge, beliefs and attitudes, education and SSC implementation. National research on SSC in the USA started in 2002 with a study by Engler et al., which revealed that 82% of 637 responding hospitals offered SSC to women who wanted it and that nurses' views toward SSC were negatively impacted by their lack of knowledge of the benefits of SSC (Engler et al., 2002).

Despite great benefits, literature review suggested that factors and barriers affect implementation of SSC included inadequate staffing, education of clinicians on early SSC, parental education and motivation were identified as important factor, and the absence of criteria for eligible mothers and infants (Koopman et al., 2016).

This study aimed to identify health care providers HCPs knowledge, practice and barriers related to mother and newborn skin-to-skin contact in governmental hospital in Gaza strip.

## **1.2 Research Problem**

In GS, the Ministry of Health (MoH) adopted the SSC and conducted workshops and meetings in cooperation with the WHO from 2016 to train medical staff who works in the governmental maternity hospitals (Shifa, Tahreer, Aqsa, and Emarati) on the mechanism of work within a program of Early Essential Newborn Care (EENC) (MoH, 2016). The EENC is recommending care for mothers and newborns during labor, delivery and immediately after delivery. These simple interventions have been demonstrating to reduce newborn morbidity and mortality and improve birth experience for the mother. At the heart of the approach is the "First Embrace", a simple sequence of steps in immediate newborn care that maximize contact with the mother and dramatically improve outcomes thorough drying, skin-to-skin contact, delayed clamping of the umbilical cord, early and exclusive breast feeding (MoH, 2016). Uninterrupted skin-to-skin contact ideally lasts for more than an hour, and longer periods when well tolerated by mother and infant should be encourage (WHO, 2017).

Evaluation of EENC was doing from 2017 and still every year. The evaluation of SSC for term deliveries revealed that: a high proportion of babies received SSC (86%), with a high proportion placed in SSC within 1 minute of birth (84%) but those who remain in uninterrupted SSC for at least 90 minutes is facing challenge with (32%) (Gaza\_EENC\_AIR\_2019). The last evaluation of SSC for term deliveries at 2020 was the highest level of 50% at Shifa hospital for immediate Skin to Skin, for at least 90 min and first breast feeding (BF) before separation and the lowest level was 35% at Emarati hospital (Gaza\_EENC\_AIR\_2020).

Also, from the researcher's observation at labor room the medical team prefer to refer newborns to special care baby unite (SCBU) for more observation after special cases as meconium stained, vacuum delivery, less than 37 weeks of gestation, mild respiratory distress, maternal fever and premature rupture of membrane (PROM) despite of a policy of nonurgent separation. Some companions were separate newborns before breastfeeding or before finishing 90 minutes of SSC, also some mothers unfamiliar to put her newborn on her skin.

In this study, the researcher is going to assess the knowledge and practice of health care providers as well as identify the barriers for the practice of SSC in labor wards in the maternal governmental hospital in (GS).

### **1.3 Justification of the study**

Skin to skin has great benefits for mother and newborn due to promotes mother and newborn interaction and decrease risk of maternal depression and bonding problems (Mehler et al., 2020). SSC has major benefit for mother's life due to decrease postpartum hemorrhage (PPH) (Saxton et al., 2015). As well for the great benefits for newborn from SSC that decrease admission rate to neonatal unit (Agudelo et al., 2020), as well as decrease neonatal mortality rate (NMR) (Smith et al., 2017).

Despite of application of SSC in the maternity hospital at the MoH, it did not apply as widely as required for a period of 90 minutes, so the mother and her newborn cannot take the benefit from that. Therefore, the researcher will study the reasons that prevent SSC practice from applying for 90 minutes, which in turn will benefit the midwifery profession from a practical point of view to participate in setting recommendations that overcome difficulties at

applying this practice, which also will contribute in increasing the quality of the service provided and the adoption of evidence-based practice.

#### **1.4 Goal of the study**

The goal of the study is assessing health care providers' knowledge and practice related to SSC and identifying the barriers associated with the application of SSC for 90 minutes.

#### **1.5 Objectives of the study**

To determine the knowledge of health care providers (pediatricians, neonatologists, obstetrician, and midwives) related to skin-to-skin contact.

To determine health care provider's practice related to skin-to-skin contact.

To identify the barriers that prevent complete application of skin-to-skin contact for 90 minutes.

To investigate the relationship between health care providers' level of knowledge and their level of practice regarding SSC.

To examine the association between the health care providers' knowledge and practice levels with some demographic variables like education, experience, workplace, day and night shift, EENC training, etc.

To identify health care providers' recommendations for improving the application of skin-to-skin for 90 minutes.

#### **1.6 Questions of the study**

What is the health care providers' level of knowledge about skin-to-skin contact?

What is the health care providers' level of practice related to skin-to-skin contact?

What are barriers that prevent complete application of skin-to-skin contact for 90 minutes?

What is the relationship between health care providers' level of knowledge and their level of practice regarding SSC?

What are the associations between the health care providers' knowledge and practice levels with some demographic variables like education, experience, workplace, day and night shift, EENC training, etc.?

What are health care provides' recommendations for improving the application of skin-to-skin contact for 90 minutes?

## **1.7 Definitions**

### **1.7.1 Theoretical Definitions**

#### **1.7.1.1 Skin to Skin Contact:**

Skin to skin contact is defined as placing the naked baby on the mother's bare abdomen or chest immediately after birth or less than 10 minutes after birth or soon afterward (WHO, 2017).

#### **1.7.1.2 Knowledge**

Knowledge conceived as the specific and justified belief on an individual, which is able to increase his/her capacity to take an effective action (Agrifoglio, 2015).

#### **1.7.1.3 Practice**

Practice is action rather than thoughts or ideas. (Cambridge university press, 2021)

#### **1.7.1.4 Barriers**

a barrier to health care is anything that restricts the use of health services by making it more difficult for some individuals to access, use, or benefit from care (Caulford, and Mayhew, 2014).

#### **1.7.1.5 Health care providers**

Health care provider is a person or a company that provides health care services (Hall, November 2020).

## **1.7.2 Operational definitions:**

### **1.7.2.1 Skin-to-skin contact**

Skin to skin contact is defined as the practice of placing newborn in direct contact with their vaginal delivered mothers with the ventral skin to the infant facing and touching the ventral skin of the mother within one minute of delivery for 90 minutes after delivery.

### **1.7.2.2 Health care providers' knowledge related to SSC**

Level of correct responses of health care providers they have about SSC as measured by questionnaire. Scoring of the items was: (1) Yes (0) No

### **1.7.2.3 Health care providers' practice related to SSC**

Health care providers' responses on dealing with newborn immediately after birth until 90 minutes regarding SSC implementation with newborn who is full-term and who is  $\geq 34$  gestation weeks after birth from first minute to 90 minutes that measured by reported practice through answering a questionnaire. Scoring of the items of the questionnaire was: Practice items: (1) Never (2) Sometimes (3) Usually (4) Always

### **1.7.2.4 Barriers for SSC**

Factors that prevent the implementing of SSC from the viewpoint of health care providers. Scoring of the items was: Barriers items: (1) Strongly disagree (2) Disagree (3) Agree (4) Strongly agree

### **1.7.2.5 Health care providers**

Midwives, obstetricians, neonatologists and pediatricians who are dealing directly with newborn in labor room.

## **1.8 Context of the study**

### **1.8.1 The state of Palestine**

The state of Palestine is located in the northwestern region of Asia, east of the Mediterranean, with an area of 27,027km<sup>2</sup>, and it has been under Israeli occupation since 1984. Palestinians live in the territories belonging to Palestinian territories in West Bank (WB) and GS, where the population for the year of 2019 reached 5,038,918 million people, about 3,019,948 million people live in the governorate of Westbank and constitute 59.9% of the population. 2,018,970 million people live in Gaza and constitute 40, 1% of the population (MoH, 2020).

### **1.8.2 Hospitals in Gaza Strip**

The numbers of hospitals in the GS reached 34 hospitals, of which 13 were governmental hospital, including five hospitals that provide maternal care and maternity services. The total number of births for the year 2019 was as follows: 52,477 births, of which 38,495 were vaginal birth and constitute 73, 4% of deliveries, of which 25,927 births were in MoH hospitals, it was constitute 68, 6% from other hospitals (MoH, 2020).

The numbers of newborns for the year of 2019 were 54,844 newborns, of which 38,988 newborns were born in MoH hospitals. MMR reached 30, 8 per 100,000 live births for the year 2019, it was 17 cases, 14 deaths in MoH hospitals and 3 deaths in Ministry of Interior. The number of newborn deaths immediately after birth was 247 death, 230 deaths was in MoH hospitals and preterm deliveries before 37week was 7,215 deliveries of which 7,102 deliveries in MoH hospitals (MoH, 2020).

There are four hospitals in Gaza Strip, which trained for EENC: Shifa, Tahreer, Aqsa and Emarati hospitals. Vaginal deliveries reached 650 to 700 deliveries at Shifa hospital, an average of 25 delivery per day on 7 labor beds, while the number of midwives is 108, of which 19 midwives work in labor room, gynecologist and obstetricians are 54, neonatologists are 22 (Buthina Sheikh Khalil, December 2020, personal contact).

At Tahreer hospital the vaginal deliveries are 650-700 deliveries per month at rate 25-35 vaginal delivery per day on 13 delivery beds at labor room, all midwives who work at Tahreer hospital are 71 midwives, 18 midwives from them work in labor room (Nawal Al Galban, December 2020, personal contact).

At Emarati hospital the vaginal deliveries 400-450 deliveries per month at rate 13-15 vaginal delivery per day on 3 delivery beds at labor room, all midwives who work in the hospital are 42 midwives, while 16 midwives work in the labor room (Dia'a Abu Kweik, December 2020, personal contact).

At Aqsa hospital the vaginal deliveries rate between 450-500 deliveries per month at rate 15-17 vaginal delivery per day on 4 delivery beds at labor room, all midwives work in the hospital are 48 midwives, out of them 14 midwives work in the labor room (Halima Nabhan, December 2020, personal contact).

## Chapter Two

### Conceptual framework and literature review

#### 2.1 Conceptual framework

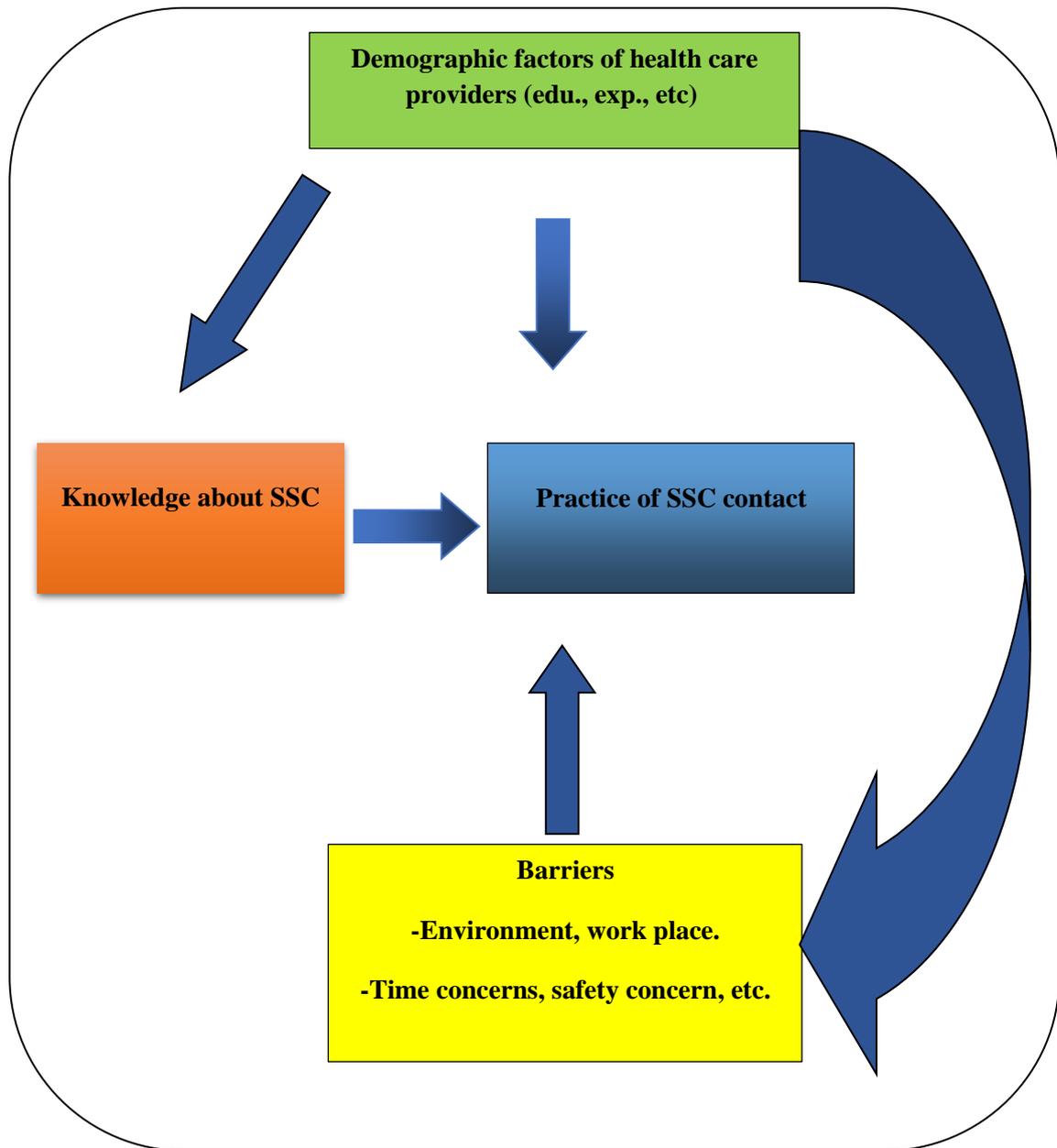


Figure (2.1): Conceptual Framework (self-developed)

Conceptual framework is a diagram which determines skin-to-skin contact implementation and the relationships between these factors and the barriers with knowledge and practice of SSC. The demographic factors as degree of education and experience will constitute the independent variables that may affect the health care providers' knowledge and practice to SSC.

As well the framework assess the relationship between knowledge and practice, since it is supposed if health care providers have adequate knowledge about benefits of SSC for mother and newborn as increase breastfeeding, preventing newborn hypothermia, stabilization of newborn's heart rate and respiratory rate, prevent newborn hypoglycemia, and decrease neonatal morbidity and mortality, as well the benefits of SSC for mother as increase oxytocin level which increase mother-newborn attachment which leads to decrease postpartum depression, adequate knowledge may influence the SSC practice by health care providers.

The barriers of SSC implementation for 90 minutes as work load, shortage of team, safety concerns and the health care provider's lack of knowledge of the policy and specifications that allow or prohibit SSC may influence the practice of SSC as dependent variable. So, this framework guides this study and test the relationship among its variables.

## **2.2 Literature Review**

### **2.2.1 Background**

Mother-infant skin-to-skin contact (SSC) defined as putting infant directly on mothers' chest or abdomen immediately (within 10 minutes) after delivery or early (between 10 minutes and 23 hours after birth) and should be continuous at least 60 minutes (WHO, 2017). It was started as a part of Kangaroo mother method (KMM) which started in Colombia at the end of 1970 when doctors Héctor Martínez Gómez and Edgar Rey Sanabria began to modify the traditional care of premature and low birthweight (LBW) babies due to overcrowding in incubators, high mortality rates among newborns with low birthweight and high rates of hospital infection (WHO, 2003). Kangaroo mother care (KMC) is placed preterm and LBW infant continuously skin-to-skin with mother as a frog position under her clothes if both mother and her infant medically stable until gestation age of infant become 40 weeks or infant weight about 2.5 kg (WHO, 2003).

### **2.2.2 Benefits of skin-to-skin contact**

The World Health Organization (WHO) has recognized that early or immediate SSC is one of primary reasons to initiate and support breastfeeding (WHO, 2017). Also, a quasi-experimental study conducted at Hawler maternity teaching hospital of Erbil, Iraq conducted on 108 healthy mothers and their newborn, 56 received SSC and 52 was control group, data were collected via structured interview, a study mentioned that mother-infant SSC after birth had positive effect on breast feeding due to increase the success rate among intervention group which had more initiation of breast feeding and long duration of the first lactation (Safari et al., 2018).

SSC had lots of benefits for mother and newborn as results of many studies, while comparing between neonate who put on the breast within the first hour after delivery, the risk of dying in the first 28 days of life is 33 higher for those who started breastfeeding 2-23 hours after birth, and more than twice as high for those who started 1 day or longer after birth (Smith et al., 2017).

A retrospective cohort study in 2020 conducted in Colombia to assess SSC on the risk of neonatal hospitalization before discharge from maternity wards mentioned that newborns who received SSC had less admission to neonate unit (Agudelo et al., 2020). In addition to,

A review-intervention study showed that SSC newborns had hemodynamic stability among heart rate, respiratory rate, and oxygen saturation, with increase blood sugar level compared with newborn who didn't receive SSC (Moore et al., 2016).

Less anxiety among newborn who exposed to SSC for longer period was a result of comparative study conducted to evaluate how different initiation and duration times for early SSC affect stress levels in full-term newborns physically and biochemically (Takahashi et al., 2011). Also, the same researcher conducted an observational study in Japan among sixty uncomplicated normal vaginal delivery women to evaluate the association of duration of SSC on blood glucose level in full-term infants, the result was that is a positive relationship between longer duration of SSC for 2 hours and increased blood sugar level (Takahashi and Tamakoshi, 2018).

In comparison to control group, newborn in the SSC group attained quick temperature management, and early SSC for 24 hours after delivery reduces the risk of hypothermia in first 48 hours of life (Nimbalkar et al., 2014). Also, from the benefits of SSC for infant, in US and Massachusettes, a study in 2020 mentioned that decreasing of sudden unexpected infant death (SUID) and asphyxia among newborn <7 days had due to increasing the implementation of SSC and breastfeeding initiation (Bartick et al., 2020).

In an immediate, continuous, uninterrupted SSC with mother in the first hour after birth, babies progress through nine instinctive, complex, distinct, and observable stages, in Stage 7, the baby finds the nipple and licks, mouths, massages, and becomes familiar with the mother's breast; in Stage 8, the infant self-attaches and suckles (annex 6). Uncompromised term newborns go through these stages at varying rates and usually achieve suckling within 60 to 90 min after birth (Widström et al., 2011).

There are many benefits of SSC for mother among decrease postpartum depression rate by enhance mother and child relationship and interaction according to a single-center randomized controlled trial conducted in German at a level III NICU (Mehler et al., 2020). Another systemic review evaluated the effect of SSC on postpartum depression, the study found that SSC low-cost intervention that would be accessible, straightforward and viable for the majority of new mothers in the first few weeks after giving birth, SSC improves mother's wellbeing by lowering depressive and physiological stress, and thereby enhances

infant's development through improving the mother-infant relationship (Kirca and Adibelli, 2021).

SSC women were more breastfeeding their newborns at one to four months after delivery, and more exclusive breast feeding with high effectiveness breastfeeding (Moore et al., 2016). Also, among a parallel-group assessor randomized-controlled trial study conducted through vaginal delivery among primiparas women in turkey to evaluate the effect of SSC on afterpain and postpartum hemorrhage, the study found that SSC reduce postpartum pain and postpartum hemorrhage in the first 24 hour of delivery, also SSC group had significant increasing of oxytocin level at the 30<sup>th</sup> minute after delivery (kartal et al., 2021).

Skin-to-skin contact and breastfeeding within 30 minutes reduce postpartum hemorrhage (PPH) level among mothers as a result of retrospective cohort study conducted in Australlia. (Saxton et al., 2015). As well as it decreases third stage of labor as a result of systemic review and meta-analysis study mentioned in 2019 (Karimi et al., 2019). Also, in Iraq another study mentioned that SSC group had shorter time of third stage of labor than who didn't had SSC (Safari et al., 2018).

Also, in Egypt a non-randomized controlled study conducted in Damnhour showed that mother-newborn SSC group had significantly less duration of third stage of labor than control group with highly initiation of breastfeeding as well (Essa and Ismail, 2015). Also, in Saudi Arabia in 2017 after conducting randomized control trial the finding revealed that SSC decrease time of placenta separation (Al Morbaty et al., 2017).

Also, the effect of SSC on newborn-parent relationship wasn't highlighted, so a review study conducting in 2021, the results was positive to reduce parental anxiety by reducing cortisol level and increasing oxytocin level (Lonio, et al., 2021). As well in another study it was mentioned that parent-infant relationship enhanced by SSC due to increase oxytocin level which leads to decrease stress and anxiety level (Vittner et al., 2017).

### **2.2.3 Accreditation**

The SSC policy has been adopted by many organizations and protocols and they have recommended its implementation as the American Academy of Pediatrics (AAP), Academy of Breastfeeding Medicine (ABM). Also, WHO which mentioned that newborns with prolonged SSC are more likely to breastfeed successfully. That's according to a recent WHO

study that found 90 minutes of uninterrupted SSC, where babies are dried and placed directly on their mother's bare chest after birth, will maximize the chances of baby being physically ready to breastfeed (WHO, 2020).

United Nations International Children's Emergency Fund (UNICEF) was reported that SSC has great benefits for mother and newborn and recognized that: "Skin-to-skin contact is a key part of the UNICEF UK Baby Friendly Initiative Standards. It helps the baby to adjust to life outside the womb and is highly important for supporting mothers to initiate breastfeeding and to develop a close, loving relationship with their baby" (UNICEF, n.d.).

Also, Association for Women's Health, Obstetric, and Neonate Nurses (AWHONN) recommended that all stable infants greater than 37 weeks and 0 days gestation born by vaginal or caesarean birth should be placed in immediate skin-to-skin contact for at least the first hour of life or until the breastfeeding is completed, also mothers should be offered SSC during neonatal painful procedures as vaccinations and blood sampling among healthy greater than 37 weeks infants (AWHONN, 2016).

And in measure 03 in AWHONN 2014 the dominator exceptions for immediate SSC were newborns who are unstable or not responsive, need admission to special care or neonatal intensive care unit, and mothers who have severe illness that prevent them from caring their newborns or mothers who adopted not practicing SSC (AWHONN, 2014).

#### **2.2.4 Duration of skin-to-skin contact**

In ten steps to successful breastfeeding WHO recommended in step 4 about immediate postnatal care to facilitate immediate and uninterrupted SSC and support mother to initiate breastfeeding as soon as possible after birth (WHO, 2018). In immediate, continuous, uninterrupted SSC with mother in the first hour after birth, babies progress through nine instinctive, complex, distinct, and observable stages, uncompromised term newborns go through these stages at varying rates and usually achieve suckling within 60 to 90 minutes after birth (Widström et al., 2011).

In a cross-sectional study assessed the relation between Early Essential Newborn Care (EENC) policy, practice, and environmental intervention and breastfeeding outcome found a high-rate response between SSC duration and early breastfeeding, uninterrupted SSC at

least 90 minutes is higher rate for early breastfeeding than 60 minutes regardless mode of delivery (Li et al., 2020).

Uninterrupted SSC should be encouraged and can be extended to 2-3 hours if desired and the mother and infant remain stable and routine care practice should be delayed until SSC session is completed (AWOHNN, 2016).

### **2.2.5 Mechanism of skin-to-skin contact**

The Gaza Neonatal Network (GNN) through a task force of obstetricians, midwives, pediatricians and neonatal nurses developed the Palestinian version of these guidelines, which they were adopted from World Health Organization/ for the Western Pacific WHO/WPRO Early Essential Newborn Care (EENC) and put clinical practice pocket guide (2016) which explained the steps of EENC in algorithms, in algorithm 2 the essential newborn care was explained as steps:

Call out time of birth and sex of the baby, deliver the baby onto the dry cloth draped over the mother's abdomen or arms, start drying baby within 5 seconds after birth:

- Wipe eyes, face, head, trunk, back, arms and legs thoroughly.
- Check breathing and assess while drying.

Remove wet cloth to start skin-to-skin contact, cover the baby with dry cloth and head with bonnet do not do routine suctioning, after 30 seconds if baby breath adequately: continue skin-to-skin contact on mother's abdomen or chest, inject oxytocin 10 IU IM after excluding a second baby and informing the mother, then remove soiled set of gloves, if you are alone birth attendant, clamp/cut cord after pulsation stop, no earlier than 1 minute.

Do not separate the baby from the mother for at least 90 minutes, unless in respiratory distress or with maternal emergency, encourage breastfeeding when baby shows feeding cues, monitor the baby every 15 minutes (MoH, 2016).

### **2.2.6 Worldwide prevalence of SSC**

According to systematic review conducted in 2018 to determine the prevalence of SSC at six WHO world regions from 2007 to 2017 the result of study showed that the highest rate of studies was from the Western pacific region 12 studies, followed by European region 9

studies, region of the Americas had 6 studies, South-East Asia region had 4 studies, African region with 2, and Eastern Mediterranean region also had 2 studies (Abdulghani et al., 2018).

**In Western Pacific Region:** Australia was conducted 5 studies and the proportion of SSC was from 72% to 95%, also Singapore got 92% of immediate SSC after normal birth in one study.

**In European Region:** study conducted in eight countries Croatia, Denmark, Finland, France, Italy, Spain, Switzerland, and the UK. In Denmark SSC was 96% after vaginal birth, in Finland the percentage of SSC 89%, 80% Italy percentage of SSC, and UK 64% as similar as France percentage of SSC.

**Region of the Americas:** in Canada 50% of women practice SSC at study conducted in 2010, in Mexico immediate SSC was reported at 9% of births, two studies in Brazil undertaken in 2011 and 2012 reported that SSC immediately after birth was 34% in one study, while it was 42% in another study at the same country.

**South-East Asia Region:** 4 countries conducted studies in Bangladesh, India, Nepal, and Sri Lanka. 50% was the highest rate of SSC in Sri Lanka was reported.

**African Region:** just two studies in Tanzania and Ethiopia, SSC after normal birth was reported in Ethiopia it was low as 9%, but in Tanzania SSC less than 1%, it was the lowest percentage among all the studies.

**Eastern Mediterranean region:** Yemen and Tunisia were the only countries reported two studies about SSC, in Tunisia SSC was 64% but in Yemen was very low 8% of women practiced SSC.

### **2.2.7 Palestine prevalence of SSC**

EENC team in Gaza Strip evaluate uninterrupted and immediately SSC for 90 minutes from 2017 to 2020 at four governmental hospitals. The evaluation of SSC for term deliveries revealed that: a high proportion of babies received SSC (86%), with a high proportion placed in SSC within 1 minute of birth (84%) but those who remain in uninterrupted SSC for at least 90 minutes is facing challenge with (32%) (Gaza\_EENC\_AIR\_2019). SSC was 50% at Shifa hospital for term and normal delivery with first breastfeeding before separation, but at Emarati hospital was lower than Shifa it was 35% (Gaza\_EENC\_AIR\_2020).

## 2.2.8 Conditions related to mother-infant SSC implementation

Skin to skin contact is recommended for all mothers and newborns, regardless of feeding or delivery method, immediately after birth (as soon as the mother is medically stable, awake, and able to respond to her newborn) and to continue for at least one hour, as defined by the WHO (Winter & Goldsmith, 2016). Immediate, continuous, and uninterrupted (SSC) of the mother and her newly born infant after birth is recommended, “Unless there are documented medically justifiable reasons for delayed contact or interruption ((Brimdyr et al, 2017).

In Gaza strip MoH didn't had any written criteria for postpartum mother to whom SSC should be apply to, while SSC should be continuous and uninterrupted for 90 minutes unless if maternal emergency had occurred (MoH, 2016). While the MoH had a policy for non-urgent separation of newborn that is a guide for health practitioners in maternity and newborn observation and admission area: baby can be evaluated later by a pediatrician after finishing at least 90 minutes of uninterrupted skin to skin and breastfeeding in **8 conditions:**

**Baby born with meconium:** breathing, vigorous and pink.

**Baby born with easy not complicated ventose:** less than 2 pop outs, no injury or visible hematoma and breathing and pink.

**Late preterm babies  $\geq$  34 week** and weight  $\geq$  1800 gm, pink, breathing and vigorous.

**PROM or PPROM:** no intrapartum risk, chorioamnionitis or fever, giving that the baby is pink and breathing.

**Mild respiratory distress with mild tachypnea when:** (1) the overall situation is calm. (2) a midwife is available to follow the baby. (3) the pediatrician is available to check on the baby after 30 minutes. Otherwise, the baby will be admitted for observation after pediatric consultation.

**Macrosomia:** if stable, pink, breathing well and born with no difficulties at all.

**False positive abnormal CTG:** giving that the baby is born pink and breathing well.

Congenital anomalies that do not need urgent intervention (**Annex 7**). (MoH, Gaza, 2018)

### **2.3 Demographic factors of health care providers in relation to knowledge and practice of SSC**

There are many factors influencing health care provider's knowledge include level of education, experiences and other factors as believes and attitude which influences on SSC implementation. According to study conducted in Saudi Arabia to examine nurses' knowledge, education, beliefs and attitudes, implementation of SSC, and explore if any relationships between them by using a cross-sectional correlational descriptive study among nurses who work at obstetric and pediatric wards at a university hospital in Jeddah, the result revealed that the nurses' average was 42.4 years (SD = 3.2), and their average experience was 12 years (SD = 2.1). The mean total score of SSC knowledge was 13.6 (SD = 2.3) from total score 25, the mean of total score of attitudes and beliefs was 12.3 (SD = 3.1) from total score 20, the SSC education mean score was 17.1 (SD = 3.4) from total score 25, and the SSC implementation mean score was 17.0 (SD = 4.1) from total score 30. In all, 55% of the nurses were unsure of how SSC affected newborns' brain development, 45% were unable to interpret infants' reactions during SSC; 67% disagreed that it was the nurses' duty to support SSC, in addition 47% of nurses had not received any continuing education on SSC in their unites, and 37.5% were unaware of SSC criteria, SSC implementation was significantly correlated with nurses' knowledge level ( $r = 0.297$ ,  $p = 0.031$ ), education ( $r = 0.85$ ,  $p = 0.015$ ), and beliefs ( $r = 0.31$ ,  $p = 0.024$ ), according to Person correlations. The study also came to conclusion that SSC implementation may rise concurrently as nurses' knowledge, education, and beliefs/attitudes improve. To encourage SSC use in practice, a continual education program and clear rules are required. (Almutairi, 2022).

A qualitative study using semi-structured interviews to detect the factors which prevent continuous SSC after vaginal and caesarean delivery of healthy full-term infants from health care providers perception were the lack of clinician algorithm, as well as an ambiguous definition of eligible mothers and infants (Koopman et al., 2016). As well as another descriptive qualitative study which using semi-structured interviews to assess the perceived facilitators, challenges and requirements for implementing SSC after vaginal birth among health care providers in two public hospitals in Saudi Arabia were the lack of a comprehensive policy and procedures to support SSC (Abdulghani et al., 2020).

A retrospective study conducted in Brasil to identify relationship between SSC and breastfeeding and factors associated with SSC practice, the result was that low prevalence of SSC followed by breastfeeding and it was affected by maternity age, Apgar score, mode of delivery, and birth weight, the Apgar score between 8-10 in first minute and high birth weight are enhancing factors for SSC followed by breastfeeding but caesarean and forceps delivery and lower maternity age considered preventive factors for SSC and breastfeeding (Saco et al., 2019).

A retrospective study conducted in Gambia to evaluate SSC prevalence rate, the result affected by geographical area, place of delivery and birth weight, the result showed that the rural area had higher prevalence than urban area, SSC was higher than at places which had health facilities rather than deliveries at home, and SSC was higher 1.37 with mothers who had more than 2.5 kg newborn than newborns less than 2.5 kg (Ekholuenetale et al., 2020).

In Bangladesh, in 2019 a study clarified that the public facility delivery, private facility delivery, and  $\geq 4$  ANC visits at least one from medically trained provider had a positive association with SSC, also, the size of baby as to be a small that is increasing SSC rate compared with a big baby, while mode of delivery influence on SSC as in caesarean section the SSC had low prevalence compared with vaginal delivery, also high educational level of the mother and the wealthy classes had a positive association with SSC practice (Binte Ali et al., 2021).

#### **2.4 Barriers and enabling factors of mother-infant SSC**

There are many obstacles faced implementation of mother-infant SSC according to studies despite its' benefits but there has been little research on the barriers of SSC. Napoli mentioned in his doctoral project about SSC barriers from mother and nurse perspective were the condition of the mother due to feeling tired and out of focus, the presence of the family that hug the baby, and the presence of visitors, while barriers from nurse perspective was mothers' lack of awareness of the importance of SSC (Napoli, 2015).

Sudden unexpected postnatal collapse (SUPC) was observed in ten cases of newborns after 3 hours of birth during SSC and breastfeeding among 9 primipara during a retrospective study conducted in Japan when the aim was to explore the condition of healthy newborn at birth but become SUPC lead to cerebral palsy before five years. (Miyazawa, et al., 2020).

A cross-sectional study conducting on 50 midwives working in the hospitals of Torbat Heydariyeh city, Iran , defined the mother exhaustion and newborn illness were the biggest barriers of SSC from midwives' point of view, also a large proportion of midwives acknowledge the importance of social support and motivation to increase SSC practice, and the enabling factors were the availability of facilities and equipment, training mother, father and companion about SSC before and during delivery (Adeli and Azmoudeh, 2016).

Also, observational study conducted among thirty women to track the precise amount of skin-to-skin time in the first two hours following delivery, examine what happens during this time, and look for risk factors for inadequate breastfeeding, the 30 babies' average total amount of skin-to-skin time during the first two hours was 90.4 25.0 minutes; 17 (56.7%) of them had at least two interruptions during this period, mostly for neonatal care. In 60% of instances, the initial break came before the first feeding. Pre-first-feeding time was 44.6 21.1 minutes on average. In the first two hours, seven babies (23.3%) did not breastfeed. Nulliparity, a lower umbilical arterial pH at delivery, and early skin-to-skin contact disruptions were all associated with this failure. Only early breaks in skin-to-skin contact seem to be adjustable among them (Robiquet et al., 2016)

According to qualitative study conducted in India to explore the major obstacles to the application of SSC by the use of in-depth interview and focused group discussion, are the lack of staff mainly nurses, and lack of time, in addition to others obstacles such as newborn safety concerns, lack of awareness of team to time of SSC that is not less than one hour, and uncertainly about the efficiency of this application, as well as the lack of motivation to the practice, routine procedures and interaction between departments ( pediatrician, obstetrician and nurses) (Alenchery et al, 2018).

A study divided the factors that affect the practice of SSC into two sides which are institutional factors including insufficient staff and education of professionals on SSC, from another side familial factors including parental education and motivation were the important factors (Koopman et al, 2016).

From the point of view of the health care providers, through a study conducted in Saudi Arabia to identify the barriers of SSC, the lack of a comprehensive policy and guidelines to support the practice of SSC, a lack of abilities and motivations to implement the practice, mothers who were uninterested in SSC, a lack of professional collaboration, staffing and

time restrictions, and a medicalized birth environment that prioritized interventions over SSC were some of the current or potential barriers (Abdulghani et al., 2020). Another study in Iran showed that training programs and easy access to adequate services and facilities have a significant impact on establishment of SSC (Adeli and Azmoudeh, 2016).

A qualitative study was conducting in South Africa reported barriers to successful implementation of SSC during birth as lack of knowledge about SSC amongst health care professionals, postponing of schedule work, and need of inspiration from administration (Mgolozeli et al, 2018).

A qualitative study using focus group discussion with post normal delivery mothers to explore the perceptions of post-delivery mothers of SSC and newborn care, the result was that adequacy of wellbeing practice of SSC by the mother was affected by information and wellbeing sensation and the pregnant women choices are dependent on social, culture, and financial components as specified by the study, also mentioned the best informants for helping mothers to understand skin to skin intervention were the health care providers (Romano et al, 2008).

The opinions of midwives about enabling factors of SSC immediately after birth in Tehran hospitals in 2012-2013, they believed there is a need for privacy, plan, and essential supplies for effective SSC (Nahidi et al, 2014). Another study mentioned that visitors and others who want to carry newborn restrict the application of SSC, also lack of knowledge of the benefits of SSC and mothers didn't stay enough time during SSC there were barriers of SSC (Ferrarello and Hatfield, 2014).

The benefits of paternal newborn skin-to-skin contact are not always advertised as strongly as they are for mothers. The first hour after birth is the golden hour when SSC should be initiated and stresses that mother and baby should be left together in prolonged and uninterrupted SSC. However, the actualities of traditional birth routines often make this an unrealistic possibility. Also as mentioned by Shorey, He, and Morelius study in 2016 which concludes for high-risk unpredictable maternal medical complications, a father's involvement in providing SSC should be promoted during the postnatal period and is a valuable alternative, especially during the unavailability of mothers due to special circumstances, including medical emergencies (Joseph, 2020).

A descriptive cross-sectional study found that, education levels, practice settings, years practicing and age differences influence implementation of SSC (Vittner et al, 2017). Another qualitative study conducted in California to detect barriers to promoting SSC in NICU explained three types of barriers to SSC were implementation, institutional, and familial factors. The main barriers in implementation were defining a clinically characteristics of patients, institutional factor were awareness and training of staff, and the familial factors involved assistance and continuous encouragements of mothers (Lee et al, 2012). While in 2007 a study found that knowledge and expectation of health professionals in NICU regarding SSC mentioned that infant safety was the barrier of SSC (Mallet et al, 2007)

A study conducted in Gambia explained that low prevalence of SSC related to decrease of mother awareness of timing of antenatal care (ANC) and newborn SSC (Ekholuenetale et al, 2020).

In qualitative research, in 2017 mentioned that the multi- professional team prefer routine care which remain obstacle for SSC (Kologeski et al, 2017). While in Brasil, in 2021 explained that APGR score, gestation age, newborn health and mode of delivery affect the mother-infant SSC (Uchoa et al., 2021). While in 2019 through institutional based cross-sectional study in Ethiopia mentioned that education level of mothers and number of ANC visits were significantly associated with SSC practice (Bedaso et al., 2019).

In randomized control trial study conducted to overcome the barriers of SSC from the side of the mothers, Caponero showed a video to 120 women before delivery about SSC in contrast 120 women didn't show the video, the result was the experimental group had more intention for SSC after delivery (Caponero et al., 2022).

It need support from maternity and child care institutions as well as public health regulations. For examinations, medical treatments, and other standard procedures, the customary separation of mother and newborn child is still encouraged. The significance of SSC and its ramifications for the newborn and his family are occasionally overlooked by health professionals. It is crucial to spread knowledge and carry out regular training since they could be resistant to change. SSC is hindered by some parents' attitudes of keeping the newborn warm and the value of keeping them in an incubator. In other instances, family visits prevent parents from having private SSC with their newborn children Crowded

maternity facilities can also be uncomfortable for mother, father and the newborn (Gangotena, 2022).

## **2.5 Knowledge of health care providers skin-to-skin contact and its effect on practice:**

Practice of health care providers affected by many factors, including the knowledge of the staff, nurses' lack of knowledge related to practice changes that are based on evidence was a gap that need be filled to improve care quality and patient safety (Bradshaw,2010), so a doctoral study evaluated educational intervention for obstetrical nurses to increase SSC practice so the result was beyond expectations and the rate of SSC practice rises from 10% to 92% (Njoku, 2017).

Furthermore, a recent web-based questionnaire study conducted in Saudi Arabia that polled 209 NICU nurses to assess their level of knowledge and competency and identify practice related barriers discovered that most respondents thought KMC promoted successful breastfeeding and mother-infant bonding but they were un sure of how KMC was applied, to facilitate the recommended implementation of KMC in Riyadh, the authors suggested offering educational sessions (Al-Shehri and Binmanee, 2019).

Numbers of studies have clarified the effect of knowledge on SSC practice, in Mexico was a study performed in a public second-level hospital in a rural community to assess the educational interventions for health care providers and mothers to change their practice from routine newborn care as interruption from mother, put under warmer, and giving formula or dextrose 5%, change to practice of mother-newborn skin-to-skin contact, the result of this educational intervention was showed that 77% of birth practice SSC and breast feeding (Sanchez-Espino et al., 2019).

Another descriptive cross-sectional study conducting among perinatal nurses to clarify the nurse's knowledge of the effect of mother-newborn SSC on newborn's brain development and the risk of infant neurodevelopmental delay, the result showed that nurses with high educational level as bachelor and master degree more accepted with SSC affects newborn brain development and decrease the risk of developmental delay, and the conclusion from this study was an increase in the educational level is linked to an increase knowledge and in turn positively affects the application of SSC ( Vittner et al., 2017)

Another qualitative study conducted in India used in depth interview and focus group discussion clarify the enablers to implementation of SSC according the knowledge of the benefits of SSC by the nurses and pediatricians due to enhance the pediatrician SSC implementation and discuss the instruction of SSC with midwife or the midwife gets the information about the benefits of SSC from textbook and curriculum (Alenchery et al., 2018)

To increase SSC implementation in Uganda, educational intervention was introduced for staff as showing videos about SSC practice, giving lectures, distribute brochures, display a poster detailing nine stages of initiating breastfeeding on the walls of maternal ward, conducting focus group and interview with employees to enhance implementation of SSC among giving elements which enhance or inhibit practice of SSC and distribute cards for who participated in interview then data collection done using a quasi-experimental design, the effect was 54.8% of mothers and their newborns had uninterrupted SSC for 1 hour (Nissen et al., 2019).

The broad implementation of SSC attributed to a lack of initiation and consistency, improvement in a health care practice's performance needs metrics that represent the depth and complexity of the phenomena under investigation starting with generalizable scientific evidence, selecting a specific setting and measuring performance in a realistic and efficient manner (Cadwell et al., 2018).

To evaluate educational intervention for the staff about SSC and its' effect on newborn's temperature, A quasi-experimental study conducted in Northern Uganda mentioned that SSC was determined to be safe in terms of temperature regulation (Nissen et al., 2019).

Through increasing staff awareness and monitoring of the condition of newborn during SSC Paul and his colleagues developed interventions by using standardized assessment tool and measuring oxygen saturation during SSC in labor room and prescribed intervention when SUPC occurred, before intervention the rate of SUPC was 5 SUPC cases per 9143 live births, but post intervention the rate was 0 (Paul et al., 2019).

Also, to increase and enhance SSC application and decrease risks of SUPC infant assessment should be done as Hoe and Morgan were developed the RAPP assessment tool (respiratory, activity, perfusion, and position) among checklist and strategies to prevent SUPC and continue safely SSC and breastfeeding (Hoe and Morgan, 2014).

Another qualitative study conducted in Uganda to assess the perceived barriers and enablers by using focus-group and individual interviews with health professionals in a governmental hospital, associated with a unique low cost intervention package nine months after it was completed among watching a DVD about the implementation of continuous SSC for one hour and discussing the obstacles and suggestions to improve the implementation of SSC for one hour, so health professionals accepted and practiced SSC after birth during the increasing knowledge and feel the advantages of SSC as decreased work pressure and decrease perennial pain during repair (Mbalinda et al., 2018).

## **2.6 Summary**

The most important barriers found in the previous studies were related to one of these sections: first the administration that includes: lack of policy, guidelines, clinician algorithm and procedures, lack of motivations. Second the health care providers' lack of knowledge & training, level of education, attitude, preference of routine care. Third the mothers' lack of awareness, exhaustion and mode of delivery. Fourth the newborns' APGAR score, gestational age and birth weight. Fifth the environment that include geographical area, place of delivery, visitors, lack of social support, privacy, and lack of essential supplies.

The gaps were the lack of knowledge of the extent of SSC implementation by health care providers in special cases as vacuum delivery, twin delivery, PROM >18 hours, meconium-stained delivery. The researcher conducted this study to assess the knowledge and practice of health care providers for implementation of SSC and to assess the barriers for health care providers to completely implement SSC for mother and newborn.

## Chapter Three

### Methods and materials

#### 3.1 Study design

The researcher used descriptive, analytical and cross-sectional design. The cross-sectional design used to describe the health care providers' knowledge, practice and barriers of SSC implementation and to determine the relationship between health care providers' knowledge and practice.

#### 3.2 Study setting

The study was conducted in the four maternity governmental hospital (Al Shifa, Tahreer, Aqsa, and Al-Emarati hospitals), the midwives who work in labor rooms were 62, obstetricians were 153 and pediatrician were 52.

#### 3.3 Study population

The study population consisted of all health care providers (midwives, obstetricians and pediatricians )who are working in maternity governmental hospitals about (286 in total) as distributed in table 1 which was obtained from supervisors at maternity hospitals.

**Table (3.1): Numbers of health care providers who work in maternity governmental hospitals:**

	<b>Al Shifa hospital</b>	<b>Tahreer hospital</b>	<b>Aqsa hospital</b>	<b>Emarati hospital</b>	<b>Total</b>
Midwives who work in labor room	19	18	14	16	67
Obstetricians	54	55	30	23	162
Pediatricians	22	12	13	10	57
Total	95	85	57	49	286

### 3.4 Sample size and sampling method

The planned sample size was 286 (census) but the actual sample size for health care providers was 267 subjects with response rate 93.3%, (19) subjects refused to share.

### 3.5 Period of the study

The researcher stayed 19 months during collecting data, the study conducted from February 2021 to September 2022.

### 3.6 Eligibility criteria

#### 3.6.1 Inclusion criteria

- Fixed employee obstetricians and pediatrician working in the four main maternity governmental hospitals (Al Shifa, Tahreer, Aqsa, and Emaratee hospitals).
- Fixed midwives who are working in labor rooms.

### 3.7 Instruments of the study

The researcher used self-administered questionnaire to measure knowledge and practice of skin-to-skin contact among healthcare providers in maternity departments and explore barriers of implementation of SSC. The questionnaire consisted of the following parts:

- First part: Sociodemographic characteristics of study participants.
- Second part: Knowledge about skin-to-skin contact (13 items)
- Third part: Practice of skin-to-skin contact (14 items)
- Fourth part: Barriers to skin-to-skin contact (10 items)
- Fifth part: Recommendations to improve application of skin-to-skin contact

### 3.8 Criteria for measurement

**Table (3.2a): level of knowledge and practice of skin-to-skin contact**

Weighted percent	Interpretation
Less than 50%	Low
50 – 69%	Fair
70 – 79%	Good
80 – 89%	Very good
90% and more	Excellent

**Table (3.2b): level of barriers to skin-to-skin contact**

Score	Range	Weighted percent	Interpretation
1	1.0 – 1.75	>25% - 45%	Very low
2	1.76 – 2.51	>45% - 65%	Low
3	2.52 – 3.27	>65% - 85%	Moderate
4	3.28 – 4.00	>85% - 100%	High

### 3.9 Pilot study

The researcher conducted a pilot study on 34 participants to test feasibility of study and reliability of the questionnaire as presented in the following tables, the pilot study subjects were included in the study sample.

### 3.10 Validity

The researcher did the content validity of the questionnaire through 7 experts (annex 2) in the area of research and topic of the study. The correlation between each item and the total score of the domain as follows:

**Table (3.3a): Correlation between each item and total score of knowledge subscale**

No.	Item	Correlation
1	Skin-to-skin contact has benefits to mother and newborn	0.426 *
2	Skin-to-skin contact increases oxytocin level among post-delivery women	0.426 *
3	Skin-to-skin contact increases the duration of third stage of labor ®	0.408 *
4	Skin-to-skin contact decreases postpartum hemorrhage	0.408 *
5	Skin-to-skin contact increases postpartum depression ®	0.488 **
6	Skin-to-skin contact promotes mother-child interaction	0.367 *
7	Skin-to-skin contact promotes newborn hemodynamic stability: heart rate, respiratory rate and oxygen saturation	0.554 **
8	Skin-to-skin contact promotes newborn hypoglycemia ®	0.570 **
9	Skin-to-skin contact promotes newborn hypothermia ®	0.585 **
10	Skin-to-skin contact promotes exclusive breastfeeding for six months	0.461 **
11	Skin-to-skin contact decreases neonatal admission to NICU	0.520 **
12	Skin-to-skin contact decreases neonatal mortality rate	0.488 **
13	Immediate and continuous skin-to-skin contact for 90 minutes had more benefits than skin-to-skin for 60 minutes	0.498 **

\*\*significant at 0.01    \*significant at 0.05

As shown in table (3.3a), all the items of knowledge domain have statistically significant correlation with the total score of the domain.

**Table (3.3b): Correlation between each item and total score of practice domain**

No.	Item	Correlation
1	I practice skin-to-skin contact	0.630 **
2	I explain to the mother the benefits of skin-to-skin contact	0.697 **
3	I practice skin-to-skin contact for completely 90 minutes	0.623 **
4	I practice skin-to-skin contact for healthy newborns	0.727 **
5	I practice skin-to-skin contact for more than 34 weeks healthy newborns	0.574 **
6	I practice skin-to-skin contact immediately for healthy and stable newborns who delivered by vacuum (ventose).	0.551 **
7	I practice skin-to-skin contact with healthy twins	0.507 **
8	I practice skin-to-skin contact immediately with healthy newborns who delivered from mothers with PROM (premature rupture of membrane) for more than 18hrs.	0.587 **
9	I practice skin-to-skin contact immediately with healthy meconium-stained newborns	0.671 **
10	I return distressed newborn to skin-to-skin contact after stabilization of his condition as soon as possible	0.317 //
11	I support the mother to breastfeed her newborn during skin-to-skin contact	0.506 **
12	I allow the companion to enter labor room to support the mother during skin-to-skin contact	0.526 **
13	I don't practice skin-to-skin when the ward is crowded to have empty beds for the increased number of cases ®	0.346 *
14	When the mother is tired (non-life threatened), I practice skin-to-skin contact	0.660 **

\*\*significant at 0.01    \*significant at 0.05    // not significant

As shown in table (3.3b), the items of practice domain have statistically significant correlation with the total score of its domain.

**Table (3.3c): Correlation between each item and total score of barriers domain**

No.	Item	Correlation
1	My workplace administration does not support the skin-to-skin contact through clear policy	0.439 **
2	Finishing routine duties as weighing newborn, giving vit. K, prevents me from applying skin-to-skin contact for 90 minutes	0.562 **
3	Staff shortage (midwives, pediatrician) prevents skin-to-skin contact for 90 minutes	0.697 **
4	Fear from newborn falling down is a barrier to practice skin-to-skin contact	0.771 **
5	Fear from occurrence of cyanosis and apnea is a barrier to practice skin-to-skin contact	0.636 **
6	Presence of family in the labor room is a barrier to practice skin-to-skin contact for completely 90 minutes	0.671 **
7	lack of mother's awareness of the importance of skin-to-skin contact is a barrier to practice skin-to-skin contact	0.646 **
8	lack of social support and motivation is a barrier to practice skin-to-skin contact	0.770 **
9	lack of privacy is a barrier to practice skin-to-skin contact	0.643 **
10	lack of essential supplies as towels, linens is a barrier to practice skin-to-skin contact	0.698 **

\*\*significant at 0.01

As shown in table (3.3c), the items of barriers domain have statistically significant correlation with the total score of its domain.

### 3.11 Reliability

#### Cronbach alpha method

The researcher used Cronbach alpha method to examine the reliability of items for each domain of the questionnaire. The results are shown in the following table.

**Table (3.4): Cronbache alpha coefficient (knowledge, practice & barriers scale)**

<b>Domains</b>	<b>No. of items</b>	<b>Correlation</b>
Knowledge about skin-to-skin contact	13	0.713
Practice of skin-to-skin contact	14	0.837
<b>Total score of knowledge &amp; practice of skin-to-skin contact</b>	<b>27</b>	<b>0.833</b>
<b>Barriers to skin-to-skin contact</b>	<b>10</b>	<b>0.854</b>

As presented in table (3.4) the items of the questionnaire showed high reliability as Cronbach alpha coefficient was 0.833 for knowledge & practice, and 0.854 for barriers to skin-to-skin contact. Therefore, the questionnaire had high reliability.

### 3.12 Data collection

The researcher collected the data by herself and a trained nurse. Each questionnaire had a consent form in the first page that asked the participants to participate in the study voluntary. Time allocated for each questionnaire was 10-15 minutes. The data collection was done during the period from March to July 2022.

### 3.13 Data entry and analysis

The researcher used SPSS program (version 25) for data entry and analysis. Statistical analysis included frequencies, means, and standard deviation. Advanced statistical procedures used as (t) test, One-way ANOVA and Post Tukey hoc test.

### 3.14 Ethical and administrative considerations

Before starting the study, the researcher obtained approval from MoH approval (annex 3), Al Quds University to carry out the study (annex 4) and ethical body as Helsinki Committee (annex 5) were obtained also. In addition, voluntary participation and confidentiality of information was maintained through consent form signed from the study participants.

## Chapter Four

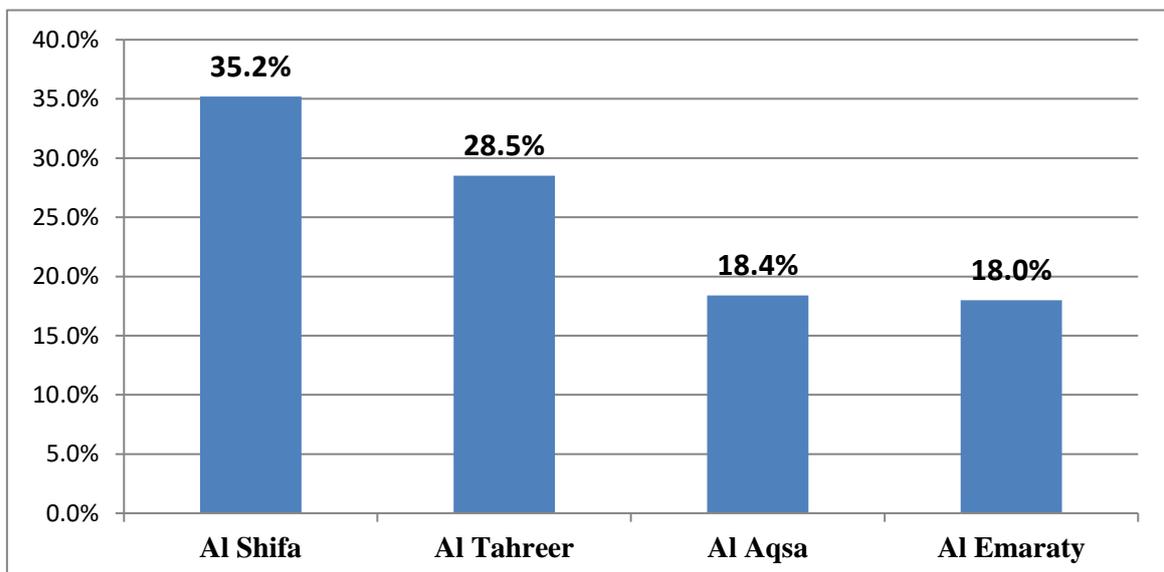
### Results and Discussion

In this chapter, the researcher presented the results of statistical analysis, in the form of figures and tables, then the results have been discussed in the light of previous studies.

#### 4.1 Descriptive results

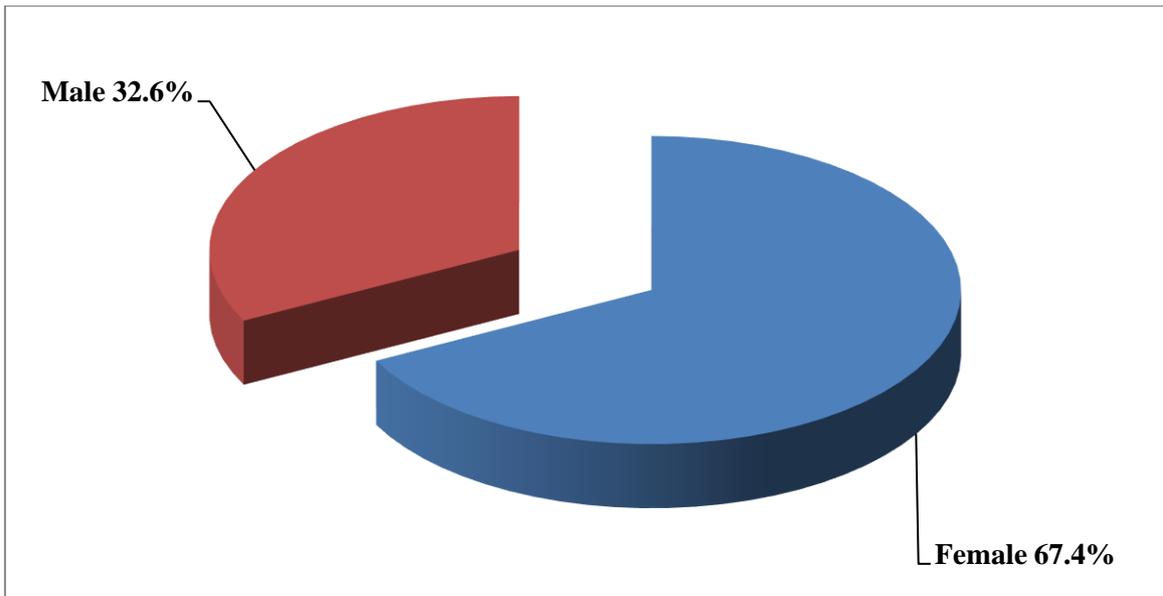
The sample of the study consisted of 267 HCPs from maternity departments in governmental hospitals in GS. Their sociodemographic characteristics are illustrated in the following tables.

##### 4.1.1 Sociodemographic characteristics of study participants



**Figure (4.1): Distribution of study participants according to hospital**

Figure (4.1) showed that 94 (35.2%) of study participants were from Al Shifa hospital, 76 (28.5%) were from Al Tahreer hospital, 49 (18.4%) were from Al Aqsa hospital, and 48 (18%) were from Al Emaraty hospital.



**Figure (4.2): Distribution of study participants according to gender**

Figure (4.2) showed that 180 (67.4%) of study participants were female HCPs and 87 (32.6%) were male HCPs

**Table (4.1): Distribution of specialty according to gender**

Variable	Female n (%)	Male n (%)	Total n (%)
Midwife	62 (100.0)	0	62 (100.0)
Obstetrician	87 (56.9)	66 (43.1)	153 (100.0)
Neonatologist	31 (59.6)	21 (40.4)	52 (100.0)

As shown in table (4.1), (56.9%) of obstetricians were females and (43.1%) were males. Also, (59.6%) of pediatricians were females and (40.4%) were males.

**Table (4.2): Socio-demographic characteristics of study participants (n=267)**

<b>Variable</b>	<b>n (%)</b>	<b>Mean (SD)</b>	<b>Min-Max value</b>
<b>Age (Years)</b>		34.18±7.673	24 - 58
Less than 30	96 (36.0)		
30 – 34	70 (26.2)		
35 – 39	41 (15.4)		
40 – 44	18 (6.7)		
45 and more	42 (15.7)		
<b>Qualification</b>			
Diploma	21 (7.9)		
Bachelor	117 (43.8)		
Master	27 (10.1)		
PhD / Board	102 (38.2)		
<b>Specialization</b>			
Midwife	62 (23.2)		
Obstetrician	153 (57.3)		
Pediatrician / Neonatologist	52 (19.5)		
<b>Position</b>			
Practitioner / staff	208 (77.9)		
Head of department	20 (7.5)		
Others	39 (14.6)		
<b>Experience</b>		7.28±5.865 years	1 – 26 years
Less than 5 years	121 (45.3)		
5 – 9 years	69 (25.8)		
10 – 14 years	39 (14.6)		
15 years and more	38 (14.2)		
<b>Working shifts</b>			
Straight morning	59 (22.1)		
Evening-night	76 (28.5)		
Mixed shifts	132 (49.4)		

As shown in table (4.2), a total of 267 participants were included in the study, more than one-third (36%) aged less than 30 years old. The majority of participants (43.8%) have bachelor degree, and (38.2%) have PhD or Board.

The proportions of participants according to specialty indicated that (57.3%) were obstetricians, (23.2%) were midwives. In addition, (45.3%) have an experience less than five

years, (14.2%) have an experience of 15 years and more, and the mean years of experience was  $7.28 \pm 5.865$ .

**Table (4.3): Distribution of study participants according to work conditions (n=267)**

Variable	N	Percent (%)
<b>Is there a policy and guidelines at your workplace to clarify the criteria of the mother with whom the skin-to-skin contact will be applied?</b>		
Yes	257	96.3
Uncertain	10	3.7
<b>Is there a policy and guidelines at your workplace to clarify the criteria of the newborn with whom the skin-to-skin contact will be applied?</b>		
Yes	246	92.1
No	10	3.7
Uncertain	11	4.1
<b>Did you receive training on EENC and SSC guidelines?</b>		
Yes	230	86.1
No	37	13.9
<b>Adequacy of training (n= 230)</b>		
Adequate	186	80.86
Inadequate	19	8.26
Uncertain	25	10.86

Table (4.3) showed that (96.3%) of participants stated that there is a policy and guidelines at their workplace to clarify the criteria of the mother with whom the skin-to-skin contact will be applied, (92.1%) said that there is a policy and guidelines at their workplace to clarify the criteria of the newborn with whom the skin-to-skin contact will be applied, the high rates of this percentage through HCPs indicates the existence of a policy for the mother and the newborn, and this is considered positive, as it does not prevent the implementation of SSC compared to Abdulghani et al. (2020) study which showed the absence of a comprehensive policy and procedures to support SSC were obstacles and challenges to practice SSC, the existence of the policy and HCPs' knowledge of its existence is due to the interest of MoH and adoption to implement this policy.

The results also indicated that (86.1%) of study participants reported that they received training on EENC and SSC guidelines, (80.86%) of them agreed that the training was adequate, and (8.26%) said that the training was inadequate, the finding of this study showed

the need for continuing training of staff on EENC& SSC in term of quantity and quality to maximize their awareness and practice.

#### 4.1.2 Knowledge about skin-to-skin contact

**Table (4.4): Knowledge about skin-to-skin contact (n=267)**

No.	Item	Correct answer	correct n(%)	incorrect n(%)	Rank
1	Skin-to-skin contact has benefits to mother and newborn	True	265(99.3)	2 (0.7)	1
2	Skin-to-skin contact increases oxytocin level among post-delivery women	True	248(92.9)	19(7.1)	4
3	Skin-to-skin contact increases the duration of third stage of labor ®	False	180(67.4)	87(32.6)	12
4	Skin-to-skin contact decreases postpartum hemorrhage	True	235(88.0)	32(12.0)	5
5	Skin-to-skin contact increases postpartum depression ®	False	209(78.3)	58(21.7)	11
6	Skin-to-skin contact promotes mother-child interaction	True	264(98.9)	3(1.1)	2
7	Skin-to-skin contact promotes newborn hemodynamic stability: heart rate, respiratory rate and oxygen saturation	True	259(97.0)	8(3.0)	3
8	Skin-to-skin contact promotes newborn hypoglycemia ®	False	227(85.0)	40(15.0)	6
9	Skin-to-skin contact promotes newborn hypothermia ®	False	91(34.1)	176(65.9)	13
10	Skin-to-skin contact promotes exclusive breastfeeding for six months	True	226(84.6)	41(15.4)	7
11	Skin-to-skin contact decreases neonatal admission to NICU	True	227(85.0)	40(15.0)	8
12	Skin-to-skin contact decreases neonatal mortality rate	True	226(84.6)	41(15.4)	9
13	Immediate and continuous skin-to-skin contact for 90 minutes had more benefits than skin-to-skin for 60 minutes	True	223(83.5)	44(16.5)	10
	<b>Overall</b>		82.9	17.1	

As presented in table (4.4), the highest score was in the item “skin-to-skin contact has benefits to mother and newborn” with mean score 0.99 and mean percent 99%, and by “skin-to-skin contact promotes mother-child interaction” with mean score 0.99 and mean percent 99%, followed by “skin-to-skin contact promotes newborn hemodynamic stability: heart rate, respiratory rate and oxygen saturation” with mean score 0.97 and mean percent 97%. The lowest score was in “skin-to-skin contact promotes newborn hypothermia” with mean score 0.66 and mean percent 66%, followed by “skin-to-skin contact increases the duration of third stage of labor” with mean score 0.67 and mean percent 67%. The overall mean score was 0.82 and the mean percent was 82%, which indicated very good knowledge about skin-to-skin contact.

This study showed better knowledge score from that conducted in Saudi Arabia by Almutairi (2022) which showed that total mean score of health care providers’ knowledge was 13.6 Out of 25 as maximum score, the mean percentage was 54% in contrast 82% of this study, this could be attributed to high percentage of HCPs (86%) who received training on EENC and SSC guidelines.

### 4.1.3 Practice of skin-to-skin contact

**Table (4.5): Practice of skin-to-skin contact (n=267)**

	Item	Always n(%)	Usually n(%)	Sometimes n(%)	Never n(%)	Mean	SD	Mean %	Rank
1	I practice skin-to-skin contact	108(40.4)	128(47.9)	27(10.1)	4(1.5)	3.27	0.702	81.75	4
2	I explain to the mother the benefits of skin-to-skin contact	129(48.3)	89(33.3)	45(16.9)	4(1.5)	3.28	0.796	82.0	2
3	I practice skin-to-skin contact for completely 90 minutes	75(28.1)	122(45.7)	60(22.5)	10(3.7)	2.98	0.811	74.50	5
4	I practice skin-to-skin contact for healthy newborns	140(52.4)	97(36.3)	28(10.5)	2(0.7)	3.40	0.705	85.0	1
5	I practice skin-to-skin contact for more than 34 weeks healthy newborns	71(26.6)	108(40.4)	75(28.1)	13(4.9)	2.89	0.855	72.25	6
6	I practice skin-to-skin contact immediately for healthy and stable newborns who delivered by vacuum (ventose).	56(21.0)	106(39.7)	75(28.1)	30(11.2)	2.70	0.925	67.50	9
7	I practice skin-to-skin contact with healthy twins	57(21.3)	5(31.8)	102(38.2)	23(8.6)	2.66	0.909	66.50	10

**Table (4.5): Continued...**

	<b>Item</b>	<b>Always n(%)</b>	<b>Usually n(%)</b>	<b>Sometimes n(%)</b>	<b>Never n(%)</b>	<b>Mean</b>	<b>SD</b>	<b>Mean %</b>	<b>Rank</b>
8	I practice skin-to-skin contact immediately with healthy newborns who delivered from mothers with PROM (premature rupture of membrane) for more than 18hrs.	46(17.2)	102(38.2)	84(31.5)	35(13.1)	2.60	0.922	65.0	12
9	I practice skin-to-skin contact immediately with healthy meconium-stained newborns	46(17.2)	104(39.0)	92(34.5)	25(9.4)	2.64	0.875	66.0	11
10	I return distressed newborn to skin-to-skin contact after stabilization of his condition as soon as possible	46(17.2)	129(48.3)	74(27.7)	18(6.7)	2.76	0.815	69.0	8
11	I support the mother to breastfeed her newborn during skin-to-skin contact	124(46.4)	102(38.2)	32(12.0)	9(3.4)	3.28	0.803	82.0	3

**Table (4.5): Continued...**

	<b>Item</b>	<b>Always n(%)</b>	<b>Usually n(%)</b>	<b>Sometimes n(%)</b>	<b>Never n(%)</b>	<b>Mean</b>	<b>SD</b>	<b>Mean %</b>	<b>Rank</b>
12	I allow the companion to enter labor room to support the mother during skin-to-skin contact	64(24.0)	110(41.2)	73(27.3)	20(7.5)	2.82	0.884	70.50	7
13	I don't practice skin-to-skin when the ward is crowded to have empty beds for the increased number of cases ®	37(13.9)	104(39.0)	99(37.1)	27(10.1)	2.57	0.853	64.25	13
14	When the mother is tired (non-life threatened), I practice skin-to-skin contact	34(12.7)	106(39.7)	86(32.2)	41(15.4)	2.50	0.903	62.50	14
<b>Overall</b>						<b>2.88</b>	<b>0.471</b>	<b>72.0</b>	

Table (4.5) showed that the highest score was in “I practice skin-to-skin contact for healthy newborns” with mean score 3.40 and mean percent 85%, followed by “I explain to the mother the benefits of skin-to-skin contact” with mean score 3.28 and mean percent 82%, and “I support the mother to breastfeed her newborn during skin-to-skin contact” with mean score 3.28 and mean percent 82%. The lowest score was in “when the mother is tired (non-life threatened), I practice skin-to-skin contact” with mean score 2.50 and mean percent 62.5%, followed by “I don't practice skin-to-skin when the ward is crowded to have empty

beds for the increased number of cases” with mean score 2.57 and mean percent 64.25%. The overall mean score was 2.88 and mean percent was 72%, which indicated good practice of skin-to-skin contact.

The practice of SSC in USA as Engeln (2002) result was 82% by the nurse who work in NICU, it was similar with the result of this study as practice was 82%, from the researcher opinion this could be attributed to high commitment of the policies and administrations' support of SSC practice.

Almutairi (2020) study which conducted in Saudi Arabia showed that HCPs practice of SSC was 56% in contrast 72% of HCPs practice SSC of this study, from the researcher opinion this could be attributed to high percentage of HCPs (86%) of participants who received training on EENC and SSC guidelines also they have very good knowledge (82%) which indicated that good relationship between HCPs practice and their knowledge.

The results of this study showed that HCPs don't practice SSC when mother is tired as 62.5% which indicated that mothers' health affect SSC practice as documented by Napoli (2015) who said that mother condition due to feeling tired and out of focus challenge for SSC implementation (82%) and Adli and Azmodeh (2016) study that showed the mother fatigue and illness was major obstacles for implementation of SSC, from the researcher opinion this could be attributed to lack of awareness of SSC benefits from mothers and HCPs and fearing from falling down of newborn due to tiredness of the mother, so there is a need to increase the awareness of SSC and training a companion to help a mother after delivery to support SSC and encourage mother for breastfeeding.

The results of this study detected that 70% of HCPs allow the companion to enter labor room to support the mother during SSC practice while Napoli (2015) showed that the presence of family and visitors were challenges to implement SSC with percentage 82%, so from the researcher opinion this indicates the existence of a policy to enhance the presence of companion and commitment of the staff to it is essential.

#### 4.1.4 Barriers to skin-to-skin contact

**Table (4.6): Barriers to skin-to-skin contact (n=267)**

	Item	Strongly disagree n(%)	Disagree n(%)	Agree n(%)	Strongly agree n(%)	Mean	SD	Mean %	Rank
1	My workplace administration does not support the skin-to-skin contact through clear policy	138(51.7)	98(36.7)	26(9.7)	5(1.9)	1.62	0.738	40.50	10
2	Finishing routine duties as weighing newborn, giving vit. K, prevents me from applying skin-to-skin contact for 90 minutes	83(31.1)	122(45.7)	50(18.7)	12(4.5)	1.97	0.824	49.25	9
3	Staff shortage (midwives, pediatrician) prevents skin-to-skin contact for 90 minutes	62(23.2)	118(44.2)	79(29.6)	8(3.0)	2.12	0.797	50.30	8
4	Fear from newborn falling down is a barrier to practice skin-to-skin contact	51(19.1)	113(42.3)	91(34.1)	12(4.5)	2.24	0.810	50.60	7
5	Fear from occurrence of cyanosis and apnea is a barrier to practice skin-to-skin contact	40(15.0)	121(45.3)	94(35.2)	12(4.5)	2.29	0.774	57.25	4

**Table (4.6): Continued...**

	<b>Item</b>	<b>Strongly disagree</b> n(%)	<b>Disagree</b> n(%)	<b>Agree</b> n(%)	<b>Strongly agree</b> n(%)	<b>Mean</b>	<b>SD</b>	<b>Mean %</b>	<b>Rank</b>
6	Presence of family in the labor room is a barrier to practice skin-to-skin contact for completely 90 minutes	48(18.0)	133(49.8)	75(28.1)	11(4.1)	2.18	0.771	54.50	6
7	lack of mother's awareness of the importance of skin-to-skin contact is a barrier to practice skin-to-skin contact	25(9.4)	90(33.7)	132(49.4)	20(7.5)	2.55	0.766	63.75	1
8	lack of social support and motivation is a barrier to practice skin-to-skin contact	30(11.2)	84(31.5)	131(49.1)	22(8.2)	2.54	0.800	63.50	2
9	lack of privacy is a barrier to practice skin-to-skin contact	36(13.5)	107(40.1)	107(40.1)	17(6.4)	2.39	0.799	59.75	3
10	lack of essential supplies as towels, linens is a barrier to practice skin-to-skin contact	58(21.7)	111(41.6)	85(31.8)	13(4.9)	2.20	0.833	55.00	5
	<b>Overall</b>					<b>2.21</b>	<b>0.471</b>	<b>55.25</b>	

As shown in table (4.6), the highest score was in “lack of mother's awareness of the importance of skin-to-skin contact is a barrier to practice skin-to-skin contact” with mean score 2.55 and mean percent 63.75%, followed by “lack of social support and motivation is a barrier to practice skin-to-skin contact” with mean score 2.54 and mean percent 63.5%. The lowest score was in “My workplace administration does not support the skin-to-skin contact through clear policy” with mean score 1.62 and mean percent 40.5%, followed by “finishing routine duties as weighing newborn, giving vit. K, prevents me from applying skin-to-skin contact for 90 minutes” with mean score 1.97 and mean percent 49.25%. The overall mean score was 2.21 and mean percent 55.25%, which indicated low level of barriers to skin-to-skin contact.

This study results showed that lack of mother awareness was (63.75%) which take the highest score from HCP perspective while it was not consistent with Napoli (2015) who mentioned that the barriers of SSC from nurse perspective was lack of mothers' awareness of the importance of SSC which was 94% which related to absence of follow up of health care system of SSC program in primary health centers.

The study results showed the lowest barrier of implementation of SSC was administration support of SSC, although Abdulghani et al (2020) in Saudi Arabia who showed that lack of a comprehensive policy and procedures to support SSC were challenges to implement SSC. The researcher attributes these could be related to the reality of MoH continuous support of mother and newborns health services through its various programs.

The results of the study indicated that most of HCP (96.3%) stated that there is a policy and guidelines at their workplace to clarify the criteria of the mother with whom the skin-to-skin contact will be applied, and (92.1%) said that there is a policy and guidelines at their workplace to clarify the criteria of the newborn with whom the skin-to-skin contact will be applied, in contrast of Koopman et al (2016) which who detect that lack of clinician algorithm and unclear definition of eligible mother and infant were factors that prevent continuous SSC.

The finding of this study results indicated that lack of social support and motivation was a barrier of SSC implementation with mean percent 63.5% which agree with Alenchery et al (2018) results of a qualitative study which showed that lack of motivation is a barrier to SSC implementation need continuous and regular motivation for this procedure, also Adeli and

Azmoudeh results in (2016) preferred the importance of social support and motivation to increase SSC practice due to 87.5 of midwives thought that motivation was important to the successful implementation of SSC, and it could be attributed to similarity of culture or health care system.

In this study 32.2% of HCPs considered presence of family in the labor room is a barrier to practice skin-to-skin contact for completely 90 minutes, so this need paying attention to educating the companion and the family about the importance of SSC, 32% of HCPs with mean percent 50.30 agree that shortage of team prevent SSC practice for 90 minutes, this agree with Alenchery et al (2018) results of a qualitative research which were the lack of team mainly nurses. From the researcher opinion shortage of team as midwives or pediatricians connect with finishing other duties by midwives or for more observation of newborn in SCBU by pediatricians.

#### **4.1.5 Recommendations of the participants to improve application of skin-to-skin contact (Ranked in order)**

**Table (4.7) Recommendation to improve application of skin-to-skin contact.**

1	Increase mothers' awareness about the importance and benefits e of SSC
2	HCP educate the mothers how to do SSC
3	Teach and train staff about SSC through education programs and workshops
4	Provide suitable environment (privacy, room temp, adequate linen)
5	Encourage and support mothers during SSC
6	Include SSC in the policy of the hospital

As shown in table (4.7), the recommendations of the participants were ranked as the following:

1. Increase mothers' awareness about the importance and benefits e of SSC: This could be done during antenatal care visits, and during the early stage of delivery when the mother is admitted to the maternity department.
2. Healthcare providers educate the mothers how to do SSC: The HCP (midwife, obstetrician) can teach the mother how to practice SSC, this can be done by demonstration when the mother is admitted to the maternity department.

3. Teach and train staff about SSC: This can be done through education programs and workshops for midwives, nurses, and obstetricians.
4. Provide suitable environment: Including adequate privacy, maintaining warm room temp, and provide adequate adequate linen supply.
5. Encourage and support mothers during SSC: The mother need support immediately after delivery as she feels pain and tired. Therefore, the midwife or a companion should stay with the mother during this period.
6. Include SSC in the policy of the hospital: The hospital administration or the decision makers should include SSC as part of the hospital policy, so all the staff will apply it as part of their tasks in maternity departments.

## 4.2 Inferential results

### 4.2.1 Differences in knowledge, practice and barriers to skin-to-skin contact related to sociodemographic factors

**Table (4.8a): Differences in knowledge, practice and barriers to skin-to-skin contact related to place of work**

Place of work		N	Mean	SD	F	P value
Knowledge	Al Shifa	94	0.832	0.093	2.923	0.034 *
	Al Tahreer	76	0.803	0.114		
	Al Aqsa	49	0.835	0.122		
	Al Emaraty	48	0.860	0.098		
	Total	267	0.829	0.107		
Practice	Al Shifa	94	2.833	0.411	4.184	0.006 *
	Al Tahreer	76	3.018	0.349		
	Al Aqsa	49	2.737	0.576		
	Al Emaraty	48	2.907	0.577		
	Total	267	2.882	0.471		
Barriers	Al Shifa	94	2.273	0.341	1.499	0.215
	Al Tahreer	76	2.152	0.504		
	Al Aqsa	49	2.255	0.492		
	Al Emaraty	48	2.135	0.595		
	Total	267	2.210	0.471		

One-way ANOVA test \* Significant at 0.05

**Table (4.8b): Multiple comparisons Post hoc Tukey test for place of work**

Variable	Place of work		Mean difference	P value
Knowledge	Al Tahreer	Al Shifa	-0.028	0.083
		Al Aqsa	-0.031	0.107
		Al Emaraty	-0.056	0.004 *
Practice	Al Tahreer	Al Shifa	0.185	0.049 *
		Al Aqsa	0.281	0.006 *
		Al Emaraty	0.111	0.564

Table (4.8a) showed that there were statistically significant differences in knowledge ( $P=0.034$ ) and practice ( $P=0.006$ ) of skin-to-skin contact related to place of work, while there were no significant differences in barriers to skin-to-skin contact. As presented in table (4.8b), Post hoc test indicated that participants from Al-Tahreer hospital have statistically significant lower knowledge about skin-to-skin contact compared to participants from Al-Emarati hospital, it could be attributed to increase rate of board, increase training and education at Al-Emarati hospital. In addition, participants from Al-Tahreer hospital expressed statistically significant better practice of skin-to-skin contact compared to participants from Al-Shifa hospital and Al-Aqsa hospital, it may be attributed to more follow up, training on implementation of SSC at Al-Tahreer hospital and strong administration who monitoring the practice of SSC.

**Table (4.9): Differences in knowledge, practice and barriers to skin-to-skin contact related to gender**

Variable	Gender	N	Mean	SD	t	P value
Knowledge	Female	180	0.840	0.105	2.298	0.022 *
	Male	87	0.808	0.109		
Practice	Female	180	2.954	0.447	3.668	0.000 *
	Male	87	2.733	0.488		
Barrier	Female	180	2.166	0.481	-2.247	0.025 *
	Male	87	2.303	0.438		

Independent sample (t) test \*Significant at 0.05

Table (4.9) showed that female participants have statistically significant higher knowledge about skin-to-skin contact compared to male participants ( $P=0.022$ ). Also, female participants expressed statistically higher practice of skin-to-skin contact compared to male

participants ( $P= 0.000$ ). In addition, female participants reported statistically significant lower barriers to skin-to-skin contact compared to male participants, according to the results of literature review there is no references showed relationship between the gender of HCPs and practice of SSC, from the researcher opinion that agree with religion, norms, culture and believes due to female is closer to the mother and can discover her chest and put baby on her chest, so females do not consider there are barriers that prevent SSC as male.

**Table (4.10): Differences in knowledge, practice and barriers to skin-to-skin contact related to age**

Age		N	Mean	SD	F	P value
Knowledge	less than 30	96	0.832	0.106	0.834	0.505
	30-34	70	0.828	0.105		
	35-39	41	0.848	0.098		
	40-44	18	0.794	0.139		
	45 and more	42	0.822	0.108		
	Total	267	0.829	0.107		
Practice	less than 30	96	2.834	.04563	0.400	0.808
	30-34	70	2.906	0.447		
	35-39	41	2.916	0.475		
	40-44	18	2.928	0.512		
	45 and more	42	2.898	0.535		
	Total	267	2.882	0.471		
Barriers	less than 30	96	2.241	0.407	0.657	0.622
	30-34	70	2.234	0.569		
	35-39	41	2.158	0.381		
	40-44	18	2.072	0.523		
	45 and more	42	2.211	0.492		
	Total	267	2.210	0.471		

One-way ANOVA test

Table (4.10) showed that there were statistically no significant differences in knowledge ( $P= 0.505$ ), practice ( $P= 0.808$ ), and barriers ( $P= 0.622$ ) to skin-to-skin contact related to age of study participants. This result didn't agree with the result of the study of Vittner et al (2017) which showed that age differences influence implementation of SSC and knowledge, from

the researcher opinion the practice of SSC hasn't any relationship with age of HCPs, it could be due to the new implementation of this concept in the practice.

**Table (4.11a): Differences in knowledge, practice and barriers to skin-to-skin contact related to qualification**

Qualification		N	Mean	SD	F	P value
Knowledge	High diploma	21	0.827	0.105	0.024	0.995
	Bachelor	117	0.829	0.107		
	Master	27	0.834	0.112		
	Phd/Board	102	0.828	0.108		
	Total	267	0.829	0.107		
Practice	High diploma	21	2.857	0.389	8.458	0.000 *
	Bachelor	117	2.983	0.480		
	Master	27	3.089	0.528		
	Phd/Board	102	2.715	0.408		
	Total	267	2.882	0.471		
Barriers	High diploma	21	2.271	0.314	3.906	0.009 *
	Bachelor	117	2.217	0.467		
	Master	27	1.929	0.618		
	Phd/Board	102	2.265	0.438		
	Total	267	2.210	0.471		

One-way ANOVA test \* Significant at 0.05

**Table (4.11b): Multiple comparisons Post hoc Tukey test for qualification**

Variable	Qualification	Mean	P value
Practice	PhD / Board	High diploma	-0.141
		Bachelor	-0.267
		Master	-0.374
Barriers	Master	High diploma	-0.341
		Bachelor	-0.287
		PhD / Board	-0.336

Table (4.11a) showed that there were statistically significant differences in practice of skin-to-skin contact ( $P= 0.000$ ), and barriers to skin-to-skin contact ( $P= 0.009$ ). As shown in table (4.11b), Post hoc Tukey test revealed that participants who have PhD or board have significant lower practice of skin-to-skin contact compared to participants who have bachelor and master degree. The results also showed that participants who have master degree reported significant lower barriers to skin-to-skin contact compared to participants who have bachelor and PhD or board degree. The result of this study agreed with Vittner (2017) study, the result showed that nurses with high educational level as bachelor and master degree more accepted with SSC affects newborn brain development and decrease the risk of developmental delay, and the conclusion from this study was an increase in the educational level is linked to an increase knowledge and in turn positively affects the application of SSC.

From the researcher opinion the physicians who have PhD or board practice SSC less than midwives who have master degree due to the physicians are not close contact with mothers as midwives and they have a lot of duties.

**Table (4.12a): Differences in knowledge, practice and barriers to skin-to-skin contact related to specialty**

Specialty		N	Mean	SD	F	P value
Knowledge	Midwife	62	0.862	0.090	4.240	0.015 *
	Obstetrician	153	0.824	0.109		
	Ped/neonat	52	0.807	0.115		
	Total	267	0.829	0.107		
Practice	Midwife	62	3.197	0.346	20.683	0.000 *
	Obstetrician	153	2.789	0.422		
	Ped/neonat	52	2.777	0.571		
	Total	267	2.882	0.471		
Barriers	Midwife	62	2.111	0.516	1.922	0.148
	Obstetrician	153	2.232	0.447		
	Ped/neonat	52	2.267	0.475		
	Total	267	2.210	0.471		

One-way ANOVA test \* Significant at 0.05

**Table (4.12b): Multiple comparisons Post hoc Tukey test for specialty**

Variable	Place of work		Mean difference	P value
Knowledge	Midwife	Obstetrician / Gynecologist	0.038	0.046 *
		Pediatrician / Neonatologist	0.054	0.018 *
Practice	Midwife	Obstetrician / Gynecologist	0.407	0.000 *
		Pediatrician / Neonatologist	0.419	0.000 *

Table (4.12a) showed that there were statistically significant differences in knowledge ( $P=0.015$ ) and practice ( $P=0.000$ ) of skin-to-skin contact related to specialty, while there were no significant differences in barriers to skin-to-skin contact. As presented in table (4.12b), Post hoc test indicated that midwives have statistically significant higher knowledge and significant better practice of skin-to-skin contact compared to obstetricians, gynecologists, pediatricians. In contrast, of the results of a qualitative study of Koopman et al (2016) the education of professionals (nurses, pediatricians, and obstetricians) was a factor that affect the implementation of SSC. Also, Abdulghani et al (2020) showed that lack of professional collaboration, cultural and social setting that emphasizes regular care over SSC affects implementation of SSC. In the results of this study all professions have very good knowledge and good practice but midwives have more practice, it could be attributed to that midwives have a sense of more caring for mothers' care from their professional perspectives.

**Table (4.13): Differences in knowledge, practice and barriers to skin-to-skin contact related to job title**

Job title		N	Mean	SD	F	P value
Knowledge	Practitioner / staff	208	0.831	0.102	2.687	0.070
	Head of department	20	0.780	0.130		
	Head of division	39	0.848	0.115		
	Total	267	0.829	0.107		
Practice	Practitioner / staff	208	2.897	0.482	0.538	0.584
	Head of department	20	2.860	0.453		
	Head of division	39	2.813	0.421		
	Total	267	2.882	0.471		
Barriers	Practitioner / staff	208	2.223	0.465	0.370	0.691
	Head of department	20	2.145	0.476		
	Head of division	39	2.176	0.508		
	Total	267	2.210	0.471		

One-way ANOVA test

As shown in table (4.13), there were statistically no significant differences in knowledge ( $P=0.070$ ), practice ( $P=0.584$ ), and barriers ( $P=0.691$ ) to skin-to-skin contact related to job title of study participants. According to the results of previous studies there is no results between practice of SSC and job title, from the researcher opinion it could be attributed to the adherence of the policy of SSC from all the positions of the HCPs.

**Table (4.14): Differences in knowledge, practice and barriers to skin-to-skin contact related to years of experience**

Years of experience		N	Mean	SD	F	P value
Knowledge	Less than 5 years	121	0.832	0.107	0.424	0.736
	5-9 years	69	0.828	0.101		
	10-14 years	39	0.840	0.106		
	15 years and more	38	0.813	0.120		
	Total	267	0.829	0.107		
Practice	Less than 5 years	121	2.874	0.462	1.974	0.118
	5-9 years	69	2.820	0.487		
	10-14 years	39	2.855	0.454		
	15 years and more	38	3.045	0.472		
	Total	267	2.882	0.471		
Barriers	Less than 5 years	121	2.276	0.445	1.727	0.162
	5-9 years	69	2.195	0.506		
	10-14 years	39	2.130	0.363		
	15 years and more	38	2.113	0.561		
	Total	267	2.210	0.471		

One-way ANOVA test

Table (4.14) indicated that there were statistically no significant differences in knowledge ( $P=0.736$ ), practice ( $P=0.118$ ), and barriers ( $P=0.162$ ) to skin-to-skin contact related to years of experience. This result was inconsistent with Vittner et al (2017) result which showed that years of experience influence implementation of SSC, from the researcher view the practice of SSC is newly applied in Palestine since 2017, so it is logic to have no differences related to years of experience.

**Table (4.15): Differences in knowledge, practice and barriers to skin-to-skin contact related to working shifts**

Working shifts		N	Mean	SD	F	P value
Knowledge	Day only	59	0.837	0.103	0.212	0.809
	Evening /night	76	0.824	0.116		
	Mixed shifts (DEN)	132	0.829	0.105		
	Total	267	0.829	0.107		
Practice	Day only	59	2.900	0.429	0.346	0.708
	Evening /night	76	2.844	0.455		
	Mixed shifts (DEN)	132	2.895	0.500		
	Total	267	2.882	0.471		
Barriers	Day only	59	2.155	0.437	2.444	0.089
	Evening /night	76	2.310	0.477		
	Mixed shifts (DEN)	132	2.178	0.477		
	Total	267	2.210	0.471		

One-way ANOVA test

Table (4.15) indicated that there were statistically no significant differences in knowledge (P= 0.809), practice (P= 0.708), and barriers (P= 0.089) to skin-to-skin contact related to working shifts. But it's inconsistent with the results of the previous studies, according to Alenchery (2018) the night shift is less practice of SSC due to shortage of team and overload of work and time shortage which prevent practice of SSC. From the researcher opinion practice of SSC not affected by working shift if the work priorities are organized and adherent of the policy.

**Table (4.16): Differences in knowledge, practice and barriers to skin-to-skin contact related to presence of criteria for mothers for skin-to-skin contact**

Factor	Presence of mothers' criteria	N	Mean	SD	t	P value
Knowledge	Uncertain	10	0.761	0.151	-2.054	0.041 *
	Yes	257	0.832	0.105		
Practice	Uncertain	10	2.221	0.563	-4.689	0.000 *
	Yes	257	2.907	0.449		
Barrier	Uncertain	10	2.200	0.571	-0.074	0.941
	Yes	257	2.211	0.468		

Independent sample (t) test \*Significant at 0.05

Table (4.16) demonstrated results related to the presence of policy criteria for mothers concerning skin-to-skin contact. The results showed that HCPs who were uncertain about the criteria expressed statistically significant lower knowledge (P= 0.041), and significant lower practice of skin-to-skin contact compared to those who knew about the presence of this criteria (P= 0.000). This is considered logic as awareness of criteria for implementing SSC could affect its practice by professionals. But there were no significant differences in barriers to skin-to-skin contact among providers that could be attributed to availability of same barriers in all settings.

**Table (4.17a): Differences in knowledge, practice and barriers to skin-to-skin contact related to presence of criteria for newborns for skin-to-skin contact**

Presence of newborns' criteria		N	Mean	SD	F	P value
Knowledge	Uncertain	11	0.762	0.147	4.650	0.010 *
	No	10	0.761	0.159		
	Yes	246	0.835	0.101		
	Total	267	0.829	0.107		
Practice	Uncertain	11	2.467	0.795	4.701	0.010 *
	No	10	2.978	0.354		
	Yes	246	2.896	0.450		
	Total	267	2.882	0.471		
Barriers	Uncertain	11	2.081	0.682	0.864	0.423
	No	10	2.080	0.640		
	Yes	246	2.222	0.453		
	Total	267	2.210	0.471		

One-way ANOVA test \* Significant at 0.05

**Table (4.17b): Multiple comparisons Post hoc Tukey test for presence of criteria for newborn**

Variable	Presence of criteria for newborn		Mean difference	P value
Knowledge	Yes	Uncertain	0.073	0.026 *
		No	0.074	0.032 *
Practice	Yes	Uncertain	0.429	0.003 *
		No	0.081	0.586

Table (4.17a) showed that there were statistically significant differences in knowledge ( $P=0.010$ ) and practice ( $P=0.010$ ) of skin-to-skin contact related to presence of criteria for the newborn, while there were no significant differences in barriers to skin-to-skin contact ( $P=0.423$ ). As presented in table (4.17b), Post hoc test indicated that participants who know about the presence of the criteria have statistically significant higher knowledge and significant better practice of skin-to-skin contact compared to those who do not know and those who were uncertain about the presence of newborn criteria. These results agree with the result of Abdulghani et al (2020) which expressed that the lack of guidelines and policy consider a barrier to practice SSC, from the researcher opinion, the presence of criteria for newborn make clarity at work and encourage SSC practice.

**Table (4.18): Differences in knowledge, practice and barriers to skin-to-skin contact related to training**

Factor	Training	N	Mean	SD	T	P value
Knowledge	No	37	0.785	0.137	-2.703	0.007 *
	Yes	230	0.836	0.100		
Practice	No	37	2.704	0.612	-2.489	0.013 *
	Yes	230	2.910	0.439		
Barrier	No	37	2.159	0.592	-0.714	0.476
	Yes	230	2.219	0.450		

Independent sample (t) test \*Significant at 0.05

Table (4.18) showed that participants who did not receive training expressed statistically significant lower knowledge ( $P=0.007$ ), and significant lower practice ( $P=0.013$ ) of skin-to-skin contact compared to participants who received training about skin-to-skin contact. The result of this study matched with Mbalinda et al (2018) and Alenchery et al (2018) who

showed that increasing practice occurs through increase knowledge among education intervention and training. From the researcher opinion increasing and continuous training is very important for adherence of SSC practice and increasing HCPs knowledge & practice about SSC.

## **Chapter Five**

### **Conclusion and recommendations**

#### **5.1 Conclusion**

This study conducted at 4 governmental maternity hospitals in Gaza Strip and assessed the HCP's knowledge and practice related to SSC practice, also identified barriers which affected the practice of SSC. The results revealed that most of HCPs have very good knowledge.

The midwives were the most category of HCPs who applied SSC. The most of HCPs know that SSC has benefits to mother and newborn, also promotes interaction between mother and newborn and promote hemodynamic stability of the newborn. The best practice was while the newborn is healthy and they explain the benefits of SSC to the mother with support of breastfeeding during SSC. But mothers' tiredness and the crowding of the department are less in the practice, while the practice of SSC was the least application in healthy newborn who delivered from mother with PROM more than 18hrs, healthy meconium-stained newborn, healthy twins and healthy newborn who delivered by vacuum despite of the presence of non-urgent separation policy which encourage to practice SSC in these cases and delay evaluation of pediatrician after 90 minutes. The practice of SSC for completely 90 minutes was very low among 28% of HCPs as always practiced.

Also, most of HCPs advocate that workplace administration supports the skin-to-skin contact through clear policy. Staff shortage and finishing duties weren't barriers to practice SSC. While lack of mother's awareness of the importance of SSC, lack of social support, lack of privacy and fear from cyanosis are the most barriers of practice.

## **5.2 Recommendations**

In the light of the results of the study, the researcher recommends the following:

### **5.2.1 For policy makers and managers**

- Increasing training and re-training to increase responsibility and accountability to SSC practice.
- Increase mothers' and community awareness through social media.
- Increasing follow up by increasing the number of visits to hospitals through those who in charge to improve practice of SSC.
- Modify the structure of labor rooms to be suitable for attendance of a companion and promote privacy for the mother to practice SSC.
- Increase HCPs awareness of the non-urgent separation policy through training.

### **5.2.2 For HCPs**

- Increase mother awareness during antenatal classes through both of MoH and United Nations Relief and Works Agency for the Palestinian Refugees (UNRWA) primary health care centers.
- Encourage the presence of the companion during labor and training her for practice of SSC.
- Develop an assessment tool to evaluate newborn during SSC for measuring O2 saturation, color, and heart rate to increase awareness of HCPs regarding newborn condition.

### **5.2.3 For researchers**

- To conduct further studies to examine HCPs knowledge and practice of SSC at non-governmental hospitals.
- To conduct further studies to examine mothers' awareness about SSC.
- To conduct further studies aiming to detect barriers of SSC among normal vaginal deliveries from perspective of mothers.
- To conduct studies to detect barriers of SSC among caesarean section.

## References

- Abdulghani, N., et al, (2020): Health care provider's perceptions of facilitators and barriers for the practice of skin-to-skin contact in Saudi Arabia. *Midwifery*, Vol. 81:102577. doi: 10.1016/j.midw.2019.102577. Epub 2019 Nov 18.
- Abdulghani, N., et al, (2018): Worldwide prevalence of mother-infant skin-to-skin contact after vaginal birth: A systemic review. *PloS ONE*, Vol. 13(10): e0205696. <http://doi.org/10.1371/journal.pone.0205696>
- Adeli, M., Azmoudeh, E. (2016): Influential factors of mother-infant skin-to-skin contact based on the precede-proceed model from the perspective of midwives in Torbat Hedariyeh hospitals. *Journal of midwifery and reproductive health*, Vol. 4(3): pp (644-653). doi: 10.22038/jmrh.2016.6992
- Agrifoglio, R., (2015): Knowledge preservation through community of practice: theoretical issues and empirical events, 1<sup>st</sup> edition. Springer, e.Book.
- Agudelo, S., et al, (2020): Effect of skin-to-skin at birth on early neonatal hospitalization. *Early human development*, Vol. 144 (11): Article 105020. doi: 10.1016/j.earlhumdev.2020.105020.
- Alenchery, A., et al, (2018): Barriers and enablers to skin-to-skin contact at birth healthy neonates – a qualitative study. *PMC Pediatri*, Vol.18 (48). <https://doi.org/10.1186/s12887-018-1033-y>
- Al Morbaty, H. et al, (2017): The effect of mother and newborn early skin-to-skin contact on the duration of separation and expulsion of placenta. *Journal of nursing and health studies*, Vol.2(2:9)
- Al Mutairi, W., (2022): Survey of skin-to-skin contact with obstetric and pediatric nurses. *Nursing reports*, Vol. 12(1): pp (13-21)
- Al-Shehri, H., and Binmanee, A., (2019): Kangaroo mother care practice, knowledge and perception among NICU nurses in Riyadh, Saudi Arabia. *Int J Pediatr Adolesc Med*. Vol. 8(1): pp (29-34)

- AWHONN, (2014): Women's health and perinatal nursing care quality refind draft measures specifications. USA. Association of Women Health Obstetric and Neonatal Nurses.
- AWHONN, (2016): Immediate and sustained skin-to-skin contact for the healthy term newborn after birth: AWHONN practice brief number 5. Journal of obstetric and gynecologic and neonatal nursing, Vol.45(6): pp (842-844) <http://doi.org/10.1016/j.jogn.2016.09.001>
- Baby-Friendly USA. (2016). Guidelines and evaluation criteria for facilities seeking baby-friendly designation. Baby-Friendly USA. Retrieved from <http://www.babyfriendlyusa.org/get-started/the-guidlines-evaluation-creteria>
- Bartick, M., et al, (2020): Trends in breastfeeding interventions, skin-to-skin care, and sudden infant death in the first 6 days after birth. The Journal of Pediatrics, Vol. 218 (March 2020): pp (11-55)
- Bedaso, A., et al, (2019): Assessment of skin-to-skin contact during the postpartum stay and its determinant factors among mothers at public health in institutions in Ethiopia. PMC Research Note, Vol. 12 article number: 136
- Binte Ali, N., et al, (2021): Prevalence and factors associated with skin-to-skin contact (SSC) practice: finding from a population-based cross-sectional survey in ten selected districts of Bangladesh. BMC pregnancy child birth, Vol. 21(1): pp (709)
- Bradshaw, W., (2010): Evidence based-practice. Neonatal Network, Vol. 29(2): pp (117-125) doi:10.1891/073-0832.29.2.17
- Brimdyr, K., et al, (2017): An implementation algorithm to improve skin to skin practice in the first hour after birth. Wiley Maternal child nutrition. Doi: 10.1111/mcn.12571
- Cambridge University Press, (2021): Definition of practice. Cambridge American dictionary. (<https://dictionary.cambridge.org/dictionary/english/practice>,15.03.2021)
- Caulford, P., Mayhew, M., (editors). (2014): Barriers and facilitators to health care for new comers. Caring for Kids New to Canada. A guide for health professionals working with immigrant and refugee children and youth. Canadian Pediatric Society. (<https://www.kidsnewtocanada.ca/care/barriers>, 15.03.2021)

- Cadwell, K., et al, (2018): Mapping, measuring and analyzing the processes of skin-to-skin contact and early breastfeeding in the first hour after birth. *Breastfeed Med*, Vol. 13(7): pp (485-492)
- Caponero, C., et al, (2022): The effect of video education on skin-to-skin contact at the time of delivery: a randomized control trial. *AJP Rep*, Vol. 12(1): e10-e16. Published online 2022 Feb 4. Doi: 10.1055/s-0041-1741540
- Ekholuenetale, M., et al, (2020): Prevalence and determinants of the mother and newborn skin-to-skin contact in The Gambia: a secondary data analysis. *Journal of Egyptian public health association*, Vol. 95(1): pp (18)
- Engler, A., et al, (2002): Kangaroo care: national survey of practice, knowledge, barriers and perceptions. *MCN Am J Matern Child Nurs*. Vol. 27(3): pp (147-153)
- Essa, R., Ismail, N., (2015): Effect of maternal / maternal skin-to-skin contact after birth on the duration of third stage of labor and initiation of breastfeeding. *Journal of nursing education and practice*, Vol. 5(4). DOI: 10.5430/jnep.v5n4p98
- Ferrarello, D., Hatfield, L., (2014): Barriers to skin-to-skin care during the postpartum stay. *MCN*, Vol. 39(1): pp (56-61)
- Gangotena, M., (2022): Literacy on Skin-to-Skin Contact. In (Ed.), *Childbirth* [Working Title]. intechOpen. <https://doi.org/10.5772/intechopen.104812>
- Gaza-EENC-AIR-(2019), EENC-Annual implementation review, GAZA, July 2019: Report
- Gaza-EENC-AIR-(2020), EENC-Annual implementation review, GAZA, July 2020: Report
- Hall, A (November, 2020), "What is a health care provider?" *Verywell Health* (<https://www.verywellhealth.com/what-is-a-provider-1738759>, 15.03.2021)
- Hoe, S., Morgan, K., (2014): Infant assessment and reduction of sudden unexpected postnatal collapse during skin-to-skin contact. *NANIR*, Vol. 14(1): pp (28-33).

- Jouseph, E., (2020): Promoting newborn skin-to-skin to increase breast feeding initiation and exclusivity in caesarean deliveries. Seton Hall university DNP final projects. 34. <https://scholarship.shu.edu/final-projects/34>
- Karimi, F., et al, (2019): The effect of mother-infant skin to skin contact on third stage of labor: A systemic review and meta-analysis. *Iranian journal of public health*, Vol. 48(4): pp (612-620)
- Kartal, Y., et al, (2022): Effects of skin-to-skin contact on afterpain and postpartum hemorrhage: a randomized controlled trial. *Nursing and health science*, Vol. 24(4). Doi:10.1111/nhs.12945
- Kirca, N., Adibelli, D, (2021): Effect of mother-infant skin-to-skin contact on postpartum depression: A systemic review. *Perspect Psychiatr Care*, Vol. 57(4). Doi: 10.1111/ppc.12727.Epub 2021 Jan 21. PMID: 33476428.
- Kologeski, T., et al, (2017): Skin to skin contact of the newborn with its mother in the perspective with the multi professional team. *Journal of nursing UFPE on line*, Vol. 11(1): pp (94-101).
- Koopman, I., et al, (2016): Early skin-to-skin contact for healthy full- term infants after vaginal and cesarean delivery: A qualitative study on clinician perspectives. *JCN*, Vol. 25(9-10): pp (1367-1376)
- Lee, H., (2012): Clinician perspective on barriers to and opportunities for skin-to-skin contact for premature infants in neonatal intensive care units. *Breastfeeding Medicine*, Vol. 7 (2): pp (79-84)
- Li, Z., et al, (2020): Association between early essential newborn care and breastfeeding outcomes in eight countries in Asia and Pacific: A cross-sectional observational-study. *PMG Global Health*, Vol. 5(8). Doi: 10.1136/bmjgh-2020/002581.
- Lonio, Ch., et al, (2021): Parent-infant skin-to-skin contact and stress regulation: a systematic review of literature. *International journal of environmental research and public health*, Vol. 18(9): pp (4695). doi: 10.3390/ijerph18094695

- Mallet, I., et al, (2007): Skin to skin contact in neonatal care: knowledge and expectations of health professionals in 2 neonatal intensive care units. *Pediatric*, Vol.14 (7): pp. (881-886)
- Mbalinda, S., et al, (2018): Experience of perceived barriers and enablers of safe uninterrupted skin-to-skin contact during the first hour after birth in Uganda. *Midwifery*, Vol. 67: pp. (95-102). doi: 10.1016/j.midw.2018.09.009. Epub 2018 Sep 11.
- Mehler, K., et al, (2020): Delivery room skin-to-skin contact for preterm infants-A randomized clinical trial. *Acta paediatrica*, Vol. 109(3), pp (518-526).
- Mgolozeli, S., et al, (2018): Midwives' perceptions of skin-to-skin contact between mother and baby after birth in selected rural primary healthcare facilities in Scoonord, Limpopo, South Africa. *African journal for physical Activity and Health Science*, Supplement (October), pp (28-39).
- Miyazawa, T., et al, (2020): Unsupervised breastfeeding was related to sudden unexpected postnatal collapse during early skin-to-skin contact in cerebral palsy cases. *Acta paediatrica*, Vol. 109(6), pp (1154-1161)
- MoH, (2016): Clinical practice pocket guide. Early Essential Newborn Care, first embrace, algorithm 2. Gaza, Palestine.
- MoH, (2018): Non urgent separation policy of newborn, (poster). Gaza, Palestine.
- MoH, (2020): Annual Report 2019, Gaza, Palestine.
- Moore, E., et al, (2016): Early skin-to-skin contact for mothers and their healthy newborn infants. *The Cochrane database of systemic reviews*, Vol.11(11), CD003519. <https://doi.org/10.1002/14651858.CD003519.pub4>
- Nahidi, F., et al, (2014): Opinions of midwives about enabling factors of skin-to-skin contact immediately after birth: A descriptive study. *Journal of family and reproductive health*, Vol. 8(3), pp (107-12)

- Napoli, R., (2015): Perceived barriers to skin-to-skin care from maternal and nurse perspectives. Doctoral project. 13, San Jose State University. Northern California Consortium. Doi: [https://scholarworks.sjsu.edu/etd\\_doctoral/13](https://scholarworks.sjsu.edu/etd_doctoral/13)
- Nimbalkar, S., et al, (2014): Effect of early skin-to-skin contact following normal delivery on incidence of hypothermia on neonates more than 1800 g: randomized control trial. *Journal of perinatology*, Vol. 34(5), pp (364-368)
- Nissen, E., et al, (2019): A low-cost intervention to promote skin-to-skin contact and improve temperature regulation in Northern Uganda. *African journal of midwifery and women's health*, Vol. 13(3): pp (1-12)
- Njoku, F., (2017): Translating evidence of skin-to-skin contact and rooming in to practice. Walden University Scholar Work, Walden Dissertations and Doctoral Studies.
- Paul, D., et al, (2019): Development of a single-center quality bundle to prevent sudden unexpected postnatal collapse. *Journal of perinatology*, Vol. 39(7): pp (1008-1013). DOI:[10.1038/s41372-019-0393-y](https://doi.org/10.1038/s41372-019-0393-y)
- Robiquet, P., et al, (2016): Observation of skin-to-skin contact and analysis of factors linked to failure to breastfeed within 2 hours after birth. *Breastfeeding medicine*, Vol. 11(3): pp (126-132)
- Romano, N., et al, (2008): Perceptions among post-delivery mothers of skin-to-skin contact and newborn baby care in a peri urban hospital in Uganda. *Midwifery*, Vol. 24(2), pp (183-189)
- Saco, M., et al, (2019): Skin-to-skin contact followed by breastfeeding in the first hour of life: associated factors and influences on exclusive breastfeeding. *Texto Contexto Enfermagem*, Vol. 28: e20180260. Available from: <http://dx.doi.org/10.1590/1980-265X-TCE-2018-0260>
- Safari, K., et al, (2018): The effect of mother and newborn early skin-to-skin contact on initiation of breastfeeding, newborn temperature and duration of third stage of labor. *International breastfeeding journal*, Vol. 13(32). doi:[10.1186/s13006-018-0174-9](https://doi.org/10.1186/s13006-018-0174-9)

- Sanchez-Espino, L., et al, (2019): An educational intervention to implement skin-to-skin contact and early breastfeeding in a rural hospital in Mixco. *International of breastfeeding journal*, Vol. 14:8. Doi: 10.1186/s13006-019-0202-4.
- Saxton, A., et al, (2015): Does skin-to-skin contact and breastfeeding at birth affect the rate of primary postpartum hemorrhage: Results of a cohort study. *Midwifery*, Vol. 31 (11)
- Smith, E., et al, (2017): Delayed breastfeeding initiation and infant survival: A systematic review and meta-analysis. *Plos one*, Vol. 12(7)
- Takahashi, Y., et al (2011): Comparison of salivary cortisol, heart rate, and oxygen saturation between early skin-to-skin contact with different initiation and duration times in healthy, full-term infants. *Early human development*, Vol. 37(3): pp (151-157)
- Takahashi, Y., & Tamakoshi, K., (2018): The positive association between duration of skin-to-skin contact and blood glucose level in full-term infants. *The journal of perinatal and neonatal nursing*, Vol. 32(4): pp (351-357)
- Uchoa, J., et al, (2021): Influence of social determinants of health on skin-to-skin contact between mother and newborn. *Rev. bras. Enferm.* Vol. 74(suppl 4): e20200138. <https://doi.org/10.1590/0034-7167-2020-0138>
- UNICEF: Guide to the UNICEF UK baby friendly initiative standers, second edition, retrieved from -----on 4<sup>th</sup> January2022.
- <https://www.unicef.org.uk/babyfriendly/baby-friendly-resources/implementing-standards-resources/skin-to-skin-contact/>
- Vittner, D., et al, (2017): A survey of skin-to-skin with perinatal nurses. *Applied Nursing Research*, Vol. 33: pp. (19-23). doi: 10.1016/j.apnr.2016.09.006.Epub 2016 Sep 24. PMID: 28096017.
- Widstrom, AM, et al, (2011): Newborn behavior to locate the breast when skin-to-skin: a possible method for enabling early self-regulation. *Acta Paediatrica*, Vol. 100: pp (79-85).

Winter, L. & Goldsmith, J. (2016). Safe sleep and skin-to-skin care in the neonatal period for healthy term newborns. *Pediatrics*, Vol. 138 (3).

World health organization (2017). Guidelines: protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services

World health organization (2018). Implementation guidance: protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services (ISBN 978-92-4-151380-7). Geneva: WHO.

World health organization (2003). Kangaroo mother care: a practical guide. WHO library. Geneva.

World health organization, Western Pacific. (2020). Retrieved from <https://www.who.int/westernpacific/news-room/feature-stories/item/skin-to-skin-contact-helps-newborns-breastfeed>.

### **References of personal contact**

Buthina Sheikh Khalil (December 2020): Health care providers and normal vaginal deliveries numbers at Al Shifa hospital. Personal contact.

Dia'a Abu Kweik (December 2020): Health care providers and normal vaginal deliveries numbers at Al Emarati hospital. Personal contact.

Halima Nabhan (December 2020): Health care providers and normal vaginal deliveries numbers at Al qsa hospital. Personal contact.

Nawal Al-Galban (December 2020): Health care providers and normal vaginal deliveries numbers at Tahreer hospital. Personal contact.

## Annexes

### Annex (1): Questionnaire



بسم الله الرحمن الرحيم

السيدة الفاضلة ... السيد الفاضل

السلام عليكم ورحمة الله وبركاته

بين أيديكم استبانة خاصة برسالة الماجستير التي أقوم بإجرائها وهي بعنوان

" المعرفة والأداء لدى مقدمي الخدمة الصحية والمعوقات لتلاصق جلد الأم والمولود في قطاع غزة،

فلسطين "

### **Health Care Providers' Knowledge, Practice and Barriers to Newborn and Mother Skin-to-Skin Contact in Gaza Strip, Palestine**

وذلك ضمن متطلبات التخصص لبرنامج ماجستير تمرير صحة الأم والطفل/ جامعة القدس، يرجى الإجابة على جميع فقرات الاستبانة بشكل صادق، مع العلم أنه لا توجد إجابات خاطئة ولكن إجابتك تعبر عن رأيك الشخصي، كما أن المعلومات التي سيتم جمعها ستستخدم لأغراض البحث العلمي فقط.

الباحثة

ياسمين إسماعيل الهبيل

Please answer the following questions in part

**Part I- Demographic information**

<b>1. Socio Demographic Characteristics</b>	
<b>1.1 Gender.</b>	<input type="checkbox"/> Female <input type="checkbox"/> Male
<b>1.2 Age</b>	.....years
<b>1.3. Qualification.</b>	<input type="checkbox"/> Diploma <input type="checkbox"/> Bachelor <input type="checkbox"/> Master <input type="checkbox"/> Doctorate or board <input type="checkbox"/> other/specify .....
<b>1.4. Specialization.</b>	<input type="checkbox"/> Midwife <input type="checkbox"/> Obstetrician <input type="checkbox"/> Pediatrician <input type="checkbox"/> General practitioner
<b>1.5. Position.</b>	<input type="checkbox"/> Practitioner/ staff <input type="checkbox"/> Head of department <input type="checkbox"/> other/specify .....
<b>1.6. Working Place.</b>	<input type="checkbox"/> Shifa Hospital <input type="checkbox"/> Tahreer Hospital
	<input type="checkbox"/> Aqsa Hospital <input type="checkbox"/> Emarati Hospital
<b>1.7. Years of mother/newborn care experience.</b>	..... Years
<b>1.8. Time of work</b>	<input type="checkbox"/> Straight day shift. <input type="checkbox"/> Straight night shift. <input type="checkbox"/> Day and night shift.
<b>1.9. Is there a policy and guidelines at your workplace to clarify the criteria of the mother with whom the skin-to-skin contact will be applied?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
<b>1.10. Is there a policy and guidelines at your workplace to clarify the criteria of the newborn with whom the skin-to-skin contact will be applied?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
<b>1.11. Did you receive training on EENC and SSC guidelines?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
	If Yes, Adequacy of the training received <input type="checkbox"/> Adequate <input type="checkbox"/> Inadequate <input type="checkbox"/> Uncertain

Please, respond to the following statements in part II by checking (yes or no) as appropriate.

**Part II- Health care providers' knowledge about skin-to-skin contact**

No.	Domain & Items	Yes	No
<b>Health care providers' knowledge</b>			
1.	Skin-to-skin contact has benefits to mother and newborn.		
2.	Skin-to-skin contact increases oxytocin level among post-delivery women.		
3.	Skin-to-skin contact increases the duration of third stage of labor.		
4.	Skin-to-skin contact decreases postpartum hemorrhage.		
5.	Skin-to-skin contact increases postpartum depression.		
6.	Skin-to-skin contact promotes mother-child interaction.		
7.	Skin-to-skin contact promotes newborn hemodynamic stability: heart rate, respiratory rate and oxygen saturation.		
8.	Skin-to-skin contact promotes newborn hypoglycemia.		
9.	Skin-to-skin contact promotes newborn hypothermia.		
10.	Skin-to-skin contact promotes exclusive breastfeeding for six months.		
11.	Skin-to-skin contact decreases neonatal admission to NICU.		
12.	Skin-to-skin contact decreases neonatal mortality rate.		
13.	Immediate and continuous skin-to-skin contact for 90 minutes had more benefits than skin-to-skin for 60 minutes.		

Please, respond to the following statements in part III by checking one column against each statement as appropriate.

**Part III- Health care providers' practice about skin-to-skin contacts between mother and newborns.**

**Always** = all the times

**Usually** = most of the times.

**Sometimes** = few times.

**Never** = not at all.

No	Domain & Items	Always	Usually	Sometimes	Never
<b>Health care providers' practice about skin-to-skin contact between mother and newborns</b>					
1.	I practice skin-to-skin contact.				
2.	I explain to the mother the benefits of skin-to-skin contact.				
3.	I practice skin-to-skin contact for completely 90 minutes.				
4.	I practice skin-to-skin contact for healthy newborns.				
5.	I practice skin-to-skin contact for more than 34 weeks healthy newborns.				
6.	I practice skin-to-skin contact immediately for healthy and stable newborns who delivered by vacuum (ventose).				
7.	I practice skin-to-skin contact with healthy twins.				
8.	I practice skin-to-skin contact immediately with healthy newborns who delivered from mothers with PROM (premature				

	rupture of membrane) for more than 18hrs.				
9.	I practice skin-to-skin contact immediately with healthy meconium-stained newborns.				
10.	I return distressed newborn to skin-to-skin contact after stabilization of his condition as soon as possible.				
11.	I support the mother to breastfeed her newborn during skin-to-skin contact.				
12.	I allow the companion to enter labor room to support the mother during skin-to-skin contact.				
13.	I don't practice skin-to-skin when the ward is crowded to have empty beds for the increased number of cases.				
14.	When the mother is tired (non-life threatened), I practice skin-to-skin contact.				

Please, respond to the following statements in part IV by checking one column against each statement as appropriate.

**Part IV- Barriers of mother-newborn skin-to-skin contact**

**SD** = strongly disagree

**A** = agree

**D** = disagree

**SA** = strongly agree

No.	Domain & Item	SD	D	A	SA
	<b>Barriers of skin-to-skin contact</b>				
1.	My workplace administration does not support the skin-to-skin contact through clear policy.				
2.	Finishing routine duties as weighing newborn, giving vit. K, prevents me from applying skin-to-skin contact for 90 minutes.				
3.	Staff shortage (midwives, pediatrician) prevents skin-to-skin contact for 90 minutes.				
4.	Fear from newborn falling down is a barrier to practice skin-to-skin contact.				
5.	Fear from occurrence of cyanosis and apnea is a barrier to practice skin-to-skin contact.				
6.	Presence of family in the labor room is a barrier to practice skin-to-skin contact for completely 90 minutes.				
7.	lack of mother's awareness of the importance of skin-to-skin contact is a barrier to practice skin-to-skin contact.				
8.	lack of social support and motivation is a barrier to practice skin-to-skin contact.				
9.	lack of privacy is a barrier to practice skin-to-skin contact.				
10.	lack of essential supplies as towels, linens is a barrier to practice skin-to-skin contact.				

**Part V- Write your recommendations in order (up to 5) for improving the application of skin-to-skin contact for 90 minutes:**

<b>No.</b>	<b>Recommendations</b>
1.	
2.	
3.	
4.	
5.	

**Thank you very much for your participation**

**Annex (2): List of experts**

<b>Name</b>	<b>Place of work</b>
Dr. Areefa Al-Bahri	Islamic University – Gaza
Dr. Sereen Al Attar	UN clinic
Dr. Shireen Aabed	Al-Nasser Hospital
Dr. Ahmed Najim	Al-Azhar University – Gaza
Dr. Waleed Abu Hattab	Al-Tahreer Hospital
Dr. Nabil Al Baraqouni	Al-Nasser Hospital
Dr. Mohammed El Jerjawy	AL- Ranteesy Hospital

## Annex (3): Approval from MoH

State of Palestine  
Ministry of health



دولة فلسطين  
وزارة الصحة

التاريخ: 01/02/2022  
رقم المراسلة: 878882

السيد : جهاد عبدالقادر عكاشه المحترم

مدير دائرة الإدارة العامة للوحدات الإدارية المساعدة /وزارة الصحة

السلام عليكم ...

### الموضوع/ تسهيل مهمة الباحثة ياسمين الهبيل

التفاصيل //

السلام عليكم

نهدبكم أطيب التحيات ونود منكم تسهيل مهمة الباحثة/ ياسمين اسماعيل عبد القادر الهبيل الملتحق/ة ببرنامج الماجستير في تمريض صحة الام والطفل - جامعة القدس أبو ديس في إجراء بحث بعنوان **Assessing health care providers' knowledge and practice related to SSC and identifying the barriers associated with the application of SSC for 90 minutes**. حيث الباحثة/ بحاجة لتعبئة استبانة عشوائية لعدد من العاملين في مرافق وزارة الصحة (الأطباء العاملين في أقسام الحضانة والقابات والأطباء العاملين في أقسام الولادة)، بما لا يتعارض مع مصلحة العمل وضمن أخلاقيات البحث العلمي، ودون تحمل الوزارة أي أعباء أو مسئولية

وتفضلوا بقبول التحية والتقدير،

ملاحظة / تسهيل المهمة الخاص بالدراسة أعلاه صالح لمدة 3 أشهر من تاريخه

علي حسن البلبيسي  
حكيم جامعي



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غزة

## Annex (4): Approval from Al Quds University

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



جامعة القدس  
كلية المهن الصحية  
دائرة التمريض - غزة

التاريخ: 2022/1/20

حضرة المهندس/ أسامة قاسم المحترم  
الوكيل المساعد - وزارة الصحة

تحية طيبة وبعد،،،

الموضوع: مساعدة الطالبة ياسمين إسماعيل الهبيل

تهديكم إدارة برامج ماجستير التمريض بجامعة القدس - فرع غزة أطيب التحيات، ونود أعلامكم بأن الطالبة المذكورة أعلاه تقوم بعمل بحث كمتطلب للحصول على درجة الماجستير في تمريض صحة الأم والطفل بعنوان:

**“Health Care Provider's Knowledge, Practice and Barriers to Newborn and Mother Skin-to-Skin Contact in the Gaza Strip, Palestine”**

وعليه نرجو من سيادتكم التكرم بالموافقة على تسهيل مهمة الطالبة في إنجاز هذا البحث حيث أن الفئة المستهدفة هم أطباء أقسام الحضانة، والأطباء والقابلات العاملين في أقسام التوليد في المستشفيات الحكومية (مجمع الشفاء الطبي، مستشفى الأقصى، مستشفى التحرير، مستشفى الهلال الإماراتي) التابعة لوزارتكم الموقرة. علماً بأنه سيتم جمع المعلومات من خلال استبانة تم إعدادها من قبل الطالبة.

و اقبلوا فائق التحية و الاحترام،،،

د. حمزة محمد عبد الجواد  
أستاذ مساعد في علوم التمريض  
منسق برامج ماجستير التمريض بغزة  
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## Annex (5): Approval from Helsinki Committee



# المجلس الفلسطيني للبحوث الصحي Palestinian Health Research Council

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

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

## Helsinki Committee For Ethical Approval

Date: 2021/08/02

Number: PHRC/HC/957/21

Name: Yasmin Ismail Al- Habil

الاسم:

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

نفيدكم علماً بأن اللجنة قد ناقشت مقترح دراستكم حول:

### Health Care Providers' Knowledge, Practice and Barriers to Newborn and Mother Skin-to-Skin Contact in Gaza Strip, Palestine

The committee has decided to approve the above mentioned research. Approval number PHRC/HC/957/21 in its meeting on 2021/08/02

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

Signature

Member

*Namir Abu Shab*  
Per  
Chairman

Member

*Dr. Yehia Abdel*

#### General 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](mailto:pal.phrc@gmail.com)

Gaza - Palestine

غزة - فلسطين  
شارع النصر - مقترق العيون

## **Annex (6): Widstroems-9-instentive-stages-of-neonatal-behavior-during-skin-to-skin-contact**

According to Widström et al., there are 9 stages that babies go through during the first hour after birth that are innate and instinctive to the baby. Examining a baby's natural and instinctive behavior during the first hour helps to eliminate possible iatrogenic effects the testing itself may create.

1. The birth cry is a distinct and specific cry as the baby's lungs expand for the first time.
2. Relaxation is a time immediately after the birth cry ends, when the baby becomes still and has no visible movements.
3. Awakening begins as the baby opens the eyes for the first time, blinks, has small mouth movements and limited hand and shoulder motions.
4. Activity involves larger body movements, including whole arm motions, specific finger movements, shoulder motion, head lifting, and stable open eyes.
5. Rest could happen at any point during the first hour, interspersed between stages or as a transition between stages.
6. Crawling involves the baby moving purposely toward the breast and nipple. It could be accomplished through sliding, leaping, bobbing, or pushing.
7. Familiarization is a stage at the mother's nipple where the baby licks, tastes, touches and moves around the nipple and areola area.
8. Suckling involves the baby self attaching to the nipple and initiating breastfeeding.
9. Sleeping is an involuntary activity of the baby around 1.5 to 2 hours after birth.

## Annex (7): Non-urgent separation policy

STATE OF PALESTINE  
Ministry Of Health



دولة فلسطين  
وزارة الصحة

### Non-urgent Separation Policy

**Mother and baby early separation guide:** Guide for Health Practitioners in maternity, newborn observation and admission areas.

Non-urgent separation
Baby can be evaluated later by a pediatrician after finishing at least 90 minutes of uninterrupted Skin to Skin and breastfeeding
<ol style="list-style-type: none"><li><b>1. Baby born with meconium:</b> breathing, vigorous and pink.</li><li><b>2. Baby born with easy not complicated ventouse:</b> less than 2 pop outs, no injury or visible hematoma and breathing and pink.</li><li><b>3. Late preterm babies</b> <math>\geq 34</math> and weight <math>\geq 1800</math> kg, pink, breathing and vigorous.</li><li><b>4. PROM or PPRM:</b> no intrapartum risk, chorioamnionitis or fever, giving that the baby is pink and breathing well.</li><li><b>5. Mild respiratory distress</b> with mild tachypnea when: (1) the overall situation is calm. (2) a midwife is available to follow the baby. (3) the pediatrician is available to check on the baby after 30 minutes. Otherwise, the baby will be admitted for observation after pediatric consultation.</li><li><b>6. Macrosomia:</b> if stable, pink, breathing well and born with no difficulties at all.</li><li><b>7. False positive abnormal CTG:</b> giving that the baby is born pink and breathing well.</li><li><b>8. Congenital anomalies that does not need urgent intervention.</b></li></ol>

بإقرار من الإدارة العامة للمستشفيات و شبكة غزة للحضانات

وزارة الصحة - غزة - تليفون: 08/2846949 - فاكس رقم: 08/2826295  
Ministry of Health - Gaza - Tel:08/2846949 - Fax:08/2826295

الطبيب: أحمد محمد أحمد  
الطبيبة: نورا محمد أحمد

عنوان الدراسة: المعرفة والممارسة لدى مقدمي الخدمة الصحية تجاه تلامصق المولود بجلد الأم والمعيقات لذلك في قطاع غزة/ فلسطين.

إعداد: ياسمين إسماعيل عبد القادر الهبيل

إشراف: د. حمزة عبد الجواد

ملخص الدراسة:

هدفت الدراسة الحالية إلى معرفة كل من المعرفة والممارسة لدى مقدمي الرعاية الصحية نحو تلامصق الأم بجلد المولود في مستشفيات الولادة الحكومية في قطاع غزة، كما هدفت إلى معرفة المعيقات التي تواجه تطبيق تلامصق المولود للأم بعد الولادة. وقد كانت عينة الدراسة عينة حسية تكونت من (267) مقدم خدمة صحية منهم 62 قابلة و153 طبيب نساء وتوليد و52 طبيب أطفال) جميع القابلات التي تعمل في أقسام التوليد بالإضافة الى جميع أطباء النساء والولادة الذين يعملون في أقسام الولادة وأطباء الأطفال والحضانة الذين يعملون في أقسام الحضانة التابعة لمستشفيات الولادة. لجمع البيانات فقد قامت الباحثة بإعداد أداة الدراسة وهي مكونة من استبانة مكونة من خمس أجزاء لقياس المعرفة والممارسة نحو تلامصق جلد الأم بالجنين بعد الولادة بالإضافة لتحديد المعيقات تجاه هذا التطبيق، وقد تم عرض الاستبانة على مجموعة من المحكمين للتأكد من مدى صلاحيتها كأداة للدراسة، كما تم إجراء دراسة استطلاعية وتبين أن معامل الثبات كرونباخ ألفا بلغ 0.833 للمعرفة والممارسة لدى مقدمي الخدمة الصحية وبلغ 0.854 للمعيقات نحو تطبيق تلامصق جلد المولود للأم بعد الولادة. وقد تم استخدام البرنامج الإحصائي المحوسب SPSS لتحليل النتائج، والتي تضمن التكرارات، المتوسطات الحسابية، النسب المئوية، اختبار (ت)، واختبار تحليل التباين الأحادي.

بينت نتائج الدراسة أن المعرفة لدى مقدمي الرعاية الصحية جيدة جدا بنسبة 82%، وممارستهم للتطبيق جيدة بنسبة 72%، بينما تلقى 82.1% منهم تدريب الرعاية الأساسية لحديثي الولادة (EENC). كان لدى القابلات الممارسة الأفضل لوضع المولود ملاصقا لجلد الأم.

بينما كانت أكثر المعيقات التي تواجه مقدمي الخدمة الصحية عند وضع الجنين ملاصقا لجلد الأم بعد الولادة هي قيلة وعي الأمهات ونقص الدعم الاجتماعي والتحفيز، وانعدام الخصوصية.

وفقا لنتائج هذه الدراسة، لم يلتزم مقدمو الخدمة الصحية بسياسة الفصل الغير عاجلة (Non-urgent separation policy) وبالتالي فهم بحاجة الى مزيد من التدريب على هذه السياسة. وأوصت الدراسة بزيادة وعي الأمهات بأهمية وضع المولود ملاصق لجلد الأم بعد الولادة SSC من خلال الزيارات ما قبل الولادة في الرعاية الأولية، والحفاظ على الخصوصية، وتقليل المعيقات لهذا التطبيق في مستشفيات الولادة.