



# The Effect of Early Maternal and Newborn Skin to Skin Contact On the Initiation of Breast Feeding

*Donia Alam Mohammed<sup>1</sup>, Entesar Fatouh Abd-Elmoneim<sup>2</sup>, Hanan Fawzy Elsayed<sup>3</sup>*

<sup>1</sup> *Clinical Instructor at technical Health Institute in Imbaba, Egypt.*

<sup>2</sup> *Professor of Maternal and Neonatal Health Nursing, Faculty of Nursing, Helwan University, Egypt.*

<sup>3</sup> *Assistant Professor of Maternal and Neonatal Health Nursing, Faculty of Nursing, Helwan University, Egypt.*

## ABSTRACT

**Background:** Early skin to skin contact between mother and newborn after giving birth provides many benefits at the beginning of breastfeeding, an effective intervention can increase the competence of breastfeeding babies compared to just getting routine care. **Aim:** was to evaluate the effect of early maternal and newborn skin to skin contact on the initiation of breastfeeding. **Design:** A quasi- experimental research design was utilized. The study was conducted at Shubra General hospital, Egypt. **Sample:** A convenient sample of 100 parturient women was recruited. The study included a study group (50) who considered skin to skin contact and a control group (50) who received routine hospital care. **Tools:** Two tools were used for the collection of data: tool (I) A structure interviewing questionnaire included the basic data related to demographic characteristics, breastfeeding history, antenatal care visits, Breastfeeding knowledge history. Tool (II) Breastfeeding Assessment Tool: It included three parts: Part 1: The Infant Breastfeeding Assessment Tool (IBFAT). Part 2: Assessment of initial breastfeeding outcome, Part 3: Assessment of mother feeling during the initial breastfeeding. **Result:** These results demonstrated a significant difference between the two groups, highlighting the importance of effective breastfeeding support and interventions in promoting successful breastfeeding initiation and duration. It also revealed that success in first breastfeeding was higher among study group compared to control group with a highly significant difference in breastfeeding duration between the study and control groups. **Conclusion:** The study concluded that mothers who engage in early maternal/newborn skin-to-skin contact immediately after giving birth have a higher likelihood of successfully initiating breastfeeding earlier compared to those who do not practice skin-to-skin contact. **Recommendation:** It is recommended that developments courses and training programs should be provided to nurses working in the delivery room about the implementation of skin-to-skin contact technique for all mothers and newborns.

**Keywords:** Early Skin to Skin Contact, Newborn, Maternal, Initiation of Breastfeeding.

**Full length article** \*Corresponding Author, e-mail: [Donia.Ms1026@nursing.helwan.edu.eg](mailto:Donia.Ms1026@nursing.helwan.edu.eg)

## 1. Introduction

Breastfeeding problems that develop in the postpartum period have been identified as a significant factor that influences exclusive breastfeeding and the duration of breastfeeding. Immediate skin-to-skin contact with initiation of breastfeeding could decrease morbidity and mortality. Breastfeeding is critical for infant survival, general health, and maternal health and is a part of the millennium goals, national and international policies. World Health Organization (WHO) states that over 1.5 million baby deaths per year occur because of inadequate intake of breast milk. When we compare non-breastfed infants are at least, 2.5 times more likely to be affected by diseases than breastfed infants. and early initiation of Skin-to-Skin Contact (SSC) in the first

hour after birth can lead to 22% reduction in mortality of infants in the first 28 days of life. Initiation of successful breast-feeding through SSC is a basic step recommended in the "Ten Steps to Successful Breastfeeding" [1]. Despite global health education recommendations for early breastfeeding initiation, only 27% of moms initiate nursing early, and only 35% of newborns globally are exclusively breastfed. For various superstitions and ignorance, breastfeeding is started as late as the fifth day in some communities [2]. Breastfeeding should be start within the first hour of a baby's birth, as this is a critical time for breastfeeding success [3]. As a result, the World Health Organization recommends initiation of breastfeeding and maternal-neonatal skin-to-skin contact as soon as possible

after birth (within one hour). Only 9.7% of mothers in Egypt initiate breastfeeding either early or late after delivery, and only 39% of newborns in developing countries are breastfed exclusively within an hour after birth. If mothers start breastfeeding at a young age, they can reduce neonatal mortality by 33% [4]. Early maternal newborn skin to skin contact is associated with several advantages for the mother and newborn. As SSC helps to regulate the newborn's heart and breathing rate, increase metabolic adaptation, decreases crying and decreases hypoglycemia incidence through normalizing the newborn's glucose levels especially when born to mothers with diabetes. Skin to skin contact causes surge of maternal oxytocin through the effect of touch, odor, and warmth. Also, the temperature of the mother's breast skin increases under the effect of oxytocin thus providing the newborn with warmth. Furthermore, the flight- fight effect is antagonized by oxytocin thus the maternal anxiety and stress will be reduced providing relaxation and social responsiveness. Throughout the first periods after birth, oxytocin can also promote parenting behaviors. As well as the mother's mental health, the development of the newborn's wellbeing and adaptation during life are greatly affected by the quality of the relationship between both in the initial minutes following delivery [5]. A recent national survey in China showed that nurses is a major barrier to SSC as nurses not knowing about SSC's benefits and each nurse having to care for a large number of infants each day, so Maternity nurses should provide prenatal and intrapartum education for improving the experience of SSC. Nurses can act as client advocates and facilitators by being will knowledgeable about: benefits of early SSC for mothers and newborn, safety concerns regarding SSC, suggestions to improve safety during its practice and safe positioning of the newborn while in SSC [6]. Therefore, important that nurses, acquire knowledge about breastfeeding, and develop skills to support and provide appropriate care to mothers with infants, in order to support mothers to breastfeed to prevent breastfeeding problems and in-hospital formula supplementation "so breastfeeding support is a significant component of nurses' role [7].

### **1.1 Significance of the study**

Breastfeeding provides a wide range of medical and neurodevelopmental benefits for both birthing mothers and infants, and these advantages tend to increase with longer breastfeeding duration. However, it is concerning that a significant number of parents discontinue breastfeeding before it is recommended. According to a study by [8]. less than half of infants receive any breastmilk at 6 months of age. This is a global concern as well, as indicated by the World Health Organization (WHO) in 2021, which reported that only 44% of infants initiate breastfeeding within the first hour after birth, and a mere 40% of all infants under six months of age are exclusively breastfed. Recent research has provided evidence that immediate skin-to-skin contact (SSC) between the mother and baby after birth plays a crucial role in promoting early breastfeeding initiation. This practice has been shown to increase the likelihood of successful exclusive breastfeeding for a period of one to four months, as well as for the entire duration of breastfeeding. Moreover, longer durations of skin-to-skin contact have been found to have a positive correlation with higher breastfeeding rates. Based on these findings, a current study will be conducted to examine

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the impact of early mother and newborn skin-to-skin contact on the initiation of breastfeeding. The study aims study effect of early mother and newborn skin to skin contact on initiation of breast feeding. This research initiative aligns with the recommendations outlined by UNICEF in 2020, which emphasize the importance of promoting and supporting early skin-to-skin contact to facilitate successful breastfeeding initiation.

### **1.2 Aim of study**

This study aims to evaluate the effect of early maternal and newborn skin to skin contact on the initiation of breast feeding.

### **1.3 Research hypothesis**

- 1- Early mother and newborn SSC after giving birth will improve earlier initiation of breastfeeding.
- 2- Early mother and newborn SSC after giving birth will maintain successful breastfeeding.

### **1.4 Research design**

A quasi-experimental research design was utilized for conducting this study.

### **1.5 Setting**

The study was conducted on obstetric departments in labor units at Shubra General Hospital that affiliated to Ministry of Health and population (MOHP), Egypt.

### **1.6 Sample**

#### **1.6.1 Type of sample**

Purposive sample was used in this study.

#### **1.6.2 Sample size**

The sample size for this study consisted of 100 laboring women. The selection of these women was done through a non-randomized purposive sampling method within a period of three months. The women were purposefully assigned to two groups: the study group and the control group, with each group consisting of 50 laboring women. In the study group, the 50 women were provided with skin-to-skin contact practice immediately after birth. On the other hand, the control group of 50 women received routine hospital care without the implementation of skin-to-skin contact. By comparing the outcomes between these two groups, the researchers aimed to evaluate the effect of early mother and newborn skin-to-skin contact on the initiation of breastfeeding.

### **1.7 Tools for data collection**

Two tools included that developed after reviewing the related literature with consideration to the aim of objectives and questions of the study.

#### **1.7.1 Tool (I): A Structured interviewing questionnaire**

It was developed by the researcher in English and translated into simple Arabic language form. It consisted of two parts.

##### **1.7.1.1 Part (one) Demographic data**

This part composed of (4) questions aimed to collect data such as age, current residence, level of education, and occupation.

**1.7.1.2 Part (two)**

Obstetric history this part composed of (18) questions aimed to collect data such as parity, gravidity, weeks of gestation, history of abortion, history of stillbirth, Age of youngest child. were collected during the first stage of labor. Antenatal care visits: this part composed of questions aimed to collect data such as time of initial antenatal visits, number of antenatal care visits women received, place of antenatal visits, attendance classes about breastfeeding during antenatal care, type of baby, type of nipple. Breastfeeding knowledge history: this part composed of questions aimed to collect data such as: knowledge women received about breastfeeding, type of this information that women received, number of session that women received, person explain these sessions.

**1.7.2 Tool (II): Breastfeeding Assessment Tool:**

It included three parts.

**1.7.2.1 Part (1)**

The Infant Breastfeeding Assessment Tool (IBFAT): This part was adopted from (Mathews,1988). Composed of (4) questions with a total score of 12. An instrument to assess infant breastfeeding behavior in the early neonatal period, The IBFAT appraised four parameters of infant suckling competence including readiness to feed, rooting reflex, fixing (Latch on), and suckling pattern. The range of scores for each of the four parameters is ranged between 0-3 for a maximum total score of 12. A final score of 10 or higher from IBFAT tool is associated with successful first feeding. Scores (7-9) represented moderate effective in first breast-feeding. and (0-6) was considered as non-effective breastfeeding.

**1.7.2.2 Part (2)**

Assessment of initial breastfeeding outcome: This part composed of (6) questions were Included, did the newborn attach to the nipple by himself, did the newborn end the first breastfeeding by own self or not. Estimating a newborn's first breastfeeding, time in (minutes) between delivery and first effective breastfeeding, duration (minutes) of first of initial effective breastfeeding, Duration from delivery to skin-to-skin contact, and number of trails before first effective breastfeeding.

**1.7.2.3 Part 3**

Assessment of mother feeling during the initial breastfeeding: to assess a mother's feelings during the initial breastfeeding, using rating scale allows the mother to indicate her level of satisfaction or pleasure regarding how the baby is being fed during the initial breastfeeding session. The mother can select the appropriate number that best reflects her feelings at that moment and a rating scale ranging from 0 to 3, as described below:

- 0 - Not pleased: The mother is not satisfied or pleased with the baby's feeding experience.
- 1 - Fairly pleased: The mother is somewhat satisfied or pleased with the baby's feeding experience.
- 2 - Pleased: The mother is satisfied or pleased with the baby's feeding experience.
- 3 - Very pleased: The mother is extremely satisfied or pleased with the baby's feeding experience.

**1.7.3 Tools Validity and Reliability**

The data collection tools were reviewed by a panel of three experts in the maternal and newborn health nursing department at Helwan University to measure the content validity of the tools to test the face and content validity. Each of the experts was asked to assess the tools for content coverage, clarity, wording, length, format, and overall appearance. There was no modification done to the tool. Also, Cronbach Alpha coefficient test was used to measure the reliability of the tools used in the current study. The reliability of the tools was assessed through 10% cases (pilot study) using the developed questionnaire. Measuring their internal consistency by determining Cronbach alpha coefficient, proved to be high as indicated below:

Tool	Reliability		Validity		Internal consistency
	Reliability Coefficient	Cronbach's Alpha	Self-validate	Content validity	
Tools about breastfeeding	0.755	0.864	.922	.878	Good

This table show Alpha Cronbach's test which used to measure the internal consistency (Reliability of the used tool or instrument) the reliability score of tools as above is (0.864) for tools about breastfeeding, where the minimum reliability coefficient we need is 60%, so is the reliability coefficient for all questions. While validity score of tools is (0.878) for tools about breastfeeding, this indicated high total internal consistency of the used tool. Final reliability (Cronbach's alpha) = 0.864 , Final validity (Content valiantly) = 0.864

**1.8 Ethical considerations**

An official permission to conduct the proposed study was obtained from the Scientific Research Ethics Committee faculty of nursing Helwan university. Participation in the study is voluntary and subjects given complete full information about the study and their role. The researcher clarified the purpose and nature of the study to the mother, stating the possibility to withdraw at any time, the researcher obtained permission of the participants to maintain confidentiality of the information. Ethics, values, culture, and beliefs were respected.

**1.9 1 Preparatory phase**

It includes reviewing of past, current, national, and international related literature, and theoretical knowledge of various aspects of the study using books, articles, internet, periodicals, and magazines to develop tools for data collection. The researcher constructed and prepared the different data collection tools.

**1.10 Pilot study**

The pilot study was conducted on ten studied labouring women (10%) of total sample (10 women), to test the clarity of questions and time needed to complete the study tools. Based on the results, no modifications were done after conducting pilot study. All Subjects who shared on in the pilot study were included in the sample.

**2. Field work**

After an official permission obtained from previously mentioned setting. Data collected from beginning of December 2022 to end of February 2023, was

accomplished at 5 days per week at Shubra general hospital on the morning and afternoon shifts until the predetermined sample size was covered.

### 2.1 Assessment phase

During this phase of the study, the researcher introduced herself to the maternity nursing staff to obtain relevant information and gain their cooperation. The researcher approached the labouring women individually during the first stage of labour. For each woman, the researcher introduced herself, and explaining the purpose of the study to conduct an individual interview. The interview questionnaire was administered to gather data from the participants women. The interviews were conducted in Arabic language, and each woman took approximately 30 minutes to complete the interview. The researcher documented the answers provided by the participants using the first tool utilized in the study. Additionally, during the interview process, the women were given the opportunity to ask any questions they had. This ensured that they had a clear understanding of the study and could seek clarification as needed.

### 2.2 Implementation phase

The study group: comprised 50 laboring women who were encouraged to provide early maternal/newborn skin to skin contact after giving birth. infant placed undressed in a prone position against the mother's bare chest between breasts immediately after delivery, before placental delivery and suturing of episiotomy. At this time the infant was suctioned while on the mother's chest, well dried and covered with a pre-warmed blanket over both mother and baby, to prevent heat loss. All other interventions were delayed until the end of third stage of labor. Skin to skin contact started during the first minute after birth until first breastfeeding success. During skin to skin contact the baby was moved close to the mother's breast to start breastfeeding and Infant Breast-Feeding Assessment tool (IBFAT) was completed by the researcher to measure the "success during first breastfeeding".

### 2.3 The control group

Comprised 50 laboring women who were received the routine hospital care (after cutting the cord, the infants were dried and put under warmer device for physical assessment and vitamin K injection. The mother's placental delivery and episiotomy repair were done at the same time. Finally, infants were transferred to postnatal room and were allowed to suck mother's breast. The researcher, stayed with each woman in both groups until the end of the first 1 hours after delivery or after the success of the first breastfeeding. The breastfeeding process was continued until infants gave up the breast in both of the groups and the duration of a feeding is usually ten to fifteen minutes. The time to, and the duration of the first breastfeeding (minutes) was measured and recorded. Assessment of mother feeling during the initial breastfeeding was used to assess a mother's feelings during the initial breastfeeding, for both groups, using rating scale allows the mother to indicate her level of satisfaction or pleasure regarding how the baby is being fed during the initial breastfeeding session. The mother can select the appropriate number that best reflects her feelings at that moment and a rating scale ranging from 0 to 3 Instructions before discharge

from hospital were given to mother regarding the importance of exclusive breastfeeding after delivery.

### 2.4 Statistical analysis

Statistical analysis of the data was carried out and the collected data was organized, categorized, computerized tabulated and analyzed by the statistical package for social sciences (SPSS version 22, Chicago, IL, USA) to assess the effect of early maternal and newborn skin to skin contact on the initiation of breastfeeding. The Statistical analysis included: Significance was adopted at  $p < 0.05$  for interpretation of results of tests of significance. Non-Significant at  $p > 0.05$  Statistically Significant at  $p < 0.05$ . High Significant at  $p < 0.001$ .

### 3. Results

The Table (1) presents demographic characteristics of two groups, Study and Control. The Study group has a less than half of younger individuals (25 - 29 years), while the Control group has less participants aged 25 to 29 years. No significant difference was observed between both groups regarding age ( $p = 0.064$ ). Educational levels show the Study group has almost one third secondary-educated individuals, while the Control group has almost one third at the primary/preparatory level. Both groups have equal rural/urban distribution, and all participants are housewives. The table (2) compares obstetrics history between the study and control groups. Regarding Parity, gravidity, stillbirths, and gestation weeks show no significant differences. However, the Study group has almost quadruple the control group regarding history of one or more abortions (16% vs. 4%). Notably, age of youngest child trends toward significance, with the Study group having almost a third of children aged 1 to 2 years (36.8% vs. 12.4%). The table (3) showed that, antenatal care visits between Study and Control groups. No significant difference is found in antenatal care visits, nipple type, baby's gender, or attending breastfeeding classes. However, the control group had a more than three quarters of initial antenatal visits in the first trimester (84% vs. 64%) with a significant difference ( $p = 0.044^*$ ). Place of care and Everett after stimulation show no significant differences.

This Table (4) illustrated that breastfeeding knowledge and education were compared in the study and control groups. Both groups showed slightly higher proportions receiving information during antenatal care (42% Study, 34% Control). Information types covered general knowledge, benefits, techniques, and positions, with no significant differences. Sessions received were consistent across groups: one session (38.1% Study, 47.1% Control), two sessions (52.4% Study, 35.3% Control), or more (9.5% Study, 17.6% Control). Health educators, nurses, and physicians explained sessions with no significant variation. Table (5) Revealed Breastfeeding experiences were compared in Study and Control groups. Both groups had similar percentages reporting past breastfeeding difficulties (26.3% Study, 28.1% Control), with no significant difference ( $p = 0.920$ ). In terms of children breastfed, the Study group had 36.8% with one child, 36.8% with two, and 26.3% with three or more, while the Control group had 21.9%, 50.0%, and 28.1% respectively. No significant difference was observed ( $p = 0.364$ ). Regarding the last child breastfed, 31.6% of the "Study" group and 21.9% of the Control group

breastfed for one year, with the majority breastfeeding for more than one year (68.4% Study, 78.1% Control). There was no significant difference ( $p = 0.522$ ).

Table (6) Breastfeeding behaviors were compared between study and control groups. The Study group notably had almost more than half directly breastfeeding without a method (58.0% vs. 28.0% in Control), and fewer exhibited rooting reflex (72.0% vs. 46.0% Control). Time to latch and suck. showed differences, with 68.0% in Study and 36.0% in Control having no specific time. Sucking patterns varied, with 46.0% Study and 28.0% Control having no specific pattern. Figure (1) Show Maternal feeling about baby feeding were compared in study and control groups. Both groups had a small percentage (4.0%) feeling very pleased. The Study group had almost two thirds were feeling pleased (64.0% vs. 36.0% in Control) and lower rates of feeling fairly pleased (32.0% vs. 50.0% Control). No participants in the Study group felt not pleased, while 10.0% in Control did. Significant difference in very pleased feelings ( $p = 0.012^*$ ). Table (7) Newborn breastfeeding behaviors were compared in Study and Control groups. The Study group had a less than half of newborns self-attaching to the nipple (40.0% vs. 14.0% in Control) and experiencing a good first breastfeeding (64.0% vs. 24.0% Control). Time between delivery and first breastfeeding showed significant differences, with 24.0% Study within 10 minutes, 64.0% >10 to 20 minutes, and 12.0% >20 to 30 minutes, compared to 10.0%, 46.0%, and 44.0% Control. Breastfeeding initiation and trials were compared in Study and Control groups. The Study group had shorter initial effective breastfeeding durations of 5-10 minutes (40.0% vs. 70.0% in Control) and more than half instances of no trials (60.0% vs. 28.0% Control). More Study participants underwent 1&2 trials (28.0% vs. 54.0% Control) with fewer experiencing 3&4 trials (12.0% vs. 18.0% Control). Significant differences were noted in trial numbers ( $p = 0.005^*$ ) and breastfeeding duration ( $p < 0.001^{**}$ ). Figure (2) Represents that (56.0%) of studied women had a duration of one minute from delivery to skin-to-skin contact, while (44%) of studied women had less than one minute from delivery to skin-to-skin contact. The table (8) illustrated that demographic factors and level of mothers feeling were analyzed. Age showed no significant differences in satisfaction. Educational level had a notable impact; those who could read and write were less pleased (12.5%), while university-educated participants were more very pleased (100%). Residence played a role; urban residents were more very pleased (100%) compared to rural residents (0%) ( $p = 0.004^*$ ).

#### 4. Discussion

In recent years, there has been a growing recognition of the profound impact that early maternal and newborn skin-to-skin contact can have on the initiation of breastfeeding. This practice, often referred to as "kangaroo care," involves placing a newborn on the mother's bare chest immediately after birth. The physical and emotional connection established during this crucial period has been found to play a pivotal role in fostering successful breastfeeding initiation and subsequent maternal-infant bonding. As a fundamental aspect of comprehensive maternity care, understanding the intricate dynamics of how skin-to-skin contact influences the initiation of breastfeeding is essential for healthcare providers and families alike [9]. Regarding demographic

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characteristics, the current study presented the distribution of studied women in both groups as the Study group has a less than half of them from twenty five to twenty nine years, while, the Control group has a less than half of them from twenty to twenty four years. As regarding educational levels, the Study group has almost one third secondary-educated individuals, while the Control group has almost one third at the primary/preparatory level. Moreover, both groups have equal rural/urban distribution, and all participants were housewives. From the researcher point of view, this might be related to the study setting which received different categories of patients from different regions.

This result was in harmony with the result of the study by [10]. who conducted the study on Egypt entitled "Effect of Early Maternal and Newborn Skin to Skin Contact after Birth on the Duration of Third Stage of Labor and Initiation of Breastfeeding". and who found that, more than two fifth of the Study group aged from twenty five to twenty nine years, while, less than half of women in the Control group has aged from twenty to twenty four years. It was also, noticed that the majority of study and control groups were married, about two third of mothers among study and control group born in rural areas and were housewives. Furthermore, the current study results were supported by [11]. who conducted the study in Brazil and studied "Skin to skin contact and the early initiation of breastfeeding: a cross-sectional study" and who discussed that, about three quarter of the studied women aged from twenty to thirty five years and had a least completed elementary school. Moreover, both groups have equal rural/urban distribution, and more than half of them were housewives. On the other hand, the present study findings were in disagreement with the study by [12]. who conducted the study in Iran entitled of "The effect of mother-infant skin to skin contact on success and duration of first breastfeeding: A systematic review and meta-analysis", and who reported that, the majority of the intervention group aged from twenty five to thirty five years, while, the majority of the comparison group aged from twenty to twenty four years. As regarding educational levels, about two third of both studied group had secondary-educated level. Moreover, the majority of both groups had residence in urban distribution, and near to half of them were housewives.

Regarding the obstetrics history between the study and control groups of the studied women, the current study results stated regarding Parity, gravidity, stillbirths, and gestation weeks no significant differences. Also, the minority of both groups of the studied women had one or more abortion. Furthermore, as regarding age of youngest child, the Study group had more than one third of children aged >1 to 2 years while the control group had a minority of the children aged >1 to 2 years. From the researcher point of view, this could be related to the total Mean $\pm$ SD of both groups were 28.28 $\pm$ 4.81 which reflect on the lower age of their children. The present study findings were in the same line with the study by [13]. who conducted the study in Ethiopia and studied "Timely initiation of breastfeeding and associated factors among mothers with vaginal and cesarean deliveries in public hospitals of Addis Ababa, Ethiopia". Further, who reported that, less than one fifth of both vaginal and cesarean deliveries mothers had one or more abortion. Furthermore, as regarding age of youngest child, the vaginal mothers had more than one third of children aged less than one years to two years. According to weeks of gestation, the current study

results were revealed that, the majority of both groups of the studied women had a week of gestation from less than thirty eight to fourthly weeks. From the researcher point of view, this could be due to the inclusion criteria of the study sampling as mothers who gave birth spontaneously and full-term (thirty eight to fourthly weeks of gestation). The current study findings were matched with the study by [14]. who conducted the study on Egypt entitled "Effect of Early Maternal and Newborn Skin to Skin Contact after Birth on the Duration of Third Stage of Labor and Initiation of Breastfeeding". Also, who reported that, the majority of the mothers were at thirty nine to fourthly weeks week of gestation, Regarding antenatal care visits between Studied women. the present study findings were reported that, no significant difference is found in antenatal care visits, nipple type, baby's gender, or attending breastfeeding classes. However, the control group had a more than three quarters of initial antenatal visits in the first trimester. From the researcher point of view, the present study findings might be due to elucidate the increased likelihood of both prolonged breastfeeding duration and exclusive breastfeeding among the studied group.

The current study results were consistent with the study by [15]. who conducted the study in Nigeria, entitled of "Association between skin-to-skin contact post-birth and breastfeeding behavior: a cross-sectional study of Nigerian women", further, who indicated that, Antenatal care visits increase pregnant women's awareness of healthy breastfeeding behaviors/outcomes, potentially increasing their intention to breastfeed. Also, the majority of pregnant women had initial antenatal visits in the first trimester with significant difference is found in antenatal care visits, nipple type, baby's gender, or attending breastfeeding classes. As regarding breastfeeding knowledge and education in the study and control groups. The present study results indicated that, more than one third of studied women were receiving information during antenatal care, Information types covered general knowledge, benefits, techniques, and positions, with no significant differences. Also, Sessions received were consistent across groups and health educators, nurses, and physicians explained sessions with no significant variation. From the researcher point of view, the present study findings could be related to both groups receive similar and comprehensive information about breastfeeding, covering general knowledge, benefits, techniques, and positions. Also, health care providers may follow a standardized curriculum to educate pregnant individuals about breastfeeding, aiming to ensure that all expectant mothers receive a similar level of knowledge and support. The current study results were in the same line with the study by [16]. who conducted the study in country of western America (Peru). entitled "Effect of a virtual educational intervention to promote early initiation of breastfeeding in pregnant women from Lima, Peru", and who revealed that, there was an increase in knowledge after the educational intervention and the majority of the pregnant

women who belonged to the experimental group started breastfeeding early after the intervention with no significant differences. Also, Sessions received were consistent across groups and all healthcare providers.

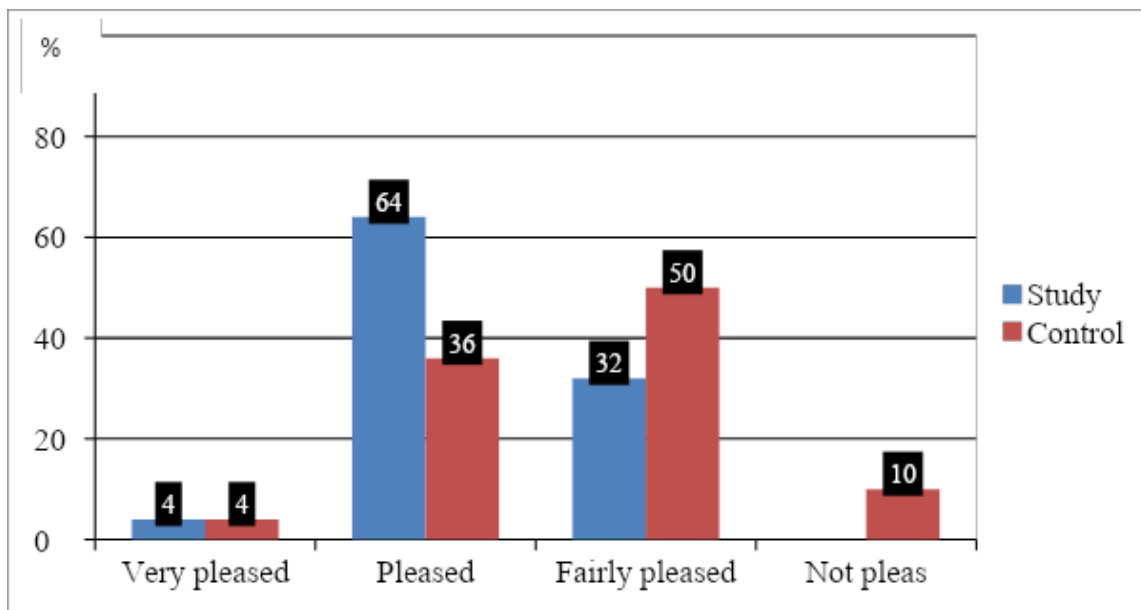
The present study results were in consistent with the study by [17]. who conducted the study in India. who studied "Early initiation of breastfeeding and factors associated with its delay among mothers at discharge from a single hospital". Also, who stated that, less than half of the studied mother had received breastfeeding knowledge and practices during antenatal care. On the other hand, the current study findings were in contrasted with the study by [18]. who conducted the study on Jordan entitled of " Breastfeeding Knowledge and Attitudes among Midwifery Diploma Students in Jordan: A Descriptive Study ", and who stated that, the majority of studied women were educated about breastfeeding practices during antenatal care with more than two sessions that studied women received. Furthermore, about three quarter of them received breastfeeding knowledge and attitudes across health educators. According to breastfeeding history among the studied women, The current study results were displayed that, more than one third of the study group had two children breastfed from her mother and about half of control group had two children breastfed from her mother. Also, regarding the last child breastfed period, the majority of both groups had the last child breastfed period for more than one year. From the researcher point of view, this could be related to personal beliefs and preferences of mothers. Also, this might be due to all studied women were housewives.

The present study findings were in the same line with the study by [19]. who conducted the study in Iran, entitled "The effect of mother-infant skin to skin contact on success and duration of first breastfeeding: A systematic review and meta-analysis", also, who reported that, the majority of experimental and routine group had one and two children were breastfed from her mother. Also, the majority of both groups had the last child breastfed period for more than one year. The other hand, the present study findings were in the opposite line with the study by [20]. who conducted the study on Nigeria entitled of " Factors influencing the early initiation of breast feeding in public primary healthcare facilities in Northeast Nigeria, and who found that, the majority of the studied mother had more than two children breastfed from her mother and about half of them had the last child breastfed period for one year. Regarding to the studied women difficulties in past breastfeeding in studied women. The current results were confirmed that, less than two third of both groups had difficulties in past breastfeeding. From the researcher point of view, the present findings were related to lack of knowledge about the best breastfeeding practices and time. Also, the present study finding could be due to low level of education among both studied women.

**Table 1:** Distribution of studied women in both groups regarding demographic characteristics (both groups n=100).

General characteristics	Study		Control		Total		Chi-square test	
	N=50		N=50		N=100		x <sup>2</sup>	p-value
	o.	%	o.	%	o.	%		
<b>Age (years)</b>								
20 to 24 years	2	24.0	2	44.0	4	34.0	7.426	0.060
25 to 29 years	3	46.0	1	22.0	4	34.0		
30 to 34years		16.0		16.0	6	16.0		
>34 years		14.0		18.0	6	16.0		
Mean±SD	28.88±4.9 1		27.68±4.7 1		28.28±4.8 1		t=1.68	0.064
<b>Educational level</b>								
Illiterate		8.0		4.0		6.0	2.505	0.644
Read & write	0	20.0	1	22.0	1	21.0		
Primary & preparatory	2	24.0	8	36.0	0	30.0		
Secondary	8	36.0	4	28.0	2	32.0		
University		12.0		10.0	1	11.0		
<b>Residence</b>								
Rural	8	36.0	8	36.0	6	36.0	0.000	1.000
Urban	2	64.0	2	64.0	4	64.0		
<b>Occupation</b>								
Worker		0.0		0.0		0.0	0.000	1.000
Housewife	0	100.0	0	100.0	00	100.0		

Using: Chi-square test                      p-value >0.05 NS



**Figure 1:** Distribution of the studied women regarding mother feeling about the baby fed at this feeding among both groups

**Table 2:** Distribution of the studied women according to obstetrics history (in both groups n=100).

History of obstetrics	Study		Control		Chi-square test	
	N=50		N=50		x <sup>2</sup>	p-value
	No.	%	No.	%		
<b>Parity</b>						
1	12	24.0	18	36.0	1.899	0.387
2	10	20.0	7	14.0		
3 or more	28	56.0	25	50.0		
<b>Gravidity</b>						
1 to 3	30	60.0	34	68.0	2.368	0.306
4 to 5	18	36.0	16	32.0		
>5	2	4.0	0	0.0		
<b>History of stillbirths</b>						
None	48	96.0	48	96.0	0.260	0.609
One or more	2	4.0	2	4.0		
<b>History of abortions</b>						
None	42	84.0	48	96.0	2.778	0.096
One or more	8	16.0	2	4.0		
<b>Age of youngest child “years”</b>	<b>N=38</b>		<b>N=32</b>			
1 to 2 years	14	36.8	4	12.4	5.750	0.056
3 to 4 years	14	36.8	14	43.8		
5 to 8 years	10	26.4	14	43.8		
<b>Weeks of gestation</b>						
38 wks.	2	4.0	2	4.0	0.711	0.701
>38 to 40 wks.	42	84.0	39	78.0		
>40 wks.	6	12.0	9	18.0		

Using: Chi-square test p-value >0.05 N

**Table 3:** Distribution of the studied women according to antenatal care visits (In both groups n=100).

Antenatal Care visits	Study		Control		Chi-square test	
	N=50		N=50		x <sup>2</sup>	p-value
	No.	%	No.	%		
<b>Number of antenatal visits</b>						
Less than four times	8	16.0	6	12.0	0.083	0.773
Four times & more	42	84.0	44	88.0		
<b>Time of initial antenatal visit</b>						
First trimester	32	64.0	42	84.0	6.239	0.044*
Second trimester	12	24.0	7	14.0		
Third trimester	6	12.0	1	2.0		
<b>Attendance of antenatal care classes regarding breastfeeding</b>	<b>N=21</b>		<b>N=17</b>			
Yes	21	42.0	17	34.0	0.382	0.536
No	29	58.0	33	66.0		
<b>Place of antenatal care</b>	<b>N=21</b>		<b>N=17</b>			
Governmental	14	63.0	11	64.7	0.072	0.789
Private	9	36.4	6	53.3		
<b>Type of nipple</b>						
Inverted	4	8.0	4	8.0	5.059	0.079
Flat	2	4.0	9	18.0		
Everett after stimulation	44	88.0	37	74.0		
<b>Fetal Sex</b>						
Male	18	36.0	22	44.0	0.375	0.540
Female	32	64.0	28	56.0		

Using: Chi-square test  
 p-value >0.05 is insignificant; \*p-value <0.05 is significant.



**Table 4:** Distribution of the studied women according to their knowledge about breastfeeding (in both groups n=100).

Knowledge	Study		Control		Chi-square test	
	N=50		N=50		x <sup>2</sup>	p-value
	No.	%	No.	%		
<b>Knowledge women received about breastfeeding during antenatal care</b>						
Yes	21	42.0	17	34.0	0.382	0.536
No	29	58.0	33	66.0		
<b>If yes, type of this information:</b>	<b>N=21</b>		<b>N=17</b>			
General knowledge of breastfeeding	12	57.1	11	64.7	0.268	0.874
Breastfeeding benefits and techniques	5	23.8	3	17.6		
Breastfeeding positions	4	19.0	3	17.6		
<b>If yes, number of sessions that women received</b>						
One session	8	38.1	8	47.1	1.264	0.532
Two sessions	11	52.4	6	35.3		
Or more	2	9.5	3	17.6		
<b>Person explains these sessions</b>						
Health educator	6	28.6	3	17.6	0.663	0.718
Nurse	8	38.1	8	47.1		
Physicians	7	33.3	6	35.3		

Using: Chi-square test  
 p-value >0.05 NS; \*p-value <0.05 S; \*\*p-value <0.001 HS

**Table 5:** Distribution of the studied women according to breastfeeding history (in both groups n=70).

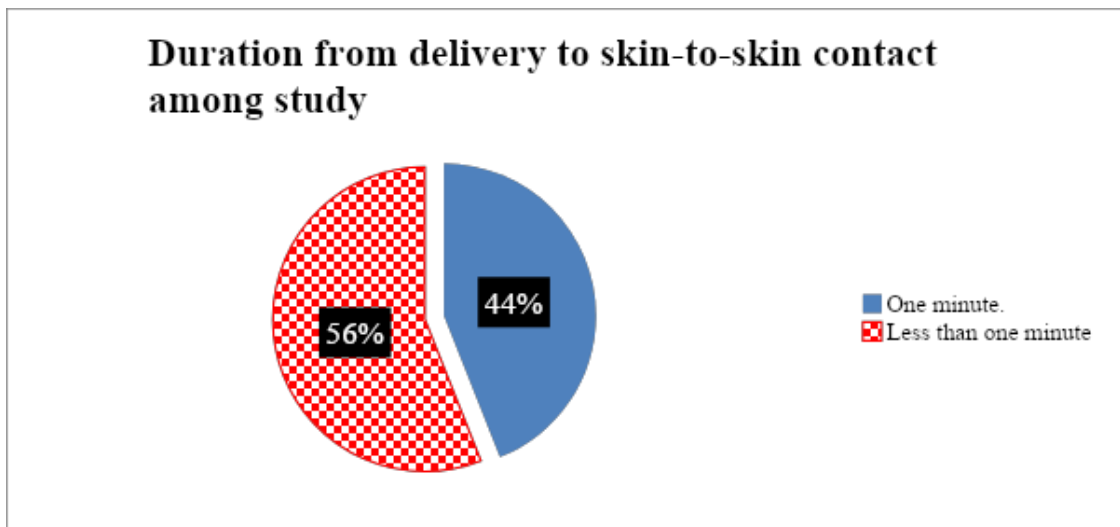
Breastfeeding history	Study		Control		Chi-square test	
	N=38		N=32		χ <sup>2</sup>	p-value
	No.	%	No.	%		
<b>Difficulties faced women in past breastfeeding</b>						
Yes	14	6.8	13	40.6	.006	0.938
No	24	3.2	19	59.4		
<b>If yes, type of breastfeeding difficulties</b>						
Breast problems as pain, engorgement, nipple sore	6	2.9	6	46.2	.106	0.948
Baby is not latching on	4	8.6	4	30.8		
Milk problems as (not enough, or too much)	4	8.6	3	23.1		
<b>Number of children who breastfed</b>						
One	14	6.8	7	21.9	.020	0.364
Two	14	6.8	16	50.0		
Three or more	10	6.3	9	28.1		
<b>For the last child, duration of breastfed.</b>						
One year	12	1.6	7	21.9	.409	0.522
More one year	26	8.4	25	78.1		

Using: Chi-square test

**Table 6:** Distribution of the studied women according to their infant breastfeeding assessment (in both groups n=100).

	Study		Control		Chi-square test	
	N=50		N=50		x <sup>2</sup>	p-value
	o.	%	No.	%		
<b>In order to get baby</b>						
0) Place the baby on the breast as no effort was needed	9	58.0	14	28.0	14.170	<0.001**
1) Used mild stimulation such as unbundling, patting	7	34.0	18	36.0		
2) Unbundled baby, sat baby back and forward, rubbed baby body or limbs at beginning and during feeding		8.0	18	36.0		
3) Could not be aroused		0.0	0	0.0		
<b>Rooting reflex</b>						
0) Rooted effectively at once	6	72.0	23	46.0	9.642	<0.001**
1) Needed coaxing, prompting or encouragement	4	28.0	22	44.0		
2) Rooting poorly even with coaxing		0.0	5	10.0		
3) Did not root		0.0	0	0.0		
<b>How long from placing baby on breast to latch and suck</b>						
0) 0-3 minutes	4	68.0	18	36.0	10.256	0.006*
1) 3-10 minutes	0	20.0	20	40.0		
2) Over 10 minutes		12.0	12	24.0		
3) Did not feed		0.0	0	0.0		
<b>Sucking pattern</b>						
0) Sucked well throughout on one or both breasts	3	46.0	14	28.0	6.881	0.037*
1) Sucked on and off but needed encouragement	9	38.0	20	40.0		
2) Sucked poorly, or sucking efforts for short periods		16.0	16	32.0		
3) Did not suck		0.0	0	0.0		

Using: Chi-square test  
 p-value >0.05 NS; \*p-value <0.05 S; \*\*p-value <0.001 HS



**Figure 2:** Percentage of study women according to their duration from delivery to skin-to-skin contact among study group

**Table 7:** Distribution of the studied women according to assessment of first breastfeeding after applying for skin-to-skin contact for Study group only. (In both groups n=100).

	Study		Control		Chi-square test	
	N=50		N=50		x <sup>2</sup>	p-value
	o.	%	No.	%		
<b>The newborn attach to the nipple by him \ herself:</b>						
Yes	0	40.0	7	14.0	7.306	0.007*
No	0	60.0	43	86.0		
<b>The newborn ends the first breastfeeding by him \herself:</b>						
Yes	0	80.0	43	86.0	0.283	0.594
No	0	20.0	7	14.0		
<b>The newborn first breastfeeding.</b>						
Good	2	64.0	12	24.0	16.519	<0.001**
Fairly Good	0	20.0	18	36.0		
Bad		16.0	20	40.0		
<b>Time (minutes) between delivery and first breast feeding</b>						
10 minutes	2	24.0	5	10.0	13.498	<0.001**
>10 to 20 minutes	2	64.0	3 <sup>2</sup>	46.0		
>20 to 30 minutes.		12.0	2 <sup>2</sup>	4.0 <sup>4</sup>		
<b>Duration (minutes) of first of initial effective breastfeeding</b>						
5-10 minutes	20	40.0	35	70.0	13.498	<0.001**
>10-15 minutes	16	32.0	7	14.0		
>15-20 minutes	8	16.0	4	8.0		
>20-30 minutes	6	12.0	4	8.0		
<b>Number of trials before the first effective breastfeeding</b>						
No trials	30	60.0	14	28.0	10.540	0.005*
1&2	14	28.0	27	54.0		
3&4	6	12.0	9	18.0		

Using: Chi-square test p-value >0.05 NS; \*p-value <0.05 S; \*\*p-value <0.001 HS

**Table 8:** Relation between level of studied mother feel about the baby fed at this feeding according to their demographic data in the **study group** (N=50).

Demographic data	Level of mother feeling						Chi-square test	
	Very pleased (n=2)		Pleased (n=32)		Fairly pleased (n=16)		x2	p-value
	No.		o.	%	o.			
<b>Age (years)</b>								
20_ 24 years	1	0.0		18.8		1.3	2.194	0.901
25 _ 29 years	1	0.0	7	53.1		0.0		
30-34 years	0	.0		18.8		2.5		
>34 years	0	.0		9.4		.3		
<b>Educational level</b>								
Read & write	0	.0		12.5		.0	19.714	0.012*
Illiterate	0	.0		25.0		2.5		
Primary and preparatory	0	.0		21.9		1.3		
Secondary	0	.0	0	31.3		0.0		
University	2	00.0		9.4		.3		
<b>Residence</b>								
Rural	0	.0		21.9	1	8.8	11.344	0.004*
Urban	2	00.0	5	78.1		1.3		

Using: Chi-square test  
 p-value >0.05 NS; \*p-value <0.05 S; \*\*p-value <0.001 HS

The present study findings were in agreement with [21]. who conducted the study in Brazil and studied " Skin to skin contact and the early initiation of breastfeeding: a cross-sectional study", and who demonstrated that, Regarding the difficulty in breastfeeding, inverted nipple or history of mastoplasty was a hindrance to the early initiation of breastfeeding as more than three quarter of studied mothers had difficulties in past breastfeeding. On the other hand, the present study results were in disagreement with the study by [22]. who conducted the study on Canada entitled of "Women's Perceptions and Experiences of Breastfeeding", and who revealed that, the minority of the studied women had difficulties in past breastfeeding. The current study results were emphasized that, the study group notably had almost more than half directly breastfeeding without a method while more than one quarter in control group, and more than two third in study and more than one third in control had no specific time. Moreover, sucking patterns varied, with less than half of studied women in study group and more than one quarter of them in control group had no specific sucking pattern. Moreover, there was significant difference in total score of breastfeeding without a method and suckling pattern between the study and control group infants. From the

researcher point of view, the current study results could be influenced by cultural or educational differences between both groups. The current study results were supported by [23]. who conducted the study in Nigeria, entitled "Factors influencing the early initiation of breast feeding in public primary healthcare facilities in Northeast Nigeria: a mixed-method study", also, who stated that, majority of the studied women had improved in breastfeeding pattern in public and with applying SSC Moreover, sucking patterns varied, with less than half of studied women and there was significant difference in total score of suckling competence between the studied group. Additionally, the current study findings were in the same line with the study by [24]. who conducted the study on Egypt entitled "Effect of Early Maternal and Newborn Skin to Skin Contact after Birth on the Duration of Third Stage of Labor and Initiation of Breastfeeding". Also, who revealed that, there was significant difference in total score of suckling competence between the study and control group infants. As regarding maternal feeling about the baby fed in both groups, The current study results were reported that, the study group had almost two thirds been feeling pleased while, more than one third of them were feeling pleased in control group. Furthermore, there was a statistical

significantly difference on both groups. from the researcher point of view, the present study findings might be related to level of communication and support provided to mothers in the study group may have been more extensive compared to the control group. This was expected since SSC produces a greater feeling of maternal competence, promotes bonding and physical contact as well as the feelings of being natural between the mother and the newborn.

The present results were similar with the study by [25]. who conducted the study in Egypt, entitled of "The Effect of Early Maternal Newborn Skin to Skin Contact after Birth on the Third Stage of Labor and Breast Feeding Status", and who revealed that, women in the SSC group were significantly and more than half of them satisfied by this experience than about one fifth of them in the control group. In addition, the current study findings were in agreement with the study by [26]. which conducted in Italy, entitled "Breastfeeding promotion and support: a quality improvement study", and who reported that, the majority of the studied mother had experience of satisfaction about the baby fed based on breastfeeding promotion and support. The current study results were noted that, the study group had a less than half of newborns self-attaching to the nipple, while, a minority of them in control group. Also, less than two third of newborns experiencing a good first breastfeeding in study group, while more than one fifth of them in control group. Furthermore, about two third of newborns had a time (minutes) between delivery and first breast feeding from >10 to 20 minutes, while less than half of them in control group. From the researcher point of view, this could be due to the study group receive more information about SSC than control group. Also, study group support and guidance related to breastfeeding than control group. Furthermore, this study results might be attributed to the fact that there is increased tactile and verbal stimulation from the mothers to their newborn babies through skin contact.

The present study results were agreed by [27]. who conducted the study in USA, entitled "Promoting Newborn Skin-to-Skin Contact to Increase Breastfeeding Initiation and Exclusivity in Cesarean Deliveries", and who indicated that, the intervention group had a less than half of newborns self-attaching to the nipple, while, a minority of them in opposite group. Also, more than three fifth of newborns experiencing a good first breastfeeding in intervention group. Furthermore, about two third of newborns had a time (minutes) between delivery and first breast feeding from >10 to 20 minutes. The current study findings were in the opposite line with the study by [28]. who conducted the study in Egypt, entitled of "The Effect of Early Maternal Newborn Skin to Skin Contact after Birth on the Third Stage of Labor and Breast Feeding Status", and who found that, the study group had about two third of newborns self-attaching to the nipple, while, more than one third of newborns self-attaching to the nipple in control group. Also, more than of newborns experiencing a good first breastfeeding in study group, while, more than one third of them in control group. The current study results were stated that, the study group had shorter initial effective breastfeeding durations from five to ten minutes and more than half instances of no trials, while the control group had higher initial effective breastfeeding durations of from five to ten minutes and more than one quarter instances of no trials. Moreover, less than two third of study group had no trials before the first effective breastfeeding, while, less than one

third of them in the control group. From the researcher point of view, the current study results could be due to the positive impact of SSC on the study group as regarding breastfeeding skills in compared with the control group. The current study results were matched with [29]. who conducted the study in Indonesia, entitled " Effect of Mother and Infant Skin to Skin Contact on Early Initiation Breastfeeding: A Meta-Analysis", and who discussed that, the intervention group had shorter initial effective breastfeeding durations of from five to ten minutes and more than half instances of no trials, while, the routine hospital are in different studied settings had higher initial effective breastfeeding durations of less than ten minutes and more than one quarter instances of no trials. Moreover, about three fifth of intervention group had no trials before the first effective breastfeeding, while, more than one quarter of them in the routine hospital are group.

Furthermore, the present study findings were in the same line with the study by [30]. who conducted the study in Saudi Arabia, entitled " A correlational study of breastfeeding duration among Saudi mothers: The role of self-efficacy, intention, and social support", and who indicated that, the initial effective breastfeeding durations of decreased in related to self-efficacy and social support and more than half instances of no trials. Moreover, the present study results were consistent with the study by [31]. who conducted the study in Nigeria, entitled of " Skin-to-skin contact and breastfeeding practices in Nigeria: a study of socioeconomic inequalities", and who noted that, the prevalence of EBF, early initiation of breastfeeding and SSC were in lower level which need more information about SSC for increasing the effective breastfeeding durations. Regarding study women according to their duration from delivery to skin-to-skin contact among study group. The current study results were revealed that, more than half of study group had a duration of one minute from delivery to skin-to-skin contact. From the researcher point of view, the present study results might be due to improve practical level of mothers regarding breastfeeding skills.

The current study results were in the same line with [32]. who conducted the study in Turkey , entitled of "The effect of kangaroo mother care applied to the healthy newborns in the early postpartum period on breastfeeding: A randomized controlled trial ", and who emphasized that, more than half of studied mother had a duration of one minute from delivery to skin-to-skin contact. On the other hand, the present study findings were in the opposite line with the study by [33]. who conducted the study on China entitled of " Association between Skin-to-Skin Contact Duration after Caesarean Section and Breastfeeding Outcomes. Children", and who indicated that, only one fifth of the study group had a duration of one to two minute from delivery to skin-to-skin contact. Regarding the relation between level of studied mother feel about the baby fed at this feeding according to their demographic data in the study group. The present study results were reported that, there was no statistically significant difference between age and satisfaction, while there was a statistically significant difference between educational level and residence with satisfaction. From the researcher point of view, the present study findings might be related to mothers with higher educational levels may have more access to information about baby feeding practices, nutrition, and child development. This increased knowledge might contribute to higher levels of satisfaction as they may

feel more confident and informed in their parenting choices. In addition, in this study group, maternal age not strongly influence how satisfied mothers with baby feeding. It could be that other factors, such as education or residence, had a more significant impact on satisfaction in this particular population.

The current study findings were consistent with the study by [34]. who conducted the study in Germany, who studied " Mother–Infant Skin-to-Skin Contact: Short- and Long-Term Effects for Mothers and Their Children Born Full-Term", also, who reported that, there was no statistically significant difference between demographics of the mothers and infants as age, infant variables, and SSC satisfaction, while, there was a highly statistically significant difference between educational level and residence. Furthermore, the present study results in harmony with the study by [35]. who conducted the study in China, entitled of "Association between Skin-to-Skin Contact Duration after Caesarean Section and Breastfeeding Outcomes. Children “, also, who showed that, there were no statistically significant differences in maternal characteristics, including age, delivery gestational week, gravidity, parity, education level, height, and weight before delivery, or neonatal characteristics, including birth weight, gender and birth length, among participants with different SSC durations. The current study results were confirmed that, there was a statistically significant difference between educational level with level of infant breastfeeding. Also, found there was no statistically significant difference between age and residence with level of infant breastfeeding. From the researcher point of view, the current study results were related to SSC effect positive on studied women breastfeeding skills as become more aware of the recommended practices and guidelines for infant care, leading to a higher likelihood of breastfeeding. The results of the current study support the hypothesis that, Early mother and newborn SSC after giving birth will improve earlier initiation of breastfeeding and maintain successful breastfeeding. Also, the present study results accomplish the study aim to evaluate the effect of early maternal and newborn skin to skin contact on the initiation of breast feeding.

## 5. Conclusion

According to the results yielded by the present study, mothers who practice early maternal/newborn skin-to-skin contact after birth exhibit early successful initiation of breastfeeding than those who do not perform skin-to-skin contact. The results of the current study supported the research hypothesis.

## 6. Recommendations

Based on the results of present study, The following recommendation are suggested:

- It is recommended that developmental courses and training programs should be provided to nurses working in the delivery room about the implementation of skin-to-skin contact technique for all mothers and newborns.
- Skin-to-skin contact between mothers and babies must be continued during the repair of perineum post-delivery. If possible, routine infant’s care should be delayed until the success of the first breastfeeding process.

-Provision of an appropriate environment to breastfeed/express milk by mothers to breastfeed their babies by direct breastmilk or expressed.

## 7. Recommendation for further researchers

- The present research can be generalized not only to healthy mothers and neonates. However, SSC can be also applied on unhealthy mothers and high-risk baby. In order to accomplish this goal, the old paradigms of labor and delivery care need to be changed.
- The study should be replicated on different the hospitals settings and not only replicated on normal birth but although on C section deliveries in order to generalize the results.

## 8. Acknowledgements

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