Effect of Virtual Care on Postpartum Pain and Episiotomy Healing Among Primiparous Women

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Abstract

Background: Perineal pain is a major complaint of postpartum females with normal vaginal delivery. Using of new technology in providing health education to postpartum women without space and time limitations is a simple nursing intervention helps in improving healing procedure. **Aim:** To evaluate the impact of Virtual Care on Postpartum Pain and Episiotomy healing among Primiparous subjects. **Design** A quasi-experimental study (control- study group) **Setting**: At the obstetric unit of Banha University Maternity Hospital. **Sample:** 126 females. **Tools:** four tools were used: I) a structured interview questionnaire; II Visual Analogue Scale; III The standardized REEDA scales and Women satisfaction Likert scale. **Results:** The current study illustrated 60.3% of study group has no pain after 7 days of intervention compared to 0% of control group, also 38.7% of control group has severe pain after 7days of delivery compared to 0% in study group. as well 60.3 % of study group had complete episiotomy healing compared to 31.7% of control group , There was a high significant direct correlation between reduction of pain intensity and healing process levels among the study group throughout follow up days of the study (p ≤ 0.001). **Conclusion:** The current study concluded that application of virtual care proved to be effective in decreasing the postpartum pain intensity and enhancing episiotomy healing process. **Recommendations:** application of virtual care should be integrated as nursing intervention for women during postpartum period.

Keywords: virtual care, postpartum pain, episiotomy healing,

Introduction

The postpartum phase is the time after placental delivery until the mother's body and reproductive organs return to their normal pre-pregnancy state in which the female adjusts psychologically and physically after pregnancy and labor. The postpartum time is regarded as a great and pleasant experience for new mothers, while being life-challenging and full of stressful events. Many health issues and mild discomforts may emerge during the postpartum; if not managed swiftly and successfully, they can lead to bad health and even mortality. **Lambermon, Vandenbussch., Dedding, & van Duijnhoven, (2020).**

Episiotomy is a frequent surgical operation used during childbirth and is regarded as an essential component of labor management for most women. It is a perineal incision used to expand the vaginal aperture soon before the neonate is born, shortening the infant's expulsion period and preventing perineal tearing. It was considered to prevent urine incontinence, pelvic organ prolapse, and

lacerations that did not heal properly. However, newer research concurred no indication that episiotomy protects against pelvic relaxation or fetal cerebral bleeding, and it carries a risk of high blood loss, infection, and delayed wound healing **(Som & Srirupa,2017).** As hospital policy, episiotomy is used as a routine care during delivery. Specially for primiparous women **(Ackerman, M., Greenwald, E., Noulas, P., & Ahn, C. 2021).)**

Visual and verbal assessments were utilized to evaluate postpartum perineal healing. Perineal wound healing evaluation techniques based solely on viewing the physical perineal region (REEDA; redness, edema, ecchymosis, discharge, and approximation) are ideal for research purposes. During the first six weeks after birth, nurses appeared to be methodical in their evaluation of perineal healing, employing both visual and verbal measures. In addition, experienced nurses urged for women to self-assess their perineal healing. Most females complain of sort of discomfort during the early few days postpartum as a result of episiotomy,

including pain, infection at the surgical region(27.3%), lower abdomen pain (24.8%), and backache (16.8%). The primary nursing interventions are to alleviate discomfort and enable the females to care for herself and her neonates (**WHO., 2022**)

Virtual care is a broad term that refers to numerous healthcare treatments delivered remotely via digital communication methods. It refers to the use of technology to provide healthcare services such as consultations, monitoring, and even treatments. Virtual care strives to fill the gap between patients and health experts, enabling access to quality care from the comfort of remote place with an internet connection. Virtual Care during postpartum period is the use of technology that allows puerperal women to have health care without having to come to a clinic or hospital (**Tacgin, 2020**)

Maternity nurse plays a vital role in assessing, educating and evaluating postpartum women; One of the key issues that the postpartum nurse has is meeting the educational requirements of the new mother and her family. Nonetheless, the mother spends only a brief duration in the postpartum, addressing and identifying individual instructional needs can be difficult, so using such advanced methods of digital communication as virtual care is beneficial. Nurses have significant role in providing efficient education to the postpartum females with adequate knowledge to meet their health requirements and to seek assistance is important. The mother needs instructions in comfort measures and perineal hygiene as a part of postpartum care, to relief postpartum pain (**Murray & Huelsmann, 2020**)

Significance

Episiotomy is a very common procedure in obstetrics, and it was shown by (**WHO, 2020**) that about 30-90% of females with vaginal labor had an episiotomy. in Egypt, recent studies evaluated episiotomy need and the possibility of vaginal and perineal tears that require repair, it was discovered that out of 483 parturient females, 129 (26.7%) women underwent episiotomy and most of them were primipara, Women who undergo perineal episiotomy can be affected by several

complications Studies also revealed that almost 23% of subjects have health issues in the first month following labor, including infection, hemorrhage, dyspareunia, perineal pain, sexual desire reduction, and incontinence. the risk of infections reaches 20%. (**CAPMAS., 2022**)

Perineal pain linked to episiotomy has been displayed to interfere with the daily activities of females such as "sitting, walking, and lifting the neonate". In addition to, perineal pain can hinder proper breastfeeding, and maternal-infant bonding. Morbidity associated with episiotomies can have an impact on women's well-being both immediately and long after birth. Females who have perineal episiotomy might be affected by many consequences, such as infection, injury to the anal sphincter and mucosa, bleeding, wound opening, loss of sexual desire, perineal pain, and urine and anal incontinence. Therefore, if postpartum women are helped to change behaviors related to self-care, it effectively restores their health and helps promote the overall health and wellbeing of women**. Jacob, (2019).**

Virtual care is one of the newly digital-communications technologies used in the field of nursing to provide education to the mother regarding intervention to help her gain sufficient knowledge and maintain favorable health for herself and her neonates. This technology uses telephones, video, mobile apps, and other platforms to give health care to patients outside of a health institution. Such technologies enable virtual care, but virtual healthcare encompasses more than that. Virtual healthcare refers to the actual delivery of care to faraway patients via technology. It can be effective for providing consultations, management of chronic diseases, and remote monitoring of definite conditions (**Zaami S et al., 2019**).

Operational definitions:

❖ **Virtual care:** in this study the researcher used Telegram Mobile Application as a type of virtual care that allow puerperal women to access to virtual instructions regarding perineal self-care to decrease postpartum pain, improve episiotomy healing and access to educational materials.

❖ **Postpartum pain:** in this study it indicates the perineal pain associated with episiotomy as one of most common postpartum pains.

Aim:

To identify the impact of Virtual Care on Postpartum Pain and Episiotomy healing among primiparous subjects.

This objects will be achieved through: -

1- Assessing intensity of perineal pain and episiotomy healing immediately after delivery among study sample (study/control group).

2- Developing and implementing virtual care regarding perineal self-care associated with perineal pain and episiotomy healing for primiparous cases in the study group.

3- Evaluating the effect of virtual care on intensity of perineal pain intensity and episiotomy healing through comparison between controls and study category.

4- Assess primiparous woman satisfaction regarding virtual care virtual care as a method of education and instructions.

Methods:

Design:

A quasi-experiment (study/control category) was adopted. The quasi-experimental design examines if there is a causal relationship between independent and dependent variables. **(Iowa, 2020)**.

Hypotheses

1: Puerperal cases who receive virtual care experience lower perineal pain scores.

2: Puerperal females who receive virtual care instructions display faster healing level.

3: Puerperal women will be satisfied with virtual care as a method of education and instruction after its implementation.

Setting:

At the postpartum unit in Banha University Maternity Hospital. It is an educational hospital that serves a vast number of individuals at a low cost. It offers comprehensive services to women.

Participants:

Type of sample:

The study comprised a purposive sample that were recruited from the previously stated setting based on the criteria:

- Postpartum women free from chronic disease
- Age ranged between 18-35 years.
- Educated with access to telephone and WhatsApp application.
- Primipara during immediate postpartum period.
- Had normal vaginal delivery with episiotomy.

Exclusion criteria:

- Midline episiotomy
- Had any postpartum complications and high risk women

Sample size: 126 postpartum women were enrolled in the study fulfilling the previous criteria This study measured based on research established by **Ghani & Abd-Elmonem (2018)**, estimating an effect size 0.51, based on the mean pain severity score for the study group pre intervention was 4.38 ±0.48 and post intervention was 3.85±0.38 and power of 90%, level of confidence: 95%, Alpha 0.05, Beta 0.1. The sample size determines at every category 57 woman. Considering 10% sample attrition (5-6 women), the sample is divided into two categories (study or cases and controls) each category not less than 60 women. The final sample size was (126) postpartum females 63 for each group.

Sample technique:

Postpartum women who were fulfilling the inclusion criteria were divided randomly and equally for control group and study group in which the first 10 women were recruited in study category and the following10 were included in controls and so on,

- The first category (control group) of 63 women received routine hospital care regarding perineal self-care associated with pain and episiotomy care.
- The second group (study group) of 63 women received virtual care regarding perineal self-care associated with pain and episiotomy care.

Tools:

Tool I: structured interviewing sheet.

The development and utilization of this toll was by the researcher based on previous literature (**Wilson et al., 2019**) to collect the data focused on general postpartum women's characteristics which include: - (age, telephone number, residence, education, occupation, type of family, supportive person) Questions from (1-7)

Tool II: ''Visual Analogue Scale

It was retrieved from (**Huskisson, 2016**) and used to self-assess the severity of pain experienced by postpartum women on a 10-cm ruler scale. This tool utilized before, after intervention and at follow up ''7th days after discharge''.

Scoring system

- Is a line of **10** cm marked from **zero** (no pain) to **10**cms (worst Pain) score from **0** considered No pain, **I-3** is mild pain, **4-6** is moderate pain and **7-10** is severe pain.

Tool III: The standardized REEDA scale.

A descriptive scale developed and utilized by (**Alvarenga et al., 2015**) to evaluate five aspects related to the healing procedure. The term REEDA is derived from redness, edema, ecchymosis, discharge, and approximation of skin edges. Each class is measured using a Likert scale with range of 0-3 point as the following: **0 = none , 1= mild, 2=moderate, 3=sever**

Total score ranges from 0–15. The low score refers to better healing.

The total score categorization:
(a) Complete healing =0 to 2
(b) Moderate =3 to 5
(c) Mild= 6 to 8
(d) No healing=9 to 15

Tool VI: Women satisfaction Likert scale:

It was retrieved from (**Ackerman et al., 2020)** and modified by the researcher to assess study group satisfaction regarding using virtual care. It consisted of 8 statements regarding woman satisfaction with educational method used these statements were for example: this method is easy to use, this method of communication has sparked an interest, they

willing to inform and encourage other women about it.

Satisfaction scoring system: 2 points scale ranging from 1- 3:
- Agree (3)
- Uncertain (2)
- Disagree (1)

The women total satisfaction scores were categorized to:
- Satisfied: (≥60%)
- Unsatisfied: (<60%)

Supportive materials:

An Arabic educational booklet was developed by the researcher following reviewing the relevant and recent literature (**Lambermon, et al. (2020).** on all aspects of instruction related to self-care during postpartum period encountered with postpartum pain and episiotomy healing , it was made utilizing simple Arabic language and different explanatory visuals to help the females' understanding the content. It involved two sections; **part I** (introduction, general purpose , definition and causes of postpartum pain , measures to deal with and relive pain , **part II** included proper technique of perineal self-care:, Ice pack application, and strategies to speed healing and relieve discomfort).

Validity & reliability:

The used tools were given to a committee of five specialists from the maternal and newborn health nursing department at Banha University's Faculty of Nursing. Adjustments made based on the committee's view about sentence clarity and appropriateness of the topic.

The Cronbach's alpha test assessed tool reliability, which demonstrated that each tool was composed of reasonably homogeneous items, where **Visual Analogue Scale** scored 0.86, 0.85 for **standardized REEDA scale** and 0.87 for females' satisfaction Likert scale.

Pilot Study:

It enrolled 10% of the subjects (12 puerperal females, 6 controls and 6 cases) for three weeks. It was carried out to evaluate the tools' comprehensiveness, clarity, and feasibility of the study process. The necessary alterations were made based on the findings of the pilot study, such as (addition of some

questions from or to the tools) to reinforce the contents, simplify and clarify them, or make them more brief and focused. Such groups were omitted from the sample.

Administrative design:

The Dean of Banha University's Faculty of Nursing and the Director of Banha University Hospital provided an official written approval letter that clarified the study's title, purpose, and setting.

Ethical considerations:

Prior to beginning the study, the Scientific Research Ethical Committee of the Faculty of Nursing at Banha University provided ethical permission. Participants provided informed consent after being explained the objective of the research. No hazardous approach was applied with the individuals. Every participant can leave the research at any time. Human rights were guaranteed. The information is private and encrypted.

Field work

The research was divided into four phases: preparation, interviewing and assessment, implementation, and evaluation. Such phases lasted four months, from the first of January until the end of May 2024. The researchers visited the previously stated location three days a week, from 9:00 a.m. to 12:00 p.m.

Preparatory:

It comprised a survey of relevant local and global literature on several elements of the study problem. It enables the researcher to become familiar with the scale and gravity of the issues and guides the researchers to develop the necessary data collection equipment and instructional material.

Interviewing and assessment:

- At first, the researchers attended the postpartum ward of the previously mentioned setting introduced themselves to the females and explained the nature and the objective of the work to the eligible women and obtained their written consent to participate.

- Then the Researchers evaluated puerperal females' characteristics, using tool 1 for both groups through which was conducted individually and in privacy. Each participant was interviewed 5-10 minutes promptly during postpartum duration; females were assigned randomly to either controls or cases. Then the educational

booklet was distributed to each puerperal subject among intervention category.

- The obtained data during this phase involved the baseline for further comparison to measure the intervention's effectiveness.

Implementation:

Control subjects have received the routine hospital care provided by hospital personnel, assessment of postpartum pain and episiotomy condition at 2 hours after episiotomy repair (before intervention), then after 72 hours and 7th day during postpartum follow up using Tool II and Tool III.

Study category.

- The group received virtual care services via Telegram and telephone follow-up from the researchers. The researchers separated the study groups into six subgroups, each with 10 to twelve women. Each subgroup was added to a Telegram group for mobile. The study participants were given two recorded video sessions, as well as appropriate health education mobile voice messages and explanatory movies. One session per day, which includes one recorded video relating to the session theme Each session was almost 20 to 25 minutes then they were asked to follow instructions involved in educational session that were divided as the following:

- ❖ **First session**: included instructions about self-care measures to decrease intensity of perineal pain as: To relieve pain, use ice packs, wash hands before and after each perineal care, remove soiled pad from front to back and discard in recycle pin, squeeze peri bottle, or pour warm water or cleansing agent over perineum without opining labia. To avoid contamination and cross infection, don't sit in warm water.

- ❖ **Second session**: including instructions associated with measures for wound healing, and ways to speed healing as: Avoid sitting or standing that put pressure on the perineal site. Avoid standing or sitting for extended time periods. Pour warm water over your perineum while you urinate to relieve the sting. Lie on your side while resting or napping and place a pillow between your legs. Expose to dry

heat, try not to strain during bowel motions. Press a pad of toilet paper against the sutures when bearing down.

❖ **Each session** was followed by revision and discussions using chat and recording voice messages as well, asking the woman if she adapted the instructions that she received before. At the end of session, the woman was once again invited to ask her questions through group chatting.

Evaluation:

After 72 hours follow up was done by telephone to estimate the intensity of postpartum pain through VAS by asking women to circle the number of pain intensity. While at 7th day, the women were assessed for degree of episiotomy healing process using REEDA scale as well as pain intensity using tool (II) during postpartum follow up visit by researchers at hospital, to compare it with the previous observation done at 2hours after repair. The effect of virtual care was performed by comparing control and study groups by measuring pain scores, episiotomy healing for both groups by using the pre intervention tools at postpartum unit or by telephone., as well as assessing females' satisfaction regarding virtual care among cases using tool VI during postpartum follow up visit.

Limitations of the Study:

- The researchers tried to call each woman for more than once as well as chatting and all this was time consuming, and great effort from the researchers.

Results:

Table 1 displays the mean age of the cases was 29.29 ± 4.33 years, while that of the controls was 29.67 ± 3.80 years. Regarding to residence, (65.1% and 69.8%) of the cases and controls reside in rural regions, respectively. Also, (39.7% and 34.9%) of the cases and controls have secondary education, respectively. Moreover, (61.9% and 68.3%) of the cases and controls were housewife, respectively. Furthermore, (52.4% and 44.4%) of the cases and controls live in descended family, respectively. Also, (71.4% and 76.2%) of the cases and controls were supported by

their mothers, respectively, there were no considerable differences between the two categories regarding characteristic at (p >0.05).

Table 2 reveals, 60.3% of case group has no pain after 7 days of intervention compared to 0% of control group, also 38.7% of control group has severe pain after 7days of delivery compared to 0% in cases. There was significant relation between levels of pain before intervention and after 3 days of delivery among the study group (P <0.05). While no significant correlation at control group (P > 0.05).

Table 3 displays comparison between both categories regarding episiotomy site examination using REEDA scale, displayed that there were highly statistical significance variance between two groups regarding REEDA scale only at 7th day after delivery at (P= ≤ 0.001). As in study group redness decreased from 20.5 %to 6.3 % and 3.1% at pre intervention, after 72hr and after 7 days respectively, compared to 17.4% and 15.9% in controls also there is considerable decrease in edema, ecchymosis, discharge and approximation, on the other hand there is slow reduction in all parameters of REEDA scale in control group with

Table 4 illustrates Comparison between both categories regarding the Total perineal healing scores showed that about 60.3 % of cases had complete healing compared to 31.7% of control group while only 1.6% of study group had no healing compared to 7.9% of controls.

Table 5 indicates a high significant positive relationship between levels of pain and episiotomy healing among the study group throughout different phases of the study (p ≤ 0.001

Table (6): displays a high remarkable positive relationship between levels of pain and episiotomy healing among the control group throughout different phases of the study (p ≤ 0.001).

Figure 1 shows overall Satisfaction score of intervention category regarding the virtual care implementation revealed that about 89% of study group was satisfied with virtual care

Table (1): Comparison between the two groups regarding characteristics**.**

Items	Study category. (n=63)		Controls (n=63)		Chi-square	
	No.	**%**	**No.**	**%**	**X²**	**P**
Age						
28- < 25 years	9	14.3	6	9.5	0.730	0.694
25-<30 years	21	33.3	21	33.3		
30-35 years	33	52.4	36	57.1		
Mean ± S.D	**29.29 ± 4.33**		**29.67 ± 3.80**		T= 0.614	0.686
Place of residence						
Urban	22	34.9	19	30.2	0.325	0.568
Rural	41	65.1	44	69.8		
Education level						
Read and write	8	12.7	13	20.6	2.563	0.464
Primary education	6	9.5	9	14.3		
Secondary education	25	39.7	22	34.9		
University education	24	38.1	19	30.2		
Occupation						
Housewife	39	61.9	43	68.3	0.559	0.455
Working	24	38.1	20	31.7		
Type of family						
Nuclear family	30	47.6	35	55.6	0.794	0.373
Descended family	33	52.4	28	44.4		
Supportive person						
Mother	45	71.4	48	76.2	0.257	0.847
Husband	12	19.1	11	17.5		
Sister	6	9.5	4	6.3		

Table 2: Comparison between the two categories regarding pain levels throughout different phases of the study.

Parameters		Study (n=63)		Controls (n=63)		X²	P-Value
		No.	**%**	**No.**	**%**		
Pain level before intervention (first 2 hours after repair)	Mild	0	0.0	0	0.0	0.130	0.719
	Moderate	28	44.4	26	41.3		
	Severe	35	55.6	37	58.7		
	Mean ± SD	**7.27±2.13**		**7.52±2.11**		T=0.659	0.512
Level of pain at 72 hrs. after delivery	No pain	6	9.5	0	0.0	50.54	0.000**
	Mild	24	38.1	4	6.4		
	Moderate	33	52.4	29	46.0		
	Severe	0	0.0	30	47.6		
	Mean ± SD	**3.65±1.65**		**6.35±1.69**		T=9.129	0.000**
Level of pain at 7th day after delivery	No pain	38	60.3	0	0.0	88.50	0.000**
	Mild	25	39.7	15	23.8		
	Moderate	0	0.0	28	44.5		
	Severe	0	0.0	20	31.7		
	Mean ± SD	**1.03±1.33**		**5.33±1.84**		T=14.77	0.000**

Table (3): Comparison between the two categories regarding episiotomy site examination.

	items	Study. N=63		Controls. N=63		Chi-square	
		No.	%	No.	%	X2	P-Value
before intervention (First 2 hours after repair	Redness	13	20.5	11	17.4	0.723	0.474
	Edema	12	19	14	23.5		
	Ecchymosis	11	17.4	10	15.8		
	Discharge	12	19	10	15.8		
	Approximation	15	23.8	18	28.5		
at 7th day after delivery	Redness	2	3.1	10	15.9	2.962	.005
	Edema	1	1.5	33	52.4		
	Ecchymosis	0	0.0	10	15.8		
	Discharge	0	0.0	3	4.7		
	Approximation	0	0.0	3	4.7		

Table (4): Comparison between both groups regarding the Total perineal healing scores at 7th day

Items	Study group		Control group		Chi-square	
	No.	%	No.	%	X2	P-Value
Complete	38	60.3	20	31.7	11.43	0.000**
Mild	15	23.8	22	35		
Moderate	9	14.3	16	25.4		
No healing	1	1.6	5	7.9		
Mean ± SD	2.34 ± 1.661		6.24 ± 3.274			

Table (5): Correlation between Levels of episiotomy pain and total healing process among control group

Variables		Levels of episiotomy pain					
		Immediately after delivery		72 hrs. after delivery		7th day after delivery	
		r	P	r	P	r	P
Total Episiotomy healing	**Before intervention (2 hours after repair)**	0.914	0.000**	0.739	0.000**	0.471	0.000**
	7th day after delivery	0.429	0.000**	0.375	0.002**	0.358	0.004**

Table (6): Correlation between Levels of episiotomy pain and total healing process among study group

Variables		Levels episiotomy pain			
		2hours after delivery (pre intervention)		7th day after delivery	
		r	P- value	r	P- value
Total Episiotomy healing	**2 hours after repair**	0.597	0.000**	0.508	0.000**
	7th day after delivery	0.472	0.000**	0.449	0.004**
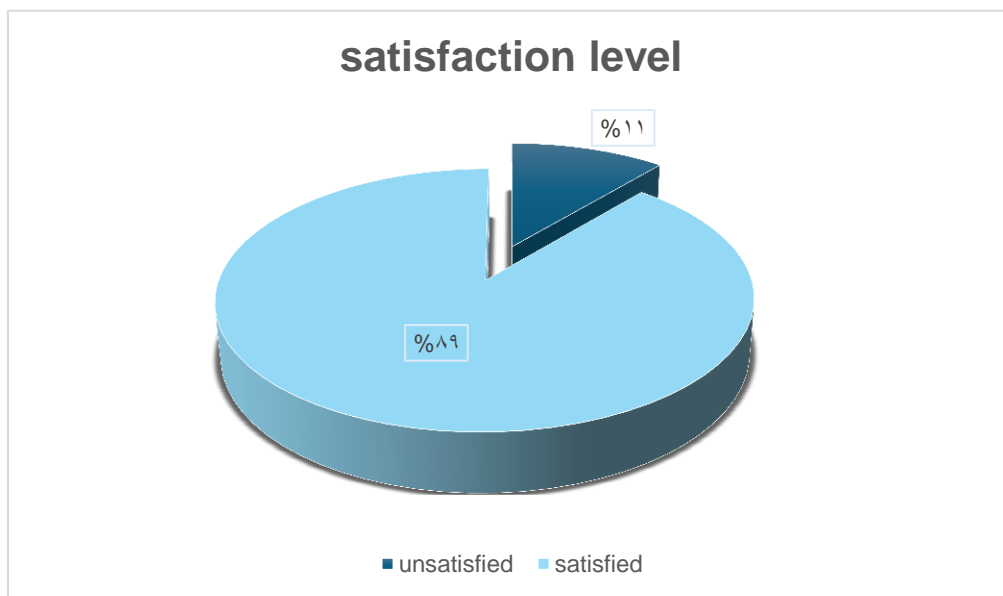
Figure 1: Total Satisfaction score regarding the virtual care application among study group (n=63)

Discussion:

The postpartum phase is seen as a critical period connected with a variety of physical and emotional symptoms such as pain, poor sleep quality, stress, worry, and exhaustion. After-birth pain stops moms from bonding with their newborns and interferes with proper nursing positions, self-care, newborn care, and daily activities. Episiotomy is a global frequent obstetric procedure. Its incidence ranges from 20% to 62.5% globally. Episiotomy care is critical; if neglected, it can result in serious problems such as infection and wound gapping. Post-episiotomy pain has always been distressing for primiparous, negatively affecting their first motherhood experience and

mother-child contact. Perineal hygiene and episiotomy care require extra attention **(Wilson et al., 2019).**

The present research was conducted to investigate the impact of Virtual Care on Postpartum Pain and Episiotomy healing among Primiparous females. Regarding general characteristics, the findings demonstrated that, more than half of both groups "study and control" their age raged from 30-34 years old. While the mean age of the study groups was 29.36 ± 4.17 years. Also, mean age of the control groups was 29.81 ± 3.86 years. In addition, more than one third of the study and controls had secondary education. This work also displayed that, more than half of the cases

and controls were rural residents. There were no considerable variations between both categories regarding socio-demographics. Both groups displayed homogeneity regarding general features despite the purposeful random sampling.

In the same line a study done by **Abou shady. Soliman, Amr & Abd Elnabi.,2023** on titled "Effect of New Modality Application during Episiotomy Repair on Pain, Anxiety, and Satisfaction among Primiparous Women" found that mean age of the participants in the study category was twenty-eight years old, and more than half of them were 20-30 years. Among them, two thirds were employed. Almost one-third of the study group had completed high school, Consistently, a study carried out by **Mohamed, Sweelam, Mohamed, Abuzaid., 2022** reported the mean age of study category was 21.05±4.14 and that of controls was 21.57±4.60. Also, demonstrated that slightly more than two-fifths of the samples in both categories had secondary educationa. Both categories were similar in their demographics.

Moreover, this work demonstrated that around half of the cases and controls where housewife as the study was conducted at rural area. Furthermore, more than half of them live in nuclear family. This result agreed with a study by **Hables, (2021)** entitled "Effect of Olive Oil, Lavender Oil and Placebo on Pain Intensity and Healing of Episiotomy in Women" and reported that more than half of the studied women were unemployed. Also, a study conducted by **Shayan et al., (2020)** about "The effect of olive oil and honey combination on episiotomy wound healing and pain relief" reported that most of the studied mothers live in nuclear family.

Perineal discomfort caused by episiotomy is a stressful situation; most puerperal cases have discomfort during early postpartum days, which hinder their ability to nurse and complete their obligations as moms, and may impede with urine and excrement. It may cause emotional distress during postpartum that can impact attitude and activities of mothers towards their neonates as well as interfere with postpartum woman basic daily activities. (**Jiang et al., 2017)**

The current study revealed no remarkable variation between the study subjects and controls regarding level of pain before intervention. While a highly remarkable variations between the study individuals and controls regarding pain intensity at 72 hours of follow up after delivery. This may be attributed to the fact using virtual care to deliver health related information and instructions was helpful for relieve of pain.

This result agreed **Zaki, EL-Habashy, Abdel Aziz., 2019** who discovered that there was no considerable variance in pain severity immediately postpartum between the two categories before providing perineal self-care training. After 72 hours and 7 days postpartum, there was a substantial decrease in pain intensity in the study category compared to the controls. Such findings suggest a possible positive influence of adequate perineal self-care during postpartum acquired by giving clear instruction using virtual care and which was effective in reducing perineal pain. Similarly **Ghani & Abd Elmonem (2018)** demonstrated that there was no markedly variation in pain levels between both categories before intervention, but significant variation occurred following intervention.

REEDA tool focuses solely on visualizing the physical perineal area. Nurses should look systematic in their evaluation of perineal healing, using both verbal and visual measures throughout the first six weeks postpartum. Furthermore, skilled nurses encouraged women to self-assess their perineal healing.

Concerning examination of episiotomy site healing using REEDA scale among both cases and controls s allover all stages of study, this research revealed significance difference between two categories regarding assessment of episiotomy healing only at 7th day after delivery after implementation of virtual care, that displayed a significant improvement in healing process among study participants compared to controls. Such results assured the positive effect of such method of newly digital communication in enhancing women self-care associated with episiotomy care among study group.

Similarity, **Zaki, EL-Habashy, Abdel Aziz., 2019** found that after 48 hours postpartum, the perineal region redness score was much decreased. More over one-quarter of the study subjects had moderate redness of the perineal site and no severe redness, whereas two-fifths had moderate redness and 15% had severe redness in the controls. After the seventh postpartum day, only 7.5% of the study group had moderate redness and 2.5% had severe redness, whereas more than two-fifths of the controls had moderate and more than one-third had severe redness.

On investigating total healing scores of episiotomy among cases and controls, this work illustrated a significant faster healing scores among study females than controls and there was no considerable variance between both categories regarding total healing scores scale before intervention, while a highly significant variation was found regarding level of total healing scores after intervention at 72 hr. and 7th day after delivery.

On accordance with a study done by **Zaki, E L-Habashy, Abdel Aziz., 2019,** deduced that wound healing was better in the self-perineal care category than in the control group. In all groups, the rate of healing reduced on the first postnatal day but increased on the third postnatal day, with no sign of infection. Also, and in the same concern **Amandeep et al (2015)** revealed that interventional subjects had higher alteration in mean score of pain of episiotomy and wound healing on the first day following the intervention, days 2 and 3 which was remarkable as compared to controls.

On the same line **(El-Saidy et al .,2018)** found that majority of the intervention participants (92.0%) had good healing, while more than half of the controls (57.0%) continued to have poor and mild healing. A significant variation was noted between the both groups in terms of the overall scores of REEDA (p<0.001*).

As regard to correlation between levels of pain intensity and total episiotomy healing scores this work stated a high significant positive association between levels of pain and episiotomy healing among both control and study groups throughout different phases of the study. These results highlighted that pain reduction is associated signifiable with improving healing process as the lower experiencing of pain is the faster healing process.

In harmony with **Mohamed., et al 2022** illustrated a highly potential differences between controls and study subjects regarding mean pain score post intervention (P= 0.01 &0.00 respectively). According to the study's findings, postnatal women in the case category had a lower mean score of perineal pain than the controls. According to the researchers, this could be related to the efficiency of the newly deployed technology intervention approaches, which is evident in pain reduction.

This study found that almost all the intervention group were satisfied with such method and accepted it as a model for giving health education, guidance, and instruction. They highlighted that this method was effective and fulfilled their needs and strengthen on their problems they accepted to use it later and share it with their families, friends, and neighbors.

According to **Abou shady., et al., 2023,** about one-half of those who participated were satisfied with new modalities as virtual application was being used. Also, **Sridhar et al. (2020)** who evidenced that most of subjects had a pleasant experience with the Virtual application. In addition, this finding matched by those of Ebrahimian **&Bilandi (2020),** who reported a potential variation in maternal satisfaction with childbirth in the intervention subjects compared to the controls. Moreover, **Mohamed et al., (2022)** showed that most of the cases were satisfied with the Virtual application.

In the same line **Mohamed, Essayed, Ezzat., 2021** demonstrated that most of the cases were satisfied with tele-nursing application. This accordance highlights the fact that such satisfaction levels could be related to a desire to choose new digital communication methods as virtual care or telenursing that are wide of spread nowadays and have positive effect because of its costlessness, easy to access by mothers and availability at any time.

Finally, this study emphasized substantial evidence regarding the potential influence of virtual care application in improving the

health-related aspects and health indicators among clients by easily improve self-management about episiotomy care, management of postpartum pain, this finding supported the research hypotheses that stated that purpureal women who received virtual care will have less postpartum pain intensity, faster episiotomy healing with high level of satisfaction of virtual care as an educational instructional method .

Conclusion

There was a positive impact of virtual care in reducing intensity of postpartum pain among primiparous women in the study group (supported first research hypothesis) as well as significant faster of episiotomy healing process these results (supported second research hypothesis). Also using virtual care was accepted by postpartum women as an instructional method among study subjects who were almost satisfied with it.

Recommendations:

Based on our findings, the following are recommended:

❖ Virtual care attributed to be an alternative method of nursing intervention for women during postpartum period.
❖ More studies are required to include a larger sample for generalization of the outcomes to emphasize the benefit of virtual care and analyze how to be applyed.
❖ Further research should be carried out to compare effect of virtual care in relation to other newly digital methods.

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