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EFFECT OF UTILIZING HANDS-ON VERSUS OFF METHOD DURING DELIVERY OF FETAL HEAD ON OCCURRENCE OF PERINEAL TEAR

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Abstract:

Most vaginal births are associated with some forms of trauma to the genital tract. The morbidity associated with perineal tear is significant, especially when it comes to third- and fourth-degree tears. Different perineal techniques and interventions are being used to prevent perineal tear such as hands on and hands off techniques. ***Aim:*** *This study was carried out to evaluate the effect of utilizing hands on versus off method during delivery of fetal head on occurrence of perineal tear.* ***Design:*** *Randomized clinical trial study design was used.* ***Setting:*** *This study was carried out at Sherbeen General Hospital, Dakahlia Governorate Egypt on 130 parturient women in the 2nd stage of labor, who were selected by purposive sample technique and divided into two equal sample size (65). In hands-on method group, the researcher put one hand above fetal head to maintain downward direction toward perineum and guarding the perineum by placing the other hand against it. In hands-off method group in which the delivery occurs without touching the fetal head or perineum.* ***Two tools*** *were used to collect the necessary data namely socio-demographic and current obstetrical data, evaluation check list to clarify perineal condition after delivery.* ***Results:*** *72.3% of hands on parturient women group had perineal tear during labor compared with 80% of hands off group, there was statistically significant difference between hands on and hands off groups regarding degree of perineal tear (p=0.033). This study* ***concluded*** *that hands-on technique had significant effect on decreasing rate, lowering degree of perineal tears and need to repair than hands-off technique. This study* ***recommended*** *that relevant nursing curriculum must entail a detailed portion about the correct manner of performing hands-on technique to increase the chance of perineal integrity during the second stage of labor.*

Keywords: *Hands on, Hands off, perineal tear, Second stage of labor.*

I.Introduction

The second stage of labor begins with full cervical dilatation and ends with delivery of baby. The cardinal movement of fetus until birth includes engagement, descent, flexion, internal rotation, extension, external rotation, and expulsion. The duration of second stage of labor typically lasts less than four hours in nulliparous women and less than three hours in multiparous women **(Hutchison &Mahdy, 2019)**.During the second stage of labor, the mother and her fetus my exposure to some degrees of trauma that result to variouscomplications. The mother complications ranging from uterine rupture, vaginal & cervical tears, uterine bleeding, amniotic fluid embolism and death,while the fetus can exposed to complications like brain injury, shoulder dystocia, bone fractures, acidemia, nerve

palsies and scalp hematoma **(Cheng &Caughey,2017).**

The female genitalia trauma during delivery could occur spontaneously or due to episiotomy or instrumental delivery. Anterior trauma of perineum may include; anterior wall of vagina, labia, urethra and clitoris. Posterior trauma of perineum could affect the posterior wall of vagina, perineal muscle & body, internal & external anal sphincters and anal canal (**Goh et al., 2018: Mohamed, Ahmed, Hassan 1& Hassan, 2017).**Many obstetricians considered the most recognized and adopted classification of perineal trauma was done by The Royal College of Obstetricians and Gynecologists, they classified perineal tears into four degrees;1st degree, vaginal mucosa only involved; 2nd Degree: vaginal mucosa and perineal muscles involved; 3rd Degree tearwhenanal sphincter involved; Third degree perineal is further subdivided into: 3A if less than 50% of the external anal sphincter is involved, 3 B if more than 50% and 3C if the internal anal sphincter is involved. 4th degree, involves the mucosa of the rectum. **(Royal Collage of Obestatric and Gynecology RCOG, 2015).**

One of the several techniques used to reduce perineal trauma during the second stage of labor through the use of ‘‘Hands-on’’ or ‘‘Hands-off’’ technique for more protection and controlling the perineum. In hands-on method or (Ritgen's maneuver)when crowning occurs by opening of vagina 5cm or more the role of doctor or the midwife is to apply one hand in the perineum in front of coccyx on fetal chin with a towel and the other hand make pressure on the occiput (**WHO,2018:Aasheim, Nilsen, Reinar&Lukasse, 2017).** Extension of fetal headachieved by using hands on methodso fetal head enter vaginal inlet on perineum with a small diameter. The prevalence of anal sphincter injury reduced only when hands-on or the modified Ritgen maneuver performed only between uterine contractions with the delivery of fetal head. Another technique known as hands off maneuver the midwife role is to monitor only and follow the progress of baby delivery and apply slight pressure in case of rapid expulsion and without touching the perineum the baby born**(National Institute for Health and Care Excellence(NICE). 2019; Goh et al, 2018 :Rezaei, Sussan, Huak& Sharif, 2014)**

Regarding the rate of perineal trauma, it’s noticed that there is no significant difference between hands on and hands off methods but the 3rd degree tear was noticed to be less in hands off method. Other researches revealed that hands-off or hands on techniques are prevalent in decreasing therate of obstetric anal sphincter injury (**Queensland Clinical Guidelines QCG,2017: Foroughipour, Firuzeh, Ghahiri, Norbakhsh&Heidari. 2011).**

Significance of the Study:

Maternal morbidity is one of the most common consequences of perineal tear related to vaginal birth.in 2010 was about 71.5% mild degree perineal trauma to the perineal skin or underlying muscles but 2.4% involved the anal sphincter **(QCG, 2017).** Females who will birth vaginally will suffer from more than 85% some degree of perineal tear with 0.6–11% resulting in a third-degree

or fourth-degree tear. **(Goh et al., 2018: Aabakke,willer& krebs,2016: Kettle & Ismail, 2015; Smith, Price, Simonite& Burns,2013).**

The accurate prevalence rate of perineal lacerations in Egypt is unavailable (not in hand), but there are a few studies which scrutinized the prevalence rate of perineal lacerations in some Egyptian districts, the study conducted in Zagazig, Egypt by **Mohamed 2016** mentioned that 27% of the research subjects had 2^{nd},3^{rd} or 4^{th}degree perineal tears and 16% of them had episiotomy. She concluded that the prevalence rate of perineal tears was 43% ofstudy subjects.

Another study carried out by **Mohamed et al,2017** in Mansours, Egypt illustrated thatthe prevelance of perineal tears estimated about one third among parturient women(34.5% of subjects had perineal tear). **Ismail &Tayel ,2019** conducted study in Damanhour/ Egypt and found that one-third (33.3%) of hands-off group had perineal tears compared to more than one-half (55%) of hands-on group, so it is important to study the effect of utilizing hands on versus off method during delivery of fetal head on occurrence of perineal tear.

Operational Definition:

Hands on Methodrefers to the role of doctor or midwife is to apply one hand in the perineum in front of coccyx on fetal chin with a towel and the other hand make pressure on the occiput when crowning occurs by opening of vagina 5cm or more.

Hands –off Methodincludes monitor only and follow the progress of delivery of baby and apply slight pressure in case of rapid expulsion and without touching the perineum birth of baby occurred.

Perineal trauma (tear) refers to any damage to the genitalia during childbirth. It can be spontaneousperineal trauma (non- intentional trauma) or episiotomy (intentional trauma).

Aim of the Study:

This study aimed to evaluate the effect of utilizing hands on versus off method during delivery of fetal head on occurrence of perineal tear.

Research Hypotheses:

Parturient women who delivered fetal head by utilizing hands on method had less perineal tear than parturient women who delivered by hands off method.

II. Material andMethods:

Research Design: A randomized clinical trial was utilized in this study to fulfill the purpose of research.

Setting: This study was conducted at Labor and Delivery room at Obstetrics and Gynecology Department at Sherbeen General Hospital, Ministry of health, Dakahlia Governorate.

Sample: The study comprised apurposivesample of 130 parturient women undergoing vaginal delivery. They were selected from the previous mentioned setting according to following inclusion criteria: women aged from 18-35 years, women who were nulliparous with normal body mass index, has singleton fetus in occiput anterior position and women who were at full term (37-42 weeks) with cephalic presentation. The researchers also included women hadspontaneous vaginal delivery(SVD) without episiotomy and free from any medical or obstetrical

complications.

Sample Size: Based on the data obtained from a previous study of **Rozita, Sussan, Huak& Sharif, (2014),** who conducted a randomized controlled trial to compare the effect of hands on and hands off techniques for perineum protection during spontaneous delivery. The sample of parturient women was calculated according to the following formula: n = [2(Zα/2 + Zβ)2 × p (1-p)]/(p1 - p2). Study participants included 130 nulliparous expectant mothers, who were divided equally between the ‘‘hands off’’ and ‘‘hands on’groups (n=65 per group).

Tools of data collection: Two tools were developed and used by the researchers to collect the necessary data:-

Tool (I): Documentary Data:

The parturient woman medical sheet was used to collect and complete the data required on tool I, which included:

Part (1): General characteristics of parturient woman e.g. Age, level of education, occupation and residence ….etc.

Part (2): Current obstetrical information of parturient women such as: gravidity, parity, gestational age, BMI(body mass index), durationof 1st & 2ndstage of labor, fetal position….etc.

Part (3): Associated factors to perineal tear such as: fundal pressure, changing maternal position ….etc.

Tool (II): Perineal tear degrees; it was adopted from **(Royal College of Obstetricians and Gynecologists (RCOG, 2015);**to assess four degrees of perineal laceration as follow**:**

- **Intact perineum (0)**no tissue separation at any site.
- **First degree (1)**injury to the skin only (i.e. involving the fourchette, perineal skin and vaginal mucous membrane; but not the underlying fascia and muscle.
- **Second degree (2)**injury to the perineum involving perineal muscles but not involving the analsphincter**.**
- **Third degree (3)**injury to perineum involving the anal sphincter complex which include (**3a:** Less than 50% of external anal sphincter thickness torn, **3b:** More than 50% of external anal sphincter thickness torn, **3c:** Both internal and external anal sphincter torn).
- **Fourth degree (4)**injury to perineum involving the anal sphincter complex (external and internal anal sphincter) and anal epithelium (i.e. involving anal epithelium and/or rectal mucosa).

Tools Validity: Content validity was tested by three experts (professor’s specialty on obstetric and gynecological nursing) in woman's health and midwifery nursing. The questionnaire was modified according to the expert's comments and recommendations like avoid written the measurement of weight, height and written only body mass index (BMI) which refers to an individual’s weight in kilograms divided by the square of his or her height in meters (kg/m2).

Tools Reliability: The reliability of Tool II used in this study was adopted from **(RCOG, 2015)**. The reliability of tool cronbachs alpha = 0.71, so it is highly reliable.

Pilot study: After the development of the tools, a pilot study was carried out on10% (13 parturient

women) of the total sample (who were excluded from the sample) to ascertain the clarity and the applicability of the tools then the necessary changes were undertaken.

Ethical Consideration: From the Research Ethics Committee at the Faculty of Nursing, Mansoura University,an ethical approval was obtained. Informed consent was obtained from all participants after explaining purpose of the study and the training. Participants were informed that inclusion in the study is fair and voluntary. They were informed that they have the right to accept or refuse to participate in the study and they can withdraw from the study at any stage without consequences. Participants were assured that the collected data will be kept confidential. The results were used as a component of the necessary research for doctoral study, as well as for future publication and education.

Collection of data:

- Collection of data was taken a period of seven months start from the onset November 2018 to the end of May 2019.
- The researcher obtained the general characteristics and obstetric history from documentary data in labor unit to fill in tool I. Each parturient woman who fulfilled the inclusion criteria was interviewed during second stage of labor.
- The researcher after collecting data from documentary data to fill on tool I in labor unit assigned parturient women randomly into two groups.
- **On hands on method**, During second stage of delivery under supervision of a doctor and assistant of a nurse in the delivery room, with crowning of fetal head by using hands on technique, the index middle fingers of the researcher left hand was placed on the baby‘s occiput to maintain the flexion of baby head and the right hand placed on the perineum with thumb and index fingers forming a ―U shape so expulsion is controlled.

  Once the anterior shoulder is delivered, gentle traction is applied upward to facilitate delivery of the posterior shoulder. After both shoulders have been delivered, the researcher removes the right hand from the posterior perineum and supports the baby‘s neck with one hand, while supporting the remainder of the body with the other hand.
- **On hands off method** when crowning occurs, the role of the researcher was only support baby head and ready to support torso with the other hand to avoid falling of the baby in the floor without doing any action. If the delivery of head or shoulders delivery does not occur within 15 seconds from head delivery, or fetal hypoxia occurred, delivery of fetus by the researcher should be done using appropriate interventions instead of hands off technique to save the baby and the parturient woman life.

Statistical analysis:

Data were extracted from the interview questionnaire and computerized in Microsoft Excel 2010. All statistical analyses were performed using SPSS for windows version 20.0 (SPSS, Chicago, IL).Data were tested for

normality of distribution prior to any calculations. All continuous data were expressed in mean ±standard deviation and categorical data were expressed in number and percentage.The obtained outcomes considered significant at p-value ≤ 0.05 and a highly significant at p-value ≤ 0.001 while, p-value > 0.05 considered non-significant.

III. Results

Table (1)presentsthe distribution of Hands on& Hands off groups according to socio-demographic characteristics, clarifies that 26.2% of hands on group were 30-32 years versus 33.8% of hands off group. Regarding their educational level, data revealed that 41.5% in both groups were secondary education. About 75.4% of hands off group were not working versus 64.6% of hands on group and 81.5% of hands off group from rural areas versus 72.3% to hands on group.

Table (2) showsdistribution of hands on and hands off groups according to obstetrical data. About 43.1% of hands on group were primigravida versus 47.7% of hands off group. About 40% &35.8% of hands on and off groups had previously abortion. 63.1% of hands off group attended to antenatal visits 4-6 times versus 56.9% of hands on group and (66.2% versus 56.9%) of hands on and off groups have gestational age between 40-42weeks.

Table (3) shows distribution of hands on and hands off groups according to duration of first & second stage of labor and fetal position. Regarding duration of 1st stage of labor ,found there was no statistically significant difference between hands on and hands off groups, but regarding groups regarding 2nd stage duration, there was statistically significant difference between two groups (p=0.025). Regarding fetal position ,it was found that 55.4% of hands on group have ROA versus 58.5 of hands off group have LOA position.

Table (4) clarifies that that there were statistical significant difference between hands on versus off groups regarding degree of perineal tears (p=0.033%). Data show that 72.3 % hands on versus 80% hands off groups need perineal repair but there is no statistically difference between both groups

Table (5) clarifies relationship between need of repair and obstetrical data among hands on and hands off Groups. No statistically significant difference between obstetrical data and need of repair were revealed between hands on & hands off groups (p > 0.05).

Figure (1) shows the distribution of hands on and hands off groups according toaverage body mass index, clarifies no significant difference between the two groups regarding average body mass index in hands on (22.35 ±1.81) and hands off (22.22 ± 1.64) (t = 0.371, P 0.128).

Table (1): Frequency Distribution of Hands on and Hands off Groups According to Socio-demographic Characteristics.

Age Groups	Methods				Significance test
	Hand On (65)		Hand Off (65)		
	No	%	No	%	
18-20 years	10	15.4	5	7.7	$\chi 2 = 5.492$, P: 0.359
21-23 years	10	15.4	5	7.7	
24-26 years	8	12.3	9	13.8	
27-29 years	14	21.5	20	30.8	
30-32 years	17	26.2	22	33.8	
33-35	6	9.2	4	10.2	
Mean ± SD	26.63 ± 4.81		27.91 ± 3.91		t = 1.661, P: 0.099
Education					
Illiterate	5	7.7	6	9.2	$\chi 2 = 0.580$, P: 0.902
Read/ write	13	20.0	10	15.4	
Secondary	27	41.5	27	41.5	
University	20	30.8	22	33.8	
Occupation					
Working	23	35.4	16	24.6	$\chi^2 = 1.795$, P: 0.180
Not working	42	64.6	49	75.4	
Residence					
Rural	47	72.3	53	81.5	$\chi^2 = 1.560$, P: 0.212
Urban	18	27.7	12	18.5	

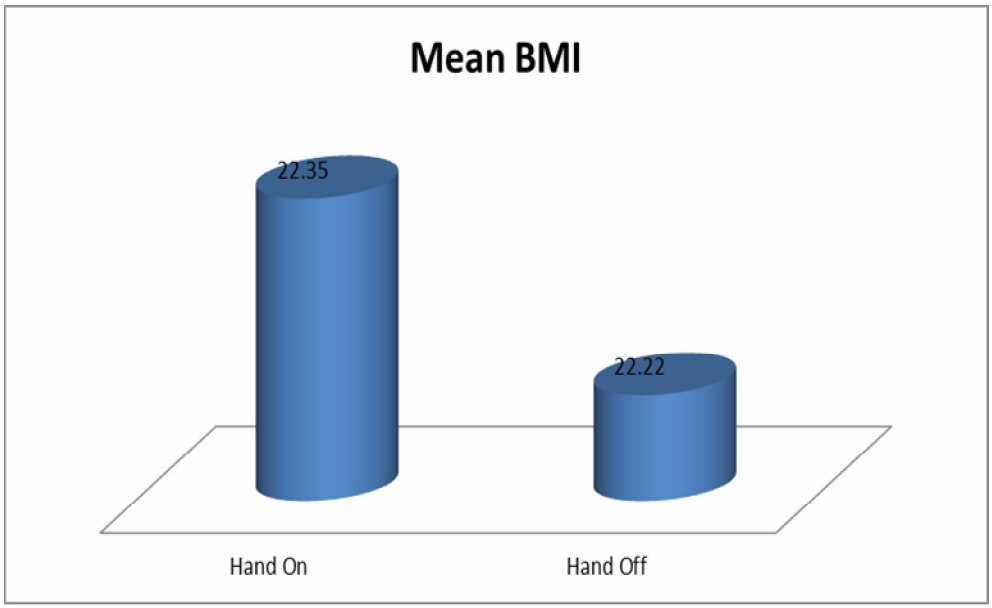

Figure (1): Average body mass index in hands on and hands off groups.

Table (2): Frequency Distribution of Hands on and Hands off Groups According to Obstetrical Data.

Variable	Methods				Significance test
	Hand On (65)		Hand Off (65)		
	No	%	No	%	
Gravidity Gravida 1 Gravida 2 Gravida ≥3	28 27 10	43.1 41.5 15.4	31 25 9	47.7 38.5 13.8	χ^2 = 0.282, P: 0.868
previous obstetric complications Abortions Vesicular mole Ectopic pregnancy	26 8 3	40.0 12.3 4.6	23 7 4	35.8 10.8 6.2	χ^2=0.271,P0.601 χ^2=0.081,P0.784 P :0.0500
Antenatal visits 1-3 4-6 >6	11 37 17	16.9 56.9 26.2	16 41 8	24.6 63.1 12.3	χ^2 = 4.371, P: 0.112
Gestational age (weeks) 37-39 40-42	22 43	33.8 66.2	28 37	43.1 56.9	χ^2=1.170, P: 0.279

Table (3): Frequency Distribution of Hands- on and Hands -off Groups According to the duration of first & second stage of labor and fetal position.

Variable	Methods				Significance test
	Hand On (65)		Hand Off (65)		
Duration of first stage Range Mean ± SD	12.0 – 16.0 14.42 ±1.38		12.0 – 16.0 14.39 ± 1.42		t = 0.094, P: 0.925
Duration of second stage Range Mean ± SD	18.0 – 100.0 68.74 ±11.82		19.0 – 24.5 73.97 ± 14.35		t = 2.495, P :0.025
Variable	**Hand On (65)**		**Hand Off (65)**		**Significance test**
	No	%	No	%	
Fetal position ROA LOA	36 29	55.4 44.6	27 38	41.5 58.5	χ^2 = 2.495, P: 0.114

Table (4): Frequency Distribution of Hands- on and Hands -off Groups According to Perineal Condition and Need to Repair.

Perineal condition	Methods				Significance test
	Hand On (65)		Hand Off (65)		
	No	%	No	%	
Intact Perineum	18	27.7	12	18.5	$\chi 2 = 8.741$, P 0.033
1st degree tear	16	24.6	25	38.5	
2nd degree tear	14	21.5	21	32.3	
3rd degree tear Less than 50% of external anal sphincter thickness torn	7	10.8	3	4.6	
3rd degree tear more than 50% of external anal sphincter thickness torn	5	7.7	3	4.6	
3rd degree both	5	7.7	1	1.5	
4th degree tear	0	00.0	0	00.0	
Need repair	47	72.3	53	80.0	$\chi^2 = 1.560$, P 0.211

Table (5): Relationship between need of repair and obstetrical data among Hands on and Hands off Groups.

Factors	Methods							
	Hands On				Hands Off			
	Need repair (47)		Not need repair (18)		Need repair (53)		Not need repair (12)	
	No	%	No	%	No	%	No	%
Gravidity								
G1	22	46.8	6	33.3	26	49.1	5	41.7
G2	18	38.3	9	50.0	20	37.7	5	41.7
G3	7	14.9	3	16.7	7	13.2	2	16.7
Significance test	$\chi^2 = 1.002$, P 0.605				$\chi^2 = 0.240$, P 0.889			
Gestational Age								
37-39	14	29.8	8	44.4	24	45.3	4	33.3
40-42	33	70.2	10	55.6	29	54.7	8	66.7
Significance test	$\chi^2 = 1.250$, P 0.264				$\chi^2 = 0.571$, P 0.450			
Fetal Position								
ROA	25	53.2	11	61.1	22	41.5	5	41.7
LOA	22	46.8	7	38.9	31	58.5	7	58.3
Significance test	$\chi^2 = 0.331$, P 0.565				$\chi^2 = 0.101$, P 0.992			

IV. Discussion

A substantial risk of perineal tear to the mother always existed at vaginal tear, but with the improvement in the obstetric services, this era has declined, perineal injuries are one of the serious complications of the vaginal delivery that has a severe impact on the quality of life of a healthy woman and is responsible for postpartum pain, To decrease the pregnancy related perineal tears, it is important to identify the risk factors that predict perineal tears **(Kavita et al,2016).**

The association between age and condition of perineum on occurrence of perineal trauma found to be statistically significant. This result was supported by **Mohamed et al, 2017: Mohamed2016 and sheiner, Levy,Walfisch,Hallak |&Mazor, 2005** who revealed that old age and very young women had increased risk of increased incidence of perineal tear than normal age women.

Regarding occupation, the present study revealed that housewife women have increased risk for perineal tear among hands on and hands off groups (64.6% & 75.4%) it could be explained by the fact of sedentary life style with less activity performed among housewife women , this study finding was in accordance with **Mohamed2016: Goldman,Hardman,Limbird, Gilman & Gilman's, 2015** who showed employed women have more opportunity for intact perineum and less perineal tears than unemployed women p=0.00.

Regarding obstetrical history, the researcher present study findings revealed no statistically significant difference between hands on & hands off groups, this finding is contradictory with **Yap -Icamina et al,2014** who mentioned that age of gestation (AOG) of hands off group was slightly higher than those under hands on technique p=0.0250 this is due to selection of(GA 37-24 weeks) within normal inclusion criteria and exclude abnormal GA from the present study.

The result of the present study showed that subjects in both groups had statistically significant difference regarding duration of second stage p=0.025 and increase the duration in hands off versus on group as there is no intervention done by the researcher only keep hands ready in case if rapid expulsion of fetal head during second stage. This finding was contradictory with the study done by **fahami et al,2012** who mentioned that there is slightly increase duration of second stage among hands on group (SD21.50 with 43.93minutes)versus the non-touching group (SD 20.30 with 38.48minutes) this may be due to included obese women in the study with BMI among hands on higher than hands off.

Conversely to the results of the present study, **Ismail et al, 2019**showed that there was no significant difference between hands-off and hands-on groups regarding duration of the second stage, also disagreed with **Rahimikianetal**, **2015** who had done a study titled comparing the effect of active and expectant managements of the second stage of labor on perineal status. Their results had revealed that there was no significant difference between control

(hand-on technique), and experimental (hand-off technique) groups in terms of lengths of first and second stages of labor.

Conversely with the researcher findings, **Foroughipouret al,2011** found no significantly different between the hands-off and the hands-on groups regarding the length of time taken during 1st and 2nd stage of delivery.

The present finding showed a statistically significant difference between hands on and hands off groups regarding thedegree of perineal tear (p=0.033). The current evidence was that 'hands-on' manual support of the perineum at birth might reduce significantly the incidence of perineal trauma and obstetric anal sphincter injuries (OASIS) **Antonakou**, **2017&Leenskjold et al, 2015** .

According to **Zaitoun, 2013 and Mohamed. 2016 results**, Ritgen maneuver or hands on technique found to aid in controlling the gradual extension of fetal head and prevent perineal tears by gradual controlling of head movement through pressure on the perineum with one hand other hand fingers applied downward pressure on the occiput.Prevention of perineal trauma is achieved also when exention of head happened in the absence of uterine contractions (modified Ritgen maneuver) in the same time the woman is panting during headdelivery.

The present study findings were not in agreement with **Fahami et al,2012**study about the effect of perineal management techniques on labor complication , they showed that the incidence of perineal tear during delivery among hands on subjects is higher than hands off and there are significant difference, this may be due to lower sample size and episiotomy used by the previous study.

In contrast with the current result, the study conducted by **De costa and Riesco , 2006** revealed that,The prevelance of perineal trauma or injures among hands off and Ritgen maneuver groups (p>0.05) so there was no statistically significant difference between hands on & hands off groups, also the incidence of perineal trauma was 81.4%.**Eyvanbagha et al., 2009** study alsonot in the same line with the present study findings, who mentioned that astatistically significant difference was found in the prevalence of intact perineumand the rate of 1st and 2nddegree, were less in hands on group.

Study done by **Petrocnik et al, 2015** about Hands-poised technique: The future technique for perineal management of second stage of labor? A modified systematic literature review on five studied researches was not in agreement with the current study result, who revealed that hands off technique is a safe method for parturient women during delivery of the baby head so this technique must be educated and trained among all midwifery health system.

Regarding third degree perineal tear prevelance, this study result showed that hands off group (n=7) had increased chance of intact perineum than hands on group (n=17). Evidence introduced by **Petrocniket al , 2015** was in agreement with the current study finding about

reduction of third degree tear in hand poised slightly less than hands on group , the reason that our study not include episiotomy incision during second stage .

Lowdermilketal,**2016** mentioned that hands-on and hands-poised approaches have similar results in terms of perineal and vaginal tears, in the other side the hands-on technique is associated with a higher incidence of third-degree tears and episiotomies, similar to the present study results regarding third degree perineal tears. Research done by **Rozitaetal**, **2014** that compare between hands off and handson techniques for reduction of perineal tears during fetal head delivery was in contrast with the present study findings that there is no difference in the occurance of perineal tears between the two groups.

Dissimilar with the researcher present results **Thomas et al,2016** showed that there was a significant difference found in the perineal trauma and perineal pain of parturient mothers between the study hands-off group and study hands-on group at p=0.000 level. The parturient mothers in study Group I (hands-off group) had less perineal trauma and perineal pain than study Group II (hands-on group).**Thomas et al,2016 : Rozitaetal**,**2014** were in the same line of agreement with the present study findings regarding the occurrence of third degree tear , a significant difference was observed on the prevalence of the third degree tears among hands on group compared with hands off group.

Conversely to the present result, **Aasheim et al, 2017** found that a hands-poised technique reduced the rate of episiotomy but no differences on the rates of intact perineum, perineal trauma requiring suturing or any severity of perineal trauma were found ,because findings were based on moderate-to-low quality evidence (meta-analysis of two studies **(Mayerhofer et al,2002 and McCandlish,2001)** and should be considered with caution.In contrast with the present study findings **Williams, Saccone&Berghella, 2019**studied;spontaneous vaginal delivery of singleton gestations with hands-on technique found to have similar chance of perineal tears compared to a hands-off technique. Regarding the incidence of intact perineum, 1st, 2nd and 4th degree tears found to be no significant difference between hands on and hands off techniques.

Regarding 3rd degree perineal tears, **Williams et al, 2019** results was in the same line with the researcher findings, that hands-on technique was associated with higher rate of 3rd degree lacerations (2.6 versus 0.7%) compared to the hands-off technique. Contradictory with **Foroughipour et al, 2011** results, they concluded that “hands off” is associated with less perineal trauma, lower need for episiotomy and lower incidence of postpartum hemorrhage, This may be explained two forces that act on the fetal head. The first force exerted by the uterus acts posteriorly and the second force supplied by the resistant pelvic floor and symphysis pubis acts anteriorly. This cause fetal extension which will bring the occiput into direct contact with the inferior margin of the

symphysis pubis, making the anterior perineum at risk for trauma if hands on technique is performed.

Contrast with the present study finding **Smith et al, 2013** study about therisk factor and prevalence of perinea tear among 2754women who planned for normal vaginal delivery of one fetusconcluded that hands off group had less likely for tear than hands on group and it's not statistically significant.According to **fahami et al,2012 and Yap -Icamina et al,2014** , there was no significant difference between hands on and hands off groups regarding body mass index p=0.1200 , this agree with the present study result regarding BMI p=0.128 this may be due to my inclusion criteria including normal BMI so there is no significant difference between two groups.

V. Conclusion

According to the findings of the present study, it can be concluded that hands-on technique had significant effect on decreasing rate of perineal tears, lowering degree of perineal tears as well as need to repair than hands off technique after exclusion of several risk factors significantly associated with the occurrence of perineal tear.

VI. Recommendations

Based on the findings of this study, the following recommendations are suggested:

- Relevant nursing curriculum must entail a detailed portion about the correct manner of performing hands-on technique to increase the chance of perineal integrity during the second stage of labor.
- Maternity nurses should have an opportunity to attend training programs about the correct manner of performing hands-on technique to increase the chance of perineal integrity with the correct practice.
- Perineal trauma prevention through continuous adopted and follow up of nursing protocol taking into considerationthe riskfactors and benefits of perineal management techniques.
- Antenatal educational classes by trained maternity nurses should be available about proper safety interventions that maintain perineal integrity during labor such as kegel exercise, perineal massage and warm compresses.
- Evaluation of the safety and effectiveness of hands on and hands offmethods is achieved by replication of the present study at different sittings and among different subjects.

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