Mansoura Nursing Journal (MNJ)

vol.3 No.1 ISSN:18235-2016

EFFECT OF APPLYING SPONTANEOUS PUSHING TECHNIQUE DURING SECOND STAGE OF LABOR ON WOMEN'S EARLY POSTPARTUM FATIGUE

[1]Merfat Amin Ahmed Elzihiri, [2]Tyseer Mohamed Fathy, [3]Amina Mohamed Rashad El-Nemer, [4]Mohamed Alaa Eldeen Mosbah Mohemed , [5]Nadia Mohamed Fahemy

1Clinical Instructor, technical instude of Nursery, Mansours University, 2Lecturer of Women's health &midwifery department., Faculty of Nursing, Mansoura University, 3Assistant Professor of Women's health &midwifery department Faculty of Nursing, Mansoura University, 4Assistant Professor of Obstetrics and Gynecology ,Faculty of Medicine, Mansoura University, 5Professor of Maternity and Newborn Health Nursing Faculty of Nursing, Ain Shams University

Email of corresponding author: mervet_ameem@yahoo.com

Abstract:

The aim of this study was to evaluate the effect of applying of spontaneous pushing technique during second Stage of labor in early postpartum fatigue. **Methods: A** quasi-experimental research design was used to carry out this study at the Labor and delivery unit of Mansoura University Hospital on 100 primigravida women at ≤37 gestational weeks, who were selected by purposive sampling technique. They were free from any medical and obstetric problems, can read and write. They were assigned either to the control or intervention group (n= 50 per each group). The intervention group: had received spontaneous pushing during second stage of labor, while the control group had received the routine pushing technique. **Three tools** for data collection were used; an interviewing questionnaire schedule, Visual analogue scale for fatigue and women's satisfaction questionnaire**. Results:** The study showed significant different between the two groups regarding the duration of second stage ,newborn health status &Apger score(7.8 ±1 versus 4 ±1.4 respectively, 0<0.001).Women expressed greater satisfaction with spontaneous pushing (98% versus 44% respectively, p<0.001).**Conclusion** spontaneous pushing technique is an effecting method in reducing women's fatigue. **Recommendation** Educating women about the spontaneous pushing technique in the first stage of labor and providing support for spontaneous pushing in the second stage for decrees postpartum fatigue.

Key word: second stage of labor, pushing technique, postpartum Fatigue

Introduction:

Labor and childbirth represent important life events fraught with strain and anxiety. Laboring women naturally seek the assistance of professionals who are experienced and qualified to secure an optimal birth outcome [15,10]. She needed to explanation and give health education about labor and identified proper pushing techniques.

The second stage of labor is the stage of expelled of fetus from mother's body. The second stage subdivided into two phase, the latent phase full dilatation of the cervical os is recorded ,but the presenting parte may not yet have reached the pelvic outlet .

Women in this situation may not experience strong expulsive urge until

the head has descended sufficiently to exert pressure on rectum and perineal tissues[1,2]. active pushing(bearing down) during latent phase versus the women's natural feeling to push and not achieve much. active pushing in this stage result increased exhaustion[3].

Active phase during this phase the fetal head is lower in the pelvic floor and is stretching the perineum. the fetal head has rotated and started to descend [4,5,6].

Expulsion of the fetus out of the maternal body relies on pushing forces. Power forces are of two sources: the upper uterine contraction is contracted and relaxed the power from uterine contractions less due to the short ended upper uterine muscles. during this time the fetal head moves downward to the pelvic floor, about half of the fetal body has passed from the upper uterus [1,7]. So the power from the existent short upper uterine contractions alone cannot push the fetus through the pelvic cavity [8].

Maternal bearing down (pushing) is the second force efforts, whose occur with contractions of the diaphragm and abdominal muscles. This is help the fetus to move downward to compress the pelvic floor, perineum and rectum, after that the sacrum and obdurate nerves as well as stretch receptors causes to an urge to push [7,8].

There are two basic pushing methods commonly employed during the second stage of labour. directive pushing women are encouraged to take a deep breath, hold it and strongly push for as long as possible without releasing air or making any noise [10,9]. This cause increases intrathoracic pressure, decrease in the oxygen supply to the fetus results in a marked fetal hypoxic, unnecessary instrumental delivery due to maternal exhaustion, burst blood capillaries in maternal eyes, and damage to the muscles of the vagina and perineum[10,11].

A woman who uses a spontaneous pushing approach is self-directed in her bearing-down techniques. She may push with an open glottis and vocalisation or use an intermittent exhalation technique. She will typically push three to five times for 5–7 seconds followed by a breath and release of air[12.13].

The spontaneous pushing method has been found to have advantages over directed pushing, such as greater perineal integrity, fewer fetal complications including acidosis and heart rate alterations fewer maternal complications such as a change in blood pressure, less fatigue, and higher maternal satisfaction. Nonetheless, the spontaneous pushing method is not widely used in local maternity units. [9,10,12].

Postpartum fatigue has a major impact on women's lives, affecting their relationships with others and their ability to fulfil new roles [10,19,17,20].

Nursing care for women during second-stage labor is complex. It involves frequent and intelligent assessments of mother and fetus, promoting fetal descent, and supporting each woman's ability to cope with labor and pushing [13,12].

Good 'pushing techniques' are nonmedical practice areas that can bring about significant improvements in maternal and fetal well-being[15]. The relationship between early postpartum fatigue and the pushing technique used during the second stage remains unclear. This study was evaluated effect of applying spontaneous pushing technique during the second stage of labor on women's postpartum fatigue, to assess their effect on women's perceived level of maternal fatigue immediately after and about 2 hours,24 hours post birth.

Research hypothesis

Spontaneous pushing technique used during second stage of labor less early post-partum fatigue

Subjects and Method

Study Design: **A**quasi-experimental design was utilized.

Study Setting: The study was conducted at the Labor and delivery unite of Mansoura University Hospital in Mansoura City.

Subjects: purposive sample, was selected according to the following formulae ***(Senn, 2007)***: $n = 2(Z_{\alpha/2} + Z_{\beta})^2 \sigma^2 / \Delta^2$

and include the criteria, gestation age at ≤37 gestational weeks they were free from any medical and obstetric problems, can read and write. The eligible 100 laboring women were equally divided into two groups: Intervention group (n=50): received a Spontaneous Pushing Technique during Second Stage of Labor while the control group (n=50): had received the routine pushing (directive pushing).

Tools of Data Collection: three tools were used for data collection;

Tool I: A Structured Interviewing Questionnaire Schedule:

This tool was developed and used by the researcher. It consists of 2 parts. **Part I:** Entails the participant's socio-demographic data, (e.g., age, education, occupation, marital status, residence, family income and telephone number).

Part II: Represents the current labour and delivery data for both mother and newborn. Maternal data includes duration of labour stages, use of Oxytocin, duration of pushing, episiotomy, tear and its degree, and degree of perineal pain (i.e. mild, moderate, or severe). Newborn data includes.

Tool II: Apgar Score. This is a simple method to assess the condition of the newborn infant. It is performed in the first minute and after five minutes of fetal expulsion ***(Apgar et al, 1958).*** It is based on assessment of five physical signs, namely: heart rate, respiratory effort, reflex irritability, muscle tone, and color. The total score ranges from 0 to 10. A score of zero means none of these signs is present and 10 means a completely healthy infant. If the infant score ranges from 7 to 10, this indicates good infant condition. A score from 4 to 6 indicates moderate infant condition (moderate asphyxia), and from 0 to 3

indicates very bad infant condition (sever asphyxia).

Tool III: Visual analogue scale for fatigue (VAS-Fatigue):

The original VAS-Fatigue scale consists of 18-items (13 items for fatigue and 5 items for energy). It is a valid tool which was previously tested for its validity and reliability **(Lee et al., 1991**). VAS-Fatigue was evaluated three times; immediately; 2–hours and 24–hours after labor; by asking each respondent to mark her level of fatigue/energy on 100 mm scale, and then the researcher measure the marking point and length (100 mm) using a standard metal ruler with mm marking to demonstrate the scores for fatigue and energy at each time point. It took less than 2 minutes to complete.

Tool IV: Women's Satisfaction Questionnaire:

This tool was developed by **Yurachai. (2006)** and used by the researcher to assess the level of women's satisfaction regarding the pushing technique used during labor. It consist of 6 items. It was demonstrated by selecting one of two options; either satisfied score 1 or not satisfied score0.

Ethical Considerations :

- Ethical approval was obtained from the Research Ethics Committee of the Faculty of Nursing, Mansoura University.
- Official permissions were obtained from the head of the Obstetrics and Gynecology department and the Director of Mansoura University Hospital.
- The aim of the study was explained to the studied groups and informed consents were obtained.
- Ethical issues were considered in dealing with the obtained information.
- Women had the right to withdraw from the study at any time, and their data were confidential.
- Tool of data collection didn't touch religious, culture or ethical issues among mothers and mother's dignity was considered.

Pilot Study:

After preparing the tools, a pilot study was conducted on 10 Parturient women (5 per each group). The results of the pilot indicated that the statements of the questionnaire were clear and relevant, and few words and items were modified. No modification with done.

Field Work:

- The data were collected over a period of five months. During the study period; from June 2013 to October 2013, the researcher visited the study setting 3 days/week from 9 am to 3 pm. The researcher introduced herself and briefly explained the purpose and method of this study to the eligible women. The researcher then divided the sample into two groups beginning with the control group.

Control Group:

This group was subjected to the conventional pushing (directed pushing) during the second stage of labor. The Obstetricians on duty determined the progression of labor by vaginal examination, when they detected that the cervix fully dilated, laboring women were encouraged by the researcher to push at the beginning of each uterine contraction, whether they had an urge to push or not. The researcher detected the uterine contractions by placing the palm of the hand over the woman's abdomen at the funds. As a contraction started, the laboring women were asked to take a deep breath and hold it while both hands hold on the bedside rails and push strongly for as long as possible (closed glottis) and were instructed to repeat the same procedure with every contraction until birth, and when the crown was visible at 2–3 cm, the laboring woman was sent to the delivery room using the lithotomy position to complete the birthing process.

Study Group:

Parturient women in this group were subjected to spontaneous pushing technique. During the first stage, they were instructed by the researcher to relax during uterine contractions by inhaling deeply-slowly and exhaling deeply-slowly until the contraction had ceased (breathing exercise), while in second stage they were instructed to push spontaneously, by pushing only during contraction when they felt the urge to do so and rest in between, without any specific instructions about the timing and duration of pushing. As in the control group subjects, when the crown was visible at 2–3 cm, the laboring woman was sent to the delivery room to complete the birthing process.

For both group

Maternal assessment:

- Levels of fatigue and energy were assessed using VAS-Fatigue immediately, at 2 and 24 hours postpartum. As well as, women's satisfaction regarding the technique that was assessed on the discharge time were the primary outcomes.
- Duration of the second stage, perineum status; either episiotomy incision or tear, and the level of perineal pain were the secondary outcomes.

Neonatal assessment:

- Apgar score was assessed at the 1st and 5th minute postpartum.
- Admission to the neonatal intensive care unit (NICU).

Statistical analysis:

After data were collected, it coded, organized, categorized, and then transferred into especially designed formats. The statistical analysis of data was done by using SPSS program (statistical package for social science) version 17.0. The data was tabulated and presented. The description of the data was done in form of mean and standard deviation for quantitative data (duration of pregnancy), frequency and proportion for qualitative data. Analysis of the data was performed to

test statistical significant difference between variables for both groups (intervention and control). For disease duration (mean and standard deviation) independent t- Test was used to compare between the two groups. For qualitative data (frequency and proportion), Chi- square test was used. Statistical significant difference was considered at P<0.05, and highly significant difference at P<0.001.

Results:

Table (1) Distribution of the general characteristics of both intervention and control groups according to their demographic characteristics. Data reveals no statistically significant differences observed among the studied groups related to age, education level, occupation and residence (P >0.05).

Table (2) Comparison of the current labor and delivery data between the both intervention and control groups. Data reveals that significantly longer in the directed pushing group compared to the spontaneous pushing women in the directed pushing group needed analgesics while none of the women in the spontaneous pushing needed analgesics. This difference was significant (p=0.006).

Table (3) Comparison of the maternal and newborn condition between the both intervention and control groups: reveals that the duration of pushing during second stage was significantly longer in the directed pushing group than in the spontaneous pushing group (50.3 ±5.8 versus 29.5 ±6.6, p<0.001) reveals that the duration of pushing during second stage was significantly longer in the directed pushing group than in the spontaneous pushing group (50.3 ±5.8 versus 29.5 ±6.6, p<0.001). Women in the directed pushing group 3 (8.1%) had mild tear, 25 (43.2%) had moderate tear and 24 (48.6%) had severe tear (p<0.001).

Table (4) Comparison of the women's satisfaction between the both intervention and control groups: find statistical significant in the intervention group that is in control group.

Figure (1) The changes of VAS-fatigue total score of the intervention and the control groups immediately, two hours and 24 hours postpartum It is clear from this table that the VAS-fatigue total score of the spontaneous pushing group was lower (104.2±5.7, 57.1±7.8, 28.7±5.9) and that of the directed pushing group was (112.2±4.0, 71.7±7.6, 40.8±6.3) immediately, two hours and 24 hours postpartum respectively.

Figure (2) the changes of VAS-energy total score of the spontaneous and the directed pushing groups immediately, two hours and 24 hours postpartum. It is clear from this table that the VAS-energy total score of the spontaneous pushing group was (44.0±2.1, 34.6±4.4, 16.6 ±3.2) and that of the directed pushing group was (41.1±3.3, 29.7±5.3, 12.0 ±4.6) immediately, two hours and 24 hours postpartum respectively

Table 1. Distribution of the general characteristics of both intervention and control groups according to their demographic characteristics

	Intervention group		**Control group**		**Chi square test**	
	N	**%**	**n**	**%**	X^2	**P**
Age (years) (mean ±SD)	22.6 ±3.4		22.8 ±3.5		0.233*	0.816
Residence						
Rural	31	62	29	58	0.167	0.683
Urban	19	38	21	42		
Marital status						
Married	48	80	47	84	0.344	0.842
Divorced	1	0	1	0		
Widow	1	0	2	0		
Education level						
Illiterate	2	4	3	6	0.597	0.742
Primary/preparatory	6	12	8	16		
Secondary/university	42	84	39	78		
Occupation						
Housewife	25	50	21	42	0.644	0.422
Working	25	50	29	58		
Income						
Enough	15	30	10	20	1.333	0.248
Not enough	35	70	40	80		

* *Student's t test*

Table 2. Comparison of the current labor and delivery data between the both intervention and control groups

	Intervention group		Control group		Student's t test	
	Mean ±SD		Mean ±SD		t	P
Duration of stages of labor						
1st stage (minutes)	15.1 ±0.8		15.0 ±0.8		0.369	0.713
2nd stage (minutes)	104.8 ±3.4		115.2 ±2.9		16.614	<0.001
3rd stage (minutes)	20.3 ±1.4		20.0 ±1.5		0.893	0.374
Use of analgesics (n, %)	0	0	7	14	7.527*	0.006
Use of oxytocin (n, %)	30	60	45	90	12.00	<0.001
Spontaneous membrane rupture	50	100	50	100	0*	1
Amniotic fluid characteristics						
Clear	50	100	45	90	5.236*	0.022
Meconium	0	0	5	10		

* *Chi square test*

Table 3. Comparison of the maternal and newborn condition between the both intervention and control groups

Variables	Intervention group		Control group		Chi square test	
	N	%	n	%	X^2	P
Duration of pushing						
<60 seconds	50	100	0	0	88.104	<0.001
60 – 90 seconds	0	0	36	72		
>90 seconds	0	0	14	28		
Degree of tear**						
No	38	95	0	0	72.193	<0.001
Mild	2	5	3	8.1		
Moderate	0	0	16	43.2		
Severe	0	0	18	48.6		
Episiotomy	10	20	13	26	0.508	0.476
Perineal pain						
Mild	46	92	0	0	86.207	<0.001
Moderate	4	8	25	50		
Severe	0	0	25	50		
Apgar score						
1 minute postpartum	7.8 ±1		4 ±1.4		15.628*	<0.001
5 minutes postpartum	9.5 ±0.5		9.4 ±0.8		0.750*	0.455
Admission to the NICU	2	4	9	18	5.005	0.025

** Student's t test, ** n=40 in the intervention group, n=37 in the control group*

Table 4. Comparison of the women's satisfaction between the both intervention and control groups

Satisfaction items	Intervention group		Control group		Chi square test	
	n	%	n	%	X^2	P
Experence has shown that I can have appropriate and adequate control over my care	48	96	39	78	7.16	0.007
The pirsons responsible for my care were caring and compassionate	45	90	37	74	4.34	0.037
Problems that have arisen up to now have been dealt with effectively	42	84	31	62	6.14	0.013
My needs have been addressed with appropriate consideration for my time	44	88	36	72	4.00	0.046
The overall organization of my care has been appropriate	47	94	39	78	5.32	0.021
Would choose the same type of care for my next labor	49	98	22	44	35.4	<0.001

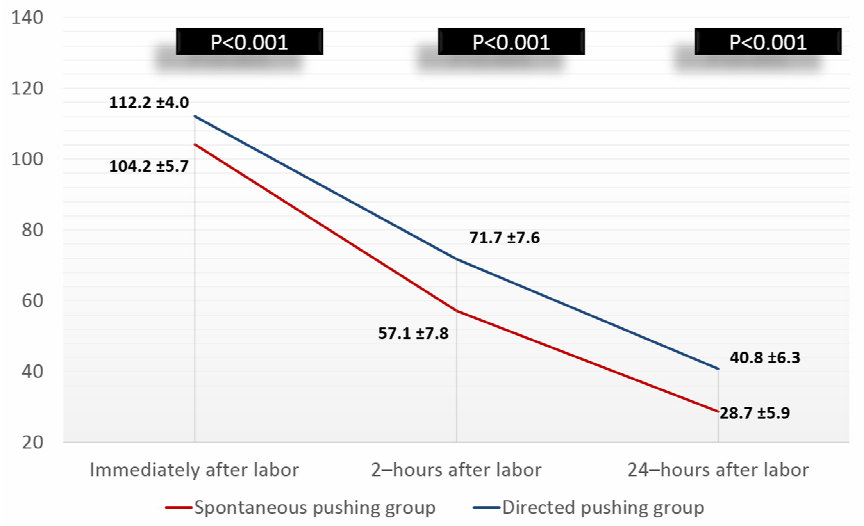

Figure 1. The changes of VAS-fatigue total score of the intervention and the control groups immediately, one hours and 2 hours postpartum

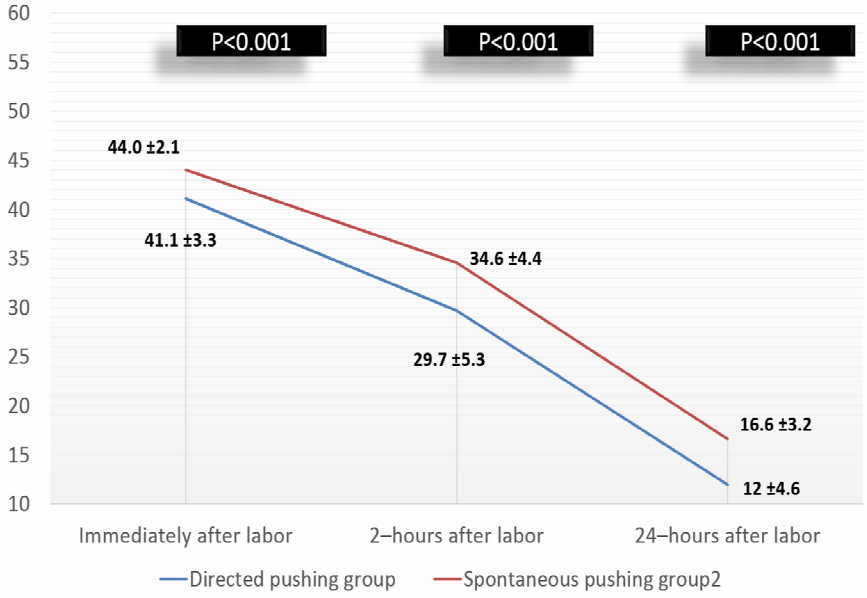

Figure 2. The changes of VAS-energy total score of the spontaneous and the directed pushing groups immediately, two hours and 24 hours postpartum.

Table (2): Represents comparison between control group and study (SCG) group regarding alopecia questions that all women (100%) in control group and the majority of the women (96.7%) in the studygroup(SCG) were suffered from hair loss, and all the women (100%) in both groups suffering hair loss more than a month. There is no significant difference between the study group (SCG) & the control group regarding alopecia questions (P<0.05).As regard to the degree of hair loss according to WHO scaling system for hair loss there is highly significance difference between the two groups regarding degree of hair loss (p=.000) as in the control group there were (46.7%) suffering total alopecia in comparison to study group (SCG) there were (3.3%) suffering total alopecia .This means that the study group (scalp cooling group) suffered less hair loss after receiving scalp cooling than the control group who receive the routine hospital care.

Table (2): comparison between control group and study group regarding alopecia questions

Alopecia questions	Control group (N=30)		Study group (No =30)		X^2	P - value
	No	%	No	%		
Suffering from hair loss:-						
Yes	30	100.0%	29	96.7%	1.017	.313
No	0	.0%	1	3.3%		
Time of hair loss:-						
More than a month	30	100.0%	30	100.0 %	-	-
Degree of hair loss:-						
0-Not significant hair loss	0	0%	1	3.3%		
1-Minor hair loss not	0	0%	19	63.3%	37.06	.000**
requiring a wig	4	16.7%	6	20.0%	7	
2-Moderate hair loss not requiring a wig		40.0%				
3-sever hair loss, requiring	12	43.3%	3	10.0%		
a wig	14		1	3.3%		
4- Total alopecia						
Other scalp problems before chemotherapy:						
No	30	100.0 %	30	100.0 %	-	-

Table (3): Represents the prevalence of scalp cooling side effect, where 100% of study group(scalp cooling group) suffered from feeling cold and 7o% needed blanket for warmth during doing this procedure. And 100% are suffering from headache and feel boring

Table (3): Prevalence of side effects of scalp cooling among scalp cooling group.

Scalp cooling side effects	Study group (No =30)	
	No	%
Feeling cold:-		
Yes	30	100.0%
No	0	0%
Blanket for warmth:-		
Yes	21	70.0%
No	9	30.0%
Headache :-		
Yes	30	100.0%
No	0	0%
Feeling boring:-		
Yes	30	100.0%
No	0	0

Table (4): Represents comparison between control group and study group(SCG) in grades of hair loss before the first cycle and after the six cycle of chemotherapy there were (63.3%&0%) have grade1 from the study group (SCG)andcontrol group respectively. While there were (43.3%&3.3%) have grade 4(total alopecia) from the control group and study group(SCG) respectively after the six cycle of chemotherapy. There is highly significance difference between the two groups regarding grades of hair loss. P<.05

Table (4): Comparison between control group &study group (scalp cooling group) in grades of hair loss according to WHO before the first cycle and after the six cycle of chemotherapy.

Grades of hair loss	Control group				Study group (SCG)				X^2		P - value	
	Before cycle 1		After cycle 6		Before cycle 1		After cycle 6		Before cycle 1	After cycle 6	Before cycle 1	After cycle 6
	No	%	No	%	No	%	No	%				
0	30	100%	0	0%	30	100 %	1	3.3%	1.017	35.777	.313	.000**
1	0	0%	0	0%	0	0%	19	63.3%				
2			5	16.7%			6	20.0%				
3			12	40.0%			3	10.0%				
4			13	43.3%			1	3.3%				

Table (5): Represents the relation between the type of chemotherapy and grades of hair loss after the sixth cycle of chemotherapy in both control group and study group (SCG) that there were 40% from the women treated with**Taxol-carpolinate**in study group have gradeI hair loss and also 40% have grade II hair loss while 60% from the women who treated with **taxol-carpolinate** in the control group have grade III hair loss. In relation to the women treated with **FAC (Floururacil - Adriamycin-Cyclophosphamide {Endoxan})** there were 60% from the women in study group(SCG)have grade I hair loss while in the control group there were 70.6% have grade IV hair loss. As regard to the women who treated with **Flox**there were 80% from the women in the study group have grade I hair loss while 62.5% from the women in the control group have grade III. There were significance differences between the two groups in grades of hair loss in relation to type of chemotherapy

Table (5) The relation between grades of hair loss and type of chemotherapy after the six cycle of chemotherapy among study group (scalp cooling group) and control group.

Grades of hair loss	Type of chemotherapy in SCG group						Type of chemotherapy in control group						X^2		P – value	
	Taxol – carpolinate		FAC(Floururacil-Adriamycin-Cyclophosphamide {Endoxan})		Foulox		Taxol – carpolinate		FAC(Floururacil-Adriamycin-Cyclophosphamide {Endoxan})		Foulox					
	No	%	No	%	No	%	No	%	No	%	No	%	SCG	Control	SCG	Control
Grade 0	0	0%	0	0%	1	10.0%	-	-	-	-	-	-	7.061	15.962	.530	.003*
Grade 1	2	40.0%	9	60.0%	8	80.0%	-	-	-	-	-	-				
Grade 2	2	40.0%	3	20.0%	1	10.0%	1	20.0%	1	5.9%	3	37.5%				
Grade 3	1	20.0%	2	13.3%	0	0%	3	60.0%	4	23.5%	5	62.5%				
Grade 4	0	0%	1	6.7%	0	0%	1	20.0%	12	70.6%	0	0%				

Table (6): Represents the relation between age & grades of hair loss after the 6th cycle among study group(scalp cooling group)(SCG) that all women whose age ranged from (18 – 39) years old have gradeI hair loss and 46.2% from the women whose age ranged from(40 – 49) have gradeI hair loss.Otherwise 40% from women aged from(50 – 60) have gradeII hair loss. This means that there was a significance difference between younger age women (most of them have gradeI) & the older age women (which they have gradeII,III,IV)and the grades of hair loss. ($P<0.05$)

Table (6) Relation between age & grades of hair loss after 6th cycle among study group (scalp cooling group).

Grade of hair loss	Age						X^2	P - value
	18 < 39		40 < 49		50 < 60			
	No	%	No	%	No	%		
Grade 0	0	0%	1	7.7%	0	0%	17.174	.028*
Grade 1	12	100%	6	46.2%	1	20.0%		
Grade 2	0	0%	4	30.8%	2	40.0%		
Grade 3	0	0%	2	15.4%	1	20.0%		
Grade 4	0	0%	0	0%	1	20%		

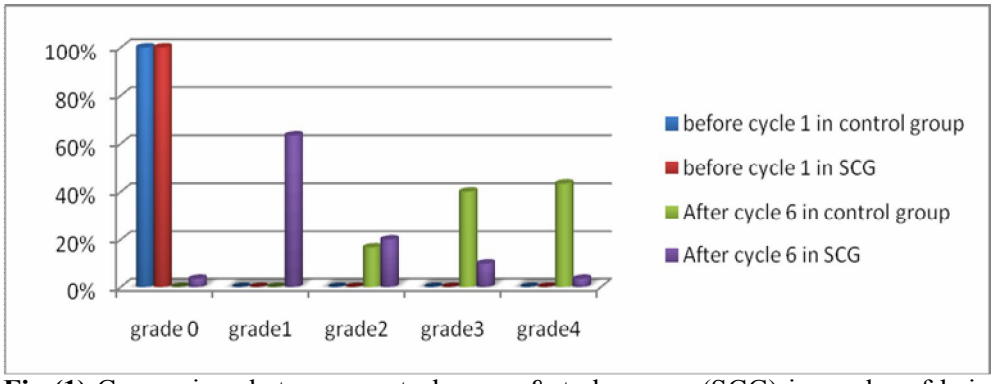

Fig (1) Comparison between control group &study group (SCG) in grades of hair loss according to WHO before the first cycle and after the six cycle of chemotherapy.

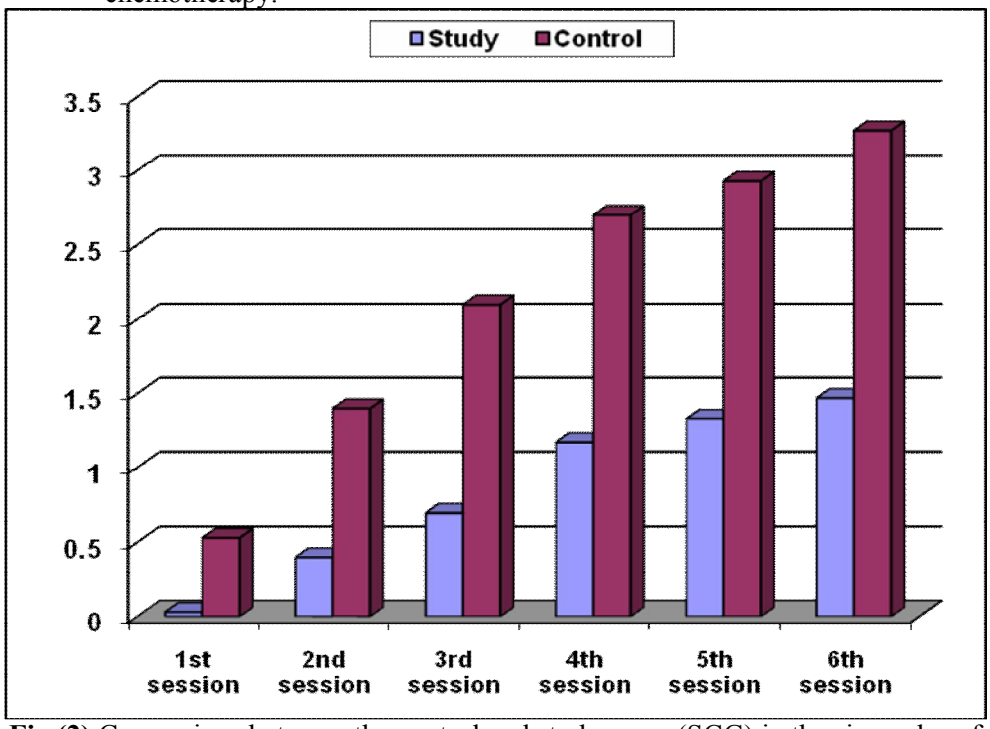

Fig (2) Comparison between the control and study group(SCG) in the six cycles of chemotherapy in relation to hair loss

Discussion:

The current study was aimed to evaluate effect of applying spontaneous pushing technique during second stage of labor in early postpartum fatigue.

The present study found no significant differences between the two groups in their demographics as

regards the (age of the participants, residence, marital status, educational level, occupation status and income).

Several causes of maternal fatigue in the early postpartum ,include physical factors such as length of labour, type of delivery and blood loss associated with delivery, maternal hormonal shifts, episiotomy healing, pain , mode of delivery, and pushing technique used during labour also affect maternal fatigue .

The present study found significantly higher fatigue in the directed pushing at immediately, two, 24-hours postpartum. These can be related to the study findings reveals that there the 2nd stage of labor was significantly longer and increase of duration pushing time in the directed pushing group compared to the spontaneous pushing group. The spontaneous pushing causes of decrease pain sensation and fatigueon early postpartum period.Accordingly, the study hypothesis is accepted . These findings are consistent with those of **Christine and Susan . (2010) and Gillesby et al. (2010)** reported that directed pushing longer and strong push every uterine contraction and immediate full cervical dilatation during the second stage of labour led to higher fatigue scores at 24 hours after birth(15,3).**Yildirim and Beji (2008)**;**Su-Chen Kuo, et al. (2011)** and **Yurachai . (2006)** who reported that women use spontaneous pushing low post partum fatigue(10,12). The present study was agreed with the **Methodius et al, (2012)** there reported that second stage of labor duration less for the spontaneous pushing, compared with the directive pushing. Similarly, **Lai et al. (2009**) the researcher found that the duration of the expulsion phase were significantly longer with directed pushing.

On another hand the present study found spontaneous pushing technique improved circulation (increased blood supply of uterus) and decrease sensation of pain and decrease of needed analgesics. This finding supported by **Albers and Borders. (2007)** and **Su-Chen Kuo, et al. (2011)** who reported directive pushing during the second stage of labor in mothers receiving analgesics. **Lai et al. (2009)** there reported that women in the directive pushing had a higher pain.

The present study found spontaneous pushing improved placenta perfusion, fetal oxygenation cause the Apgar score at 1 minute was significantly higher in the babies of the women of the spontaneous pushing group. However, at 5 minutes, Apgar score did not differ significantly between the two groups. The study supported by **Lai et al., (2009)** who reported that spontaneous group had significantly higher one minute Apgar scores ($x2 = 8.696$, $p < .01$). There was no difference between groups for 5minute Apgar scores ($p = 0.001$) or cord pH levels ($p = 0.004$). **Samer, N(2005):Yildirim and Beji. (2008**) with spontaneous pushing, with higher 1- and 5-minute Apgar scores, and higher umbilical cord pH and Po_2 levels (22,12). **Osborne. & Hanson. (2012)** Directive versus Supportive Approaches Used by Midwives When Providing Care during the Second

Stage of Labor. The researcher findings the group use spontaneous pushing fetal and neonatal outcomes include improved fetal oxygenation (11).

The present study findings women who are uses bear down spontaneously report higher levels of satisfaction The study supported by. **Ibrahim,S. (2012)** :**Yurachai . (2006)** :**Yildirim and Beji (2008)**. Reported that spontaneous pushing technique increased satisfaction levels for women giving birth(10, 23, 18).

Conclusion:

The findings of this study the spontaneous pushing reduce of fatigue on women's early postpartum.

Recommendations:

On the basis the most important findings of the study the recommendation following are suggested:

- Educating women about the spontaneous pushing technique in the first stage of labor and providing support for spontaneous pushing in the second stage for decrees postpartum fatigue
- Dissemination of the present study finding to all hospital and MCH health services at Mansoura city.

Further study

- Rising awareness for caregivers working in the delivery room spontaneous pushing during the second stage of labor.

References:

1. **Brancato R, Church S, Stone P**.(2008). A meta-analysis of passive descent versus immediate pushing in nulliparous women with epidural analgesia in the second stage of labor. *JOGNN*. 2008; 37:4-12.
2. **Marshall, Raynor (2014)**. Myles Texbook for Midmiver, 13rd, Edinburgh, Londen, New Yourk, compone, Pp.371-377.
3. **Gillesby ,E & Burns,S & Dempsey & Kirby, S & Mogensen, K, et al. (2010)** Comparison of Delayed Versus Immediate Pushing During Second Stage of Labor for Nulliparous Women With Epidural Anesthesia., Journal of Obstetric, Gynecologic, & Neonatal Nursing .Volume 39, Issue 6, pages 635–644,November/December
4. **Roberts J, Hanson L (2007)**. Best practices in second stage labor care: maternal bearing down and positioning. Journal Midwifery Women's Health 2007;52:238-245.
5. **Roberts J, Gonzalez C, Sampselle C (2007)**.Why do supportive birth attendants become directive of maternal bearing-down efforts in second stage labor? *Journal Midwifery Women's Health*.;52:134-141.
6. **Roberts, J. E. (2003).** A new understanding of the second stage of labor: implication for nursing care. Journal of Obstetric, Gynecologic, and NeonatalNursing,32(6),794-801

7. **Lowdermilk D., Perry S., Cashion K., (2014),** Maternity Nursing, 8th ed., Unit Three ChildDirth, Mosby Elsevier, Philadelphia, Pp. 366-370.
8. **Orshan, s.a. (2008)** maternity newborn and women's health nursing (1st ed) welters kluwer Lippincott Williams Wilkins, p585-618.
9. **Prins M, Boxem J, Lucas C, et al. 2011**. Effect of spontaneous pushing versus Valsalva pushing in the secondstage of labour on mother and fetus: a systematic review of randomised trials. BJOG 118(6):662-70
10. **Yurachai M.(2006)** The effect of directed versus spontaneous pushing on postpartum fatigue, perineal pain and childbirth satisfaction [thesis]. Thailand: Mahidol University;
11. **Osborne. K, Hanson.L, 2012** Directive Versus Supportive Approaches Used by Midwives When Providing Care During the Second Stage of Labor. Journal of Midwifery &Women's Health _ www.jmwh.org. 2011 by the American College of Nurse-Midwives. Volume 57, No. 1, January/February 2012
12. **Yildirim G, Beji NK..(2008).** Effects of Pushing techniques in birth on mother and fetus: a randomized study. Birth Mar; 35(1) :25-30.
13. **Lai, K.C. Lin, H.Y. Li, K.S. Shey, M.L. Gau.(2009).**Effects of delayed pushing during the second stage of labour on postpartum fatigue and birth outcomes in nulliparous women. Journal of Nursing Research, 17, pp. 62–72
14. **Dittner, J, Wessely, S, Brown, G, 2004**. The assessment of fatigue A practical guide for clinicians and researchers Journal of Psychosomatic Research 56 (2004) 157–170.
15. **Christine C and Susan J.2010.** Comparison of Pushing Techniques Used in the Second Stage of Labour for Their Effect on Maternal Perception of Fatigue in the Early Postpartum Period among Chinese Women. Hong Kong J Gynaecol Obstet Midwifery; 10:13-21.
16. **Gupta JK, Hofmeyr GJ, Smyth R.(2004).** Position in the second stage of labour for women without epidural anaesthesia. The Cochrane Database of Systematic Reviews, Issue 1. Art No: CD002006.pub2. DOI: 10.1002/ 14651858. CD002006. pub2.
17. **Corwin, E. J., Brownstead, J., Barton, N., Heckard, S., & Morin, K. (2005).** The impact of fatigue on the development of postpartum depression. Journal of Obstetric, Gynecologic, and Neonatal Nursing, 34, 577-586. - See more at: http://www.nursingcenter.com/lnc/CEArticle?an=00005721-200707000-00005&Journal_ID=54021&Issue_ID=732391#sthash.mlttWFPF.dpuf
18. **Chuan Chang, S & Min Chou, M& Chia Lin, K& Chu Lin, L &**

Lan Lin, y and Chen Kuo, S. (2011). Effects of a pushing intervention on pain, fatigue and birthing experiences among Taiwanese women during the second stage of labour. Midwifery Volume 27, Issue 6, December 2011, Pages 825–831.

19. .**Fraser D., Cooper M., Fletcher G., (2003),** Myles: Textbook for Midwives, 14th edition .London; Churchill Livingstone P.13, 217.

20. **Elizabeth J. Corwin, Arbour, M. 2007**. Postpartum Fatigue and Evidence-Based Interventions American Journal of Maternal/Child Nursing August Volume 32 Number 4 Pages 215 - 220

21. **Albers, L. L., & Borders, N. (2007).** Minimizing genital tract trauma and related pain following spontaneous vaginal birth. Journal of Midwifery & Women's Health, 52(3), 246Y253.

22. Samer, N(2005)Effect of pushing technique during second stage of labor for multiparous women and maternal fetal outcome. Ain Shams University.

23. Ibrahim ,S.(2012).Effect of Supportive measure for companion ship on partuient women satisfaction and labor outcome .Ain shams University