

## Effect of Maternal Semi-Sitting, Dorsal Recumbent and Lithotomy Positions on the Progress of Labor: A Comparative Approach

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### Abstract:

Although various positions adopted during labor and delivery has been studied over the past 40 years, controversy still surrounds the results regarding obstetric variables. **The aim of this study** was to compare the effect of maternal semi-sitting and dorsal recumbent versus lithotomy positions on the progress of labor. A Quasi-experimental research **design** was adopted. **Setting:** The study was carried out in the labor ward of the General Hospital and the Health Insurance Hospital in Beni Suef Governorate. **The sample** were eighty parturient recruited in each of the three labor positions: semi-sitting (SS), dorsal recumbent (DR), and lithotomy (LI) positions. **Tools of data collection** were; a structured interview schedule, an assessment sheet of mother fetal condition, and observation checklist: to collect data about details of second and third stage of labor. **The results of the study** revealed that the mean duration, frequency, and intensity of the uterine of the contractions were highest in the SS group, and lowest in the LI ( $p < 0.001$ ). No significant differences were noticed among the three groups in their vital signs, but women in the SS group had women who were higher mean diastolic pressure ( $p < 0.001$ ). The mean duration of the second and third stages in the SS group was lower than those in the DR and LI groups. **Conclusion:** The frequency, intensity, and duration of the uterine contractions were better compared to dorsal recumbent and lithotomy positions. The mean durations of the second and third stages were also significantly shorter. **Recommendations:** the utilization of the semi-sitting labor position must be encouraged, with randomized clinical trial to provide further confirmation of the study findings.

**Key words:** Semi-sitting, Dorsal recumbent, Lithotomy, Second stage of labor

### Introduction:

Childbirth is the culmination of a human pregnancy or gestation period with the birth of one or more newborn infants from a woman's uterus. It also called labor, birth, partus or parturition (Simpson, 2008).

Birth position affects woman's anatomic and physiologic adaptations to labor. (Taiema, Shoaib & El-Habashy, 2008). For the second stage, an ideal position would include opening the pelvic outlet as widely as

possible; providing a better fetal position with a smooth path for the baby to descend through the birth canal; using the advantages of gravity to help the baby move down; giving the mother a sense of being safe and in control of the process (Bloom et al., 1998; Hodnett et al., 2007; Hunter, Hommeyr & Kulier., 2007; Goer, Lesile & Romano, 2007).

The lithotomy position, with a mother flat on her back and her feet in

stirrups, has become the standard position which is used in 65.9% of vaginal births (Lawrence et al., 2009). It is considered the ideal posture for doctors to deliver the baby due to easy access. For the mother, who has to push her baby uphill against the force of gravity when lying on her back however it may not be so ideal (Noorani & Korejo, 2007). Also, dorsal recumbent position, in which women lie flat on their backs are still used in many deliveries despite the scientific evidence to the contrary (Declercq et al., 2002; Ricci, 2007). However, this position has been claimed to be a harmful modern practice (Klossner & Hatfield, 2006).

On the other hand, upright position during labor has received special attention, as it is a simple, inexpensive intervention that allows for a wide variety of positions (Miquelutti, Cecatti & Makuch, 2007). It including standing, kneeling, sitting on a birth chair, and squatting have many advantages. It allows gravity to play its part in the descent of the fetus, which shortens the duration of the second stage of labor. It also increases the pelvic outlet diameters, and increases the efficiency of uterine contractions (Roberts et al., 1995; Adachi, Shimada & Usai, 2003).

The semi-sitting position is also used during childbirth. Although this position does not have all the benefits of upright positioning, it is better than lying flat on back. It makes woman more comfortable, uses gravity to aid fetal descent, and makes good access visibility at delivery and good access to fetal heart tones (Murray, McKinney & Gorrier, 2002; United Brachial Plexus Network, 2006, Ivillage, 2007)

Birth attendants play a major role in influencing a woman's choice of the position for birth (Lowdermilk, Perry & Bobak, 2000; Lowdermilk & Perry, 2004). Nurses are in a unique position to provide these care practices and to help childbearing women make informed choices based on evidence (Romano & Lothian, 2008).

#### **Significant of the study:**

Although various positions adopted during labor and delivery have been studied over the past 40 years, controversy still surrounds the results regarding obstetric variables (Miquelutti et al., 2007), and there have been few scientific investigations involving the relative advantages of maternal positions (Fraser et al., 2003). Actually, the gaps between actual practice and lessons from the best evidence are wide, and that reveal tremendous opportunities to improve the structure, process, and outcomes of maternity care for women and babies and to obtain greater value for investments (Hodnett et al., 2009).

#### **Aim of the study:**

The aim of this study was to compare the effect of maternal semi-sitting, dorsal recumbent and lithotomy positions on the progress of labor.

#### **Hypothesis:**

Semi-sitting position (SS) was associated with better progress of labor and shortening of the second stage compared to dorsal recumbent (DR) and Lithotomy (LI) positions.

#### **Subjects and methods:**

##### **Research design:**

A quasi-experimental research design was adopted in the conduction of this study.

**Study Setting:**

The study was carried out in the labor ward of the General Hospital and the Health Insurance Hospital in Beni Suef Governorate.

**Study Subjects:**

Any woman admitted to the delivery unit in the study settings during the time of the study was eligible for being recruited in the study sample according to the following criteria:

**Inclusion criteria:**

- Multiparous
- Had a previous normal vaginal delivery (NVD)
- Expecting spontaneous normal vaginal delivery.

**Exclusion criteria:**

- Use of any medication to stimulate, accelerate, or slowdown uterine contractions
- Fetal or maternal distress manifested during first or second stages of labor
- Use of epidural anesthesia.

**Sample Size and Sampling Technique:**

The sample size was estimated according to the following equation to detect a mean difference of the duration of the second stage of 5.4 minutes between women in the semi-sitting versus recumbent position according to **Gupta and Nikodem (2002)**, with a standard deviation of 10 minutes, at a 95% level of confidence ( $\alpha$  error = 5%), and a study power of 80% ( $\beta$  error=20%). Using the equation for the difference between two means (**Schlesselman, 1982**). Accordingly, the estimated sample size was 72

women per group. After adjustment for a dropout rate of 10%, the sample size was increased to 80 women per group.

Purposive sample was consecutively recruited according to the inclusion and exclusion criteria. Women were then assigned to one of the three groups (semi-sitting, dorsal recumbent, and lithotomy positions) in an alternating manner until the sample sizes were fulfilled.

**Data Collection Tools:**

Three different tools were developed and used to collect data from the three study groups.

**1- Structured interview schedule:** included the following parts:

- Socio-demographic characteristics of women such as age, education.
- Obstetric history: gravidity, parity, abortions, and the history of last delivery

**2- Assessment sheet:** included:

- Maternal, fetal condition as maternal vital signs, fetal heart rate, and state of membranes, and presence of vaginal discharge.

**3- Observation checklist:** used to collect data about:

- Details of the second stage of labor: as duration, frequency, intensity, rhythm, and progress of uterine contractions, maternal vital signs, state of membranes, moulding and fetal heart rate and mode of delivery.
- Details of the third stage of labor: as delivery of the placenta, duration of third stage, in addition to maternal vital signs and fetal heart rate.

**Administrative design:**

An official permission to conduct the study was gained from the pertinent authorities of the study settings. The aim and procedures of the study were explained to the directors of the settings to obtain their consent and cooperation in data collection.

**Ethical considerations:**

The researcher explained the study aim in a simple and clear manner to be understood by eligible women before asking them to participate in the study and taking her consent. No harmful maneuvers were performed or used, and no foreseen hazards were anticipated from conducting the study on parturient women. All Participants were informed about their right to withdraw from the study at any time without giving reason. Data were dealt with confidentially and not be used except in this study.

**Content validity and reliability:**

Content validity was used for the tools to make sure that they cover the aims of the study. The stage developed by a Jury of 5 experts in the field of Obstetrics Gynecological Nursing. Test reliability of the proposed tools was done by conbach's alpha test to show the relation between test A and retest B in data recorded

**Pilot study:**

A pilot study was carried out on thirty women, ten for each position. It was conducted to test the feasibility and applicability of the study maneuvers, and to assess the clarity and completeness of the tools. It also helped to set the timeframe of the study according to the time required to fill out the forms. Analysis of the pilot data

indicated the need to delete some items from the tools pertaining to the first stage of labor.

**Fieldwork:**

Upon securing official permissions, the researcher started the actual fieldwork. This was started in January 2010 and ended in November 2011. The researcher attended each of the two study settings three days per week. The work procedures were explained to the healthcare providers to gain their cooperation during the application of the maneuver and the process of data collection.

Each eligible woman, according to the inclusion and exclusion criteria, was approached by the researcher. Upon obtaining her consent, she was assigned to one of the three labor position groups. All women in the three groups received the same support and care from the attending healthcare team.

Each participating patient was interviewed by the researcher using the structured interview schedule form. Then, physical assessment for fetal and maternal condition was done upon admission, and during the second, and third stage of labor using the assessment sheet. Observational checklist was used to record the progress of second and third stage labor,

**Statistical design:**

Data entry and statistical analysis were done using SPSS 16.0 statistical software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations for quantitative variables. For multiple group comparisons of

quantitative data, one-way analysis of variance test (ANOVA) was used. Qualitative categorical variables were compared using chi-square test. Whenever the expected values were less than 5 in more than 25% of the cells in larger than 2x2 cross-tables, no valid test could be applied. Statistical significance was considered at p-value <0.05.

### Results:

**Table (1):** Shows the characteristics of the sample, it demonstrate that the mean age of women in the dorsal recumbent(DR) group 26.1 years, compared to 27.1 years in the semi-sitting (SS) group and 26.9 years in lithotomy (LI) group. Although the difference among means of age were slight there was statistically significant (p=0.03). Meanwhile, the percentage of women with secondary or university education is higher in the SS group, compared to the other two groups (p=0.006). Concerning women's obstetric history, the percentages of para two –three are highest in the LI and SS group (53.8% and 41.3%), and lowest in the DR group (36.3%), and the differences are not statistically significant. Meanwhile, the DR group has the highest percentage of previous delivery with episiotomy (92.5%, p=0.004).

**Table (2):** Compares women's vital signs during the second stage of labor. It shows no differences of statistical significance among the three groups in their pulse, temperature, or systolic blood pressure. Only two (2.5%) women in the LI group have temperature higher than 37°C. None of the women in the three groups has systolic hypertension (140+ mm Hg).

Meanwhile, 2(2.5%) women in the SS group have diastolic hypertension (90+ mm Hg), and the difference is statistically significant (p<0.001).

Statistically significant differences are revealed among women in the three groups regarding uterine contractions during the second stage of labor as shown in **table (3)**. The mean duration of the contractions (84.5 sec) and of their frequency (4.5/min) are highest in the SS group, and lowest in the LI group (75.3sec, 3.5/min), (p<0.001). Similarly, 76.3% of the women in the SS group have intense contractions, compared to 10.0% in the DR group and 21.3% in the LI group (p<0.001). The rhythm is regular and the progress is increasing in almost all women in the three groups. As for the membranes, 96.3% of the women in the SS group have their membranes ruptured, compared to 87.5% in the DR group and 76.3% in the LI group (p=0.001). Concerning fetal heart rate, none of the three groups exceeds 160 bpm. However, the mean is lowest in the DR group (139.0) compared to the other two groups, and the difference is statistically significant (p<0.001).

**Figure (1):** Illustrates more intense molding in the LI group, reaching "++" in 8.8% of the women and "+" in 80.0% of them. Meanwhile, 37.5% of the women in the DR group and 2.5% of those in SS groups reached stage "+", and none of them reached stage "++" of molding. (Test result was not valid).

Regarding the mode of delivery, **table (4)** shows that all women in the three groups have normal vaginal delivery, with spontaneous placental delivery. However, the rate of episiotomy is

lowest in the SS group (13.8%), compared to 38.8% in the DR group and 45.0% in the LI group,  $p < 0.001$ . Very low percentages in the three groups have incomplete placental delivery.

**Table (5):** Demonstrates that the mean duration of the second stage in the SS group (11.8 min) is almost half of those in the DR (20.4 min) and LI (23.5 min) groups, and the difference is statistically significant ( $p < 0.001$ ). Similarly, the mean duration of the third stage is lower in the SS group (12.9 min), compared to 16.9 and 17.7 minutes in the DR and LI groups, respectively ( $p < 0.001$ ).

#### **Discussion:**

This study was carried out to compare the effect of maternal semi-sitting or dorsal recumbent versus lithotomy positions on labor progress. It was hypothesized that the semi-sitting (SS) position would be associated with better labor progress compared to dorsal recumbent (DR) and Lithotomy (LI) positions. The study findings lead to acceptance of this hypothesis.

The study was conducted using a quasi-experimental design. Unlike randomized clinical trial, this design entails no randomization, which is a process that ensures similarity of the compared groups. Socioeconomic factors may influence the choice of the method as well as the maternal and fetal outcomes. However, **Hafez, Ali H. and Ali S. (2011)** reported that maternal age does not result in a higher sense of security or control during delivery, and neither of the delivery positions tried is more suitable for any particular age group.

As regards the obstetric history women in the DR group had the lowest percentages of multiparty (2-3), which is probably more influential on the mode of delivery, compared to gravidity as indicated by **Terry et al., (2006)**. Meanwhile, women in the DR group had the highest percentage of previous episiotomy. Nonetheless, none of the women had a history of cesarean section.

Assessment of women's vital signs during the second stage of labor demonstrated that all or almost all of them had their pulse, temperature, and blood pressure within the normal limits. However, the mean diastolic blood pressure was significantly lower in the DR and LI groups. This might be related to the fact that these supine positions are associated with decreased blood pressure, decreased uterine blood flow, and increased catecholamines (**Barrett & Stark, 2010**).

The present study results demonstrated significant differences among the three groups in the frequency and quality of uterine contractions during the second stage of labor. The results indicate that women in the SS group had more frequent contractions with longer duration and higher intensity. The findings are in agreement with previous studies which reported stronger and more efficient uterine contractions in non-supine labor positions (**De Jonge & Largo-Janssen, 2004; Soong & Barnes, 2005; Stremmer et al., 2005; Altman & Lydon-Rochelle, 2006; De Jonge et al., 2008**).

The better uterine contractions associated with the semi-sitting position might be

explained by the utilization of the effect of gravity compared to the other dorsal recumbent and lithotomy positions. This would enhance cervical dilatation and subsequently reduce the risk of obstructed labor, and may improve fetal descent. This is congruence with **Declercq et al. (2006)**, and **Lawrence et al. (2009)** who also added that the semi-recumbent or non-supine positions are associated with more effective bearing down, improved fetal positioning, increased diameters of the pelvis.

Moreover, the semi-sitting position may give the parturient women more feeling of being in control, compared to the other two supine positions; this may make them more able to have effective communication with attending health professionals (**Simkin et al., 2005; Gupta & Nikodem, 2010**).

According to the present study results, all women in the three different positions delivered vaginally. Nonetheless, the percentage of women who had episiotomy was significantly lower in the SS group. This may point to more difficult labor in the two supine positions, namely DR and LI. This might be due to the more lack of movement in these positions, which may decrease the progress of labor. In agreement with this, **Bloom et al. (1998)** found lower rates of episiotomies in the non-supine positions. Additionally, a number of studies demonstrated that the dorsal recumbent and lithotomy positions do not allow much position changes during labor. Such immobility would decrease the baby's ability to flex, engage into the pelvis, find the best fit, rotate, and descend. The end-result would be a need for forceps,

vacuum extraction, or cesarean section (**Roberts et al., 2005; Simkin & Ancheta, 2005**).

Another benefit of the non-supine SS position on the process of labor is related to the duration of its second and third stages. The present study showed that women in the SS group had the lowest means of the duration of the second and third stages of labor. The findings are compatible with the results showing improved uterine contraction and progress of labor. In agreement with this, **Lawrence et al., (2009)** clarified that the non-supine position results in stronger bearing down efforts which are important in the progress of labor in the second stage. Moreover, it has been suggested that non-supine birthing positions may be advantageous because they facilitate more efficient pushing, and shorten the second stage (**Roberts & Hanson, 2007; Yildirim & Beji, 2008**).

The present study findings also point to a shorter duration of the second stage of labor in the semi-sitting position group comparing to dorsal recumbent and lithotomy position groups (11.8 min, 20.4 min, and 23.5 min respectively,  $p < 0.001$ ). Our result agree with **Lawrence et al., (2009)** who found that the second stage was significantly shorter for the sitting position compared to the supine position in nulliparous women, but not in the multiparous ones. Also the finding is similar to study of **Gupta and Nikodem (2010)** who reported that dorsal recumbent position reduced the duration of the second stage of labor comparing to lithotomy position. On the other hand, the duration of the second stage of labor was found to be significantly shorter in the lithotomy

position compared to the dorsal recumbent position (**Hafez et al., 2011**). In addition, some studies could not show a significant effect of the labor position on the duration of the second and third stages of labor. Furthermore, **Lawrence et al. (2009)** and **Miquelutti et al. (2009)** reported that many earlier studies did not find any significant effects of labor position on the length of labor, and the results are inconclusive.

### **Conclusion:**

Semi-sitting position was associated with better progress of second stage of labor demonstrated by significant increasing in frequency, intensity, and duration of the uterine contractions compared to dorsal recumbent and lithotomy positions ( $p < 0.001$ ). The mean duration of the second stage was significantly decreased in the semi-sitting position group comparing to dorsal recumbent and lithotomy position groups (11.8 min, 20.4 min, and 23.5 min respectively,  $p < 0.001$ ). Similarly, the mean duration of the third stage is lower in the SS group (12.9 min), compared to 16.9 and 17.7 minutes in the DR and LI groups, respectively ( $p < 0.001$ ). The need for episiotomy is lowest in the SS group compared to DR group and LI group,  $p < 0.001$ . No statistical significance differences among the three groups in their pulse, temperature, or systolic blood pressure. But, diastolic hypertension was observed in the SS group have, ( $p < 0.001$ ).

### **Recommendations:**

Depending on the results of this study, we recommend the following:

1. Encouraging the utilization of the semi-sitting position during 2<sup>nd</sup> stage of labor and eliminate the use of supine positions.
2. Randomized clinical trial is needed to provide further confirmation of the study findings.



**Table (1): Characteristics of women in the three study groups**

Item	Group						X <sup>2</sup> Test	p-value
	Semi-Sitting (n=80)		Dorsal recumbent (n=80)		Lithotomy position (n=80)			
	No.	%	No.	%	No.	%		
<b>Age (years):</b>								
• <25	11	13.8	19	23.8	14	17.5	H=6.97	0.03*
• 25-	67	83.8	59	73.8	62	77.5		
• 30+	2	2.5	2	2.5	4	5.0		
<b>Range</b>	22.0-35.0		20.0-36.0		22.0-35.0			
<b>Mean±SD</b>	27.1±2.6		26.1±2.8		26.9±3.0			
<b>Education:</b>								
• Illiterate/read	0	0.0	0	0.0	6	7.5	14.55	0.006*
• Basic	25	31.3	34	42.5	28	35.0		
• Secondary/univ.	55	68.8	46	57.5	46	57.5		
<b>Parity:</b>								
• 1	47	58.8	51	63.8	37	46.3	5.28	0.07
• 2-3	33	41.3	29	36.3	43	53.8		
<b>Last delivery:</b>								
<b>Mode:</b>	17	21.3	6	7.5	22	27.5		
• NVD								
• NVD+Episiotomy	63	78.8	74	92.5	58	72.5		

(\*) Statistically significant at  $p < 0.05$ 

(-- ) Test result not valid

**Table (2): Vital signs during second stage among women in the three study groups**

Item	Group						ANOVA Test	p-value
	Semi-Sitting (n=80)		Dorsal recumbent (n=80)		Lithotomy position (n=80)			
	No.	%	No.	%	No.	%		
<b>Pulse (bpm)</b>								
• <80	42	52.5	51	63.8	62	77.5	1.49	0.47
• 80-<90	38	47.5	29	36.3	18	22.5		
<b>Range</b>	67.0-86.0		65.0-86.0		69.0-85.0			
<b>Mean±SD</b>	77.0±4.7		76.3±5.3		76.7±3.3			
<b>Temperature:</b>								
• ≤37	80	100.0	80	100.0	78	97.5	0.67	0.71
• >37	0	0.0	0	0.0	2	2.5		
<b>Range</b>	37.0-37.0		37.0-37.0		36.0-38.0			
<b>Mean±SD</b>	37.0±0.0		37.0±0.0		37.0±0.2			
<b>Systolic blood pressure (mm Hg):</b>								
• <120	57	71.3	57	71.3	74	92.5	3.42	0.18
• 120-	17	21.3	17	21.3	3	3.8		
• 130+	6	7.5	6	7.5	3	3.8		
<b>Range</b>	100-130		100-130		100-130			
<b>Mean±SD</b>	111.3±8.6		110.9±8.8		108.9±6.4			
<b>Diastolic blood pressure (mm Hg):</b>								
• <70	19	23.8	38	47.5	42	52.5	24.31	<0.001*
• 70-	37	46.3	28	35.0	35	43.8		
• 80-	22	27.5	14	17.5	3	3.8		
• 90+	2	2.5	0	0.0	0	0.0		
<b>Range</b>	60.0-90.0		60.0-80.0		60.0-80.0			
<b>Mean±SD</b>	72.1±7.1		68.1±6.7		66.9±4.5			

(\* ) Statistically significant at  $p < 0.05$

**Table (3): Labor progress findings and fetal condition during the second stage among women in the three study groups**

Item	Group						X <sup>2</sup> Test	p-value
	Semi-Sitting (n=80)		Dorsal recumbent (n=80)		Lithotomy position (n=80)			
	No.	%	No.	%	No.	%		
<b>Uterine contractions:</b>								
<b>Duration (sec)</b>								
• 60-	3	3.4	9	11.3	17	21.3	H=103.99	<0.001*
• 70+	77	96.6	71	88.7	63	78.7		
<b>Range</b>	70.0-90.0		70.0-85.0		65.0-85.0			
<b>Mean±SD</b>	84.5±5.3		77.6±3.8		75.3±3.9			
<b>Frequency/10 min:</b>								
• 3-4	33	41.3	63	78.8	80	100.0	H=79.22	<0.001*
• 5+	47	58.8	17	21.3	0	0.0		
<b>Range</b>	3.0-5.0		3.0-5.0		3.0-4.0			
<b>Mean±SD</b>	4.5±0.6		4.0±0.7		3.5±0.5			
<b>Rhythm:</b>								
• Irregular	1	1.3	0	0.0	0	0.0	2.01	0.37
• Regular	79	98.8	80	100.0	80	100.0		
<b>Intensity:</b>								
• Mild	0	0.0	2	2.5	0	0.0	90.29	<0.001*
• Moderate	19	23.8	70	87.5	63	78.8		
• Intense	61	76.3	8	10.0	17	21.3		
<b>Progress:</b>								
• Stationary	0	0.0	0	0.0	0	0.0	0.00	1.00
• Increasing	80	100.0	80	100.0	80	100.0		
<b>Membranes:</b>								
• Intact	3	3.8	10	12.5	19	23.8	13.92	0.001*
• Ruptured	77	96.3	70	87.5	61	76.3		
<b>Fetal heart rate(bpm):</b>								
• 120-	73	91.3	75	93.8	66	82.5	H=41.10	<0.001*
• 160	7	8.8	5	6.3	14	17.5		
<b>Range</b>	135-160		120-160		130-160			
<b>Mean±SD</b>	148.1±6.6		139.0±11.3		148.8±8.2			

(\* ) Statistically significant at  $p < 0.05$  (H): ANOVA test

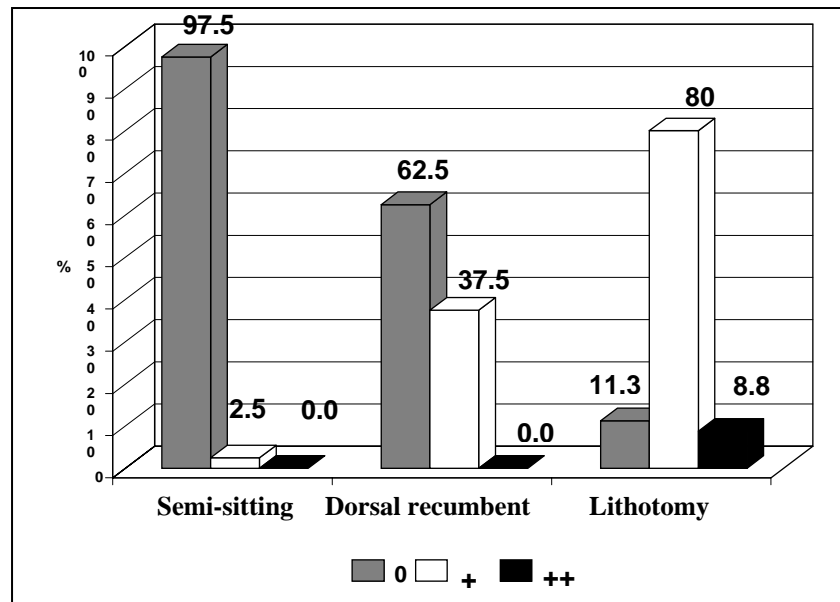


Figure (1): Molding during the second stage among women in the three study groups

Table (4): Mode of delivery among women in the three study groups

Item	Group						X <sup>2</sup> Test	p-value
	Semi-Sitting (n=80)		Dorsal recumbent (n=80)		Lithotomy position (n=80)			
	No.	%	No.	%	No.	%		
<b>Mode of labor:</b>								
• NVD	69	86.3	49	61.3	44	55.0	19.94	<0.001*
• NVD+Episiotomy	11	13.8	31	38.8	36	45.0		
<b>Placental delivery:</b>								
• Spontaneous	80	100.0	80	100.0	80	100.0	0.00	1.00
<b>Placenta:</b>								
• Complete	76	95.0	74	92.5	72	90.0	1.44	0.49
• Incomplete	4	5.0	6	7.5	8	10.0		
<b>Conducted by:</b>								
• Doctors	65	81.3	65	81.3	59	73.8		
• Nurses	4	5.0	2	2.5	5	6.3	--	--
• Interns	10	12.5	12	15.0	16	20.0		
• Researcher	1	1.3	1	1.3	0	0.0		

(\*) Statistically significant at  $p < 0.05$

(--) Test result not valid

**Table (5): Duration of various stages of delivery among women in the three study groups**

Duration (minutes)	Group						ANOVA Test	p-value
	Semi-Sitting (n=80)		Dorsal recumbent (n=80)		Lithotomy position (n=80)			
	No.	%	No.	%	No.	%		
<b>Stage II:</b>								
• <15	68	85.0	2	2.5	0	0.0	172.48	<0.001*
• 15-	12	15.0	78	97.5	77	96.3		
• 30+	0	0.0	0	0.0	3	3.8		
<b>Range</b>	8.0-20.0		14.0-25.0		17.0-30.0			
<b>Mean±SD</b>	11.8±2.4		20.4±2.7		23.5±2.9			
<b>Stage III:</b>								
• <15	61	76.3	7	8.7	2	2.5	111.57	<0.001*
• 15-	19	23.8	73	91.3	78	97.5		
<b>Range</b>	10.0-19.0		12.0-20.0		12.0-30.0			
<b>Mean±SD</b>	12.9±2.3		16.9±1.8		17.7±2.6			

(\*) Statistically significant at  $p < 0.05$

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