

## Comparison of Labor Outcomes in Physiological and Normal Delivery Methods

Masoomeh Shakeri

MSC of midwifery ,Faculty member of Zanjan Branch, Islamic Azad University Department. of midwifery, Zanjan Branch, Islamic Azad University , Zanjan, Iran  
[shakerimasoomeh@gmail.com](mailto:shakerimasoomeh@gmail.com)

**Abstract:** Labor is one of the most critical and important services of healthcare systems in all communities. Like other services, labor services should be associated with the best outcome and minimum physical complications. This aim of the present study is to compare labor outcomes of physiological and normal delivery methods in mothers referred to Zanjan maternity hospitals in 2013. This is a clinical trial study conducted on 200 eligible nulliparous pregnant women referred to Zanjan maternity hospital in 2013. The mothers were selected randomly and divided into two groups of physiological labor and normal delivery. The data was collected using the General Health Questionnaire (GHQ) and a questionnaire. The content validity of the questionnaire was confirmed. The reliability of GHQ was confirmed through an agreement between assessors. The internal reliability of the Satisfaction Questionnaire was also confirmed. Data analysis was performed using descriptive and inferential statistics including the paired t-test, Chi-square and ANOVA with the help of SPSS. According to the results, there was no significant difference between the two groups in terms of age, BMI, educational level, gestational age and employment status. The cesarean rate decreased in the physiological labor as compared to the normal delivery ( $p=0.04$ ). A significant difference was found between intervention and experimental groups in terms of the mean score of the maternal general health ( $p=0.001$ ). However, no significant difference was found between the two groups in terms of the first and fifth minutes' Apgar scores ( $p=0.341$ ,  $p=0.233$ ). The results indicated the impact of physiological labor on the cesarean rate and general maternal health. The widespread use of physiological labor will improve the qualitative indicators of maternal health.

[Shakeri M. **Comparison of Labor Outcomes in Physiological and Normal Delivery Methods.** *Researcher* 2014;6(6):14-17]. (ISSN: 1553-9865). <http://www.sciencepub.net/researcher>. 4

**Keywords:** Physiological labor, Labor outcome, Normal labor

### 1. Introduction

Maternal and neonatal health is among the most important health indicators in most communities (Khorsandi , 2008). Labor is an event with severe psychological, social and emotional impacts on maternal health (Hodnet ,2002). Labor is a purely physiological process. Lord has provided necessary conditions and tools for natural delivery without medical interventions (Keshavarz ,2003). Labor is one of the most critical and important services of healthcare systems in all communities. Since all healthcare services should be provided with low cost, best outcome and minimum physical complications, the delivery process is no exception (Shakeri,2011). Various studies show that 85% of normal deliveries do not require medical intervention. This physiological natural process will be terminated healthy just with training mothers and with care and monitoring during labor (Khorsandi , 2008). Choosing the right method of delivery may affect maternal and neonatal health (Shakeri,2011). With the development of specialized and hospital services during the past five decades and with the growing trend of deliveries in hospitals and birth centers in Iran, labor has been considered as a medical and specialized problem, thus unnecessary medical interventions have been proposed for delivery

(Keshavarz ,2003).

Many researchers are trying to find an appropriate method of delivery to contribute to physiological delivery and prevent increased rate of cesarean using most effective treatments with the least side effects (Keshavarz ,2003). The nature of labor is pain. Labor is among overwhelming pain that women experience during their lifetime (Naghizadeh.2011). Labor may cause long-term emotional imbalances disturbing the mental health of mother with negative impacts on the mother-infant relationship (Goodman, 2004). Many researchers are trying to find an appropriate method of delivery to contribute to physiological delivery and prevent increased rate of cesarean due to the fear of labor to improve labor outcome (Rostampey,2010).

One of the factors affecting the maternal and neonatal outcomes is continuous support during labor (Campell, 2006). The support included in the physiological process of labor will facilitate delivery by reducing anxiety, modifying contraction activities and uterine blood flow (Goodman,2004). Several studies have been conducted to promote natural childbirth techniques to improve labor outcome. Most studies consider labor outcome as an important aspect to select the procedure for termination of pregnancy

(Hidarnia, 2005). This aim of the present study is to compare labor outcomes of physiological and normal delivery methods in mothers referred to Zanjan maternity hospitals in 2013. The results of the present study may be a step toward improved maternal health.

## 2. Materials and Methods

This is a clinical trial study conducted on 200 nulliparous mothers referred to Zanjan maternity hospital. The mothers who met the inclusion criteria were selected by quota random sampling technique and divided into two groups of physiological and normal delivery. Inclusion criteria were: nulliparity, the age between 18 to 35 years, singleton gestation with cephalic presentation, gestational age of 40-38 weeks and no history of infertility and anticipated normal delivery. The exclusion criteria include fetal distress, diagnosis of fetal abnormalities in the current pregnancy, premature rupture of membranes (PROM), rapid or premature delivery, the use of drugs for pain relief, cephalo pelvic disproportion (CPD), any complications during labor and delivery or any problem requiring intervention for maternal and fetal health. First, the Questionnaire No. 1 containing demographic data and inclusion and exclusion criteria was completed for each sample by the researcher. Then, the eligible samples were randomly divided into physiological and normal delivery groups. The data was collected through measurements, refer to the maternal records, interviews, demographic data form, delivery and postpartum information and general health questionnaire (GHQ). The content validity of the questionnaire was confirmed. The equivalence test was used to measure the reliability of the questionnaire. Accordingly, a correlation coefficient of 0.98 was calculated for the questionnaire. The questionnaire measures four subscales including physical signs, anxiety and insomnia, social dysfunction and depression. Each subscale consists of 7 questions with a score of 0 to 3 on a Likert scale. Questions 1 to 7 assess health and fatigue feelings and physical signs. Questions 7 to 14 diagnose problems such as anxiety and insomnia while questions 15 to 21 measure social dysfunction and the ability to deal with the professional demands and everyday issues. Finally,

questions 22 to 28 evaluate severe depression. A total score of 0 to 84 was calculated considering the subscales and the score achieved in each section. The demographic data form was completed before entering the study. The samples were randomly divided into intervention and control groups according to inclusion and exclusion criteria. Labor information form was completed 2 h after delivery referring maternal and neonatal records. The General Health Questionnaire (GHQ) was completed 8 weeks after delivery through phone interviews with mothers.

In the physiological labor, the six principles for physiological labor including spontaneous onset of labor, freely move (walk) in labor, continuous support during labor and lack of routine interventions, spontaneous pushing in non-supine positions and no separation of mother and baby from birth are emphasized. The principles of physiological labor including specialized care in labor, the presence of partner, intermittent auscultation of the fetal heart, mobility and displacement, least interventions and limited vaginal examinations were respected. In the normal delivery group, interventions such as shave, enema, open vessel, stimulated and intensified labor with oxytocin, rupture of membranes, the continuous monitoring of fetal heart rate, episiotomy and Ritgen's maneuvering and routine interventions were performed by midwife as directed by an obstetrician. After obtaining a written consent, the samples were divided into physiological labor and normal delivery groups.

The data was analyzed using descriptive statistics (frequency distribution table, central and dispersion indices) and inferential statistics such as ANOVA, independent t-test and Chi-square test at a significance level of 0.05.

## 3. Findings

According to the results, the mothers in both groups were similar in terms of age, educational level, body mass index (BMI), gestational age, planned or unplanned pregnancy, the marriage duration, the economic status of family and spouse's educational level and job.

**Table 1:** Mean general health scores of nulliparous women referred to Zanjan maternity hospitals for physiological and normal labor groups

General health aspects	Physiological labor (Mean $\pm$ SD)	Routine delivery (Mean $\pm$ SD)	P value
Physical signs	0.17 $\pm$ 1.01	2.7 $\pm$ 6.32	0.04
Anxiety and insomnia	1.71 $\pm$ 0.98	1.55 $\pm$ 6.22	0.01
Dysfunction	0.6 $\pm$ 0.3	1.82 $\pm$ 4.02	0.001
Depression	0.8 $\pm$ 0.13	2.31 $\pm$ 3.11	0.01
Total general health score	3.28 $\pm$ 2.42	8.38 $\pm$ 19.67	0.001

**Table 2:** Comparison of the first and fifth minutes' Apgar scores of nulliparous women referred to Zanjan maternity hospitals for both physiological and normal labor groups

Apgar score	Physiological labor (Mean $\pm$ SD)	Routine delivery (Mean $\pm$ SD)	P value
First minute	0.82 $\pm$ 8.86	1.02 $\pm$ 8.82	0.341
Fifth minute	0.74 $\pm$ 9.2	0.56 $\pm$ 9.43	0.271

The comparison of results showed that the cesarean rate in the physiological labor is significantly lower than the control group ( $p=0.04$ ). Furthermore, the average score of maternal general health in the physiological labor group was significantly higher than the routine delivery ( $p=0.001$ ) (Table 1). No significant was found between the experimental and control groups in terms of first and fifth minutes' Apgar scores ( $p=0.341$ ,  $p=0.231$ ) (Table 2).

#### 4. Discussion

Improvement of maternal health is one of the basic pillars of healthcare systems in all communities. Accordingly, the outcome of pregnancy is defined as a factor affecting maternal health. According to the results of the present study, cesarean rate in the physiological labor was significantly lower than in the routine delivery. This is consistent with the results of Hofmeyer, et al. In a comparative study, Hofmeyer et al. found that the rate of cesarean in induced labor is significantly higher than in spontaneous supported labor (Mackey,2003). According to previous studies, 85 percent of deliveries without interventions will result in normal complication-free labors. According to Shakeri et al., one of the reason for the increased rate of cesarean is the fear of labor pain(Shakeri,2011). Simkin believes that the most effective factor reducing the labor intensity is ongoing presence of a supporting partner during the delivery process(Simkin,2003).

The results showed a significant correlation between the use of physiological delivery method and the total general maternal health score ( $p=0.04$ ). Fear of labor unknowns increase medical intervention (Javadnoori, 2008). Among the principles of physiological labor are the presence of a supporting partner during childbirth, no additional intervention in the labor room and desired maternal position during labor. It seems that physiological delivery will improve general health subscales and thereby the general maternal health by reducing stress, adequate support during childbirth and physiological labor (Table 1).

No significant correlation was found between the first and fifth minutes' Apgar scores and the delivery method (physiological or normal labor). Osmmundson et al. compared neonatal outcomes in nulliparous women in spontaneous and induced labor groups in Chicago during 2006-2008. For this purpose, 294 mothers from each group were studied. Neonatal

outcomes including the umbilical artery pH less than 7, fifth minute's Apgar score less than 7 and admission to the ICU were similar(Javadnoori,2008). in both groups. In a similar study conducted by Robertson et al., the infants birthed by physiological and normal labor methods were not significantly different in terms of first minute's Apgar score. But there was a significant difference between the two groups in terms of fifth minute's Apgar score(Samiezadeh,2011). Due to discrepancies in the results, complementary studies seem to be necessary to identify all factors affecting neonatal outcomes. According to the results of the present study, physiological childbirth will improve the general maternal health and thus family health. More comprehensive studies are recommended to evaluate the impact of physiological labor care components on improved maternal health.

#### Acknowledgement

The present paper is the outcome of a research plan approved by Islamic Azad University of Zanjan Hereby. I appreciate Research Department of Islamic Azad University of Zanjan. That provided us with the opportunity to conduct the present study. We also thank all those who helped us to conduct this research for their efforts.

#### Correspondence to:

Masoomeh Shakeri  
Faculty member of Zanjan Branch, Islamic Azad University Department. of midwifery, Zanjan Branch, Islamic Azad University, Zanjan, Iran  
[shakerimasoomeh@Gmail.com](mailto:shakerimasoomeh@Gmail.com)

#### References

1. Khorsandi M, Ghofranipour F, Hidarnia A Faghizadeh S, Vafaei M, Rousta F, et al(2008). The effect of childbirth preparation classes on childbirth fear and normal delivery among primiparous women. Arak Medical University Journal (Rahavard Danesh);11(3): 29-36.
2. Hodnett ED(2002). Pain and women's satisfaction with the experience of childbirth: a systematic review. Am J Obstet Gynecol ;186(5): 160-72.
3. Keshavarz M, Shariati M, Jahdi F(2009). Effects of complementary therapies on pain and labor outcomes in nuliparous women referred to delivery unit in Fatemiyeh Hospital in Shahrood

- city (2003-2005) Medical Science Journal of Islamic Azad University,tehran Medical Unite;18(4): 245-50.
4. Shakeri M, Mazlomzade S, and Mohammadian F(2011). Factors Affecting the Rate of Cesarean Section in Zanzan Maternity Hospitals in 2008. Zanzan University of Medical Sciences Journal. 20(80): p. 98-104.
  5. Naghizadeh S, Sehhati F, Barjange S, Ebrahimi H(2011). Comparing mothers' satisfaction from ethical dimension of care provided in labor, delivery, and postpartum phases in Tabriz's educational and non- educational hospitals in 2009. J Research & Health; 1:25-33.
  6. Goodman P, Mackey M,Tavakoli AS(2004). Factors related to childbirth satisfaction. J Adv Nurs; 46(2):212-19.
  7. Rostampey Z, Khakbazan Z, Golestan B(2010). The effect of trained female relative on active phase length during labor among low risk pregnancies. Journal of Medical Faculty Guilan University of Medical Sciences;19(75): 79-85.
  8. Campell DA, Lake MF, Falk M. A Randomized Control Trail of Cntinuous Support during Lab by a Lay Doula. J Obstet Gynecol Neonatal Nurs. 2006; 35: 456-64.
  9. , Hidarnia A, Vafaei M(2005).Effect of relaxation training based on the synthesizing of the precede model with the health belief model and the self-efficacy theory on anxiety and pregnancy outcomes among pregnant women] [Thsise in Persian]. Tehran:Tarbiat Modares University;1:42-45.
  10. Mackey MC, Goodman P , Tavakoli AS(2003). Factors related to childbirth satisfaction.J Nurs;46:212-9.
  11. .Field M(2009).Postpartum depression in Asian cultures: a literature review.Int J Nurs Stud . Oct;46(10):1355-73.
  12. Langer A, Campero L, Garcia C, Reynosos (1998). The effects of psychosocial support during labor and childbirth on breastfeeding,Medical Interventions and mothers welling: A randomized clinical trial. BJOG;105(10):1056-63.
  13. Nobakht F, Safdari Dahcheshmeh F, Parvin N,Rafiee Vardanjani L(2012). The Effect of the Presence of an Attendant on Anxiety and Labor Pain of Primiparae Referring to Hajar Hospital in Shahre Kurd, 2010. Journal of *Research Development in Nursing & Midwifery*;9(1):41-50.
  14. Javadnoori M, Afshari P, Montazeri S, Latifi S-M(2008).The effect of continuous labor support by accompanying person during labor process. Scientific Medical Journal of Ahwaz University of Medical Sciences;7(56): 32-8.
  15. Samieizadeh Toosi T, Sereshti M, Dashipur AR, Mohammadinia N, Arzani A(2011). The effect of supportive companionship on length of labor and desire to breastfeed in primiparous women. Journalof Urmia Nursing And Midwifery Faculty;9(4): 262-69. [Persian].

6/6/2014