

Preference of Birth Delivery Modes among Women Attending Antenatal and Postnatal Clinics in the Tamale Metropolis of Ghana

Williams Walana^{1*}, Samuel Ekuban Kwabena Acquah¹, Ezekiel Kofi Vicar¹, Abubakar Sidik Muhiba², Justus Bennett Dedume², Ibrahim Wunpini Mashoud², David Zawumya Kolbilla³, Iddrisu Baba Yabasin⁴, Sylvanus Kampo⁵ and Juventus Benogle Ziem¹

¹Department of Clinical Microbiology, School of Medicine and Health Sciences, University for Development Studies, Tamale, Ghana

²Department of Nursing, School of Allied Health Sciences, University for Development Studies, Tamale, Ghana

³Department of Obstetrics and Gynaecology, School of Medicine and Health Sciences, University for Development Studies, Tamale, Ghana

⁴Department of Anaesthesia, Tamale Teaching Hospital, Tamale, Ghana

⁵Department of Anaesthesia and Intensive Care, University for Development Studies, Tamale, Ghana

*Corresponding author: Williams Walana, Department of Clinical Microbiology, School of Medicine and Health Sciences, University for Development Studies, Tamale, Ghana, Tel: 243997017104; E-mail: walanawilliams@yahoo.com

Received date: November 21, 2016; Accepted date: January 20, 2017; Published date: January 25, 2017

Copyright: © 2017 Walana W, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

Abstract

Introduction: Spontaneous vaginal delivery is the commonest mode of delivery globally, particularly in remote areas of resource constrained countries where modern healthcare is limited. This study sought to establish among antenatal and postnatal attendees, women's preferences regarding modes of delivery and the factors influencing their choices of delivery.

Methods: This cross sectional hospital based study was conducted at the antenatal and post-natal care units of the obstetrics and gynaecology department of the Tamale Teaching Hospital. Data on respondents' demographic characteristics, their preferred mode of birth delivery, and the reasons influencing their choice of delivery modes were collected via a structured closed and opened ended questionnaire.

Results: A total of 499 women were interviewed. Majority (86.6%), of the respondents were within the ages of 18 to 34 years with modal age of 30 years and a mean age of 27.9 ± 5.6 years. In all, 85.0% (424) and 12.0% (60) preferred spontaneous vaginal delivery (SVD) and SVD with epidural anaesthesia respectively, while 3.0% (15) preferred delivery by elective caesarean section (CS). Majority (97.2%) of the respondents took self-decisions on their preferred mode of delivery. However, those who were influenced by healthcare workers were 1%, while 0.4% was influenced by their husbands and other family members respectively.

Conclusion: In conclusion, the study revealed that the respondents most preferred choice of mode of delivery was SVD, followed by SVD with epidural anaesthesia, with caesarean section being the least preferred. The respondents' have relatively low external influence regarding their preferred choice of delivery.

Keywords: Spontaneous; Vaginal; Delivery; Caesarean; Epidural; Anaesthesia

Introduction

Among the birth delivery methods available, spontaneous vaginal delivery (SDV) is the most common. It is the process through which child birth naturally occur through the birth canal. Conditions that may prevent natural delivery or make it difficult include cephalopelvic disproportion, foetal distress, abnormal presentations and other medical conditions. Usually, the presence of such conditions will require the use of other procedures such as caesarean section, vacuum extraction and forceps delivery [1]. Generally, spontaneous vaginal delivery is the main form of delivery, but when it is not prudent, caesarean is carried out.

In practice most often, the need for caesarean delivery is not determined until after the commencement of labour. Usually, the incidence of previous caesarean delivery has a high possibility of subsequent similar deliveries in future because of increased risk of

uterine rupture during labour and vaginal delivery [2,3]. However, between 60-80% of women who underwent previous caesarean delivery can still undergo normal vaginal delivery [4]. Even though caesarean delivery rate has increased throughout the world, it is still variably low in certain parts of the globe [5].

An estimated 18.5 million caesarean sections are carried out annually in the world, and in 3.6% the procedure is performed without any medical or surgical indications [6,7]. It has been established that serious complications or even deaths were more likely to occur following caesarean sections compared to spontaneous vaginal deliveries [8]. The World Health Organization (WHO) recommends caesarean delivery rates should not exceed 10-15% [9]. However, in the year 2008 alone, about 6.2 million avoidable caesarean deliveries were performed, and the corresponding economic cost associated with such operations is estimated at 2.3 billion American Dollars [6].

The use of caesarean delivery and SVD with epidural anaesthesia are limited in the African health facilities, probably due to resource constrains, cultural values, fear of suffering and wrong perceptions of

womanhood. In Ghana, spontaneous vaginal delivery is common as in most developing countries, but there exist paucity of information on the perception of women on the various modes of delivery and factors influencing such perception. Thus this study establishes the birth delivery preferences and the associated factors influencing choices of delivery modes among antenatal and postnatal attendees in the Tamale Teaching hospital.

Methodology

Study area and design

This cross sectional hospital based study was conducted at the antenatal and post-natal care units of the obstetrics and gynaecology department of the Tamale Teaching Hospital (TTH). The TTH is located in the Eastern part of the Tamale Metropolis. The hospital was commissioned as a Regional Referral Hospital in 1974 and gained accreditation as a teaching hospital in 2007, with a client base of about two million people. The TTH serves as a referral centre for the Northern, Upper East and West Regions, the Northern parts of the Brong Ahafo Region and Neighbouring countries like Togo, Burkina Faso and La Cote D'ivoire. The hospital has a bed capacity of over one thousand and it serves as a clinical teaching institution for all health training institutions in the Northern Region. The obstetrics and gynaecology department is one of the several departments in the hospital, with the overall responsibility of providing antenatal, postnatal, gynaecological and family planning service. In addition, the department handles medical and nursing students in obstetrics and gynaecology. The study was conducted between April and May, 2015. The study population comprised of all expectant mothers and mothers attending antenatal and postnatal clinics respectively during the period of the study.

Sampling and data collection

A total of 499 women were randomly sampled for the study. The antenatal and postnatal clinics together attend to an average of 2000 clients in a month. About 8 to 12 people were interviewed in a day for a period of two months. The days for data collection excluded weekends. Data was collected using carefully designed, pre-tested and validated closed and opened ended questionnaire. The questionnaire captured data on respondents' demography, socioeconomic factors, birth delivery preference and factors influencing choice of birth delivery modes. The study protocol was explained to all participants in a language they understood, and those who accepted to be interviewed were included in the study.

Data analysis

The data was entered into MS Excel version 2010 for Windows. Data was cleaned for data entry errors and exported to Statistical Package for the Social Sciences (SPSS) version 16.0 for Windows for data analysis. Skewness test was performed to check for the distribution of the data. Further, the data was analysed using descriptive statistics of frequencies and cross tabulations to compare the statistical proportions.

Ethical consideration

The study was approved by the Research Department of the TTH. Permission was also sought from participants after explaining the purpose and relevance of the study to them. The consent of the

respondents was sought prior to questionnaire administration, and only those who gave written consent were included in the study. The data was anonymously collected and kept confidential such that no portion of the data could be traced to any of the respondents.

Results

Socio-demographic characteristics of the study participants

A total of 499 women attending antenatal and post natal clinics were successfully interviewed. Majority of the respondents were within the ages of 18 and 34 years (86.6%), and a few 1% (5) below 18 years and 4% (20) were forty years and above. The modal age of the respondents was 30 years with a mean age of 27.9 ± 5.6 years. Regarding the participants' marital status, 76.6% (382) were married, and 18.4% (92) were single. Divorced mothers and mothers who had separated from their husbands were 1.4% (7) and 3.0% (15), respectively, while widows were 0.6% (Table 1). Majority of the participants 87.4% (436) had formal education while 12.6% (63) had no formal education. Among those who had formal education, 41.1% (179), 31.9% (139) and 27.1% (118) had a maximum of basic, secondary, and tertiary education levels, respectively. Occupation-wise, petty-traders were the most dominant 76.0% (379), followed by civil servants 11.2% (56). Farming and Healthcare worker recorded 7.0% (35) and 5.8% (29) respectively (Table 1).

Variable	Frequency (n)	%
Age(Years)		
<18	5	1.0
18-24	140	28.1
25-29	172	34.5
30-34	120	24.0
35-39	42	8.4
≥ 40	20	4.0
Marital Status		
Married	382	76.6
Single	92	18.4
Separated	15	3.0
Divorced	7	1.4
Widowed	3	0.6
Educational Status		
Formal education	436	87.4
Basic	179	41.1
Second cycle	139	31.9
Tertiary	118	27.1
No formal educational	63	12.6
Occupation		
Petty trading	379	76.0

Civil Servant	56	11.2
Farming	35	7.0
Healthcare worker	29	5.8

Table 1: Demographic characteristics of the study population.

Respondents' birth delivery preference

Overall, 85.0% (424) of the respondents preferred SVD while 12.0% (60) preferred SVD with epidural anaesthesia. The least preferred mode of birth delivery was caesarean section 3.0% (15) (Figure 1).

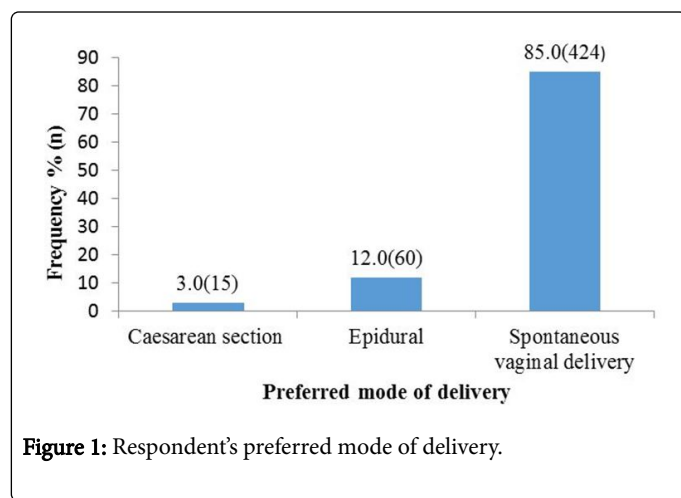


Figure 1: Respondent's preferred mode of delivery.

Respondents' reasons for their preferred choice of mode of delivery

Among the reasons given by respondents who preferred caesarean section (CS) were; medical advice, less stress during labour and fear of labour pain (Table 2). All the participants who would prefer SVD with epidural anaesthesia said they will opt for it because the delivery process is painless, whereas those who would prefer SVD gave multiple reasons including; it is natural, safe, easy, simple and offers quick post-delivery recovery (Table 2).

Why preferred mode of delivery?	Frequency (n)	%
Spontaneous vaginal delivery (n=424)		
Natural and safe	147	34.7
Safe	97	22.9
Less complications	60	14.2
Quick recovery	49	11.6
Due to previous experience	21	5.0

Variable	CS	%	Epidural	%	SVD	%	Total	%
Age of clients								
<18	0	0	2	40	3	60	5	1
18-24	7	5	18	12.9	115	82.1	140	28.1

Fear of surgery	12	2.8
To experience labor process	10	2.4
Less painful after delivery	9	2.1
Less invasive	7	1.7
Simple	4	0.9
Does no limit number of births	3	0.7
Easy	2	0.5
Painless	1	0.2
Caesarean section (n=15)		
Doctor's advice	4	26.7
Less stressful	4	26.7
Easy with no labor stress	3	20
Less pain	3	20
Fear of labour pain	1	6.7
Spontaneous vaginal delivery with epidural (n=60)		
Painless	60	100

Table 2: Reasons for preferred mode of delivery.

Factors influencing respondents' choice of birth delivery

None of the respondents <18 years old and those ≥ 35 years old preferred birth delivery by CS. Respondents of the other age categories however had variable preferences for birth delivery modes with a positive trajectory from CS delivery through delivery by SVD with epidural anaesthesia to SVD. Similarly, respondents' educational level showed varied preference for available birth delivery option with greater aversion for CS delivery and increased affinity to SVD. Mothers with ≥ 3 parity would not opt for CS delivery, while mothers with ≥ 5 parity would neither prefer delivery by CS nor SVD with epidural anaesthesia. However, mothers with ≤ 2 parity had varied preferences for the various birth delivery modes. Even though majority 97.2% (490) of the mothers took self-decision on their preferred mode of delivery, 1.0% (5) of the respondents were influenced by Healthcare worker, while 0.4% (4) were each influenced by their husbands or other family members. Out of the 12.0% (60/499) mothers who previously under-went CS delivery, only 13.3% (8/60) still would prefer same mode of delivery, while 85.0% (51/60) and 1.7% (1/60) would prefer SVD and SVD with epidural anaesthesia. Also, only 0.4% (1/247) and 15.0% (37/247) of respondents delivered previously by SVD would prefer CS and SVD with epidural anaesthesia in their next deliveries, respectively (Table 3).

25-29	6	3.5	13	7.6	153	89	172	34.5
30-34	2	1.7	16	13.3	102	85	120	24
35-39	0	0	8	19	34	81	42	8.4
≥ 40	0	0	3	15	17	85	20	4
Parity								
0	5	3.5	19	13.5	117	83	141	28.3
1	5	4.5	10	8.9	97	86.6	112	22.4
2	5	4.2	8	6.7	107	89.2	120	24
3	0	0	11	12.8	75	87.2	86	17.2
4	0	0	12	37.5	20	62.5	32	6.4
5	0	0	0	0	6	100	6	1.2
6	0	0	0	0	2	100	2	0.4
Educational level								
Basic	4	2.2	27	15.1	148	82.7	179	35.9
Second cycle	5	3.6	11	7.9	123	88.5	139	27.9
Tertiary	2	1.7	18	15.3	98	83.1	118	23.6
No formal education	4	6.3	4	6.3	55	87.3	63	12.6
Who influenced?								
Family	0	0	0	0	2	100	2	0.4
Husband	0	0	0	0	2	100	2	0.4
Healthcare worker	0	0	2	40	3	60	5	1
Self	15	3.1	58	11.8	416	85.1	490	98.2
Past deliveries								
CS	8	13.3	1	1.7	51	85	60	12
SVD	1	0.4	37	15	209	84.6	247	49.5
SVD CS	2	3.8	5	9.4	46	86.8	53	10.6

Table 3: Factors influencing respondent's choice of preferred mode of delivery (Key: CS: Caesarean Section, Epidural: Spontaneous vaginal delivery with epidural anaesthesia, SVD: Spontaneous Vaginal Delivery).

Discussion

This study revealed that 85.0% of the respondents had preference for SVD compared to the other modes of delivery, suggesting approximately 9 out of every ten mothers interviewed preferred SVD. This observation agrees with studies conducted in similar settings [10-12]. The proportion of preference for SVD was higher than that of a similar study conducted in the southern part of Ghana where 55.2% of mothers preferred SVD [13] and in Chile where 77.8% of women preferred SVD [14]. Among the reasons given for their inclination towards SVD in the current study included quick post-delivery recovery, natural and safe, easy and simple. In part, the current study commensurate with previous reports where SVD was viewed as

normal, healthy and a natural sign indicating a successful passage from womanhood to motherhood [15-17].

Mothers who preferred SVD with epidural anaesthesia constituted 12.0% of the study population, suggesting that approximately one out of every ten of the interviewees liked to be delivered by this method. Like many other developing countries, the practice of SVD with epidural anaesthesia is relatively new in Ghana and only few hospitals provide such service usually on request. The service is also seen as a preserve for people who are thought to be financially sound and of high social status. It was observed from the study that, most of the mothers who opted for the service did so after it was explained to them, suggesting the existence of low awareness and knowledge levels about the service. However, the study revealed that SVD with epidural

anaesthesia is the second preferred mode of child delivery. By inference, mothers who preferred this method of delivery also liked SVD but the pain associated with it often serves as a deterrent. Nonetheless, many more mothers would still prefer SVD because mostly it is the only option available, and it is preserved as natural. Moreover, the seemingly acceptable cultural effect of pain endurance may also contribute to the societal aversion for the other birth delivery modes even when options are available. It is therefore not surprising that the proportion of mothers who preferred SVD with epidural anaesthesia as observed in the present study is more than twice lower than that observed in Brunei Darussalam where 26% of mothers preferred SVD with epidural anaesthesia [18,19].

Respondents' aversion for CS was very high. Only three percent (3.0%) of the participants would prefer to be delivered by CS. In most Sub-Saharan Africa countries, the CS rate is relatively low, ranging from 1 to 2 percent [20,21]. Comparatively, CS are higher in many European and American countries [22]. Previous reports have shown that even in countries where CS delivery is above the WHO recommended range of 10 to 15 percent, the preference for CS remains relatively low [23,24]. According to studies in Pakistan and Iran, women with higher income status are more likely to accept CS than women with lower income [25,26]. However, in the current study, both the women with formal education as well as those without formal educations had relatively strong dislike for CS.

The current study established that 13.3% (8/60) of mothers who previously had CS delivery preferred same SVD, a finding which agrees with that of Torloni et al., who reported that only 14.7% out of 36% of their participants who had CS delivery preferred same mode of delivery [27]. Respondents who preferred delivery by CS thought it frees them from both the pain and stress associated with labour. This is consistent with a study by Sercekus and Okumus, who stated labour pain as the most common source of childbirth related fear [28]. Therefore, more mothers who opted CS delivery because of fear for labour pain are likely to accept SVD with epidural anaesthesia provided the service is available and accessible.

Past modes of delivery had some influence on the respondents preferred mode. In this study, 84.6% (209/247) of the respondents who had SVD in their previous delivery preferred SVD in their next delivery, 0.4% (1/247) would prefer CS and 15% (37/247) would like SVD with epidural anaesthesia, while only 13.3% (8/60) delivered previously by CS will prefer same. In a related study conducted by Yilmaz et al., in Turkey, 90% of women given their previous birth through SVD preferred same mode in their next delivery, whereas 36% of those given their last birth by CS liked same [29]. In contrast, Pang et al., reported in their study that 23.8% of 259 women with SVD were found to prefer CS after their first delivery, while 5 out of 25 women with elective CS changed their mind to prefer SVD [30]. The present study also observed that none of the participants with parity ≥ 3 and ≥ 5 would prefer delivery by CS and SVD with epidural anaesthesia respectively. However, all mothers with parity ≥ 5 liked SVD. It is worth noting that neither age, parity nor educational level have significant influence on participants' choice of delivery, an observation which concurs the findings of Yilmaz et al. [29].

Sources of influence generally emanated from family members, husband, and healthcare workers. However, majority 490 (98.2%) of the mothers took self-decision on their preferred mode of delivery. The study revealed that no husband or family member influenced any of the participants to take up delivery by CS or SVD with epidural anaesthesia, except the latter where two of the mothers claimed they

were influenced by a healthcare worker. This revelation possibly presents the seemingly societal aversion for CS delivery.

Conclusion

The current study observed that 85.0%, 12.0% and 3.0%, of women attending antenatal and postnatal clinics at TTH prefer SVD, SVD with epidural anaesthesia and CS delivery respectively. Majority of respondents preferred SVD because they believe it is safe, natural and offers quick postpartum recovery, while those who opted for caesarean section did so because they want to avoid the pain and stress associated with labour. Participants who preferred SVD with epidural anaesthesia accept the procedure because it makes the labour process painless. Based on the findings of the study, it is recommend that expectant mothers, and couples be educated on the delivery options available and their accessibility, more especially on labour with epidural anaesthesia. This will help clients to take informed decisions on their preferred mode of child delivery.

Acknowledgement

We are grateful to the management and staff of the Tamale Teaching Hospital for permitting us to undertake the study in the facility. We are also thankful to all participants who volunteered to be part of the study.

Competing Interest

The authors declare that they have no competing interest.

Author's Contribution

Authors WW, SEKA, DZK and JBZ conceived, developed the study protocol. WW and IBY drafted the first manuscript. Authors ASM, DBJ and IW collected the data for the study. Authors EKV and SK cleaned up and analysed the data. All authors made significant inputs and approved the final manuscript.

References

1. Cunningham G, Gant N, Leveno K, Giztrap L, Hauth J, Wenstrom K (2001) Induction and augmentation of labour. *Williams Obstetrics* 21: 469-479.
2. Chibber R, El-Saleh E, Fadhli RA, Jassar WA, Harmi JA (2010) Uterine rupture and subsequent pregnancy outcome—How safe is it? A 25-year study. *J Matern Fetal Neonatal Med* 23: 421-424.
3. Silver RM, Landon MB, Rouse DJ, Leveno KJ, Spong CY, et al. (2006) Maternal morbidity associated with multiple repeat cesarean deliveries. *Obstetrics and Gynaecology* 107: 1226-1232.
4. Dodd J, Crowther C (2004) Vaginal birth after caesarean versus elective repeat caesarean for women with a single prior caesarean birth: A systematic review of the literature. *Aust N Z J Obstet Gynaecol* 44: 387-391.
5. Rouhe H, SalmelaAro K, Halmesmaki E, Saisto T (2009) Fear of childbirth according to parity, gestational age and obstetric history. *BJOG: An International Journal of Obstetrics and Gynaecology* 116: 67-73.
6. Gibbons L, Belizán JM, Lauer JA, Betrán AP, Merialdi M, et al. (2010) The global numbers and costs of additionally needed and unnecessary caesarean sections performed per year: overuse as a barrier to universal coverage. *World Health Report* 30: 1-31.

7. Kiliç M (2012) The delivery methods and the factors affecting among giving birth in hospitals in Yozgat, Turkey. *International Journal of Caring Sciences* 5: 157-161.
8. Souza JP, Gülmezoglu A, Lumbiganon P, Laopaiboon M, Carroli G, et al. (2010) Caesarean section without medical indications is associated with an increased risk of adverse short-term maternal outcomes: The 2004-2008 WHO Global Survey on Maternal and Perinatal Health. *BMC Medicine* 8: 1.
9. (1985) World WHO: Appropriate technology for birth. *Lancet*, p: 2.
10. Adageba R, Danso K, Adusu-Donkor A, Ankobea-Kokroe F (2008) Awareness and perceptions of and attitudes towards caesarean delivery among antenatal. *Ghana Med J* 42: 137-140.
11. Aslam M, Gilmour K, Fawdry R (2003) Who wants a caesarean section? A study of women's personal experience of vaginal and caesarean delivery. *J Obstet Gynaecol* 23: 364-366.
12. Awoyinka B, Ayinde O, Omigbodun A (2006) Acceptability of caesarean delivery to antenatal patients in a tertiary health facility in south-west Nigeria. *J Obstet Gynaecol* 26: 208-210.
13. Danso K, Schwandt H, Turpin C, Seffah J, Samba A, et al. (2009) Preference of Ghanaian women for vaginal or caesarean delivery postpartum. *Ghana Med J* 43: 29-33.
14. Angeja A, Washington AE, Vargas J, Gomez R, Rojas I, et al. (2006) Chilean women's preferences regarding mode of delivery: Which do they prefer and why? *BJOG: An International Journal of Obstetrics and Gynaecology* 113: 1253-1258.
15. Pevzner L, Preslicka C, Bush MC, Chan K (2011) Women's attitudes regarding mode of delivery and cesarean delivery on maternal request. *J Matern Fetal Neonatal Med* 24: 894-899.
16. Buyukbayrak E, Kaymaz O, Kars B, Karsidag A, Bektas E, et al. (2010) Caesarean delivery or vaginal birth: Preference of Turkish pregnant women and influencing factors. *J Obstet Gynaecol* 30: 155-158.
17. Haines H, Rubertsson C, Pallant JF, Hildingsson I (2012) Womens' attitudes and beliefs of childbirth and association with birth preference: A comparison of a Swedish and an Australian sample in mid-pregnancy. *Midwifery* 28: 850-856.
18. Bamanikar SA, Amdani NB (2009) Preference of delivery at term either natural or by epidural analgesia by pregnant women in Brunei Darussalam.
19. Kukulu K, Öncel S (2009) Factors influencing women's decision to have a home birth in rural Turkey. *Midwifery* 25: 32-38.
20. Brouwere DV, Dubourg D, Richard F, Van Lerberghe W (2001) Need for caesarean sections in west Africa. *Lancet* 359: 975-976.
21. Betrán AP, Merialdi M, Lauer JA, BingShun W, Thomas J, et al. (2007) Rates of caesarean section: analysis of global, regional and national estimates. *Paediatr Perinat Epidemiol* 21: 98-113.
22. Graham W, Hundley V, McCheyne A, Hall M, Gurney E, et al. (1999) An investigation of women's involvement in the decision to deliver by caesarean section. *BJOG: An International Journal of Obstetrics and Gynaecology* 106: 213-220.
23. Victora CG, Aquino EM, do Carmo Leal M, Monteiro CA, Barros FC, et al. (2011) Maternal and child health in Brazil: Progress and challenges. *Lancet* 377: 1863-1876.
24. Hopkins K (2000) Are Brazilian women really choosing to deliver by cesarean? *Social Science and Medicine* 51: 725-740.
25. Ajeet S, Jaydeep N, Nandkishore K, Nisha R (2011) Women's knowledge, perceptions and potential demand towards caesarean section. *National Journal of Community Medicine* 2: 244-248.
26. Aali B, Motamedi B (2005) Women's knowledge and attitude towards modes of delivery in Kerman, Islamic Republic of Iran.
27. Torloni MR, Betrán AP, Montilla P, Scolaro E, Seuc A, et al. (2013) Do Italian women prefer cesarean section? Results from a survey on mode of delivery preferences. *BMC Pregnancy Childbirth* 13: 78.
28. Serçekuş P, Okumuş H (2009) Fears associated with childbirth among nulliparous women in Turkey. *Midwifery* 25: 155-162.
29. Yilmaz SD, Bal MD, Beji NK, Uludag S (2013) Women's preferences of method of delivery and influencing factors. *Iran Red Crescent Med J* 15: 683.
30. Pang MW, Leung TN, Lau TK, Chung H, Kwok T (2008) Impact of first childbirth on changes in women's preference for mode of delivery: Followup of a longitudinal observational study. *Birth* 35: 121-128.