

# Choice of delivery positions among multiparous women in Kano

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## ABSTRACT

**Background:** Confining women to hospital bed with limited power of movement and involvement of decision making during labor process and restricting them to supine position in second stage of labor might contribute significantly to aversion to hospital delivery.

**Objective:** To determine the different delivery positions women take during home delivery.

**Method:** This was a cross sectional survey among 285 multiparous women who had vaginal delivery of life singleton babies. They were interviewed using questionnaire at Murtala Muhammad Specialist hospital Kano on choices of delivery position. Ethical approval was obtained from the ethical committee of the state. Data obtained were analyzed using SPSS Version 19. Qualitative data were summarized using frequencies and percentages. Chi ( $\chi^2$ ) test was used for categorical data. A *P* value of  $\leq 0.05$  was considered statistically significant.

**Results:** The mean age ( $\pm$ SD) of the respondents was  $28.9 \pm 7.12$  years. Majority of the women that delivered at home assumed the squatting position for delivery (60%) and were mainly assisted by traditional birth attendants (TBA) (41.3%). Over 50% of those that delivered at home were instructed to take the position they delivered in by their assistants at delivery while those that chose their position by themselves did that because they felt more comfortable in that position (85%). Over 80% of those that were instructed to take a position at delivery did not ask their assistant the reason for advising on that position. There was statistically significant association between educational level and right to decide in which position to deliver the baby ( $\chi^2=28.517$ , *P* = 0.000).

**Conclusion:** Squatting position was the most assumed position following home delivery. There was statistically significant association between educational level and right to decide in which position to deliver the baby.

**Key words:** Choices; delivery position; multiparous women; Nigeria; vaginal birth.

## Introduction

Delivery outside health facility poses serious danger to the mother as well as the unborn child. These deliveries are either unattended or poorly supervised. According to the NDHS of 2013 in Nigeria, 63% of births take place at home across the country and 45% of all deliveries are assisted by unskilled persons. The survey also showed that the proportion of birth occurring in health facilities decreases with increasing birth

order.<sup>[1]</sup> This finding could be as a result of dissatisfaction with the care received at health facilities in the country.

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Though, reasons for not delivering in health facilities were alluded to as child born suddenly and distance to health facility among others. Interestingly, 31% of the respondents felt it was not necessary to deliver in health facility.<sup>[1]</sup> Majority of these respondents were higher order parturients. The survey however, did not probe their reasons further. Some labor ward practices may have played a role in their attitude towards hospital delivery.

It is pertinent therefore to concentrate energy in ensuring that higher percentage of pregnant women not only attend antenatal care but deliver in health facility under the supervision of skilled birth attendant in order to reduce the high rate of maternal and newborn morbidity and mortality.

One of the major challenges to increased hospital confinement in our community are some labor ward practices that are not only alien to the community but are also infringement of privacy and total medicalization of delivery.<sup>[2]</sup> There is need to critically look at our labor ward practices especially those that are not evidence based with the view of modifying or abandoning them particularly now that there is global shift to more freedom of movement and reduced interventions during the process of labor.

In a society such as ours where most women deliver at home in squatting position and have freedom of movement during labor in the confine of their homes, could restriction of movement during labor be a factor in discouraging women from coming to hospital to deliver?

Different delivery positions have been adopted by humans in the conduct of second stage of labor.<sup>[3]</sup> Over forty different positions have been adopted by women across races and continents in conducting delivery and each has been found to give mixed feelings among parturients that practice such positions for delivery.<sup>[4]</sup> There is no single position that can be regarded as ideal. However factors such as Mother`s comfort, minimal risk to fetus and mother, position that will not impede cervical dilatation and convenience of the attendant are some of the factors to be considered when deciding on position to be taken in second stage of labor.<sup>[4]</sup>

Traditionally, women in this part of the world conduct labor at home with freedom of movement during labor until when the urge to bear down becomes irresistible, they then squat to deliver. The conventional supine position adopted by health facilities for delivery was credited to the French accoucheur Mauriceau in the 17<sup>th</sup> Century when men started taking active role in the art of Midwifery.<sup>[5]</sup> Confining women to hospital bed with limited power of movement and hardly participating

in decisions making during the labor process and above all, restricting them to supine position in second stage of labor might contribute significantly to aversion to hospital delivery.<sup>[6]</sup> Delivery in lithotomy position has been shown to reduce blood flow to the uterus and increases maternal anxiety.<sup>[6]</sup> This causes abnormality in fetal heart rate in labor and the increased anxiety reduces uterine contractions which prolongs labor.<sup>[7]</sup> No harm has been demonstrated in women that are allowed freedom of movement during labor and delivery, provided restriction of movement is not needed to treat a complication.<sup>[8]</sup> It has also been shown that when women are allowed to move freely the process of labor is shortened.<sup>[7]</sup> Several studies have shown that most women value the choice to be mobile during labor and delivery and most feel that the process of labor is being over medicalized.<sup>[7,9]</sup> In a study of 410 pregnant women in rural northern Nigeria, Ashimi *et al.*<sup>[10]</sup> reported that twenty nine percent of the women delivered at home due to preferred birthing position. A study in Tanzania showed that women are more mobile in labor at home than in labor wards.<sup>[11]</sup> The study also revealed that supine position was routinely used for delivery in the four hospitals studied and very few women are aware of other positions in second stage of labor.<sup>[11]</sup>

The general aim of the study was to document the different positions parturients take during home delivery and if given the opportunity to assume the position of their choice in labor would positively influence the utilization of health care facility for delivery. The objectives of the study were to determine the different delivery positions women take during home delivery, to determine if allowing parturients to assume positions of their choice at delivery would influence their decision to have a hospital delivery and to find out whether parturients were aware that they have choice to decide on the position they take for delivery at hospital.

## Material and Methods

This was a cross-sectional survey in which consenting multiparous women who had vaginal delivery of live singleton babies were interviewed using a close ended pretested questionnaire at Murtala Muhammad Specialist hospital Kano on choices of delivery positions. Ethical approval was obtained from the ethical committee of the state. Resident doctors from the department of obstetrics and gynecology of Aminu Kano Teaching hospital administered the questionnaire until the required sample size was obtained. Approval was obtained dated 20<sup>th</sup> August, 2018. REF: MOH/OFF/797/T.I/938.

Data obtained were analyzed using statistical package for the social sciences (SPSS) software package Version 19 (SPSS Inc, IL, Chicago, USA). Qualitative data were summarized using

frequencies and percentages.  $\chi^2$  and Fishers' Exact tests were used, where appropriate, for categorical data. A *P* value of  $\leq 0.05$  was considered statistically significant.

Sample size estimation.

Sample size was estimated using the formula below:

$$N = z^2pq/d^2^{[12]}$$

*N* = minimum sample size

*Z* = standard normal deviate set at 95% confidence limit = 1.96

*P* = prevalence

*Q* = 1 – *p* (complementary probability)

*D* = margin of error = 5%=0.05.

In this study the prevalence of hospital deliveries of 36% in Nigeria was used.<sup>[1]</sup> Based on this the sample size estimated was 361 subjects. In total, 10% attrition rate due to incomplete response was added. Therefore the sample size was 370 participants.

## Results

The survey was conducted from 1<sup>st</sup> January, to 31<sup>st</sup> July, 2019. Out of the 370 questionnaires issued out, 285 responded giving a response rate of 77.0%. In total 84% of the respondents had experienced a home delivery. The mean age ( $\pm$ SD) of the respondents was 28.9  $\pm$  7.12 years and were in the age range of 25 to 34 years (43.5%). Their mean parity was 4.5  $\pm$  2.91 A larger proportion of the respondents 121 (42.5%) had Secondary school education as their highest level of education [Table 1].

Majority of the women that delivered at home assumed the squatting position for delivery (60%) and were mainly assisted by TBA (41.3%). Other position assumed by the respondents was lying 95 (39.6%). Over 50% of those that delivered at home were instructed to take the position they delivered in by their assistants at delivery while those that chose their position by themselves did that because they felt more comfortable in that position (85%). Over 80% of those that were instructed to take a position at delivery did not ask their assistant the reason for advising on that position. Over 70% of them did not encounter any problem during the home delivery.

Table 2 shows that squatting was the commonest position taken during home delivery (60.4%), assistance at home delivery was mainly given by TBAs (41.3%) and the assistants

**Table 1: Socio demographic characteristics of the respondents**

Variable	Frequency	Percent
Age group		
15-24	90	31.6
25-34	124	43.5
35-44	67	23.5
$\geq 45$	4	1.4
Total	285	100.0
Parity		
0-4	171	60.0
5-9	91	31.9
$\geq 10$	23	8.1
Total	285	100.0
Educational status		
Qur'anic	56	19.6
Primary	82	28.6
Secondary	121	42.5
Tertiary	26	9.1
Total	285	100.0

**Table 2: Characteristics of respondents that had home delivery**

Characteristics	Frequency	Percent
Position at home delivery		
Squatting	145	60.4
Lying	95	39.6
Total	240	100.0
Assistance at home delivery		
Nurse	84	35.1
Doctor	4	1.8
TBA	99	41.3
Others	52	21.8
Total	240	100.0
Who decided on the position you took during		
The home delivery		
My Choice	90	37.5
The Assistant instructed	150	62.5
Total	240	100.0
Reason for choosing a position at home delivery		
Comfort	77	85.6
Tradition	10	11.1
Friends/Relatives	3	3.3
Total	90	100.0
Did you encounter any problem during the home delivery?		
No	184	76.7
Yes	56	23.3
Total	240	100.0

decided the position the woman takes during delivery (62.5%). Those that chose a position did so for their comfort 77 (85.6%) whereas 10 (11.1%) considered it as a tradition. Only 56 (23.3%) encountered problems during home delivery.

Figure 1 shows that no explanation was given to women on position they asked to assume during home delivery (86.7%) and they never asked for explanation too (76.3%). However,

57.9% were happy with the position chosen for them. Only 38.8% (93) were aware that they have the right to ask questions on any procedure done on them during labor. Also 21.7% (52) were aware they have the right to decide the position they take at delivery. Majority of the respondents (78.3%) were not aware of their right to decide on which position they take during delivery and were also not aware that they have the right to ask questions on any procedure done on them during delivery (61.3%).

In total 28 (11.7%) of the respondents agreed If they were given the chance to choose a position at delivery in a health facility, they would still prefer to deliver at home while 212 (88.3%) would deliver in a health facility. Only 17% thought the position they took at delivery could give rise to a problem in labor [Figure 2]. There was statistically significant association between educational level and right to decide in which position to deliver the baby ( $\chi^2=28.517, P = 0.000$ ). Table 3. There was also statistically significant association between educational level and right to ask questions during labor ( $\chi^2=68.247, P = 0.000$ ). [Table 4].

### Discussion

The main position women take during delivery in this environment is the squatting position which accounted for sixty percent of the position taken during home delivery. This is in contrast to the adopted lithotomy or dorsal positions taken in health facilities.<sup>[7,8]</sup> Such strict protocols may deter women in this community from delivering in our health facilities. They probably take this position because labor in nonsupine position tend to be shorter.<sup>[7,8]</sup> A woman who had a home delivery and had experience less pain with freedom of movement will only decide to patronize health facility for delivery after a home trial without success. It is often not uncommon to see women giving a home birth a trial and only decide on hospital delivery where there was a delay in the expected time of delivery. It is therefore important to note that in addition to the reasons alluded to in the NDHS,<sup>[1]</sup> lack of freedom to choose a position for delivery may deter some parturients from hospital delivery.

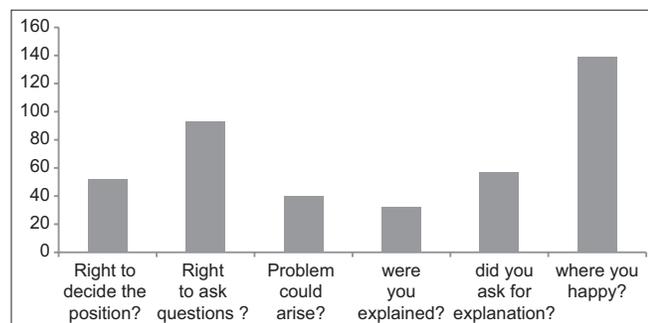


Figure 1: Right, explanation and satisfaction about delivery position

Although they have a choice at delivery in their homes, assistants at delivery hardly explain to them anything concerning the labor process. In this study, over 80% of the respondents where assistants asked them to assume the position they took during delivery were not told the reason for doing so. This finding can be harnessed in the health facility if the skilled birth attendants will be friendlier in creating an enabling environment for parturients to ask questions during labor and any procedure done explained

Table 3: Cross tabulation between educational level and right to decide the position to deliver the baby

Educational level	Right to decide in which position to deliver the baby		Total (%)
	No (%)	Yes (%)	
Qur'anic	48 (85.7)	8 (14.3)	56 (100.0)
Primary	79 (96.3)	3 (3.7)	82 (100.0)
Secondary	92 (76.0)	29 (24.0)	121 (100.0)
Tertiary	14 (53.8)	12 (46.2)	26 (100.0)
Total	233 (81.8)	52 (18.2)	285 (100)

$\chi^2=28.517, P=0.000$

There was statistically significant association between educational level and right to decide in which position to deliver the baby ( $\chi^2=28.517, P=0.000$ )

Table 4: Cross-tabulation between educational level and right to ask questions during labor

Educational Level	Right to ask question concerning any procedure taken on me during labor		Total (%)
	No (%)	Yes (%)	
Qur, anic	44 (78.6)	12 (21.4)	56 (100.0)
Primary	61 (74.4)	21 (25.6)	82 (100.0)
Secondary	39 (32.2)	82 (67.8)	121 (100.0)
Tertiary	3 (11.5)	23 (88.5)	26 (100.0)
Total	147 (51.6)	138 (48.4)	285 (100.0)

$\chi^2=68.247, P=0.000$

There was statistically significant association between educational level and right to ask questions during labor ( $\chi^2=68.247, P=0.000$ )

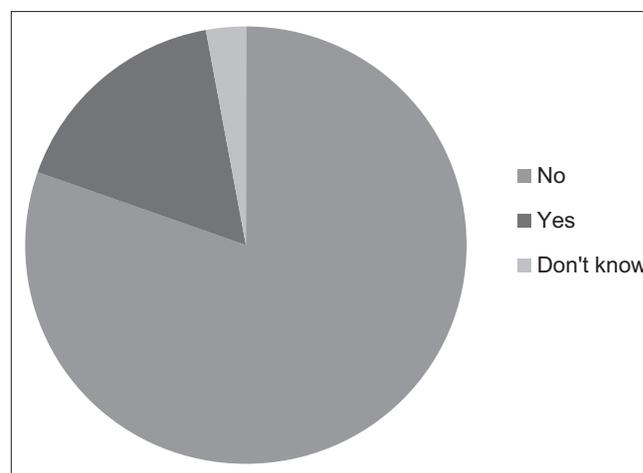


Figure 2: Perception of respondents toward problems arising from the position they assumed during delivery

to them in ways they will understand. In this way parturients will feel in control of the labor process. Nieuwenhuijz and colleagues<sup>[13]</sup> have shown that when parturient's opinion is considered during delivery the need for obstetric intervention is reduced.

Over 80% of the respondents who had a home delivery felt that if given the liberty of choosing a position for delivery, they will deliver in a health facility in subsequent pregnancies. Ashimi<sup>[10]</sup> in his study in rural Jigawa demonstrated that over 28% of women deliver at home due to the freedom of choice of position at home delivery. With the paradigm shift in contemporary labor ward practices, where the concept of reduced medicalization of labor process is being advocated, allowing women to choose position in which they will give birth may significantly reduce home delivery in our community. This will however require drastic overhaul in our labor ward practices through educating the women, training and retraining skilled birth attendants on the contemporary issues in labour ward practices.

Nigeria is among countries in the world with worst maternal mortality indices and the strong aversion to hospital delivery might not be unconnected to some labor ward practices such as restricting delivery position to lithotomy position.

Labor is said to be a normal physiology.<sup>[7]</sup> Restricting movement in labor is not normal especially when a woman is confined to one position in an otherwise normal physiological process.<sup>[14]</sup> When labor starts, the sensitivity of uterine muscles to oxytocin is increased and the uterine muscles respond to oxytocin by contractions which cause pain.<sup>[7]</sup> With continuous release of oxytocin, the contractions become strong and effective. One of the strategies women employ to dampen the effect of this pain is to move around.<sup>[3,7,14]</sup> The movement leads to release of beta-endorphins which help her cope with the pain of labor.<sup>[14]</sup> On the contrary when there is anxiety, catecholamine secretion increases leading to uncoordinated uterine activity and prolonged first stage of labor. Women that are allowed to move freely during labor have less demand for analgesia, less intervention in labor and overall, shorter duration of labor.<sup>[15]</sup> A study in Italy on women's choice of position during labor concluded that changing position in labor positively influences labor process and reduces intervention including caesarean section.<sup>[16]</sup> Women who assume non supine position during birth were shown to have less perineal injuries and less blood loss.<sup>[9]</sup>

Advances in science, advent of male midwives and medicalization of labor from the last century have made labor

more of a "pathological" state and over medicalization of the process has made some practitioners especially in some developing countries, to assume some delivery positions as the "ideal" and deviation from the "ideal" leads to increased risk of complications. Edqvist *et al.*<sup>[4]</sup> in their review of almost three thousand women demonstrated low prevalence of severe perineal trauma and episiotomies among low risk pregnant women who opted for home delivery in four Nordic countries where women used variety of birth positions. Thies-Lagergren *et al.*<sup>[17]</sup> showed that even primigravidae with low risk can have alternative delivery position such as the birth seat without adverse obstetrical outcome.

In our hospitals, women in second stage of labor are confined to lithotomy position to the end of the labor process. They are being threatened with all sorts of risk of complications if they assume any position otherwise without evidence to back such claims. Where complications developed, the cause is usually ascribed to the parturients uncooperative manners rather than look for the true cause of the complication. In this survey, among over 60% of the respondents, positions taken during delivery were decided by the birth attendants. When birth attendants rather than the parturient decide position taken in second stage of labor, Gizzo *et al.*<sup>[15]</sup> in a cohort study in Italy, showed that there was higher risk of developing complications in supine than in nonsupine positions.

Only 37.5% of those that had home delivery were allowed to make a choice of position. When a woman in second stage of labor is allowed to assume position of her choice, the frequency of obstetric intervention is reduced with better fetal and maternal outcome. This is because the woman feels that she is not only in control of a process that completely involves her, but also she participates in decision making during the labor process. Nieuwenhuijz *et al.*<sup>[13]</sup> has shown that women whose opinions were considered during labor tend to be more satisfied with the process and require less intervention in labour.

The freedom of choice of position by women in second stage of labor is very important. However, where there is danger to either the mother or the unborn child by assuming a certain position in second stage of labor, safety rather than choice should be the guiding principle. The parturient should be made to assume the most comfortable position to her without putting her or her unborn child at risk. The choice of position in conduct of second stage of labor should be patient and not accoucheur driven. The study showed that there was statistically significant association between educational level and right to decide in which position to

deliver the baby ( $P < 0.05$ ). Similarly there was statistically significant association between educational level and right to ask questions during labor ( $P < 0.05$ ).

### Limitations

It was a cross sectional survey conducted in only one hospital in Kano. A multi centered cohort study from different hospitals in the state would have presented better choices of delivery positions.

### Strengths of the study

The methodology, sampling technique and the response rate by the multiparous women.

### Conclusion

Squatting position was the most assumed position following home delivery. There was statistically significant association between educational level and right to decide in which position to deliver the baby. There was also statistically significant association between educational level and right to ask questions during labor.

### Recommendations

Parturients should be giving the freedom of choosing their preferred delivery position provided it would not compromise the maternal and neonatal outcomes during labor.

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Nil.

### Conflicts of interest

There are no conflicts of interest.

### References

1. National Population Commission (NPC) [Nigeria] and ICF International. Nigeria Demographic and Health Survey 2013. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF International; 2014.

2. Behruzi R, Hatem M, Goulet L, Fraser W, Misago C. Understanding childbirth practices as an organizational cultural phenomenon: A conceptual framework. *BMC Pregnancy Childbirth* 2013;13:205.
3. Simkin PP, O'hara M. Nonpharmacologic relief of pain during labor: Systematic reviews of five methods. *Am J Obstet Gynecol* 2002;186:131-59.
4. Edqvist M, Blix E, Hegaard H, Ólafsdóttir O, Hildingsson I, Ingversen K, *et al.* Perineal injuries and birth positions among 2992 women with a low risk pregnancy who opted for a homebirth. *BMC Pregnancy Childbirth* 2016;16:1-8.
5. de Jong P, Johanson R, Baxen P, Adrians V, Van der Westhuisen S, Jones P. Randomised trial comparing the upright and supine positions for the second stage of labour. *Br J Obstet Gynaecol* 1997;104:567-71.
6. Hotelling B. The coalition for improving maternity services: Evidence basis for the ten steps of mother-friendly care. *J Perinat Educ* 2007;16:38-43.
7. Ondeck M. Healthy birth practice #2: Walk, move around, and change positions throughout labor. *J Perinat Educ* 2019;28:81-7.
8. Flynn P, Franick J, Janssen P, Hannah W, Klein M. How can second-stage management prevent perineal trauma? Critical review. *Can Fam Physician* 1997;43:73-84.
9. Soong B, Barnes M. Maternal position at midwife-attended birth and perineal trauma: Is there an association? *Birth* 2005;32:164-9.
10. Ashimi A, Amole T. Prevalence, reasons and predictors for home births among pregnant women attending antenatal care in Birnin Kudu, North-west Nigeria. *Sex Reprod Healthc* 2015;6:119-25.
11. Lugina H, Mlay R, Smith H. Mobility and maternal position during childbirth in Tanzania: An exploratory study at four government hospitals. *BMC Pregnancy Childbirth* 2004;4:1-10.
12. Stephanie. Sample Size in Statistics (How to Find it): Excel, Cochran's Formula, General Tips. *Statistics How To* 2018; Available from: <http://www.statisticshowto.com/probability-and-statistics/find-sample-size/>.
13. Nieuwenhuijze M, Low L, Korstjens I, Lagro-Janssen T. The role of maternity care providers in promoting shared decision-making regarding birthing. *J Midwifery Womens Health* 2015;59:277-85.
14. Reid A, Harris N. Alternative birth positions. *Can Fam Physician* 1988;34:1993-8.
15. Gizzo S, Di Gangi S, Noventa M, Bacile V, Zambon A, Nardelli G. Women's choice of positions during labour: Return to the past or a modern way to give birth? A cohort study in Italy. *Biomed Res Int* 2014;2014:1-7.
16. Terry R, Westcott J, O'Shea L, Kelly F. Postpartum outcomes in supine delivery by physicians vs nonsupine delivery by midwives. *J Am Osteopath Assoc* 2006;106:199-202.
17. Thies-Lagergren L, Kvist L, Christensson K, Hildingsson I. Striving for scientific stringency: A re-analysis of a randomised controlled trial considering first-time mothers' obstetric outcomes in relation to birth position. *BMC Pregnancy Childbirth* 2012;12:1-9.