

Development and application of a maternity satisfaction questionnaire

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Abstract

Background: In contrast to the industrialised world, there has been no published quantitative birth satisfaction questionnaire in the developing countries. Such a questionnaire would prove extremely useful for routine monitoring of the quality of maternity services. Aim: to developing and testing a quantitative questionnaire which measures women's level of satisfaction with birth care in a developing country setting. Methods: A 25-item questionnaire was developed to assess women's satisfaction with birth care in the hospitals in Sana'a city, Yemen. It covers personal characteristics of women, previous reproductive history and level of satisfaction. The topics were based on both a literature review and feedback from eight FGDs with 47 mothers in the community. Principal component factor analysis with varimax rotation was used to group the satisfaction questions into dimensions. Internal reliability (internal consistency) and validity (content, criterion and construct) were assessed. Data are based on exit interviews with 326 women who had given birth in four public and eight private hospitals in Sana'a city. Results: Factor analysis produced the following dimensions (reliability Cronbach's alpha): hospital environment (0.81), privacy (0.50), information during labour (0.61), information on discharge about the possible maternal and neonatal complications (0.71), staff attitude (0.57), pain control (0.43) and the care in general (0.76). The following aspects were addressed by a single question only "care of the baby", "waiting time" and "cost of the care". The overall satisfaction score was calculated as the average of the items (0.71). FGD ensured the relevance of the questions to women's need. The correlation among the dimensions was moderate (range 0.031- 0.727). Conclusion: Overall, the questionnaire has acceptable levels of validity and reliability and is sufficiently robust to assess women's satisfaction with the quality of birth care services provided in hospitals. Adding questions will improve the reliability of the privacy and pain control dimensions.

Introduction:

Women-centred and women-friendly approaches have been emphasised in health care^{1,2}. Although issues have been long raised about the concept, measurement and explanation of satisfaction^{3,4,5}, satisfaction has become important in assessing women's perspectives on the quality of the care^{6,7}. A number of instruments have been developed and used in maternal satisfaction surveys in the industrialised countries where quantitative data have been used to assess the different aspects of care ^{8,9} (e.g. privacy , labour environment , place of birth), to compare different models of care^{9,10} (e.g. midwives' and

obstetrician-led maternity units) or interventions¹¹. Several of these surveys applied multidimensional questionnaires which assess satisfaction with several aspects of care. However, few studies reported the validity and reliability of the results ¹²⁻¹⁶ (table 1). Few studies were published from developing countries ^{17, 18}. However, there was no information published from developing countries ^{17, 18}. However, there was no information about the reliability or validity of the data collection tool applied.

Other questionnaires address specific aspects of care. Soet et al ¹³ measured women's satisfaction with their

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interaction with medical personnel using a 9- item scale. The scale demonstrated acceptable internal reliability with an α coefficient of 0.87. The authors used another questionnaire to assess women's satisfaction with medical interventions and obstetrical procedures. Smith described a series of questionnaires assessing, respectively women satisfaction with, labour¹⁵ and postnatal care¹² with acceptable validity and reliability.

It is important for the developing countries to determine users' satisfaction and its determinant factors within their context. There has been no published questionnaire to assess women's satisfaction with care in such settings. Such quantitative instruments allow exploration of the views of a larger number of women and are easier to apply and analyse for monitoring purposes ^{19,20}.

Aim of the study: This study was conducted with the aim of developing and testing a quantitative questionnaire which measures women's level of satisfaction with birth care in a developing country setting.

Subjects and Methods

A questionnaire was developed for use with women using maternity services in Yemen hospitals. This was done by conducting 8 FGDs (focus) group discussions with 47 women who had a wide range of social characteristics and childbirth experiences. Whilst the topics for discussion were identified from a review of the relevant literature on users' satisfaction in childbirth and health care services in general, considerable freedom was given within the FGDs so that the resulting issue for inclusion in the questionnaire were not prescribed by the literature review nor by the investigator's views on what is important in maternity services.

Focus Group Discussions

Eight FGD were conducted in Sana'a city over 5 weeks each including 5-7 women (total N= 47). Participants were 19-55 years old, had different levels of education, had childbirth experience and had given birth at a health facility (users of birth care services) or "at home" (non-users). Husbands were not included since women are best

able to provide the information sought i.e. aspects of birth care they value. Discussions were held in Arabic and conducted by two trained researchers aided by a topic guide. Data were manually analysed. Key exchanges in the discussion implicitly or explicitly referring to the health service in the discussion were extracted and grouped into the related themes about childbirth services. The items within each theme indicated the things that women valued and expected in the care. Three examples of the kinds of issues that women commented on are illustrated below.

One woman commented:

The nurses/ doctors come during labour, check on you, examine you, but never tell you anything.

Another woman spoke about her experience losing her baby, showing that she did not receive any explanation about the baby's condition:

I went to the hospital for delivery, the baby was moving. But after delivery, I did not hear him cry. The nurse told me he was dead, but did not explain any further.

Indeed the majority of the women mentioned that the information provided during birth is very limited and in some instances, the information exchange was described as nil.

"Nobody explains anything to women".

Development of the questionnaire

The questionnaire was first drafted in English as a set of 34 Likert response items covering satisfaction with the following aspects of care: hospital environment, privacy, information given during labour, information at discharge, staff attitude, pain control, care of the baby, waiting time, cost of the care, continuity of the carer, women's sense of control, presence of a companion, staff assistance and the care in general. Respondents were asked to indicate their agreement with one of five response categories as a 5-point scale. Open-ended questions were included to allow respondents to mention important areas not already covered in the fixed response items. The questionnaire was translated into Arabic and back to English using the back-translation technique to ensure that the Arabic

version really did capture the meaning of the English original. A pilot study of 40 exit interviews with women who gave birth in two hospitals in Sana'a city was undertaken to evaluate the questionnaire. It was clear from this pilot that a number of revisions were needed. The major change was due to the low level of literacy; it was clear from the pilot that it would be impractical to use the 5-point response scales. Instead of these Likert statements of agreement, women were asked directly about their opinion of the specific aspects of the care. For example the item "I feel that the baby was well handled", was replaced with "how was the baby handled?" (with response categories of well, fairly well, poorly). Other questions that produced severely skewed answers (e.g. whether the woman felt that a companion should be present during labour) or questions associated with low response rate (e.g. whether a woman felt in control during birth) were removed. A question on the "source of payment for the care" was used as an indicator of affordability of the services instead of the using ratio of the service costs to the household income. The income was irregular in time and amount in a number of cases and monthly income was not reliably given during interviews. This accords with findings from other studies which found that determination of socioeconomic status and household income are often unreliable in the Arab²¹ and other developing countries¹⁹.

The second version of the questionnaire (annex 1) retained 25 questions addressing women's satisfaction with hospital environment (three questions), privacy (two), information given during labour (four), information at discharge (five), staff attitude (three), pain control (two), care of the baby (one), waiting time (one), cost of the care (one) and the care in general (three). Answers were coded 1 (satisfied/ information was given), 0.5 (fairly satisfied) and 0 (not satisfied/ no information given). Sections on demographic characteristics and previous reproductive health history and use of reproductive health services were added.

The questionnaire was used to assess and compare the level of satisfaction of 326 women who gave birth in the public (N= 180) and private hospitals (N= 146) in the city of Sana'a, Yemen between October 2001 and June 2002.

Measurement scales

Measurement scales allow assessment of the satisfaction with the specific aspects of care e.g. privacy, and assist comparison of satisfaction between groups (public and private users of the care). Scales were generated using factor analysis: repeated stepwise principal component technique (PCA) with varimax rotation using the SPSS program²².

Measurement characteristics of the questionnaire

The questionnaire was tested in terms of reliability and validity. Reliability was measured using Cronbach's alpha (α) as a measure of internal consistency²³. The reliability of a scale was considered to be satisfactory if Cronbach's alpha (α) coefficient is 0.6 or higher²⁴.

Validity was assessed using content, construct and criterion validity. Content validity is based on agreement among professionals about whether the important components are included in the scales²³⁻²⁵. Construct validity is demonstrated from the correlation between the scales. Acceptable construct validity is achieved when there is moderate correlation between scales, i.e. overall satisfaction scale is related but remains distinct from the scales referring to the dimensions of the care. Criterion validity refers to how well the questionnaire measures what it is supposed to measure and can be assessed by comparing scores between groups known to have different levels of the concept under investigation^{26, 27}. In this case, private hospitals are perceived to give better care than public so the criterion validity can be studied by comparing scores between public and private hospitals²⁸. The study was approved by the ethical committee in the Liverpool School of Tropical Medicine and the Department of Reproductive Health and Family Planning in the Ministry of Public Health and Population in Yemen.

Results

The questionnaire was tested in a survey that included 328 mothers who gave birth in 4 public (N=180) and 8 private hospitals (N=148). If the woman agreed, she was interviewed using the questionnaire when she was ready to be discharged from the hospital. This was usually 2 hours after a normal vaginal delivery, 6 hours after a complicated vaginal delivery and 3-7 days after a caesarean section. All interviews were conducted by 12 specially trained student nurses. There was little difference in the demographic characteristics between the two groups. Women were on average (\pm SD) 25.5 \pm 6.3 years old, had 5.5 \pm 5.3 years education and 92% of them were housewives. Spouses had mean education (\pm SD) of 9.9 \pm 5.9 years in the public group and 11.7 \pm 8.9 in the private; $p = .030$, and 5% of the spouses were unemployed in the public group compared to 2% in the private. At median point, women had no abortions, gave birth 3 times and had 2 live children.

PCA produced eight scales corresponding to different dimensions of care; together these account for 64.7% of the variance. The dimension of "staff assistance" was dropped due to its low reliability score ($\alpha = 0.43$). For the other scales a simple scoring system was used (table 2). As mentioned, responses were scored as 1= satisfied, 0.5= fairly satisfied and 0= not satisfied and a respondent's average score was calculated for each satisfaction scale, with equal weight attached to each question in the scale. The respondent's overall satisfaction score was calculated as the average of the 25 questions.

The scores were standardised to a possible range of 0 and 100 (lowest- highest level of satisfaction).

Internal reliability

With Chronbach's $\alpha \geq 0.6$, reliability achieved acceptable levels for the majority of scales developed, including that for overall satisfaction (table 2). However, three scales had an α coefficient < 0.6 namely "staff attitude", "privacy" and "pain control during birth". This indicates the need to add further items. Two items - "satisfaction with waiting time" and "satisfaction with care of the baby"- did not cluster and were left as individual items.

Validity

Construct validity was measured by the correlation between the overall satisfaction scale and the subscales 24,25. The inter-correlations among scales are moderate in size indicating acceptable construct validity (table 3).

Levels of satisfaction

Women's levels of satisfaction were highest for neonatal care and lowest for information given. The private hospitals had higher levels of satisfaction than the public hospitals except for satisfaction with the cost of care. Table 4 presents the main findings.

Table1:Birth satisfaction questionnaires,components and measurement characteristics.

Study instrument	Characteristics: validity/ reliability	Remarks
The WOMBPNSQ¹, A psychometric multidimensional satisfaction questionnaire, The UK Based on interviews and fieldwork, and related published instruments		
Smith (2011) ¹²	36 questions, 7-point likert scale covering 13 scales including Internal reliability α : General satisfaction scale (0.848), Inpatient stay (0.861), Maternal health (0.825), Contraceptive advice (0.855), Feeding baby (0.778), Partner support (0.839), Postnatal visiting (0.756), Social support (0.744), Professional support (0.758), Pain after birth (0.779), Health visitor care (0.675), Continuity (0.735), GP care (0.624).	Used to assess postnatal care among 300 women of different socio
Wijma Delivery Experience Questionnaire (W- DEQ version A & B) USA		
Soet et al, 2003 ¹³	Version A (fears and expectations about birth). Version B (the actual experience) mirrors version A. Scales in both versions are computed in exactly the same way. Internal reliability α , all items (29): version A: 0.86, version B: 0.89. No information about validity.	Results are presented as a difference score between a woman's expectations and her actual experience. A positive score indicates that a woman's expectations were exceeded by a more positive birth experience (N= 103).
Simple Six Questions (SSQ), Canada		
Harvey et al, 2002 ¹⁴	α : All items (6) 0.86. Validity: SSQ results compared to LADSI, Pearson correlation coefficient r2: 0.506.	Questions covered control; staff attitude, competence, consideration of women's needs; organisation of care and a question about whether the women would choose the same care in the future. The tool is still under development (N= 345).
Women's Views of Birth Labour Satisfaction Questionnaire (WOMBLSQ4), UK		
Smith, 2001 ¹⁵	α : All items (32): 0.75, professional support during labour: 0.91, expectations of labour: 0.90, home assessment in early labour: 0.90, holding the baby: 0.87, support from husband/partner: 0.83, pain relief in labour: 0.83, pain relief immediately after labour: 0.65, knowing labour carer: 0.82, and control during labour: 0.62.	The instrument was tested and modified yearly from 1995-1999. FA was used (N= 1683).
Perception Of Birth Scale (POBS) , USA		
Fawcett and Knauth, 1996 ¹⁶	α : All items (25) 0.85; Labour experience: 0.79, Delivery experience: 0.87, Delivery outcome: 0.68, Partner participation: 0.62, Awareness: 0.59.	Factor analysis (FA) was used, 4 questions were dropped. Factors explain 54% of the variation in results. (N= 325 vaginal delivery, N= 100 C-section)
α : Cronbach's alpha coefficient All are designed in statements of agreement using 5,6, or 7 point scales All based on literature review unless stated otherwise.		

Table 2 Reliability of satisfaction scales.

Scale	Items	Cronbach's Alpha	Means scale score	Standard deviation	Variance
Overall satisfaction	25	0.70	13.94	3.08	9.5
Environment	3	0.81	2.23	0.78	0. 61
Privacy	2	0.50	1.06	0.57	0.43
Information during labour	4	0.61	1.79	1.02	1.04
Information at discharge	5	0.71	.47	0.93	0.87
Staff attitude	3	0.57	2.44	0.80	0.62
Pain control	2	0.43	0.34	0.56	0.32
General care	3	0.76	2.21	0.94	0.88

Table 3 Matrix of correlation between the satisfaction scales.

	Overall score	Environment	Information	Attitude	Pain control	Privacy	General satisfaction
Overall score	—	.453**	.558**	.543**	.345**	.442**	.727**
Environment		—	.037	.185**	.084	.358**	.251**
Information			—	.169**	.175**	.124*	.313**
Attitude				—	.031	.267**	.453**
Pain control					—	.142*	.159**
Privacy						—	.447**
General satisfaction							—

** p value < 0.01, * p value < 0.05 .

Table 4: Satisfaction scores (mean \pm 95% C.Is, 0-100) by hospital group

Scale	Total (N= 326)	Public (N= 180)	Private (N= 146)	p value
Overall score	53.2 (51.8- 54.6)	49.5 (47.3- 51.3)	57.8 (55.9- 59.7)	<0.001
Labour environment	74.4 (71.6- 77.2)	69.2 (65- 73.4)	80.7 (77.3- 84.1)	<0.001
Information during labour	45.1 (42.3- 47.9)	42 (38.4- 45.6)	48.8 (44.6- 53)	0.015
Information at discharge	9.5 (7.5- 11.5)	5.8 (3.6- 8)	13.9 (10.4- 17.4)	<0.001
Staff attitude	80.8 (77.6- 84)	74.8 (70.6- 79)	88 (84.4- 91.6)	<0.001
Pain control	17.7 (14.5- 20.9)	12.1 (8.4- 15.8)	24.5 (19.3- 29.7)	<0.001
Privacy	53 (49.4- 56.6)	44.6 (39.8- 49.4)	63.3 (58.3- 68.3)	<0.001
Waiting time	85.2 (81.4- 89)	83.8 (78.5- 89.1)	87 (81.6- 92.4)	0.858
Neonatal care	91.3 (85.7- 96.9)	84.6 (76- 93.2)	99.3 (92.9- 105.7)	<0.001
Costs	71.7 (67.1- 76.3)	91.7 (88.3- 88.3)	46.2 (40.3- 52.1)	<0.001

Discussion

Access to services has been addressed in several studies across the developing world and attention is increasingly given to monitoring and improving quality of maternal services 1,2. This issue has been complicated by the debate about whether qualitative or quantitative measures of these aspects are more useful. Quantitative measures have been criticised for a lack of meaning and sensitivity to clients' real views on how well the services are

provided 19. However, using the FGD data helped determine women's priorities in birth care and informed development of the quantitative tool. The advantage of this tool is that it can be part of rapid assessments or evaluation of any intervention in maternal health care 20. The application of the existing questionnaires in the developing countries is limited by a number of factors relating to the way in which health services are organised and women's needs. One example is the continuity of the

care giver in satisfaction surveys²⁹. Continuity of the care is difficult to achieve especially in the absence of a functioning booking system, a common situation in developing countries. On the other hand, there is a discrepancy in the literature between the developing and industrialised countries concerning the criteria of satisfaction with birth care. In industrialised countries two common themes are “achieving a sense of control during birth” and “greater involvement of women in clinical decision”²⁹⁻³¹. In contrast “humanness of the treatment”³² and “social support”³³ are old and major issues raised in the developing countries studies.

This study is an attempt to overcome this criticism by basing the development of a quantitative tool on a qualitative approach that allows clients of maternity services to meaningfully influence the issues that are monitored by a quantitative tool. The tool has 25 items used to assess women’s satisfaction with hospital birth care in Sana’a city in Yemen. The development was based on literature review and adapted to the local context using qualitative FGD data in which a wide range of clients were given the opportunity to influence the issues and priorities covered by the questionnaire. A scoring system was developed where a score represent the women’s level of satisfaction scale of 0-100 pertaining to the aspects of care such as privacy and personal communication. Using quantitative scales helps identify areas of priority (lowest satisfaction) for improving the quality of care. On the other hand, the preliminarily collected qualitative data help interpret the quantitative findings.

Overall, the questionnaire has acceptable measurement criteria. With an alpha value of 0.7, the reliability of the overall scale is comparable to previous questionnaires used for measurement of women’s satisfaction in industrialised countries¹²⁻¹⁶. On the other hand, this questionnaire has a high level of validity. The methodology developed revealed a low level of satisfaction with the birth care in the study hospitals and detected the difference in women’s satisfaction with the

care in the public and private hospitals of Sana’a, Yemen. It was also able to pinpoint the factors that explain most of the variation in the level of satisfaction among the participants (table 4).

High level of satisfaction and low variability of responses are commonly quoted limitation of satisfaction surveys in obstetric care³⁴ and other health services³⁵. The ability of this study to reveal lower rate of satisfaction is explained by the approach used for data collection; the preliminary FGD helped improve the relevance of the satisfaction criteria and questions to women’s needs. In addition, satisfaction was addressed as a multidimensional concept by asking women about the individual aspects of care rather than their satisfaction with the care in general.

Conclusion

This instrument provides a reliable and valid picture of women satisfaction with the various dimensions of birth care in the hospitals of Sana’a, Yemen.

Recommendations

Questions should be added in the dimensions addressing pain relief and privacy. In addition, further work is needed to test the tool in other context such as the primary health care facilities in order to verify its validity and reliability.

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References

1. World Health Organisation. Improve the quality of maternal health services. Themes of the World Health Day, April 7th, 1998.
2. Van den Broek NR, Graham WJ. Quality of care for maternal and newborn health: the neglected agenda. *BJOG*. 2009; 116:18–21.
3. Austin A, Langer A, Salam R, Lassi Z, Das J, Bhutta Z. Approaches to improve the quality of maternal and newborn health care: an overview of the evidence. *Reprod Health*. 2014; 11(Suppl 2): S1.

4. Alexander L, Sandridge J, Moore L. Patient satisfaction: an outcome measure for maternity services. *J Perinat Neonatal Nurs*. 1993; 7(2): 28- 39.
5. Sitzia J, Wood N. Patient satisfaction: a review of issues and concepts. *Soc Sci Med*. 1997; 45(12): 1829-1843.
6. Redshaw M. Women as Consumers of Maternity Care: Measuring “Satisfaction” or “Dissatisfaction”? *Birth*. 2008; 35:1
7. Goberna-Tricas J, Banu´s-Gime´nez M, Palacio-Tauste A, Linares-Sancho S. Satisfaction with pregnancy and birth services: The quality of maternity care services as experienced by women. *Midwifery*. 2008; 27 : e231–e237
8. Rudman A, El-Khoury B, Waldenstro U (2008). Evaluating multi-dimensional aspects of postnatal hospital care. *Midwifery*. 2008; 24: 425–441
9. Christiaens W, Bracke P. Place of birth and satisfaction with child birth in Belgium and the Netherlands. *Midwifery*. 2009; 25: e11–e19
10. Janssen P, Klein M, Harris S, Soolsma J, Seymour L. Single room maternity care and client satisfaction. *Birth*. 2000; 27(4): 235-243.
11. Fereday J, Collins C, Turnbull D, Pincombe J, Oster C. An evaluation of Midwifery Group Practice Part II: Women’s satisfaction. *Women and Birth*. 2009; 22: 11—16
12. Smith L. Postnatal care: development of a psychometric multidimensional satisfaction questionnaire (the WOMBPNSQ) to assess women’s views. *Br J Gen Pract*. 2011; 591: e628- e.637
13. Soet J, Brack G, Dilorio C. Prevalence and predictors of women’s experience of psychological trauma during birth. *Birth*. 2003; 30(1): 36-46.
14. Harvey S, Rach D, Stainton MC, Jarrell J, Brant R. Evaluation of satisfaction with midwifery care. *Midwifery*. 2002; 16(4): 260-267.
15. Smith L. Development of multidimensional labour satisfaction questionnaire: dimensions, validity, and internal reliability. *Qual Health Care*. 2001;10(1): 17-22.
16. Fawcett J, Knauth D. The factor structure of the perception of birth scale. *Nurs Res*. 1996; 45(2): 83-86.
17. Aghlmand S, Akbari F, Lameei A, Mohammad K, Small R and Arab M. Developing evidence-based maternity care in Iran: a quality improvement study. *BMC, Pregnancy and Childbirth*. 2008; 8:20. Available at: <http://www.biomedcentral.com/1471-2393/8/20>
18. Atkinson S, Haran D. Individual and district scale determinants of users’ satisfaction with primary health care in developing countries. *Soc Sci Med*. 2005; 60: 501-513.
19. Bowling A. Research methods in health: investigating health and health services. Buckingham, Philadelphia. Open University Press. Second edition. 2002
20. Baum F. Researching public health: behind the qualitative-quantitative methodological debate. *Soc Sci Med*. 1994; 40(4): 459- 468.
21. Kabakian-Khasholian T, Campbell O, Shediach-Rizkallah M, Ghorayeb F. Women’s experiences of maternity care: satisfaction or passivity? *Soc Sci Med*. 2000; 51(1): 103-113.
22. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp. 2011
23. Bland J, Altman D. Statistical notes: Cronbach’s alpha. *BMJ*. 1997; 314(7080): 572.
24. Bland J, Altman D. Statistical notes: validating scales and indexes. *BMJ*. 2002; 324(7337): 606- 607.
25. De Vaus DA: Surveys in social science. London, Routledge. Fifth edition. 2002.
26. Streiner D, Norman G. Health measurement scales: a practical guide to their development and use. Oxford University Press Inc. Second edition. 1995
27. Litwin MS. How to measure survey reliability and validity. The survey kit, vol. 7. Sage publications London California New Delhi. First edition. 1995
28. Huff-Rousselle M, Pickering H . Crossing the public-private sector divide with reproductive health in Cambodia: out-patient services in a local NGO and the

- national MCH clinic. *Int J Health Plann Manage.* 2001; 16(1): 33-46.
- 29.Hundley V A, Milne J M, Glazener C M A, Mollison J. Satisfaction and the three C's: continuity, choice and control. Women views from a randomised controlled trial of midwife-led care. *BJOG.* 1997; 104(11): 1273- 1280.
- 30.Green J. Commentary, What is this thing "control"? *Birth.* 1999; 26(1): 51-52.
- 31.VandeVusse L. Decision making in analysis of women's birth stories. *Birth.* 1999; 26(1): p 43- 50
- 32.Jewkes R, Abrahams N, Mvo Z. Why do nurses abuse patients? Reflections from South African obstetric services. *Soc Sci Med.* 1998; 47(11): 1781- 1795.
- 33.Maimbowla M C, Sikazwe N, Yamba B, Diwan V, Ransjö-Arvidson A. Views on involving a social support person during labour in Zambian maternities. *J Midwifery Womens Health.* 2001; 46(4): 226-234.
- 34.Brown S, Lumley J. Changing childbirth: lessons for an Australian survey of 1336 women. *BJOG.* 1998; 105(2): 143-155.
- 35.Waldenström U, Rudman A, Hildingsson I. Intrapartum and postpartum care in Sweden: women's opinions and risk factors for not being satisfied. *Acta Obstet. Gynecol.* 2006; 85: 551-560.
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Annex 1

The scales used in the birth satisfaction questionnaire

Scales and their constituent items	Measurement		
Advice on discharge: whether women were given:			
an appointment to discuss family planning	Yes <input type="checkbox"/>		No <input type="checkbox"/>
advice to come back in case of bleeding	Yes <input type="checkbox"/>		No <input type="checkbox"/>
advice to come back in case of fever	Yes <input type="checkbox"/>		No <input type="checkbox"/>
advice to come back in case baby becomes feverish	Yes <input type="checkbox"/>		No <input type="checkbox"/>
advice to come back in case baby is not suckling well	Yes <input type="checkbox"/>		No <input type="checkbox"/>
Hospital environment: how satisfied are women with			
the cleanliness of the hospital	Satisfied <input type="checkbox"/>	Fairly satisfied <input type="checkbox"/>	Not satisfied <input type="checkbox"/>
the cleanliness of the ward	Satisfied <input type="checkbox"/>	Fairly satisfied <input type="checkbox"/>	Not satisfied <input type="checkbox"/>
the cleanliness of the toilets	Satisfied <input type="checkbox"/>	Fairly satisfied <input type="checkbox"/>	Not satisfied <input type="checkbox"/>
Information given during labour: Women were asked whether			
it was easy to understand doctors	Yes <input type="checkbox"/>	Some of the time <input type="checkbox"/>	No <input type="checkbox"/>
staff explained the progress of labour	Yes <input type="checkbox"/>	Some of the time <input type="checkbox"/>	No <input type="checkbox"/>
purpose of tests/ procedures explained	Yes <input type="checkbox"/>	Some of the time <input type="checkbox"/>	No <input type="checkbox"/>
they were told the results of the tests	Yes <input type="checkbox"/>	Some of the time <input type="checkbox"/>	No <input type="checkbox"/>
Staff's attitude: How satisfied are women with			
Doctors' attitude	Satisfied <input type="checkbox"/>	Fairly satisfied <input type="checkbox"/>	Not satisfied <input type="checkbox"/>
Nurses' attitude	Satisfied <input type="checkbox"/>	Fairly satisfied <input type="checkbox"/>	Not satisfied <input type="checkbox"/>
Female assistants' attitude	Satisfied <input type="checkbox"/>	Fairly satisfied <input type="checkbox"/>	Not satisfied <input type="checkbox"/>
Privacy: How satisfied are women with			
The number of people present during labour and delivery	Satisfied <input type="checkbox"/>	Fairly satisfied <input type="checkbox"/>	Not satisfied <input type="checkbox"/>
the level of privacy	Satisfied <input type="checkbox"/>	Fairly satisfied <input type="checkbox"/>	Not satisfied <input type="checkbox"/>
Pain control: women were asked whether			
The level of pain was acceptable	Yes <input type="checkbox"/>	Some of the time <input type="checkbox"/>	No <input type="checkbox"/>
they needed further medication for pain	Yes <input type="checkbox"/>	Some of the time <input type="checkbox"/>	No <input type="checkbox"/>
Care in general: Women were asked:			
about the intended place in case of having another delivery	Same hospital	Other hospital <input type="checkbox"/>	Home
Whether they would recommend hospital to others	Yes <input type="checkbox"/>		No <input type="checkbox"/>
Satisfaction with their birth experience in general	Satisfied <input type="checkbox"/>	Fairly satisfied <input type="checkbox"/>	Not satisfied <input type="checkbox"/>