Original Research Article

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Quality of antenatal care services at subcentres: an infrastructure, process and outcome evaluation in a district in Tamil Nadu

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ABSTRACT

Background: Quality of care is a priority concern all over the world and all the countries are trying to improve the effectiveness and efficiency of their health care delivery systems. Recognizing the potential to improve the reproductive health status in developing countries, quality of care in reproductive health field has been the priority area of research by WHO.

Methods: This study assesses the quality of antenatal care services delivered at subcentre level by comparing with the recommended Structural attributes, Process attributes and Initial outcome attributes. By simple random sampling, ten subcentres under three Block Primary Health Centres in Coimbatore district were included in the study.

Results: On observing the quality of client-provider interaction, most of the women were treated with dignity (98.5%), but there were deficiencies in examination for pallor (19.2%), pedal edema (18.5%) and pulse (10.6%) which is very critical for good antenatal care. The exit interview revealed that most clients (98.6%) were satisfied with the antenatal care.

Conclusions: The findings of this quality assessment study provide information about training needs for improving the quality of service and serves as a baseline data on status before implementing NRHM.

Keywords: Quality of service, Antenatal care, Health subcentre

INTRODUCTION

Quality health care is defined as "Proper performance [according to standards] of interventions that are known to be safe, that are affordable to the society in question and that have the ability to produce an impact on mortality, morbidity, disability and malnutrition". (Roemer and Aguilar: WHO, 1988). 1

Quality of care is a priority concern all over the world and all the countries are trying to improve the effectiveness and efficiency of their health care delivery systems. Recognizing the potential to improve the reproductive health status in developing countries, quality

of care in reproductive health field has been the priority area of research by WHO.

It is estimated that worldwide about 585,000 women die every year from pregnancy and childbirth complications. More than 99% of these maternal deaths and morbidities occur in developing countries indicating that the availability of high-quality health services has made maternal death a rare occurrence in developed countries.

According to WHO, key determinants of quality include the technical competence of providers, their interpersonal skills, the availability of basic supplies and equipment, the quality of physical facilities and infrastructure, linkages to other health services and the existence of a functional referral system.²

According to Donabedian (1966), assessment of Quality of care should include three dimensions:

- Structure—relating to the facilities, equipment, personnel, and the organization available for provision of care,
- 2. Process–referring to activities related to actual provision of care,
- 3. Outcome–Indicates the effect of health care on health status of patients and population (Morbidity and Mortality levels).³

In India, Target *Free Approach* was implemented from April 1996 with provision of client-centered, demand driven, high quality, integrated RCH services based on the needs of the community. This was to ensure satisfied clients who recommend the service to others and also in turn come back for additional services that ensure better utilization of health services by the people.⁴

According to Roemer and Aguilar much of the discussion on assessment of quality of health services has focused on clinical medicine in developed countries. Relatively little work has been carried out on the evaluation of public health programmes, and even less has been done to assess the quality of primary health care in developing countries.⁵

As the subcentre is the first level of contact in the primary health care system, the assessment of quality of maternal health services at the subcentre can determine the overall performance of primary health centre. The present study is an observational study that was undertaken to know the quality of antenatal care services at the provider-client level in the subcentres of Coimbatore district in Tamil Nadu state.

Objectives

To assess the quality of Antenatal care services at subcentre level in Coimbatore district by assessing

- The structural attributes i.e. the availability of physical infrastructural facilities at the subcentres.
- The process attributes i.e. the technical skills and the competence of service providers.
- The initial outcome attributes i.e. client satisfaction and their knowledge on required antenatal care.

METHODS

Three Government Block Primary Health Centres, which are attached to the Department of Community Medicine, PSGIMS&R for students training were selected for the study. Permission was sought from the Government of Tamil Nadu for conducting the study. Meanwhile a structured questionnaire was designed based on the

Standards mentioned on antenatal care services in the user's guide for primary health care management advancement programme by Aga Khan Foundation and Target Free Approach Manual of the Ministry of Health and Family Welfare. ^{1,4} Michael A Koenig's Criteria on quality of care in family welfare programme. ⁶ After receiving the Government permission, the questionnaire was pre tested in a subcentre belonging to the block PHC that was not included in the study.

Then by simple random sampling 10 out of the 27 subcentres under the three block PHCs were selected for the study. As the sampling units were small (n=27), we followed the recommendation¹ that 30-50% of the units need to be studied. The observational study was done from May 2004 - October 2004.

Each subcentre was visited on two consecutive Mondays and all the antenatal women (n=151) attending the antenatal clinics of subcentres were included in the study. Data was collected during health facility visits using the observation checklist to assess the structural facilities and to directly examine the context and manner of interactions between service providers and clients.

Exit interview was conducted in which the clients were interviewed as they leave the subcentre, to measure the effectiveness of the services and their satisfaction about the service provided at the centre.

RESULTS

Table 1 shows that 80% of the subcentres were functioning in the Government building, but only 40% of the subcentres had separate examination room. Basic amenities like Water and toilet facilities were available only in 50% to 60% of the subcentres.

Table 1: Availability of infrastructural facilities in the subcentres n=10.

Infrastructural facilities		%			
Physical facilities	Physical facilities				
Accommodation	Government	80			
Accommodation	Rented	20			
Protected waiting	space present	70			
Examination	Separate	40			
room	Auditory and visual privacy	30			
Water facility	Water facility				
Toilet facility		50			
Electricity	80				
Cleanliness of fac	70				
Subcentre staff qu	60				

Table 2 shows most of the essential equipments and the drugs necessary for antenatal care were available in the subcentres but only 60% had displayed the IEC materials in the subcentres.

Table 2: Availability of furniture and equipments in the subcentres.

Furniture and equipments (in working condition)	%
Examination table	80
Steam sterilizer	100
Torch light	80
Weighing scale	90
Mch cards	100
Measuring tape	90
Bp apparatus	100
Fetoscope and stethoscope	100
Vaccine carrier	100
Iec materials (displayed)	60
Watch with seconds	90
Delivery kit	90
Drugs and supplies Ifa tablets	100
Inj.tt	100
Tab. Cotrimoxazole	100
Tab. Metronidazole	100
Tab. Paracetamol	100
Contraceptives	90
Gloves	80
Syringes and needles	100

Table 3: Interpersonal aspect of the care provider n=151.

Interpersonal aspect	No.	%
Treats client with respect	149	98.7
Polite and listens with interest	137	90.7
Examines the client in private	70	46.4
Explains present condition/ diagnosis	101	66.8
Encourages client to ask questions	34	22.5

Table 3 shows the current study shows that 98.7% of the clients were treated with respect but only 66.8% were explained about the present condition and only 46.4% were examined in privacy. Most (77.5%) of the clients were not encouraged to ask questions.

Table 4: Quality of history taking by VHNs n=151.

History taking	No.	%
Review and update obstetric records	146	96.7
Records age	147	97.4
Records LMP	150	99
Calculates EDD	147	97.3
Asks number of previous pregnancies	150	99
Asks about complications during previous pregnancies	150	99
Enquires about any risk factors	93	61

Table 4 shows that during the observation, of the 151 clients, 99% 0f them were asked about LMP, previous pregnancies and complications during the previous pregnancies but only 61% of the clients were enquired on the risk factors like burning micturition, spotting PV, drug abuse.

Table 5: Quality of examination by VHNs n=151.

Physical examination	No.	%
Examines for pallor	29	19.2
Checks for pedal edema	28	18.5
Takes weight	126	83.4
Checks height	106	70.2
Records blood pressure	131	87
Breast examination done	0	0
Checks for pulse	16	10.6
Checks fundal height, fetal lie and presentation*	136	99.3
Auscultates fetal heart sound*	134	98

14 women were in the first trimester (n=137).

Table 5 shows though 83.4% were checked for weight and 70.2% for height, only 19.2% were examined for pallor and 18.5% checked for pedal edema. However blood pressure was recorded in 87% and the fundal height, foetal lie and presentation was checked in 99.3%. Pulse recording was consistently ignored (10.6%).

Table 6: Provision of prophylactic services to the clients n=151.

Routine prophylactic services	No.	%
Immunisation with TT*	137	100
Iron supplementation*	137	100
Provides MCH card	149	98.7
Refers the client for investigations	141	93
Refers high risk pregnancies when necessary#	15	94

14 women were in the first trimester; #16 were high risk pregnancies.

Table 7: Quality of health communication by the VHNs n=151.

Counselling and health education	No.	%
Advised on adequate nutrition & rest	49	32.5
Informs about adequate weight gain	41	27.2
Explain the dangers of alcohol, tobacco	14	9.3
Uses appropriate IEC materials	0	0
Advised on place of delivery	36	23.8
Explain the danger signs	0	0
Informs about transport facilities in case of emergency	0	0
Reminded of next visit	117	77.5
Informs about family planning	27	17.8
Educates about Breast feeding and Newborn care	0	0

Table 6 shows all the clients were provided prophylactic services of immunization and iron supplementation and 93% were referred for basic investigations. Most (94%) of high risk pregnancies were referred for further antenatal checkup, for investigations and for safe confinement when necessary.

Table 7 only 32.5% were advised on adequate nutrition and rest and 27.2% on need for adequate weight gain. Advice on place of delivery was given to only 23.8% of the antenatal cases. Strikingly low was information and counseling given on family planning services (17.8%)

and on breast feeding and newborn care (0%) during the antenatal visit.

Exit interview

To measure the effectiveness of the health communication given by the health care providers, an exit interview of the clients after a provider-client encounter was done. Their knowledge regarding the key practical knowledge elements was elicited (Table 8) as well as their satisfaction about the services they received (Table 9).

Table 8: Impact on knowledge of the pregnant women n=151.

Knowledge on antenatal care	Yes	%	No	%
What are the danger signs of pregnancy?	13	8.6	138	91.4
When and where is your next prenatal visit?	146	96.7	5	3.3
Do you plan to have a health worker attend your delivery?	148	98	3	2
Do you know the nearby health centre with Blood transfusion facility?	63	41.7	88	58.3

Table 9: Client satisfaction regarding the services received n=151.

S No	Client satisfaction	Yes		No		Don't know	
D.110.		No.	%	No.	%	No.	%
1.	Are you satisfied with current session?	149	98.7	2	1.3	0	0
2.	Is the VHN available when you visit here?	149	98.7	2	1.3	0	0
3.	Is the staff friendly?	151	100	0	0	0	0
4.	Was there privacy when you were examined?	137	90.7	14	9.3	0	0
5.	Were you examined properly?	147	97.4	0	0	4	2.6
6.	Do you feel comfortable discussing your problems with the provider?	151	100	0	0	0	0
7.	Will you recommend the service for anybody?	149	98.7	0	0	2	1.3

Table 8, although most (98%) of the women were sure of having a health-worker- attended delivery, many 91.4% did not know the danger signs of pregnancies and only 41.7% knew the location of the nearest health centre with blood transfusion facility.

Table 9 shows most (98.7%) of the clients expressed satisfaction with the current session. All (100%) said that the staff was friendly and they felt comfortable discussing their problems with the provider.

DISCUSSION

In the field of health care, "Quality" means the degree to which care, or the services included, comply with specified standards.³

In the present study the degree of availability of recommended infrastructural facilities and the quality of provider-client interaction at the first level of contact namely the health subcentre was assessed.

Physical infrastructure

The quality of physical infrastructural facilities were compared with the recommended standards and we found

that in the present study, 80% of the subcentres were functioning in government building, 70% of the subcentres had protected waiting space, but only 40% centres had separate examination room, 30% with auditory and visual privacy.

In the study in Lucknow district none of the subcentres had protected waiting space and none of the subcentres had separate consultation room with auditory and visual privacy.⁷ Similarly, in the study in Sitapur district in majority of the subcentres same room was used for consultation and examination.⁶ These findings indicate the need for more allocation of funds for improving the infrastructural facilities at the subcentres.

Furniture and equipments

In the present study, the recommended furniture and equipments were available in most of the subcentres. However the IEC materials were displayed only in 60% of the subcentres and none of the village health nurses utilised appropriate IEC materials during health education. A similar situation was found by Agarwal et al in which IEC materials were present in 33% of the subcentres and that they were not utilised for health education.⁷

This indicates that there is need to improve supply of IEC materials related to RCH and to emphasise its usage during the training of health care providers.

Drugs and supplies

The availability of drugs in the rural health facilities brings satisfaction not only to the users but also to the providers. In our study, except for antihelminthics (70%) all the drugs were available adequately. Oral contraceptives were available in all (100%) the subcentres and condom was available in 80% of the subcentres, whereas in the study from Meerut district, IFA tablets were available only in 32% of the subcentres and cotrimoxazole in only 20% of the subcentres.

Client-provider communication

Interpersonal aspect

According to Donabedian, the interpersonal process is the vehicle by which technical care is implemented and on which its success depends. It is one of the important issues for client's perception of quality.

The current study shows that 98.5% of the clients were treated with respect during history taking and examination.

The Target Free Approach in RCH programme stresses the interpersonal aspect, wherein behaviour of the provider should be gentle to the clients, show concern for the clients, care for privacy and dignity of the clients and adequate time to be spent.⁴ But not many studies in India address on the interpersonal communication aspect of client provider interaction.

History taking

WHO recommends an average of about 20 minutes particularly for the first visit, when a full history has to be taken and communication of an individual birth plan started.¹⁰

In the present study, of the 151 clients, 99% were asked about LMP, EDD was calculated in only 97% of the cases, 99% of the clients were asked about the complications that occurred during the previous pregnancies.

In the study by Agarwal et al none of the clients were asked about history of any complications during pregnancy.⁷

In the ICMR task force study (1991) observation of ANMs in field was done and they found that past obstetric history was addressed properly by only about 25% of the ANMs, only 50% of the ANMs asked the history of present complaints.¹¹

Physical examination

In the present study, 83.4% of the pregnant women were checked for weight, 70.2% for height and Blood Pressure was recorded in 87%. However only 12% were examined for pallor and only 18.5% were checked for pedal edema. Pulse recording was consistently ignored (10.6%).

In the ICMR task force study (1991) it was noted that BP and weight recording were hardly being done and 50% of ANM's did not properly perform checking for edema and anemia. NFHS-2, (1998-99) Tamil Nadu survey data reveals that weight was measured in 85% of mothers in their antenatal period, height in 57.5%, BP was checked in 80.4% of them. 12

These findings reveal the need to reinforce these elements in the training program as well as by the supervisory staff during their supervisory visit to the health subcentres.

Prophylactic services

According to Target free approach⁴ effective referral linkages and adequate follow up is one of the important component of quality care. In the current study, all the clients were provided prophylactic services of immunization and iron supplementation and most of them (93%) were referred for basic investigations and referral of high risk pregnancies was 94%. But in the study at the subcentres of Rohtak, referral of high risk antenatal was very poor (1.6%).¹³

Counseling and health education

Antenatal care provides an important opportunity for discussion between the pregnant women and the health care provider about healthy behaviour, recognizing complications and about delivery plan. According to WHO, the health care provider should inform the mother and her family about the place and conditions for delivery so that they take the most appropriate decision about the appropriate and safest place to deliver. ¹⁰

In the current study, only 32.5% were advised about adequate nutrition and rest and advice on place of delivery was given to only 23.8% and none of them were informed on danger signs. According to NFHS-2, (1998-99), Tamil Nadu, danger signs of pregnancy were informed to 38.9% and delivery care was informed to 77.5% of them. 12

The advantages of family planning and birth spacing and advice on the availability of services should be repeatedly done by the health care providers. ¹⁰ In the present study strikingly absent was information and counseling on family planning services (17.8%), a key component of Target Free Approach service delivery.

Immediate impact of provider-client interaction

In the present study client exit interview was done to measure the effectiveness of the service delivery and user's satisfaction of the service they received.

Impact on knowledge of the pregnant women

All pregnant women, their family members and the community should be ensured so that they can cope with emergencies i.e., know the nearest facility where emergency care is available and make some contingency plans for transport should an emergency arise. ¹⁰

In the present study, 98% of the women were sure of having a health worker who will attend their delivery but 91.4% did not know the danger signs of pregnancies and only 41.7% knew the nearest health centre with blood transfusion facility. Identification of this gap in awareness reflects failure of communication of this key element which has considerable influence on maternal mortality and needs to be addressed in future training programmes.

According to study by Rawal, even where efforts are made to seek medical attention, the community lacks either the means or knowledge on where to go for such emergencies.¹⁴

Impact on satisfaction of the clients regarding the services

An essential factor in analyzing the quality of care of health facilities is the perception of the client about the facility. In the present study, 98.6% of the clients expressed satisfaction with the current session and 97.4% said that they were examined properly.⁸

In another study done on client satisfaction regarding MCH services, 61.5% felt the services were "excellent" or "good" and 4.75% perceived it as "very poor". The client satisfaction contributes to overall programme sustainability and enhances the likelihood of compliance with the treatment regimen and follow-up visits. ¹⁵

CONCLUSION

Our study assessed the quality of the structural attributes, process attributes and initial outcome attributes at the subcentres as compared to the national recommended standards laid by MOHFW. We could identify the deficiencies in Infrastructural facilities in the subcentres and in the Clinical examination and Health Education components of the VHN at the subcentres. These deficiencies have to be corrected to improve the quality of antenatal care. This involves correction of infrastructure through additional monetary outlay for it. It also means ensuring adequate supply of IEC materials for Antenatal care/Postnatal care as well as identifying areas that need reinforcement during peripheral health worker

training, during in-service training and during visits by supervisory staff of the sector and PHC level.

The Target Free Approach (1996) focuses upon Quality improvement in Family welfare programme and the monthly activity report and the technical assessment report of ANM that are routinely maintained under this approach needs to be scrutinized and corrective measures have to be taken to achieve a sustainable quality care. Now that, National Rural Health Mission also stresses upon quality health care to rural people, the recommended Indian Public Health Standards (IPHS), that enlists the necessary facilities that are to be available in the primary health centres, subcentres and Community Health Centres, it needs to be monitored and followed uniformly in all the subcentres so that the quality of care can be improved.

The present study also provides baseline data for comparison after the implementation of NRHM program to see whether the improved inputs in resources has resulted in improvement of the quality of health care service delivery at the health subcentre level.

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Institutional Ethics Committee

REFERENCES

- 1. AGA Khan Health Services, USA Assessing the quality of service, Primary health care management advancement programme, User's guide. Aga Khan Foundation, Module 6. 1993.
- 2. Improve the quality of maternal health services (WHD 98.8).
- 3. WHO. Available at: www.who.int/archives/whday/en/whday1998.html. Accessed on 5 August 2017.
- 4. Helminen S. Quality of care provided for young adults and adolescents in Finnish public oral health service. 2000.
- 5. Ministry of health and family welfare. Manual on Target free approach in family welfare programme, New Delhi. 1996.
- 6. Roemer MI, Aguilar MC. Quality assessment and assurance in Primary Health Care. World Health Organisation, Geneva. 1998.
- Khan ME, Patel BC, Gupta RB. The Quality of Family planning services in Uttar Pradesh from the perspective of service providers. Khan ME, (ed.) Improving Quality of care in India's Family Welfare Programme, The challenge ahead. Population council. 1999: 238-272.
- 8. Agarwal M, Idris MZ, Mohan U. Quality of reproductive health at primary care level. Indian J Community Med. 2001;26(3):119-26.
- 9. Brawley M. The client perspective: What is quality health care service? A Literature Review. Delivery

- of Improved Services For Health: USAID Cooperative Agreement 617-00-00-0001-00. 2000.
- Jain S, Singh JV, Bhatnagar M, Garg SK, Chopra H, Bajpal SK. Evaluation of physical facilities available at subcentres in district Meerut. Indian J Community Med. 1999;24(1):27-9.
- 11. WHO. Normal pregnancy. Available at: www.who.int/reproductive-health. Accessed on 9 August 2017.
- Indian Council of Medical Research. Evaluation of Quality of Family Welfare services at Primary Health Center level, An ICMR task force study. New Delhi. 1991.
- International Institute for population sciences, Mumbai (1998-99). National family health survey India, Tamil Nadu.
- 14. Lal S, Kapoor S, Vashisht BMS, Punia MS. Coverage and quality of maternal and child health

- services at subcentre level. Indian J Community Med. 2001;26(1):16-20.
- 15. Rawal A. Trends in Maternal mortality and some policy concerns. Indian J Community Med. 2003;28(1):43-6.
- 16. Banerjee B. A qualitative analysis of Maternal and Child Health services of an Urban Health Center, by assessing client perspective in terms of awareness, satisfaction and service utilization. Indian J Community Med. 2003;28(4):153–6.

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