Original Article

DELIVERY PRACTICES IN PERIURBAN AREA OF ALIGARH: A BEHAVIOUR CHANGE COMMUNICATION INTERVENTION STUDY

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ABSTRACT

Background: Child birth is a normal physiological process, which can become pathological due to the adoption of certain practices and consequently affect the health and survival of the newborn. This will require a renewed and intensified scale up of evidence-based interventions and programs focused on preventing deaths of newborn.

Objective: 1.To assess the behavior of pregnant women regarding delivery practices. 2. Assessing impact of Behavior Change Communication (BCC) Package among pregnant women regarding delivery practices.

Study design: A community based intervention study. **Setting**: Field practices areas of Urban Health Training Center Department of Community Medicine, JNMCH, AMU Aligarh UP. **Participants:** 200 pregnant women (100 pregnant women from each intervention and non-intervention groups) were chosen. **Sampling:** Purposive sampling method. **Statistical Analysis:** Data analysed with Epi Info version 3.5.1. Significant difference was determined using Chi- square test.

Results: Due to impact of BCC Intervention 37% mothers preferred to deliver at institution in the intervention group than non-intervention (15%) group (RR=2.47, P–value 0.0004). All home deliveries were conducted by untrained dais. Untrained dais washed their hands before conducting the deliveries in 82.5%. (RR=2.50, p– value 0.001)**.** Clean surface was used in 66.7% deliveries (RR=4.36, p– value 0.001). The cord was cut with new blade in 76.2% of deliveries (RR=2.81, p–value 0.001). Use of sterilized blade was increased (RR=2.81, p–value 0.001). Use of sterile cord tie significantly increased (RR=2.69, p–value 0.002). Nothing was applied on the cord of 19.0% of newborns (RR=2.69, p–value 0.027).

Conclusion: Delivery practices improved significantly after implementation of BCC package.

Keywords: Behavior Change Communication, untrained birth attendant, umbilical cord, institutional deliveries

INTRODUCTION

Child birth is a normal physiological process, which can become pathological due to the adoption of certain practices and consequently affect the health and survival of the newborn[1]. Good pre and postnatal care and trained assistance at the time of childbirth are thus very important to ensure child survival. Ninety-nine

per cent of neonatal deaths occur in developing countries[2] usually soon after birth, at home[3] against a backdrop of poverty, suboptimal care-seeking and weak health systems [4, 5].

A recent analysis of the evidence base for efficacy (i.e. impact under ideal conditions) and effectiveness (i.e. impact within a health system) of interventions, and their cost-effectiveness, suggested that feasible, cost-effective interventions exist that could prevent roughly two-thirds of all neonatal deaths [6].

The present study was carried out with the implementation of behaviour change communication package to improve neonatal health and to assess the impact of these interventions on knowledge and practices of mothers regarding delivery practices, with the following aims and objectives: 1.To assess the behaviour of pregnant women regarding delivery practices. 2. Implementation and assessing impact of Behaviour Change Communication Package among pregnant women regarding delivery practices.

MATERIAL & METHODS

The present community based intervention study was conducted in the field practice area of the Urban Health Training Centre, Department of Community Medicine, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh, Uttar Pradesh. The Urban Health Training Center (UHTC) of the Department of Community Medicine is located 2 Kms away from the medical college on the Qila road. The area is basically a peri-urban area situated on the outskirts of the city. The subjects included in the study were residents of four registered areas of the urban health training center. Urban Health Training Centre caters a total population of 11199 at the start of the study. There were four areas, i.e. Firdaus Nagar, Nagla Qila, Patwari ka Nagla, and Shahanshabad under UHTC. Out of these 4 areas, 2 areas (Firdaus Nagar, Nagla Qila) were chosen randomly for intervention group and the other 2 areas (Patwari ka Nagla, Shahanshabad) served as non-intervention group. The population in this area was relatively stable and allowed for follow up visits. Approval for study was passed from the institutional board of study meeting. Purposive sampling i.e. nonrandom sampling to include subjects that serve the specific purpose was used. Two hundred pregnant women as observed from the previous records were chosen for the study. The study was carried out from one year i.e. from September 2008 to August 2009 which included the development of study tools, collection of data, analysis, tabulation of findings, and interpretation of results.

Exclusion criteria for intervention and non-intervention groups were primigravida, high-risk pregnant women, pregnant women who opted to deliver outside Aligarh. Ethical considerations are local cultural values and ideas (eating special calorie rich food, drinking plenty of milk so that the baby becomes fair-complexioned during antenatal period, giving calorie-rich like sweets containing peanuts, jiggery, and ghee to lactating mothers, heating the room with 'angithee' and breastfeeding as a norm in the majority of community) were respected. Confidentiality was assured. All pregnant women in the intervention and non-intervention areas were approached individually and an informed consent was taken before collecting data. All primigravida in intervention block were also informed about the messages of intervention packages, though they were excluded from the study. Proper management or referral was given to women who were found to have any health problem.

A house to house visit was made to get the information about pregnant women till 200 pregnant women (100 each from intervention and non-intervention groups) were enrolled in the study. The data were collected by using pre-designed and pre-tested semi structured questionnaire. Socioeconomic status was assessed using Modified Kuppuswami Scale[7] for urban population. The study was conducted in three phases in intervention as well as non-intervention groups.

Phase I. Baseline collection of data of pregnant women about breastfeeding practices.

Phase II. Intervention phase (only in Intervention group)

Behavior change communication[8] (BCC) package was designed focusing on changing the adverse behavior of pregnant women regarding delivery practices. It included information regarding identification, socioeconomic status; delivery practices ie Home deliveries if conducted by an untrained person are unsafe. One should go for institutional delivery or home delivery by a trained person. If there is home delivery one should ensure that trained person should be contacted before delivery. Birth attendant should wash her hands with soap and

water. Clean sheet should be spread on the floor of clean part of home for the delivery. New or boiled blade / instrument should be used for cutting the umbilical cord. Umbilical cord should be tied with clean and sterile (boiled) thread. Nothing should be applied on the cord. The information in this package was given to every individual pregnant woman of the intervention group in the 9th month of gestation and self designed pamphlets containing simple messages in local languages (Hindi, Urdu) were distributed to all pregnant women. For those who could not read, their literate family members were asked to read for them.

Phase III. Post intervention phase.

After first week: During phase III, all mothers in intervention areas who delivered were contacted after one week of delivery.

Data entry and analysis was carried out using Epi Info version 3.5.1. Significant difference was determined using Chi- square test. The impact of behavior change communication was assessed using relative risk with confidence intervals and difference was accepted significant at more than 95% (p value <0.05).

RESULTS

Pregnant women of age 15-30 years were 83% and remaining were in the age group of 31-45 years (χ^2=1.3, p-value 0.258). Most of the pregnant women (90%) were Muslim and rest of them belonged to Hindu community (χ^2=13.08, p-value 0.0002). 75% of pregnant women were illiterate (χ^2=0.97, p-value 0.327). Education of husbands of pregnant women was also low i.e. 54% illiterate (χ^2=3.70, p-value 0.157). Majority of the families (64.5 %) were nuclear. 99% pregnant women were housewives. Nearly half of the pregnant women (48.5%) belonged to upper lower class according to Modified Kuppuswami Scale of socio-economic status.

Prevailing delivery practices before BCC intervention: The majority of pregnant women 91.5% delivered at home (χ^2=.06, p-value 0.799) (Table 1).

Table 1: Place of delivery during last pregnancy

	Non-intervention group (n=100)	Interventional group (n=100)
Home	92	91
Institutional	08	09

χ^2=.06, df=1, p-value 0.799

All the home deliveries except one were conducted by untrained dais. Untrained Dai washed their hands with soap and water only in 35.6% of home deliveries (χ^2=0.04, p-value 0.834). Clean surface was used in 18.5% deliveries (χ^2=1.5, p-value 0.540). The cord was cut with a new blade in 31.2% of deliveries (χ^2=0.72, p-value 0.396). Umbilical cord tied with clean and sterile (boiled) thread in 9.3% deliveries (χ^2=.0.07, p-value 0.780). Nothing was applied on the cord of 6.5% deliveries (χ^2=0.38, p-value 0.537) (Table 2).

Table 2: Delivery practices at home in last delivery

Delivery practices	Non-intervention group (n=92)	Intervention group (n=91)	p-value
Delivery conducted by			
Trained Dai	01 (1.1)	00 (0.0)	
Untrained Dai	91 (98.9)	91 (100.0)	
Clean hands			
Yes	32 (34.8)	33 (36.3)	0.834
No	60 (65.2)	58 (63.7)	
Clean surface			
Yes	15 (16.3)	18 (19.8)	0.540
No	77 (83.7)	73 (80.2)	
Clean instrument			
Yes	26 (28.3)	31 (34.1)	0.396
No	66 (71.7)	60 (65.9)	
Sterile cord tie			
Yes	08 (8.7)	09 (9.9)	0.780
No	84 (91.3)	82 (90.1)	
No application of cord			
Yes	05 (5.4)	07 (7.7)	0.537
No	87 (94.6)	84 (92.3)	

Figures in parentheses are percentages

Impact of BCC Intervention (On 7th day of delivery-follow up survey): Due to impact of BCC Intervention 37% mothers preferred to deliver at institution in the intervention group than non-intervention (15%) group (RR=2.47, P–value0.0004). All home deliveries were conducted by untrained dais. Untrained dais washed their hands before conducting the deliveries in 82.5%. (RR=2.50, p– value 0.0001). Clean surface was used in 66.7% deliveries (RR=4.36, p– value 0.001). The cord was cut with new blade in 76.2% of deliveries (RR=2.81, p–value 0.001). Use of sterilized blade was increased (RR=2.81, p–value 0.001). Use of sterile cord tie significantly increased (RR=2.69, p–value 0.002). Nothing was applied on the cord of 19.0% of newborns (RR=2.69, p–value 0.027) Table 3.

Table 3: Impact BCC package Intervention on delivery practices in home deliveries

Variables	Non-Intervention (BCC not given) (n=100)		Intervention (BCC given) (n=100)		Relative Risk, p – value
	Baseline	7th day	baseline	7th day	
Institutional delivery	08	15	09	37	2.47, 0.0004
Home deliveries	92	85	91	63	
Home delivery by untrained dai	91	85	91	63	
Clean hands	32(34.8)	28(32.9)	33(36.3)	52(82.5)	2.50, 0.001
Clean surface	15(16.3)	13(15.3)	18(19.8)	42(66.7)	4.36, 0.001
Clean instrument	26(28.3)	23(27.1)	31(34.1)	48(76.2)	2.81, 0.001
Sterile cord tie	08(8.7)	10(11.8)	09(9.9)	20(31.7)	2.69, 0.002
No application of cord	05(5.4)	06(7.1)	07(7.7)	12(19.0)	2.69, 0.027

(Figures in parentheses are percentages)

DISCUSSION

Due to implementation of BCC Package institutional deliveries improved, practices of hands washing were increased more than two times, use of sterilized blade was increased two folds**,** use of sterile cord tie significantly increased in intervention group. Nothing was applied on the cord of 19.0% of newborns. This was statistically significant (P–value< 0.05).Other researcher like Sibley and Sipe[9] suggest that TBA training is associated with substantial improvement in knowledge, attitude, behaviour, and advice. There was also a small decrease in perinatal or neonatal mortality associated with training. Other researcher from Shivgarh, Uttar Pradesh, reported improvements in birth preparedness, hygienic delivery, umbilical cord care, skin care in intervention arms 10**.** In Sylhet district, Bangladesh[11] it was reported that neonatal mortality rates were 29·2 per 1000, 45·2 per 1000, and 43·5 per 1000 in the home-care, community-care, and comparison arms respectively. Neonatal mortality was reduced in the home-care arm by 34% during the last 6 months versus that in the comparison arm. No mortality reduction was noted in the community-care arm.

CONCLUSION

It was concluded that there was a low percentage of institutional deliveries and very poor delivery practices in peri-urban area of Aligarh. There is a need to Increase coverage of deliveries attended by skilled health personnel and backed by obstetric and neonatal emergency care. There was a significant impact of behavior change communication package on the behavior of pregnant women regarding delivery practices. Behavior Change Communication Package can be applied through health workers in the community to improve delivery practices that can decrease the morbidity and mortality among infants. Although there was significant improvement in knowledge of mothers regarding delivery practices some delivery practices had not changed due to some strong cultural beliefs and influence of mother in-law and elderly females of the family. Doctors and the staff of the centre and train health care providers including ANM, ASHA and CMC workers should be involved in the educational sessions along with the elderly females; mother-in-laws, dais and reproductive age group women and efforts should be made to address the harmful socio-cultural beliefs and practices prevalent in the community.

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