

Conference Paper

Scaling Up Chlorhexidine for Umbilical Cord Care in Hard-To-Reach-Areas, Far-Western, Nepal

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Abstract

Neonatal Health is a grave concern for Nepal presently. Still home delivery does exist in our country where sixty three per cent of deliveries happens at home in an unhygienic environment and 41% of them apply a substance such as oil, dried cow dung, ash, vermilion to the umbilical cord for early fall of stump which can lead to infection (NDHS 2011). Meanwhile, the Government of Nepal (GoN) has made great strides in reducing NMR. In 2011 GoN pioneered an exciting and promising intervention with Chlorhexidine (CHX) which is affordable, efficacious and safe. This intervention saved four thousand babies' lives. The main objective of the research was to identify an appropriate behavioral communication strategy to reach the hard-to-reach-areas for the practice of healthy cord care. The BCC intervention used were three standard approaches. The first one were social mobilization approach (training to FCHV, mother's groups and community leaders, demonstrations with life-sized dolls, distribution of posters, pamphlets and providing essential CHX related audio and video messages) to primary and secondary audiences. Another approach used were advocacy which included initial observation and keeping records of availability of CHX tubes in health facilities and counseling to ANC service providers, health facilities in charge and FCHV and the last approach used were multimedia which constituted of ICT and IEC materials for the purpose of intervention to change the participant's behaviour.

Keywords: behavioral communication change, social mobilization, advocacy, multimedia use

1. INTRODUCTION

Neonatal Health is a grave concern for Nepal presently. According to Nepal Demographic Health Survey (2016), the neonatal mortality rate (NMR) as 21 per 1000 live births. More than 12000 neonates die every year in this area, of which 42% die from

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neonatal infection. 63% of deliveries happen at home in an unhygienic environment and 41% of them apply a substance such as oil, dried cow dung, ash, vermilion to the umbilical cord for early fall of stump which can lead to infection (NDHS 2011). Meanwhile, the Government of Nepal (GoN) has made great strides in reducing NMR. In 2011 GoN pioneered an exciting and promising intervention with Chlorhexidine (CHX) which is affordable, efficacious and safe. This intervention saved four thousand babies' lives which were technically supported by John Snow Research and Training Institute, Inc (JSI) and other supporting partners. It was a wide scale intervention addressing both institutional and home deliveries. Cleansing newborn umbilical cord stumps with 7.1% CHX diclugonate solution has been demonstrated to reduce newborn mortality by 23 percent. CHX in a gel formulation has been found more acceptable for users; this product was first developed and piloted in Nepal. After the success of the pilot, GoN endorsed the use of CHX for essential newborn cord care in December 2011. By the start of 2013, Nepal was moving forward as the first country in the world to adopt CHX for newborn cord care and the intervention had reached 74 of 75 districts. Nepal is also exporting CHX gel to other countries. JSI have continuously provided technical support to GoN. The Chlorhexidine Navi Care Program (CNCP) has been fully implemented in 50 districts so far and is ongoing in 24 districts however there are remote regions within districts where there is limited access to the services. These areas are called *Hard-to-reach areas*. The notion of 'hard-to-reach areas' is contested and is an ambiguous term that is commonly used within the spheres of social care and health, especially in discourse around health and social inequalities. It denotes inaccessibility of desired services for reasons that may include low socio-economic condition/status, low level literacy, membership of an ethnic or religious minorities, and difficult geographical topography which may deprive communities of basic health services. There is a need to address health inequalities and to provide services for the marginalized and socially excluded sectors of society. This includes remote and rural areas, Adivasi and Janjati groups, disadvantaged, marginalized groups and people with different circumstances (PLHV's, IDU's, slums).

In this regard, an interventional study was done on one of the remote districts of Nepal-Kailai, located in Far Western Development Region, consisting of 29 VDC and 6 Municipalities with a population of 775,709. The district comprises 1 Zonal Hospitals, 4PHCC, 37HP, 6 UHC, 1 CHU and 36 birthing centres.

Since 2011, JSI/CNCP have implemented the CHX program (FY 2068/69) in 74 of 75 districts. The high rate of home deliveries, and the practice of applying mustard oil, vermilion, turmeric powder, and dried cow dung to the umbilical cord of newborns

makes them more vulnerable to infection. The recently formed municipality named Attariya, formed by collating 4 VDC's (Beladevipur, Malakheti, Shreepur and Geta) in 2014 came to be hard-to-reach areas. Among these four, Beladevipur seems to have the least accessibility to health services. This was formed again by collating three wards (8, 9, and 10). The population was 12,927. The health post is located at Seheri Ward No. 8 (non-birthing Centre) and some people must travel far to reach it.

Only the people of Seheri and some from Murkuti visit this health post for health services, and the remaining who are deprived of the services had a higher rate of home delivery. These communities largely practice traditional cord cutting as they consider birth as a natural phenomenon.

In an effort to provide adequate services to hard-to-reach areas, barriers must be removed. Firstly, hard-to-reach areas should be identified with the following approaches:

1. Consistent co-ordination and consultation with partner organizations and Government. Any single organization will struggle to address the most critical components necessitating support and mutual co-operation.
2. Female Community Health Volunteer (FCHV), as they generally focus only on 'low hanging fruits', should be provided an incentive to motivate them to increase access to hard-to-reach areas.
3. Role of outreach clinics and accessibility of health facilities and health service providers: regular/ routine visits.
4. Broadcasting/utility of local media outlets.
5. Social/community mobilization (community leaders and influential personalities/knowledgeable personalities)
6. Hazardous Materials Identification System (HMIS)/ Research Nepal Demographic and Health Survey (NDHS)

1.1. Difficulties in accessing hard-to-reach areas:

- *Physical Factors* are prominent barriers to accessing hard-to-reach areas. They include geographical variations/locations, poor logistic support, technical support (Human capital flight) and timing (opening and closing).
- *Behavioral factors* of Health Service providers may act as a barrier in regards to social factors. Still in today's context of 21st century, it's very hard to counsel and

convince people about the use of CHX and its benefit and make them accept it and change their behavior. It's very hard to counsel providers and family members about health services.

- *Economic factors/ Financial Burden* can be barriers as the most important factor determining project success is budget. If an organization doesn't have a sufficient budget to address the emerging issues then the program fails. So, financial burden is a dynamic barrier to providing services to hard-to-reach areas.
- *Commodities distribution* problems may result as JSI distributes CHX to district level as per expected pregnancies. Then districts further distribute the commodities. The distribution may be haphazard leading to CHX not being available where it is needed.

Effective approaches to engage 'hard to reach groups' include

- Attitude of Health care staff
- Service flexibility
- Working in partnership with other organizations
- Empowering user involvement.

1.2. Behavioral communication change intervention to scale up Chlorhexidine in hard-to- reach-areas

Despite a global increase in CHX use, its prevalence remains low in low- and middle-income countries, especially in Nepal. One strategy to improve uptake and use of CHX, as an essential component to supply-side interventions, is Behavioral Communication Change (BCC). BCC interventions have been shown to produce positive effects and reduce neonatal mortality and morbidity through demand generation. There are some unreached areas in Nepal where services are not accessible. These areas are called *Hard-to-reach areas*. There is a need to address health inequalities and to engage in services for the marginalized and socially excluded sectors of society. It may be that certain groups choose to not access treatment services and are thus deemed hard to reach from a societal stance. 'Hard to reach' audiences have been defined as 'inaccessible to desired services due to reasons such as low socio-economic condition/status, low level literacy and member of ethnic minorities.

The CHX program combines enabling environments (policies, strategies) with both supply and demand interventions. The objective of supply-side is to ensure the availability, accessibility and quality of CHX for the population. These activities are often

described in terms of supply- chain management systems, access, quality, and logistics management.

BCC interventions can be divided into two categories: Interpersonal communications and effective use of mass media.

Interpersonal communications include group discussions, one-on-one discussions, small group sessions and health worker's counseling. The aim of this category of interventions is to change people's attitudes toward CHX whereas mass media interventions are aimed at changing people's perceptions and attitudes toward CHX and also increase their knowledge.

In order to deliver the intervention, we made a use of standard approaches:

- *Social Mobilization*: This approach included training to FCHV, Mother's group and Community leaders, demonstrations with life-sized dolls, distribution of posters, pamphlets and providing essential CHX related audio and video messages to primary and secondary audiences. It also comprises of encouraging them to watch TV and listen to radio for CHX applications to prevent newborn sepsis. Involvement of local groups and clubs and mobilizing them helps in accessing the CHX services.
- *Advocacy*: This consisted of initial observation and record keeping of availability of CHX tubes in health facilities and further counseling to ANC service providers, Health facilities in charge and FCHV.
- *Multimedia use*: consisted of ICT and IEC materials used for the purpose of intervention to change the participant's behavior.

1.3. Objectives

1.3.1. General Objective:

- To explore knowledge and perceptions on the barriers and facilitators to access services for 'hard to reach' groups
- To scale-up the availability of CHX in hard-to-reach areas

1.3.2. Specific Objectives:

- To assess the knowledge of CHX among health service providers at an institutional levels and FCHV/family members at community level

- To assess the perception on use of CHX among health service provider's at institutional level and FCHV/ family members at community level
- To assess the accessibility of CHX hard-to-reach areas
- To assess the availability of CHX in hard-to-reach areas
- To assess an accessibility of local media outlets in those areas

2. METHODS

Qualitative study design were used in this study. The study was conducted in Beladevipur municipality of Kailali district, Nepal. Three wards (Dhanchauri, Balmi and Jukaiya) were selected for the study. An interventional study were conducted, where pretest of knowledge and perception about CHX at both institutional and community level was measured and in accordance with the results, interventions were provided at community level about essential newborn care being focused on use of CHX for newborn to prevent neonatal infection.

The study population included all pregnant women of reproductive age group (15-49 years). In- depth Interview was done among the 16 pregnant women and Key-informant interview was conducted among 2 Health Service Provider's and 4 Female Community Health Volunteer (FCHV). The study was conducted for the duration of 2 months (1st June-30 July), 2016. 16 pregnant women of (6, 7 and 8 months) of reproductive age group (15-49 years) were interviewed. 2 Health Service Provider's and 4 FCHV from two wards (8 and 9) of Beladevipur were interviewed. Social Mapping was done to identify the hard-to-reach-areas and ANC/FCHV register was used as sampling frame to identify the 6, 7, and 8 months pregnant women. Purposive random sampling was done to select the first pregnant respondent and then snowball sampling was done further.

3. RESULTS AND DISCUSSION

The overall objective of the research was to identify the knowledge and perception of Chlorhexidine among both demand and supply sides and explore the appropriate intervention for the particular community for accessibility of the services at hand. In this regard, the key- Informant Interview were taken of two Health Service provider's (Sr. AHW- Senior Auxiliary Health Nurse and Sr. ANM- Senior Auxiliary Nurse Midwife)

of Beladevipur Health post and Female community health volunteer's (FCHV) of three wards. Sixteen pregnant women (6, 7, and 8 months) were interviewed in depth.

3.1. Health service provider's (supply side)

Beladevipur Health post, established in 2052 B.S, has been persistently providing the health service to the denizens of this place. Earlier, the health post had only two people for delivering the services to entire community but recently, after the VDC was upgraded to municipality, the manpower has doubled. Still, it lacks the birthing facilities at the center. The pregnant women of this place suffer. In order to seek maternal health services, women must travel 10-14 km. So, instead they deliver in their homes and still practice traditional methods for cordcutting.

Beladevipur is made up of the merging of three wards (8, 9, and 10). The health post is located in ward no. 8 named Seheri. So, only the people surrounding this ward and nearby visit the health post. The remaining wards No. 8, 9, and 10 either visit to health facilities (Zonal hospital, private clinics) via local transportation (Ox-cart, cycle) if the situation seems to be critical.

The Health post in-charge was very much positive regarding the establishment of birthing centers in the same and upgrading the existing services. She said, *" I am striving very hard for this, and is in process. Though we don't meet all the criteria for making the birthing center (lacks physical infrastructure-equipment and trained skilled birth attendees). Time and again I have been keeping words with the focal person of DPHO about it. So, I think it will be very soon"* (smile on her face)- Sr. AHW Bhagawati Shah, Beladevipur health post.

3.2. Usage of Chlorhexidine in health post

The health post is a non-birthing center, hence they do not use CHX but rather distribute.

3.3. Distribution of Chlorhexidine in health post

The Health post distribute CHX to 8 months pregnant women and their family members during 3rd ANC visit along with counseling. On 28th of every month of FCHV review meeting, the Sr. ANM of health post distribute to FCHV as per expected pregnancy of their ward.

3.4. Recording and Reporting

The proper maintaining of records of CHX in LMIS and HMIS 3.6 were observed. As all three ward seems to have high number of home delivery (57), and the usage of CHX was same as per the number of home delivery, this shows that at community level the distribution was done conventionally.

3.5. Barriers encountered while counseling

The Sr. ANM is the focal person of CHX and maternal concerns in the health post. We asked about the barriers she encountered in distributing the CHX to pregnant women. Most of them accept it easily as it is related to their newborn baby, though are unaware about it. But few refuse to take it. The reason is:

"Some of them deny saying that in early days the umbilical cord used to fall within 3/4 days but after using this it falls after 12/13 days", but I convince them by saying the CHX protects the newborn from neonatal infection, it does not have any side effects, so there is nothing to be worried. Besides this, when asked to pregnant women about the reason of not coming for ANC checkup, they say, it's very far. And it is fact also that the inaccessibility of transport facilities is the major cause, depriving these citizens from getting the health services. FCHV to their level best do have a home visit. The people of this place are underprivileged because of only one health post over there".

3.6. Suggestions to overcome the barriers

Sr. AHW and Sr. ANM noted some striking suggestions.

"The very first thing is education, it is the key indicator in this place. Health awareness campaigns should be frequently conducted. Through an awareness program people are much easily influenced and takes no time for them to change in their behavior".

Another is "despite of having the road facilities here, the municipality has not been able to make accessibility of transportation facilities here. So, if only provision of few number of vehicles doing to and fro to headquarter and health post from every ward, it would be very much helpful".

3.7. Female Community Health Volunteer (FCHV)- Channel of Distribution of CHX

It is well known that FCHV are the backbone of the health system. Until the health of the community people is achieved, the health of the country also cannot be attained. If the health system at the community level is strong, then automatically the health system becomes robust at country level. FCHV are selected by members of Mothers groups for Health with the help of local health facility staff.

Dhanchauri, Balmi, and Jukaiya are the hard-to-reach wards from Beladevipur health post. Key Informant Interview were conducted among four FCHV in two wards (8 and 9). They regularly have home visits and provide health services to the community people. The problems encountered by FCHV of two wards in delivering the health services was portrayed in this way:

3.7.1. Lack of Awareness

".....Most of the people here are educated, but are not aware. There is a difference between education and level of awareness. It's very hard to convince educated people rather than to uneducated. Uneducated people easily accept the things what you say, and either do implement also, thinking it's for their benefit".

3.7.2. Carelessness

"Despite of knowing about the health service and its importance, still people do so negligence, they just listen to us for a while, and do not implement in their behavior so how can we expect a change in them. Especially, when we give them essential medicines which are free of cost (like-ORS solution, Zinc tablets, CHX to 8 months pregnant women, they just keep randomly and don't use when needed, and when we ask reason for not using, they simply say, forgot the place, or lost" (angry face...)- Bimala Rokaiya, Balmi, Ward No. 8.

3.7.3. Concept of Untouchability:

"The ingrained untouchability highly persist in far western development region. The concept of separation and untouchability during menstruation and pregnancy labor pain is deeply practiced here. Because of this also, the people over here are deprived of health services".

3.7.4. Culture/Religion

".....Some people still do follow traditional methods for cord cutting over here, thinking as birth is a natural phenomenon. Even if they have institutional delivery, after discharging at home, though had already applied CHX still some of them use mustard oil, vermilion, dried cow dung for faster falling of umbilical cord. It's very hard for them to ask to change their so running practices. It takes time to adopt the new one".

3.7.5. Shy Nature

".....Because of shy nature of community people, they are not much opened to their problem especially health related. They feel awkward to share their health problem with us. They only say when we ask to them seeing their physical appearance. Even women they don't say that they are pregnant. Observing their abdomen size we need to guess ourselves that they are pregnant and give them zinc tablets, CHX. This how is the situation of our community (.....sad face)- Bimala Rokaiya, Balmi, ward 8.

In order to overcome these barriers, they have traced some suggestions, which are illustrated below:

- Conduct health awareness programs (following with street drama, role-play, short movies) is most wanted in our community, as our community is highly influenced by external and central level people and their activities.
- Build at least a small community health unit in each place seeing the density of population and need of health services.
- Upgrade the existing Beladevipur Health post with birthing centre.
- Improve access of motor vehicles to health facilities.

3.8. Pregnant Women (Demand Side)

Sixteen Pregnant Women (of 6, 7, and 8 months) of reproductive age in ward 8 and 9 (Dhanchauri, Balmi and Jukaiya) were interviewed in depth, focusing on essential newborn care (use of CHX to Newborn). They were asked about the barriers that have deprived them from accessing the health services and at the same time they were also asked the suggestions to overcome these barriers. The major gap was identified and accordingly, an appropriate intervention was given. The pregnant women belonged to different communities. The Socio- demographic characteristics of these pregnant women along with their husband's was asked which is illustrated below.

Table 1 presents the socio-demographic characteristics of pregnant women (6, 7 and 8 months) of Kailali district. 16 Pregnant Women were interviewed during the survey and it was found that 9 were between the ages of 18-22 years, 4 were between the ages of 23-27 years, 1 was between 28-32 years and 2 of them were between 33 and above. The participants belonged to different ethnicities such as- 2 were Brahmin, 9- Chhetri, 3 belonged to marginalized group (Tharu) and 2 belonged to Dalit (BK). Though they belonged to different ethnicity, all respondents were found to be Hindu. If talking about the type of family, 13 of them belonged to Joint family and only 3 were found to be nuclear. In regards to respondent's educational level, 4 were found to be illiterate, 5 had completed their primary level education, 6 were below SLC and only 1 were SLC pass. All the respondents were found to be unemployed.

The background information of the respondents' husbands such as education and occupation were also solicited in this study. Three of the husbands were found to be illiterate, 8 had achieved primary education, 4 had Secondary level education and 1 had passed grade 11. Fourteen (14) of them were found to be working in India (Daily wages Labor), 1 was unemployed and 1 was unknown.

3.9. Knowledge on essential newborn care

Almost all pregnant women had knowledge on Essential Newborn Care but were not aware of its importance. The influence of FCHV was highly observed. Every pregnant woman had knowledge regarding this. The most surprising thing was, they only knew what FCHV had told, not more than that. As pregnant women were from different communities, they had their own culture/tradition, which suppressed all their learnings although some of them had perceived and retained it properly.

TABLE 1: Socio-demographic characteristics.

Socio-demographic Characteristics	n
Age (Years)	
18 - 22	9
23 - 27	4
28 - 32	1
33 and above	2
Total	16
Ethnicity	
Brahmin	2
Chhetri	9
Tharu	3
Dalit	2
Total	16
Type of Family	
Joint	13
Nuclear	3
Total	16
Level of Education	
Illiterate	4
Primary (1-5 Grades)	5
Secondary (6-10 Grades)	6
SLC pass or above	1
Total	16
Occupation	
Unemployed	16
Business	0
Service Holder	0
Total	16

3.10. Choice of place for delivery and use of CHX

When these pregnant women were asked about their choice of delivery of baby either at home or institution, 12 of them preferred to have institutional delivery and 4 still wanted home. Though the problem varies according to locality where they stay. As per Dhanchauri and Jukaiya, the major problems that discouraged women to opt for institutional delivery was inaccessibility of transport facilities to health institutions, whereas in Balmi, it was the poverty and inaccessibility of transport facilities.

In rural Nepal, people still preferred to deliver at home, thinking of birth as a natural phenomenon. When asked again what they use for naval care after cord cutting, most of them responded with CHX. Only a few mentioned that they still follow their own

TABLE 2: Husband's background characteristics.

Husband's Background Characteristics	n
Level of Education	
Illiterate	3
Primary (1-5 Grades)	8
Secondary (6-10 Grades)	4
SLC pass or above	1
Total	16
Occupation	
Daily Wages Labour (India)	14
Unemployed	1
Unknown	1
Total	16

traditional methods of applying mustard oil, vermilion and dried cow dung. But those who preferred CHX for naval care complained that after its application the cord falls later rather than earlier.

Some of them responded this way:

".....Why to use this new methods for naval care, I do remember, where I was born and I am still alive. See nothing have happened to me (...with a smile) till now, I was born in cowshed and my umbilical cord was cut with sickle, after that mustard oil was applied on it and was rotated and pulled it forcefully. And even I do that, I had done the same for 5 children and will do for even this one (pointing the abdomen with finger). I give birth to baby in a blink of eyes, don't suffer from any pain. I shut the door and give birth to child all alone, cut the umbilical cord with blade and apply oil on it."

- Ishwori Devi Bohora, 6 month pregnant

Age: 40 years

"I prefer home for delivering the baby, I find it easy and comfortable at home. (...Laughing), if we go to hospital, they will make stuck us in so lengthy process and apply some cream to naval which delays the fall of cord"

- Hema Oli, 6 month pregnant

Age: 21 Years

...I find home as the best place to give birth to child. We call Sudeni here during delivery time, they take care of everything of baby after birth. They cut umbilical cord with blade and apply some oil and vermilion on it to make it fall"

- Tara Joshi, 7 month pregnant
Age: 38 years

3.11. Distribution of CHX

The CHX distribution also varies as per the locality, density of population and migration. If we talk about Balmi, Ward No. 8, the distribution of CHX was very poor. Due to the overflow of migration, this place had the bulk of population and the home visit of FCHV also seems very less and majority of people were deprived of even basic health service. On 2nd and 15th of every month, they have immunization day and mothers meeting, but the participation even on this day seemed low when the FCHV register was observed. Though the FCHV do home visits of the non-attending individuals to provide the services, still the community people seems to be deprived. When pregnant women were asked about the reasons of not visiting to immunization clinic and counseling to FCHV, most of them hesitate as they consider their household work as first priority rather than their health.

This can be compared to Dhanchauri and Jukaiya where the majority of respondents had knowledge and were much more aware about CHX and even had implemented the practices. There were only a few who despite their knowledge, did not implement the practice.

3.12. Accessibility and use of radio/television

Majority of respondents reported that they didn't have both. Only a few had Radio/TV in their home and sometimes used for entertainment purpose. When these respondents were asked whether they had heard/seen about CHX in radio/TV, the majority of them replied that they had never seen/heard about it. Some respondents listen to FM radio with their mobile phone.

3.13. Barriers encountered in accessing the service

Almost all respondents reported that transportation, education and poverty were the major barriers in accessing the health services. They reported that some organizations sometimes visit their homes and do some fruitful programs but disappear suddenly. They come here and teach us some motivating things but do not re-visit and see the

impact of their interventions. This shows that organizations ignore the poor and remote communities, which is also one of the barriers.

3.14. Suggestions to overcome the barriers

All sixteen respondents reported that:

- Awareness campaigns, for example Street drama, Role-play, live demonstration, are the most effective for changing behavior.
- Access to transportation facilities, the most wanted
- Social mobilization helps in overcoming the barriers

4. CONCLUSION

The following conclusions have been drawn on the basis of findings of the study:

1. Health Service Provider's and FCHV are the main pillars to provide health services to community people.
2. Different barriers (lack of awareness, education, negligence, lack of transportation facilities, culture/religion/tradition, concept of untouchability, shy nature) act as obstacles in accessing the health services leading to poor health.
3. Municipalities also have hard-to-reach areas, where community people are deprived from basic health services.
4. Supply side (Health Institutions)-have effectively distributed CHX through FCHV to the community.
5. Demand side- Some respondent's claimed they had not received CHX, some had received but hadn't used.
6. Poor access and usage of communication media, rarely used but only for the entertainment purposes.

The suggestions recommended for both demand and supply sides are:

1. Conduct health awareness programs (Street drama, Role-play, live demonstration, displaying short movies) by DPHO, NGO's, INGO's and external organization's quarterly.

2. Improve accessibility of transportation facilities.
3. Improve proper Social/Community mobilization.
4. Expand and upgrade the existing Beladevipur health post into a Birthing Centre.
5. Increase the number of FCHV for achieving the high coverage of CHX distribution.

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