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Utilization of Maternal Health Care Services in India: A Community Based Cross-sectional Study in Rural Belgaum

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Introduction: Sub Centre (SC) is the peripheral unit of the existing health care delivery system under the allopathic system of medicine in India. These basically provide preventive, promotive and the curative services and are facilitated by Female Health Workers (ANM) and Male Health Workers (MHW). They are the integral part of health care delivery system. Also, key to achieve a goal of health for all and to promote the community people for their overall development.
Methods: A community based descriptive cross-sectional study was conducted from August 2011 to February 2013 in all 9 sub centers of Kinaye PHC of Belgaum district, all 14 maternal health care workers were selected and 272 beneficiaries were selected from catchments area of these sub-centers were interviewed by administering structured, pretested interview schedule. Data were analyzed by SPSS (20 Version).
Results: Study revealed that (85%) of the workers had correct knowledge but could not transform it into practice completely. This is due to multiple problems that encounter such as include lack of equipments(85.71%), transport facilities (77.78%), delay in decision-making by community to seek

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care (77.78%), lack of supportive supervision (>20%). Besides these, they were lacking in career development opportunities. There are no promotional avenues and low remuneration and benefits. The acceptance of service provided through sub centers was satisfactory (>90%) among beneficiaries and ANMs (98%) were most accepted than MHW. Beneficiaries faced many problems to access services such as lack of need based services (60%), poor attention by health service provider towards the need of consumers (5.2%) and difficulty in reaching to sub health post (21%).

Conclusion: The regular supply of necessary equipments and medicines needs to be ensured at the sub centre and frequent in-service trainings and career development opportunities to be given to health workers to maintain the enthusiasm and devotion towards the profession. Also there is a need to provide skill development opportunities and ensure the convenience of service at all sub centers and communication between health workers and beneficiaries to be emphasized.

Keywords: Antenatal care; maternal health; utilization; practices; barriers; Kinaye.

1. INTRODUCTION

The World Health Organization (WHO) definition of maternal mortality includes all deaths among pregnant and recently pregnant women except for deaths from 'accidental or incidental causes' [1].

1.1 Maternal Health

Refers to the health of women during pregnancy, childbirth, and the postpartum period. It encompasses the health care dimensions of family planning, preconception, prenatal, and postnatal care in order to reduce maternal morbidity and mortality [2].

World Health Assembly (1977) put forth the concept of "Health for All" which advocated for satisfactory level of health by all that will permit to lead socially and economically productive life. Although, the goal is formulated, somewhere the recommendations remained under implementation and somewhere the targets were not fulfilled. Again it was realized that the performance of existing health care system remain unsatisfactory. An international conference on Primary health care (PHC) in 1978 AD formulated the concept of essential health care with consideration of community participation, accessibility and affordability at highest potential. It was introduced in an attempt to address the existing gross inequalities in health status of people between the developed and developing countries [3].

India is a signatory country to the Alma- Ata declaration (1978), accepted and adopted the principles of PHC. In order to provide the Primary Health Care services to the people of country, National Health Policy (2000 AD.) formulated a new concept of health care provision to its community people through PHC approach by:

- Establishing one sub centre at each village. Sub Centre is the peripheral unit of the existing health delivery system in India. Subcentre basically provides preventive, promotive health services and to some extent the curative services also. According to the need, one sub centre is supposed to provide the service to 5000 population of catchment area.
- By creating the post of two technical personnel namely Male Health Worker (MHW), Female Health Worker (ANM) for the Sub Centre to provide quality Primary Health Care services [4].

MHW and ANM are expected to provide health education concerning prevailing health problems, advice on proper nutrition, Maternal and child Health (MCH) care including family planning (FP) services, immunization service, treatment of common diseases and injuries, provision of essential drugs etc. Of these activities, Maternal Health including FP and Immunization service components has been dealt in this study.

The government health services network is very large in India but the qualities of these services are lower than the acceptable limits. However there are many private health sector in India but the primary health and reproductive health care needs of the people, especially in rural areas, are expected to be provided by the public facilities, mostly run by the state governments.

Due to various inefficiencies in the public health care delivery system, even the minimum facilities are not often made available to the target groups in the population [5].

In theory, the ANM should give regular medical check-ups, distribute iron and folic acid tablets (to combat anemia, which is presumed universal), to pregnant women also give a course of free injections of tetanus toxoid (to avert neonatal tetanus caused by cutting the cord with an infected instrument), identify women at risk and assist in their deliveries or refer them to the government hospital. The ANM should also maintain a network of dais, usually those she has helped to train, to identify pregnant women and register them with her. But in practice it's not done. Trained and untrained dais alike, seldom establish contact with pregnant women and do not systematically deliver medical care to them. At the same time, village women rarely consult dais during pregnancy. The dias also show their problem claimingthat they have no treatments or medicines to administer so that women do not bring their troubles to them. Thus dais cannot provide a comprehensive safety net of medical care for pregnant women. On the one hand, cultural practices also play the significant role in life of pregnant women from seeking ANC, INC and PNC services. On the one hand, these services are not available and even available they are not affordable for the poorer households. The delivery services received either at health sub-centers or at home have illegal charges. Often the PNC services that require medication and treatment for lactating women are not for those who cannot afford [6].

According to GOI, the local primary health care centers and sub-centers have to provide most of the ANC and PNC services free of cost and often at home visits. Although there is no explicit price for most of these services, there is always a hidden price in the form of opportunity cost of the time and cost spent in availing health care facilities and services. More the distance to the healthcare facility, higher the transportation cost and higher the price of the service. Thus physical accessibility imposes another cost on the consumer, in addition to the illegal charges, for using a health care system that is supposed to be free [7].

The demand related constraints originating from cultural practices and accessibility factors, and the supply side constraints thus get reflected in the low overall rates of reproductive health care utilization in India. However, these averages hide considerable variation in utilization rates across different demographic groups and geographical regions of the country.

The objectives of the present study were:

To ascertain the pattern of health care practices and the problems faced by health care workers during delivery of maternal health services and to explore the factors associated with utilization of Maternal Health Services.

2. MATERIALS AND METHODS

A community based descriptive cross sectional study was conducted in Kinaye PHC of Belgaum district of India during August 2011 February 2013. There were 9 Sub-centers, and one Primary Health Care Centre in Kinaye PHC.

The study was carried out in all nine sub-centers. Kinaye PHC was selected purposively. All the 14 health care workers of Kinaye PHC; working under public Private Partnership with J.N Medical College, Belgaum and government health care delivery system, under the department of health service at sub-centre level and 272 mothers were selected randomly having child below one year who were residing under the catchment area of PHC and those were getting services from the respective sub centres. Beneficiaries of services were randomly selected as 25% of all the beneficiaries recorded in the each sub centers.

Then their addresses were followed. Data were collected by face-to-face interview with health workers and beneficiaries using pre-tested structured schedule and records of each sub-centers were reviewed to assess the adequacy of logistics, essential medicines and equipments at these institutions. ANMs were interviewed for maternity service, MHWs for immunization services, Family planning and services records.

Ethical Clearance was taken from District Health Office, Kinaye PHC and J.N Medical College before conducting the study. Written informed consent was taken from health workers and beneficiaries before data collection respectively.

Data were analyzed by computer software SPSS (SPSS 20.0 Version) to interpret the results in the light of objectives.

3. RESULTS

The study had assessed the maternal health care practices offered by health workers at sub-centers level as guided by National Health Policy and RCH guideline of India.

Majority of health workers were in age group 21-30 years (42.85%). Mean age was 39.21 years Out of 14 health workers, 5 were male while nine were female. The male- female health workers ratio was rather more tilted towards female though for good quality of maternal health care services it should be other way round. Out of fourteen health workers, 50 per cent of health workers (female) had undergone ANM course. more than 57.14 per cent of the health workers had less than ten years experience in the same post and among the different group of health workers, three out of nine ANM had more than 30 years of experience in the same post.

Table 1. Beneficiaries by age

Age Distribution	Frequency	Percent
15-20	60	22.1
21-25	97	35.7
26-30	70	25.7
31-35	41	15.1
more than 35	4	1.5
Total	272	100.0

Very limited (14.28%) health workers advised correctly about time to take rest during pregnancy and one in every two practiced the IFA tablet distribution as prescribed by national guideline. Even in suspected high risk cases of pregnancy, more than a quarter had not referred to the higher centers for further diagnosis and management.

As the delivery services is given only by female health workers so the sample for this is 9. There are more than five 'cleans' of delivery services to be observed for safe delivery. Surprisingly, they had poor knowledge about all cleans of delivery to be observed while engaging in intranatal care services. All used safe items for cord cutting and half of them practiced the use safe delivery kits.

Most of the health workers advised to care baby by promoting frequent breast feedings, assessment and maintenance of body temperature, prevention of infections and identification of abnormalities and seeking of care. Nine out of every ten advised for family planning services to post natal mothers to all contacted post natal mothers.

Almost health care workers had reported that the problems of transportation and remoteness of location of health facilities as factors acting against service delivery.

Most of the health care workers reported poor supervision however they were satisfied with the behaviors of the supervisors.

Most of the health workers felt that there were services related problems, that led to dissatisfaction and lowering the morale in their work. These include low salary structure, no promotional avenues and lack of opportunities for career development.

Most of the beneficiaries were utilizing the services provided by sub-health post. It was reported that most of the health workers behave friendly and most accepted health workers were Auxiliary Health Workers. The practices of health workers and responses of beneficiaries in most of the services such as cord cutting and care practices were found to be similar.

Table 2. Health workers by their practices (n = 14)

Practices	No.	%
Advice on rest hours/day		
6-8	2	14.28
More than 8 hours	12	85.72
No. of IFA tablets to be taken during pregnancy		
100-200	1	7.14
>200	3	21.42
225	10	71.42
Referral practices of workers on suspected high risk pregnancies		
Refereed to higher centers	10	71.42
Not referred to higher centers	4	29.58

There were multiple problems that hinder the accessibility and acceptability of services among beneficiaries. Nearly 60 per cent of the respondents felt that there were no services when they strive for need for services. More than half respondents replied that the health workers give less attention to the needs of client/patients.

Table 3. Health workers by their practices related to delivery care (n = 9)

Practices of cleans of delivery		
Practices /cleans	**Frequency**	**Percentage**
Seven	7	77.78
Five	2	22.22
Total	9	100.0
Cord cutting practices of health workers		
Practices	**Frequency**	**Percentage**
New blade	4	44.44
Safe delivery Kit blade	5	55.56
Total	9	100
Cord care practices of health workers		
Practices	**Frequency**	**Percentage**
Nothing applied	8	88.89
Antiseptics	1	11.11
Dry cotton	0	0
Total	9	100

Table 4. Post natal care practices (n=14)

Practices	No.	%
Advice on care of baby		
Advised	12	85.71
Not advised	2	14.28
Advice on maintenance of health		
Advised	11	78.57
Not advised	3	21.42
Advice to mothers on Family Planning		
Advised	13	92.85
Not advised	1	7.14

4. DISCUSSION

Findings related to personal characteristics revealed that most of health workers at Sub centre level were female, married, aged between 21-30 years with mean age 39.21 years. Most of the female health workers were younger age whereas some of them were aged more than 50 years. Many health workers had basic level of literacy and many of them were retired government health workers. On the other hand none of the health workers had higher education.

The study revealed that health workers were having good knowledge about the need of antenatal care for pregnant women and reported that every pregnant woman should undergo at least four ANC visits. Most of them told that pregnant women should take rest more than eight hours per day and very few (15%) had good knowledge about the need of extra rest during pregnancy. Some of them thought that the routine rest is required and such lack of knowledge requires emphasis through in-service trainings or refresher courses. More than 90 per cent of them had idea for taking more than 200 tablets of iron and folic acid by a pregnant and all of them were well aware about the minimum doses of Iron and Folic Acid tablets to be taken during pregnancy.

On an average 80.92 per cent of health workers had correct knowledge regarding the vaccines related aspects; highest being for route of administration and least for storage of vaccine items. More than 60 per cent health workers had no proper knowledge about the cold chain maintenance and appropriate temperature to store vaccines. This reflects that the knowledge and practices vary greatly which requires special attention.

Table 5. Problems in referral of high-risk cases of pregnancy (multiple responses)

Problems	Response				Total
	Yes		No		
	No.	%	No.	%	
Lack of transportation facilities	7	77.78	2	22.22	9
Distant location of SHP	6	66.67	3	33.33	9
Delayed decision by family	7	77.78	2	22.22	9
Others(economic condition)	3	33.33	6	66.67	9
Problems to provide outreach services (multiple responses)					
Inappropriate site	9	64.28	5	35.71	14
Transportation	8	57.15	6	42.85	14
Lack of equipments	12	85.71	2	14.26	14
Others	2	14.26	12	85.71	14

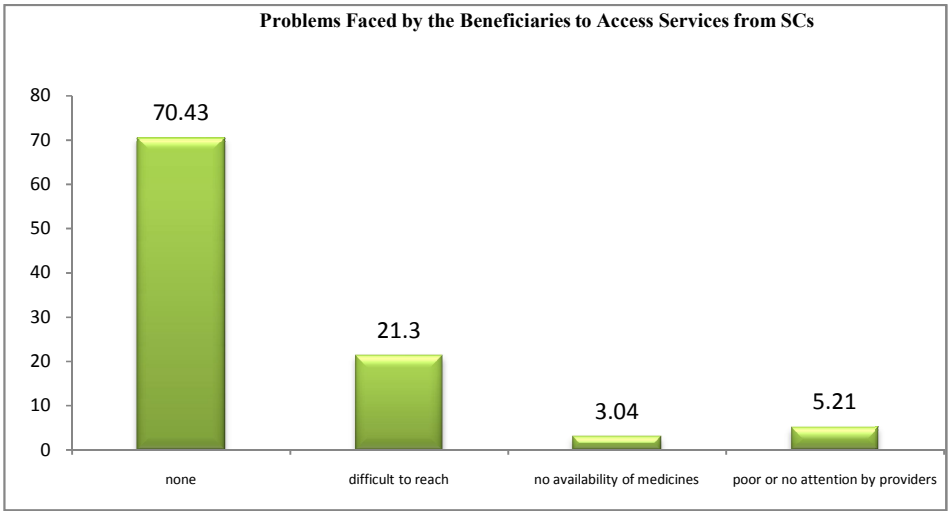

Fig. 1. Problems faced by beneficiaries to access services (n=272)

Specifically, there was the difference between knowledge regarding vaccines and pattern of Practices among health workers for the use of vaccines for the longest period of time once the vaccine vial is opened. Approximately 95 per cent of them had correct practices of use of vaccines within recommended standard time. Rest of them (4.76%) had incorrect practices.

Table 6.Supervision and monitoring of Sub-health posts by supervisors (n=14)

Supervision status	No.	%
Not at all	1	7.14
Regular supervision	10	71.42
Uncertain	1	7.14
Haphazard	2	14.28

All the health workers had referred high risk cases of pregnancy to higher centers and little proportion of health workers had treated her as counseling and follow up which is misleading. Though it was less in quantity, but has high qualitative importance, which leads to be the pregnant at higher risk than saving her life.

The study found that all of the health workers had given advises and information to pregnant women that she should take high calorie foods, additional food items and frequent small feedings to maintain the physiology of pregnancy. Almost half number of health workers advised to restrict some food items such as spicy foods, acidic and some kinds of vegetable items. A study in 2006 highlighted the importance of health promoter in the community and reported that health promoters are the most visible and key services provider in the community. They give the required support, essential health care and treatment and advices to the client as per the need of clients [8] to provide the essential health care services to the community, community health workers play an important role in primary health care programmes. They provide IEC materials, MCH services health education on nutrition improvement, maternal health services and medical treatment [9].

Table 7. Services related problems of health workers (multiple responses) (n=14)

	No.	%	No.	%
Difficult to reach	14	40	21	60.0
Non availability of services	21	60	14	40.0
Poor attention given by health workers	18	51.4	17	48.57
No problems at all	14	40	21	60

Frequently health workers provide the maternity care services either in home or in sub centre or in both settings. As per the national maternity guideline, MHWs and Particularly ANMs are authorized health workers to provide intra-natal care services. It was found that all of the health workers followed five cleans of delivery. Some of them also follows the seven cleans which was a recent amendment by the WHO. It was due to the good and timely in service training to the health care workers and their level of experience.

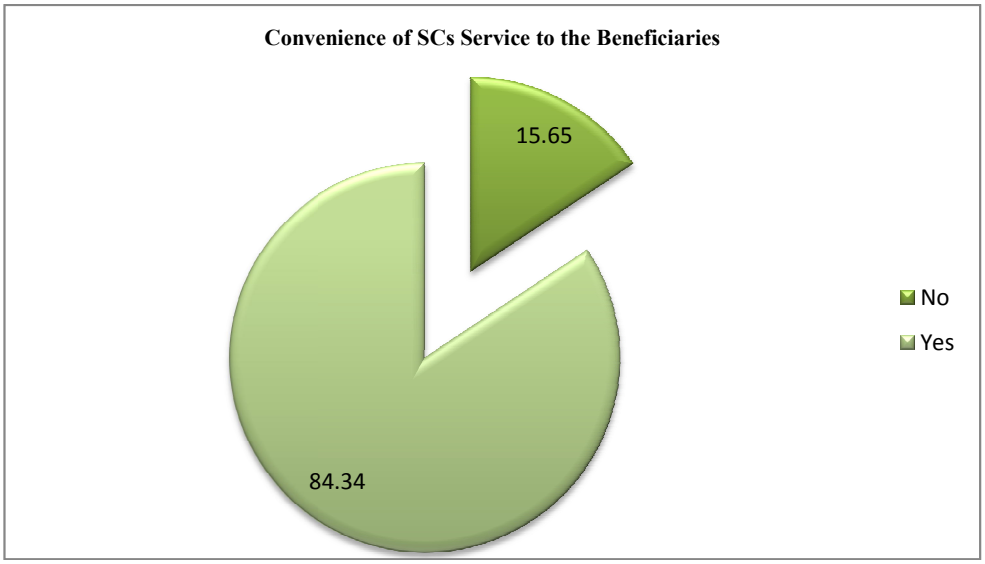

Fig. 2. Convenience of SCs services to the beneficiaries (n=272)

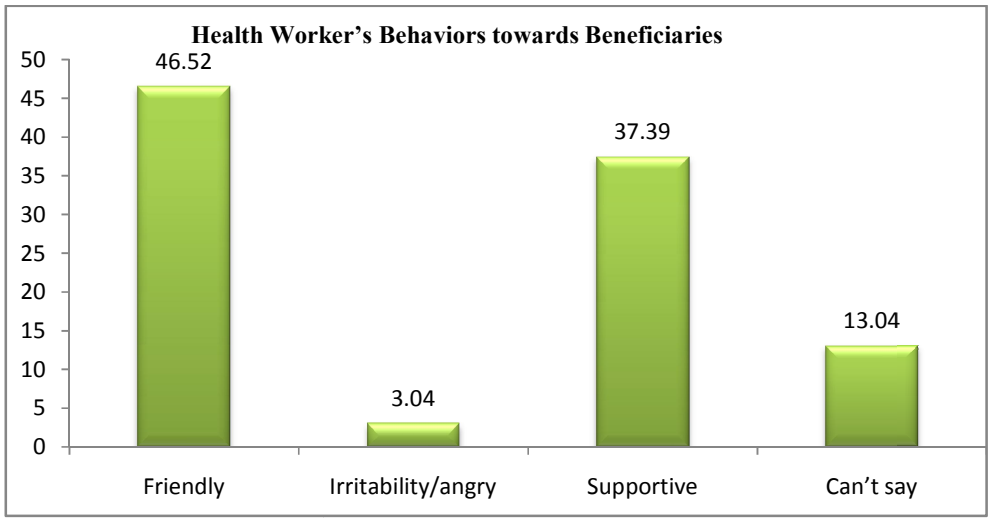

Fig. 3. Health Worker's behaviour towards beneficiaries (n=272)

All of health workers had taken care of newborn baby by following the steps such as clearing the airway and assessing respiration, wrapping a baby with warm cloths. All used safe instruments to cut cord particularly safe delivery kit blades but 11% of them had applied antiseptics to the cord. A similar study in (1999) found that 50 per cent of health workers had correct knowledge on type of postnatal cord care, but the knowledge of 50 per cent on type of care was incorrect by international standards [10]. National newborn care guideline of India has recommended the use of antiseptics to be avoided and advocates the use of dry, clean, sterile bandage to the cord.

More than 70 percent health workers advised to take newborn bath on second day of birth or before two days. Only 10 per cent advised for immediately after birth or within 24 hours of the delivery. This was the incorrect practice of health workers that leads the newborn to develop hypothermia that is very fatal condition and a major cause of neonatal deaths in developing country. Along with the background they had advised to breast feed soon after following the births, particularly within one hour of birth in case of normal delivery which is rather very good practice and also after four hours in case of caesarean delivery.

Fig. 4. Quality of services provided by sub centers (n=272)

Health workers in the sub centres were providing family planning services to the clients. All of them were providing condoms, pills, DMPA, services from sub centres facilities and outreach sessions. Beside these, they were giving counselling and referral services to the clients as per their need. A study in (1985) revealed that despite manpower shortage and irregularity in supply of family planning services, the community health practitioners have been active in various activities, including health education on nutrition improvement, service, child health service, and medical treatment. They were engaged to provide the services in coordination with other organizations. Findings of the present study were consistent with the study [11].

Findings of checklist revealed that out of nine sub centres, all of them had followed annual plans. There were planning for the activities to be carried out on annual basis whereas none had monthly plan. They had followed the plans properly and all the activities were performed according to plans in spite of some few cases.

Health workers in the subcentres encountered many problems while engaged in maternal health service work. Such problems include denial of pregnant women to receive the services, persuaded to practice in traditional ways to manage delivery cases, lack of transportation facilities and necessary drugs (77.78%), remoteness and distant location of health facility (> 60%), delay in decision making by family member to refer the high risk cases of pregnancies though health workers want to refer it timely (> 70%). Similar findings were revealed in the study (1994). They reported that the facilities in developing countries faced chronic shortage of equipment, drugs and others basic supplies, so the health workers lost their faith and credibility and acceptance by beneficiaries [12].

To conduct the immunization session effectively, there were many constraints that act against the success. It was revealed that more than fourteen percent of workers faced problems of poor community support. Difficulty in cold maintenance, lack of equipments and trans-portation services were major hurdles to run outreach programmes in peripheral area. A study in (2003) reported the similar findings that the drugs and supplies are insufficient for outreach clinic and study on (2002) reported that incomplete immunization was due to distant location of immunization centres [12,13].

Most of the health workers faced many services related problems such as they had no promotion, lack of career opportunities, very low salary and benefits. A similar study in (1993) revealed that the main cause of poor performance of Village health worker was because of lack of trainings and capacity building programmes such as no provision of further study, lack of drugs, supplies and poor supervision. The study found that all of the workers were not paid timely whereas study in (1993) reveled that 42 per cent were not paid timely and irregularities of remuneration. Nearly 30 per cent of them quote unsatisfaction due to pay related reasons, dissatisfaction with levels of

payment and promotion, lack of community support and mistreatment by seniors. Similarly, in (2000) a showed that community health workers were paid less, which led to low morale and motivation that is likely to influence the quality of services provided [15,16,9].

More than 90 per cent of the health workers reported that there was regular supervision or haphazard or irregular supervision from senior officers also their behavior towards the workers was supportive, cooperative as well as coordinated. A study in 2000 reported that there were only 0.45 visits /VHW/years and for the MCHW, the frequency was 0.4/MCHW/Year which was very less. Likert R reported that the employee worked more when they experienced general supervision rather than no supervisions and guidance. The findings of present study are not consistent with the Likert,s study [14].

The acceptance of health services was assessed by drawing the views of beneficiaries towards the services provided through sub centres. It was reported that majority had visited to sub centres for the maternal health services and less extent for the individual services. This result was in contrast with study in (2008) who revealed that two thirds preferred private clinics due to more trust in private practioners, convenient timings and less waiting time. They reported that health workers had advised to them but 5 per cent reported no advices were given at all about mother nutrition. Among the deliveries conducted by health workers, they had used safe instruments (new/boiled blade or safe delivery kit blade) to cut cord that is similar to the responses of health workers. They reported that 10 per cent of health workers did not give the advice regarding initiation of breastfeeding. A study in (2000) stated that health workers were main sources of information and advices. So they are expected to advice to people on personal contact or mass contact. It was reported that services provided were convenient to nearly eighty five percent and most accepted workers were ANMs. This is due to the influence of his behaviour and skills than other workers. Also may be preference of lady health workers by beneficiaries to attain services besides these the people had encountered many problems to access the services reported problems include difficulty in reaching to the facility (21%), lack of medicines (3%), and poor attention by health workers towards the needs and problems of client (5.2%) [17,19,18].

They revealed that most of the workers had good, friendly and supportive behavior (80%) and the services quality was good among the availed services (70%). A study (2005) showed that few perceived poor quality of services of services, which was similar to the findings of present study. Another study conducted in (1991) revealed that 26 per cent of the health workers were not available at time, 5 per cent reported unsupportive whereas this study revealed more that 14 per cent were unsupportive. Suamya Rao advocated that the improvement the services quality and sustainability results by focusing on the interpersonal communication [18,20].

Beneficiaries reported that some of health workers paid less attention to the need of beneficiaries and less than 10 percent per cent of them experienced the misbehavior of health workers. The study in (2003) showed that 36.7 per cent of the beneficiaries were utilizing the services due to nearness of sub health posts, only 14.1 per cent reported that they had visited because of good behavior and 18.3 per cent felt heat they had experiences the misbehavior of or unsupportive behavior of health workers. This study to some extent consistent with the study in (2003) and some differences were noted. The difference in utilization of health services was due to difference in the perception of benefeciaries and services availability [20].

5. CONCLUSION

In most aspects of the services the health workers had well knowledge while the pattern of practices was rather poor. There were multiple problems that hinder the delivery of services; of them lack of essential drugs and supplies were major factors. The acceptance of services was satisfactory among beneficiaries.

Frequent in-service trainings should be organized. There is need to provide the career development opportunities and trainings so that the skilled workers can perform well. Develop and implement the periodic system of supervision.

The system of minimum balance of essential drugs in the sub-health post and timely demand and supply of the items required to be ensured.

In order to increase the public acceptance of services, the services should be available to them as per their need and communication

between health workers and beneficiaries to be emphasized.

Further research regarding the cost effectiveness of health service and other components of primary health care should be conducted.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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