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Community Health Diagnosis: Participatory First Step Field Study in Primary Health among Deprived Community of Chandrapur Municipality of Madhesh Province in Nepal

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ABSTRACT

Background: Community health diagnosis is a continuous process which address the health challenges and needs of a particular community. The health needs of a community are ever changing process which evaluates the success of implementation of any health program as well as the development of the community. The public health is affected by the knowledge and practices of multiple factors like maternal and child health care, family welfare, personal hygiene and sanitation, and available health infrastructure, and services. These factors indicate the health status of the community. In our knowledge, there might be gap in delivering public health to the community. Hence, the study was conducted to assess the different community health parameters of the selected area which included demographic data, maternal and child health, family welfare, daily activities (*dinacharya*), personal hygiene and sanitation, awareness of COVID-19 and vaccination, and health institutions and facilities.

Materials and Methods: The study was conducted by face-to-face interview among the 229 household of ward 2 and 8 of Chandrapur Municipality, Rautahat district, Madhesh Province of Nepal, using semi-structured questionnaire with inclusion of community health parameters. The convenient sampling method was used for the study. Verbal informed consent was taken from the respondent as well as the local administrative office before commencing the study. The data was collected in the month of May, 2023.

Results and Discussion: The result showed that the community health status of the study area was satisfactory but still there is huge gap between the needs, services, and their utilization. Although maximum children are vaccinated according to EPI, unvaccinated children were also significantly present; whereas, though most of the people used latrine for defecation, open defecation still persisted and some resident still used mud/earth or ash or only water for hand washing. Similarly, in other health related behavior there persisted the unhealthy practices.

Conclusion: The various related stakeholder of the community should work efficiently to mitigate the gap between health problems and needs in the community. The health program should be specially planned, implemented, and analyzed in the deprived and marginalized area of the society to address the disparity in the social, economic and health needs.

Keywords: Community health, Maternal and Child health care, Family Planning, health knowledge and practices

INTRODUCTION

Community diagnosis is a holistic evaluation of health status of the selected community with relation to its physical, social, biological, and ecological dimension with the aim to define existing health issues, determine the locally available infrastructures, and address the priority to the various health needs of the community.¹ It is a continuous process as the health needs of the community will be evolving day by day. A community is group of people of defined area under study. It is concerned with the health and disease in the defined population of the community to identify the health problems and needs of the community and to plan, implement, and evaluate the extent of health measures to effectively meet these health needs.²

Deprived communities are those who have one of the traits as significant number of inhabitants of low socioeconomic status, unfavorable developmental outcomes in relation to their surroundings, exposed to destructive risk of serious in nature which create an unfavorable environment for existence or facing structurally conditioned developmental obstacles.³ The deprived communities are vulnerable to various physical, mental, and social health risks. The maternal and child health and elderly health are specially affected and prone to various health issues. The community deprivation levels influence in individual health behavior and knowledge.⁴ The people living in the deprived area are vulnerable to health risks from community water supplies and are experiencing a disproportionate burden of adverse health. The health risk from the community water supply may be direct as well as indirect risk which influence the public health of the locality.⁵ Globally there is increasing concern and interest in maternal and child health care and is an essential public health service.⁶

In spite of improvement in maternal and child health in past few decades, 95% of all deaths occurred in low middle income countries (LMIC) in 2020 were related to the maternal and child, the most could have been prevented.⁷ According to a study by the United Nation Interagency Group, the estimated maternal deaths per year were 295 in 2017, and 18 neonatal deaths per 1000 live births globally.⁸ The high rate of maternal death occur in areas with inequalities in access to quality health services and complications following pregnancy and childbirth, most of which are preventable and treatable.^{9,10} A lot needs to be done especially in the low and middle-income countries.

Nepal has been noted for remarkable achievement in decreasing the maternal death by more than 75 percent since 1990 as well as significantly reducing the under-five mortality by greater than 66 percent over the past 20 years.¹¹ The goal three of the Sustainable Development Goals (SDGs) provides a target of reducing the global maternal mortality ration to less than 70 per 100,000 live births, neonatal mortality to less than 1 per 1000 live births and under mortality to 20 per 1000 live births and improve the public health status of the country.¹² But poor maternal and child health care and other essential health care remains significant challenges in many countries like Nepal.¹³

Low utilization and access to services have been described as common challenges.¹⁴ The problem is more prevalent in low income countries like Nepal. For which maximum utilization of the health services by the community people is of utmost importance. The utilization of the services depends upon the knowledge of the community people about the services. The disparities in the use of the health services among the local resident remain the major concern. Many organizations are working to reduce the disparities in the services use and availability.

The human development index ranked Nepal 143 out of 191 countries and 35% people below poverty line. The majority of the poor are women, *dalit* (untouchable/scheduled caste) and disadvantaged *janajati* (indigenous groups).¹⁵ Nepal Multi Indicator Cluster Survey (2019), showed that 77.8% pregnant women complete at least 4 antenatal visit and more than half of the newborns were exclusively breastfeeding (62.1%).¹⁶

The neonatal mortality rate is still high in Nepal and the key preventive strategy to reduce it may be adequate prenatal care utilization. It may also be associated with higher likelihood of having immunization and initiation of breastfeeding within 1 hour after birth. The public health awareness program and interventions play significant role in increasing the utilization of prenatal care and skilled attendant delivery.¹⁷

The priority of many health programs in Nepal is to improve the maternal and child health care to eradicate the preventable cause of death of the maternal and child and enhance the public health status of the country. There are many factors which hinders in delivering quality health care. The major constraints are the knowledge of the services and utilization of the services especially in the marginalized areas. The local residents of the rural areas are unaware of the services and their benefits. Improved personal hygiene and sanitation are crucial for maintenance of health and prevention of diseased morbidity and mortality. The improved personal hygiene and sanitation are well-documented and largely acknowledged as an efficacious strategy for the prevention of health and controlling transmission of pathogens.¹⁸ The good hygiene and sanitation is cost-effective, convenient and useful public health practices to promote good health and control spread of transmission.¹⁹ The practice of the personal hygiene is affected by multiple factors. The water, sanitation and hygiene (WASH) is a holistic approach which involve not only the investing in the infrastructure but also includes behavioral change in the community to adopt better hygienic practices. The improvement in the infrastructure only will not have good impact if the individual of the community doesn't utilize it.²⁰

Chandrapur is a semi-urban area located in the central southern part of Nepal. The study areas are relatively isolated from major urban centers, and the residents have limited access to health care services. The area has poor health indicators, with high rates of morbidity and mortality from preventable diseases such as diarrhea, respiratory infections, and malnutrition. There is also a high burden of communicable and non-communicable diseases in the areas. The area is inhabited by a diverse community including

indigenous and marginalized communities. The residents have limited access to education, employment, and basic amenities, which affects their health and well-being.²¹

The COVID-19 pandemic had a huge impact on community life and health, especially in poorer neighbourhoods where many social problems have been made worse for examples; poverty, difficulties getting food and social isolation. The knowledge concerning the COVID-19 and its impact on communities plays significant role in mitigating the social and economic burden in the society.²²

People residing in socially and economically deprived area are vulnerable to worse health outcomes and have a greater prevalence of health behaviour risk. The knowledge and practices of public health might have gap in the community. The effective health programs may not have been implemented successfully after proper planning. Hence, the study was carried out to assess the different community health parameters of the selected area which included demographic data, maternal and child health, family welfare, daily activities (*dinacharya*), personal hygiene and sanitation, awareness of COVID-19 and vaccination and health institutions and facilities.

MATERIALS AND METHODS

The study was carried out in wards 2 and 8 of Chandrapur municipality, Rautahat district Madhesh Province in the month of May, 2023. The study was designed as a descriptive, quantitative, and cross-sectional survey, which aimed to collect data on the public health knowledge and practice among the community using a semi-structured questionnaire. The first section consisted of demographic characteristics, the second section consisted of questions regarding public health knowledge and practices which include Maternal and Child health (MCH), family welfare, daily activities (*dinacharya*), personal hygiene and sanitation, COVID-19, and health infrastructure and facilities. A convenience sampling technique was used to select the study participants. The study participants included household of the selected rural areas, who provided informed consent willingly to participate in the study. The data were collected through face to face interviews. In total 229 households of the study site were surveyed with head of the household in the study.

The quantitative data collected through the questionnaire was entered into Microsoft excel 2011 and analyzed using descriptive statistics. The qualitative data collected through the interviews was transcribed, translated, coded, and analyzed under thematic area. The study was conducted in compliance with ethical guidelines for research involving human subjects. Verbal informed consent was obtained from the participants of the study; and also, permission was taken from local administrative office. The study team ensured their confidentiality and privacy in the study.

RESULTS

The total number of the participants in the study were 229 household from ward number 2 and 8 of Chandrapur municipality. Among them 54% (n=124) participants were from ward no 2 and

46% (n=105) were from ward number 8. The result of the different parameters in the present study are presented below;

Socio-demographic characteristics: The first section of the study included the demographic characteristics. The demographic variables of the present study were gender, age, religion, ethnicity, family type and source of income of the respondent household. Among the respondents, 44% (n=101) were male and 56% (n=128) were female. In this study, 6% and 92.5% followed Buddhism and Hinduism respectively; and 1.5% followed other religion. Maximum respondent in the study were from age group 21-30 years. The total participants and their age are given in fig 1.

The maximum participants were *janajati* (39.7%), followed by *dalit* (24%) by ethnicity and others were *madhesi* (17.9%) and *Brahmin/kshetri* (14.8%). The maximum household (56%) belonged to nuclear family. The major source of income was labour work (32%) and 30% were farmers. Other sources of income were business (17.5%), job (6.99%) and foreign employment (2.6%) and 21.4% had multiple sources of income.

Maternal health and family welfare: The second section of the study included question regarding maternal health and family planning. The study showed that the average age of marriage was 18 years and the average age of delivery of first child was 20 years. Among the respondent households, 57% of the households visited health center for antenatal checkup, 30% out of them had four ANC visit; and 43% visited less than 4 times. Majority of the respondents (68%) did not do any preparation before delivery of the child. Among them, 30% had more than three children and rest had less than 3 children. In the study, 34% of the participants had gap of 2-3 years between child birth and others had less than 2-3 years of gap between the child births. Only 27% of the household had institutional delivery and among those with the institutional delivery, 49% didn't visited health center within 45 days of delivery. The reason for not visiting the health center for the majority of household was that they didn't face any health issues during the time. Only 38% of the pregnant women of the household took iron/folic acid for 180 days during their pregnancy and 27% took for less than 180 days; whereas 33% didn't take iron/folic acid; the major cause of which was their habit of forgetfulness. Among them also 63.7% didn't take iron/folic acid after delivery of their child.

In the section related to family welfare, 69.9% of the respondent were well aware of family planning, used temporary method (70%); and the most preferred temporary method was implant (40%); followed by condom (24%). Among the participants, 30% used permanent method of family planning; and majority (85.5%) adopted laparoscopy or female sterilization. For the family planning services, majority (68%) visited government health services and rest visited private health institutions. The cause of this may be due to the accessibility and availability of the family planning services at governmental health center.

Child Health: About the child healthcare, majority of children

(86.9%) from the respondents' household were vaccinated according to EPI (Expanded Program on Immunization) schedule; whereas children from 13.1% household weren't vaccinated. In this study, majority of (52.8%) of the children didn't receive vitamin A prophylaxis, however, only 47.2% children from the respondents' household were given vitamin A prophylaxis in last 6 month. Most of the children of the household were breast fed; among them the 66.8% were breast fed within 1 hour of birth and it was provided to 71.6% children on demand.

After weaning, majority (55.5%) of the household fed their children with the normal food prepared at home for adult; and others fed them with the *Lito* (weaning food). Among the household, 77.7% weren't aware of *Lito* and method of preparing them. Majority (59.4%) were aware of malnutrition in the children; and felt that insufficient nutrition among the children was the main culprit of the malnutrition.

Daily activities (*Dinacharya*): While talking about the daily activities of the respondents, 44.5% of respondents wake up at 5 am and engaged themselves in the household activities in the early morning. The majority (74%) responded to do brushing teeth once a day; 85% respondents did tongue scraping, 42.9% respondents took bath daily, whereas 51.5% didn't do regular exercise. Most of the respondents (79.9%) brushed teeth with toothpaste, whereas rest of them used *Datiwan* (twig of different plants) for brushing. In food habit, 84.3% ate fruits occasionally; whereas rest of them didn't take fruits, 68.6% took rice twice a day and 69.4% took chapatti/roti for afternoon snacks, and occasionally took other fast food for the day time snacks. The day time snacks were variable according to season and availability. The majority (95.6%) used iodized salt for cooking, whereas rest of them used non-iodized salt.

Personal Hygiene and Sanitation: The majority (87.8%) had separate space for hand washing, used soap (86.9%) for handwashing and 98.9% washed hand before and after taking food, preparing meal, feeding children and after defecation. Some of the participants still used mud and ash for handwashing. Majority Most of the people (93.4%) cleaned their house daily, 52.4% of household separated biodegradable and non-biodegradable waste; and used the biodegradable waste for making compost manure and non-biodegradable (51.5%) was disposed by burning. Other method used for disposing waste was dumping, throwing in river or pit. Those who didn't separate degradable and non-biodegradable waste disposed waste by burning, throwing in pit and dumping.

The main source of water in the area was hand pipe; and used water for drinking from the tap without any purification method. The majority (83.4%) of household responded that it took less than 15 minutes to fetch water due to availability of hand pipe in each stored water in utensil with lid (83.4%); whereas rest of them stored water in tank or other utensils available. Most of the household (29.6%) disposed waste water in pit nearby; whereas rest of them disposed waste water in throwing in toilet, garden nearby, open

space, etc. Most of the household use (88.6%) used latrine for defecation; whereas rest of them used open space for defecation. Most of the respondents (87.8%) used fire-wood for cooking food. The majority (80.3%) used soap for washing utensils; whereas rest of them used ash and earth/mud for the purpose.

Awareness on COVID-19 and Vaccination: The majority (94.8%) were well aware about the rules and regulation to be followed to prevent the disease, and so followed the rules to prevent the disease. There were no COVID-19 cases during last 1 year, most of them (99%) had information regarding the vaccination against COVID-19; and 93.4% were vaccinated against COVID-19. Among vaccinated respondents, the majority (70.9%) were vaccinated by Verocil; whereas 52% of the respondents had completed multiple doses (twice) of the vaccination.

Health Institutions and Facilities: The majority got information regarding the health services through radio, television and surfing internet. The nearby government health center was within half an hour of distance for 88.2% of household, and most of them used the local vehicle to reach the center. They used ambulance services for emergency situation. Most of the respondent (53%) weren't aware of the Ayurvedic health center nearby; whereas only 47% were aware of the center. They visited the center for ailments like hemorrhoids, gastritis, fever, cough, gout and other health issues. The Ayurvedic health Center was nearby the locality before some years which was shifted afterwards; and most of them gained knowledge regarding the services from the center. The residents were mostly unaware of the Ayurvedic health services provided in the nearby Ayurvedic health center; although the organogram of the health system shows the effective health services coverage in the country. Most of the residents (85.6%) denied to use of herbs for different ailments; whereas rest of them used *Aloe vera*, *Neem* (*Azadirachta indica*), *Tulasi* (*Ocimum sanctum*), *Jwano* (*Trachyspermum ammi*), *Parijata* (*Nyctanthes arbor-tristis*), *Shilajita* (*Asphaltum Punjabiannum*), etc. for the ailments like cold and cough, burn, fever, pain, weakness and others.

DISCUSSION

The study was conducted among 229 household in the deprived communities of two wards of Chandrapur municipality to assess associated factors for community health. The study showed that the respondents had knowledge regarding the personal hygiene and sanitation, family planning, maternal and child health care, COVID-19 prevention, and health services available locally. But the study showed that there is gap between the knowledge and practices in the community.

Demographic data: The majority of the household in the present study followed Hinduism, were *janajati* by ethnicity, reside in nuclear family and major source of income was labour work. The majority were female and from age group 21-30 years. The result might be due to the socio-economic and geographical distribution of the study site. One of the source of income of the community was foreign employment due to which the majority of the respondent may be female.

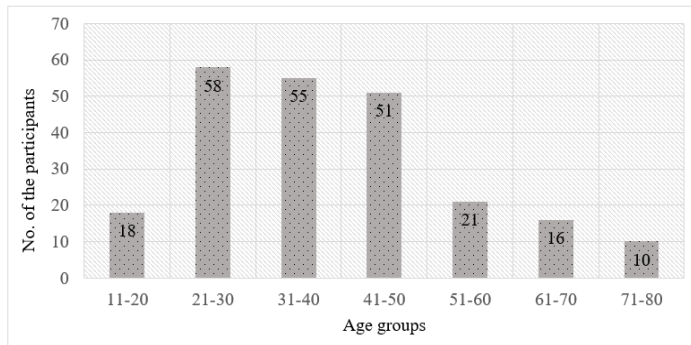


Fig: Age groups of the participants

Maternal health and family welfare: The average age of marriage among the household was 18 years which is somewhat similar to the result shown in the study conducted in Palpa and Rupandehi districts in rural Nepal which shows the median age of marriage to be 17 years.²³ The mean age of delivery of first child was 20 years which is similar to the result published in 2002 by Save the Children which showed the average of birth of first child to be 20 years.²⁴

The result is a major health concern as adolescent mothers are likely to suffer from severe health consequences related to pregnancy and childbirth. Early childbearing adversely affect the health of both mother and newborns. The report also suggest that the state of pregnancy and childbirth has not improved qualitatively since many years.

The study showed that 43% of the pregnant women of the respondents' households didn't visit health care center for ANC checkup; and among those who visited the center, didn't take iron/folic acid for the prescribed duration. The result may be due to poor services or lack of education among the women and their family as suggested in study which showed that women experiencing ethnic and social disadvantages and from remote provinces received poor quality maternal and newborn health services. As the study is conducted in remote and disadvantaged area the result may have been found.²⁵ The Study showed that majority of pregnant women in the study site don't complete the prescribed ANC visit by the Government which is a serious issues to be considered to enhance the public health indicator of the community.

Home delivery is still prevalent in the area. Only 27% had institutional delivery which is less compared to the prevalence (34%) in the previous study carried out in similar rural area.²⁶ The birth spacing was found satisfactory in the study. The result is satisfactory compared to the 2001 report of DHS which shows the use of ANC services in rural area to be 47% only.²⁷ In family planning services, most of the respondent were aware of the family planning services but still there is gap between the knowledge and services, although family planning is one of the priorities program of the Government of Nepal.²⁸ Those preferring the permanent family planning preferred the female sterilization, although the male sterilization is easy and cost-effective. The result may be due to the patriarchal social system of Nepalese society.

Child Care: The vaccination coverage, vitamin A prophylaxis and deworming coverage wasn't found to be 100%. Although these services are free of cost nationwide and is considered one of the highly successful model programme with 85% coverage.²⁹ Majority of the children were vaccinated according to EPI, but still 13% hasn't been vaccinated and 47% children haven't been provided Vitamin A prophylaxis, although the services are free of cost. This shows the huge gap between the knowledge and services of public health program. This is similar to the result of the study which state that although the immunization program in Nepal has achieved the target of 90% the crude coverage of the vaccination is low.³⁰ For weaning children, most of the household prefer the food prepared for the adult and very few had knowledge regarding the Lito prepared for the children.

Daily activities (*Dinacharya*): The daily activities followed by community of the study area are satisfactory compared to the other parameters of the study. Most of the member of the household wake up early in the morning and engage in the daily activities. Most of the respondent denied any physical exercises than their routine work. Most of the residents had habit of brushing teeth, tongue scraping daily, and taking bath at least once a week. In food habit, most of the residents took seasonal fruits and food.

Personal Hygiene and Sanitation: This study showed satisfactory knowledge and practices among the residents regarding personal hygiene and sanitation. But still people are using mud/earth, ashes and only water for washing utensils and hands. The open defecation practices were found to be still prevalent although each household has latrine. The source of water is hand pipe which is available in almost all the household, but the waste water disposal isn't properly manage. The result doesn't show any improvement compared to the result published in 2018 based on the data of Ministry of Water Supply and Sanitation, WHO, UNICEF and other organization which showed that 97% of the total population has access to basic sanitation facilities and 63 districts of Nepal achieved status of open free defecation zones.³¹

The water supply was reachable to each and every household. Majority of them were found to separate biodegradable and non-biodegradable waste, however the solid waste management isn't still satisfactory in the place and dumping in different area is also prevalent. Most of the household use firewood for cooking purpose but they deny any health issues due to the smoke from burning the firewood which might be due to lack of knowledge regarding the issues.

Awareness on COVID-19 and Vaccination: The residents were well aware of the knowledge regarding the mode of prevention of COVID-19, but still there is gap between the knowledge and practice. A few of them are still not vaccinated against the COVID-19; and vaccinated one didn't complete the full prescribed vaccination doses. The increased awareness among the resident may be due to the action of Ministry of Health and Population and other partner agencies working to provide necessary technical, economical and logistical support.³²

Health institutions and Facilities: The health center is located nearby and most of the residents use government health center for the health ailments. The health center nearby is within the distance of half an hour and have access to the facilities. Most of the household aren't aware of ayurvedic health center nearby and the health services provided by it. A few of them use locally available herbs to treat the health ailments.

CONCLUSION

In average, community health of the household was found satisfactory; however, authorities of the government health services providers should focus on proper planning and implementation in the marginalized area and focus on the decentralization of the health services. The national health program should increase its coverage so that health of the community targeted by government and non-governmental national and international agencies can be achieved and meet the health coverage goals and mitigate the gap between the health needs and services.

CONFLICT OF INTEREST: Author declares that there is no conflict of interest.

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