

Community-Based Diagnosis for the Improvement of Maternal and Child Protection in the ASACOSEKASI Health Area in the Urban Area of Bamako (Mali)

Fane Seydou¹, Simpara Nouhoum², Camara Daouda³, Sima Mamadou⁴, Kanté Ibrahim⁴, Bocoum Amadou¹, Sylla Cheickna¹, Traoré Oumar Soumana⁵, Abdoul Razak Dicko⁶, Ahmed Diallo⁴, Bokary Diallo⁶, Sissoko Abdoulaye⁷, Kanté Ibrahim⁵, Tegueté Ibrahima¹, Traoré Youssouf¹

¹Department of Obstetrics and Gynecology, Gabriel Touré University Hospital, Bamako, Mali

²Referral Health Centre of Commune 6, Bamako, Mali

³Kati Reference Health Center, Koulikoro, Mali

⁴University Hospital Center (CHU) of Point G, Bamako, Mali

⁵Referral Health Centre of Commune 5, Bamako, Mali

⁶District Hospital of Commune 4, Bamako, Mali

⁷Department of Obstetrics and Gynecology, Luxembourg Mother-Child Hospital, Bamako, Mali

Email: seydoufane@yahoo.fr

How to cite this paper: Seydou, F., Nouhoum, S., Daouda, C., Mamadou, S., Ibrahim, K., Amadou, B., Cheickna, S., Soumana, T.O., Dicko, A.R., Diallo, A., Diallo, B., Abdoulaye, S., Ibrahim, K., Ibrahima, T. and Youssouf, T. (2023) Community-Based Diagnosis for the Improvement of Maternal and Child Protection in the ASACOSEKASI Health Area in the Urban Area of Bamako (Mali). *Open Journal of Obstetrics and Gynecology*, 13, 1859-1868.

<https://doi.org/10.4236/ojog.2023.1311157>

Received: August 17, 2023

Accepted: November 20, 2023

Published: November 23, 2023

Copyright © 2023 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

The community diagnosis is an essential approach to the resolution of health problems with the involvement of the communities concerned who become object and subject. Improving maternal and child health is a health priority for many developing countries, including Mali. The objective was to study the role of community-based diagnosis in improving maternal and child protection in a vulnerable urban community in a developing country.

Methodology: This was a research-action integrating a community diagnosis conducted in March 2023. The involvement of several stakeholders, including social actors including ASACO, membership card holders, district chiefs, neighborhood delegates, local authorities, and health professionals, made it possible to provide curative, preventive and promotional care. The ASACOSEKA Health Area was used as a setting for the study. The methodology was the indicator approach, contact, document review, interview of CSCOM patients, observation of the structure, prioritization of problems, development of an action plan and restitution of the report. **Results:** The monograph consisted of describing the characteristics of the study setting. Indeed, the ASACOSEKASI area is located on the left bank of the Niger

River, with a population of 34,497 inhabitants. The CSCOM presented to describe a medical unit, a maternity unit, a laboratory unit, an ultrasound room and a medication storage room. The main pathologies found were confirmed simple malaria (45.08%), high AKI: 20.43%, confirmed severe malaria: 19.85%, suspected diarrhoea: 3.43%, trauma related to road accidents: 3.36%, pregnancy-related disorders (1%). BCG, Penta3, VAR, and yellow fever vaccination rates were above 100%. It reflects the fact that the doses administered were higher than the target population. This was related to out-of-area vaccination and lost doses. CPN1, CPN4, tetanus vaccination (VAT2) and family planning (FP) consultations all have a proportion above 100%. Maternal care is increased by out-of-area patients, particularly from Guinea. NPC3 and CPON have a proportion of less than 100%. The target population did not follow policies, standards and procedures. Postpartum, women rarely came to the CPON. Local actions to combat malaria included cleaning up plots and neighbourhoods, weeding families and streets, cleaning gutters, spraying the roosts of the female Anopheles Beetle, sleeping in LLINs, organising chemoprophylaxis days, promoting the use of MS, and using curtains against vectors. **Conclusion:** The community was involved at all stages of this diagnosis, from design to implementation, as well as to the restitution of local solutions. Indeed, the community diagnosis has led to a resolution plan related to reproductive health.

Keywords

Community Diagnosis, Reproductive Health, Local Solutions, ASACOSEKASI, Bamako, Mali

1. Introduction

Community diagnosis is an essential approach to solving health problems with the involvement of the communities concerned, who become object and subject [1]. The community diagnosis is a health promotion tool aimed at solving maternal and child health problems with the involvement of communities. The fundamental areas of intervention for safe motherhood contribute to maternal and infant protection (PMI). Maternal and Child Protection has a mission of prevention and health promotion for families, pregnant women and children aged 0 to 5 years. Indeed, the medical surveillance of pregnancy through prenatal consultations (CPN) is one of these interventions [2] [3]. The purpose of NPC is to detect, prevent, and treat maternal and fetal complications in a timely manner. It is also an opportunity for healthcare professionals to approach women and their families, to inform them about the benefits of medical childbirth and to build their loyalty to healthcare facilities [2] [3] [4]. In Mali, prenatal consultations are organized at all levels of the health pyramid in Mali, ranging from CSCOMs to 3rd reference health hospitals. In accordance with the recommendations of the International Health Organization (WHO), four ante-

natal visits or eight findings are recommended for any normal pregnancy. However, these recommendations are not always followed for several economic, social and cultural reasons. Indeed, according to the 2018 Mali Demographic Health Survey [5], 43% of pregnant women surveyed benefited from 4 CPNs during their last pregnancy; 68% had a healthy birth [4] [5]; 28% had received 3 or more doses of sulfadoxine and pyrimethamine (SP); 16% were using a modern planning method, 73% were sleeping under mosquito nets, 9% of children under one year of age were severely malnourished, 45% of children had received all 8 basic doses of immunization. These disparities were explained by multiple determinants that characterized kindergarten and infant. While we accept that improvements in indicators of health service use are partly related to the availability and quality of health services, the use of services is a matter of individual behaviours that reflect the level of awareness of the population and its involvement in health management. The development of strategies at the national level must take into account these intra-regional variances. To this end, the health promotion approach integrates complementary strategies that address the problem from different perspectives (from the perspective of decision-makers, the community and the individual) that allow us to act together to minimize inequities in access to care. Action research, which is the approach favoured by health promotion actors, is an approach that is both knowledge-producing and capable of bringing about changes in reality by taking into account the human factor [5]. The creation of a partnership between researchers, stakeholders, and the population could be an effective alternative for solving health problems. The community diagnosis at ASACOSEKASI could play a crucial role in the realization of the concept of social responsibility through actions that target the real health needs of the population [6]. The objective of this work was to study the role of community-based diagnosis in the improvement of maternal and child protection in a vulnerable urban area in a developing country: the case of ASACOSEKASI in Bamako.

2. Methodology

The ASACOSEKA health area located in the district of Bamako (Mali) was used as a framework for the study. The monograph has been designed to describe the characteristics of this framework. The ASACOSEKASI Health Area includes the districts of Sibiribougou, which is home to the CSCOM, Sebenikoro extension and Kalambambougou. The national road 5 (RN5) crosses this health area. The RN5 passes in front of the CSOM gate and continues towards the Republic of Guinea. The ASACOSEKASI health area located on the left bank of the Niger River, has a population of 34497 inhabitants and is bounded by:

- ✓ To the north: Mount Manding Hill
- ✓ To the south: the Kalabambougou health area
- ✓ To the west: the health area of Kanadjiguilla and Kalabambougou
- ✓ To the east by: the district of Sebenikoro

In this area of ASACOSEKASI we have 8 private health facilities, 3 of which provide reports to the CSCOM. The hygienic conditions in the health area were characterized by poor hygiene and sanitation. Household waste is transported by the EIGs to the final depot. Biomedical waste is incinerated at the centre and then buried with the biological waste. The social, economic and administrative organization is characterized by the presence of mayors and their councillors, village chiefs and their councillors of Sebenikoro, Kalambambougou and Sibiri-bougou.

The CSCOM has a staff of 16 consisting of obstetric doctors (3), state nurses (1), midwives (4), obstetric nurses (1), laboratory technicians (2), nurses or matrons (2), pharmacy managers (1) and labourers (2). The sources of funding to pay for health personnel are: the State (5 health workers), communities (4 health workers), the Community Health Association (ASACOSEKASI) (7 health workers). Activities have been carried out at the level of the CSCOM, namely the minimum package of activities (PMA) including curative activities, preventive activities, promotional activities, *i.e.* social mobilization, carried out mainly by the Community Health Association (ASACOSEKASI). The target population was expected pregnant women, children aged 0 to 1 years during the study period (year 2022), women of childbearing age and residents in the ASACOSEKASI area. The sampling was exhaustive and included preventive activities in pregnant women who presented for pregnancy follow-up, children aged 0 to 5 years, and curative activities within the area. Thus, the demographic and health indicators reported in **Table 1** were used to specify the expected targets during the period.

3. Results

Identify ASACOKASI needs and problems in 2022

The data collected from the media makes it possible to show the pathologies suffered by the communities. These pathologies have been recorded in **Tables 2-7**.

Table 1. Demographic Health Indicators (DHHS).

Demographic Health Indicators	Population standard (%)	Total population 34497
Pregnant women	5	1725
Women of Childbearing Potential	22	7589
Postpartum women	5	1725
Children under 12 months of age	4	1380
Children 0 - 59 months	22	1723
Children from 06 to 11 months	2	690
Children 9 months to 23 months	5	1725
Adults 50 years of age and older	11	3795

Table 2. Different pathologies encountered at ASACOSEKASI.

Pathologies	Number of cases	(%)
Suspected diarrhea	620	3.43
Cough less than 15 days old	59	0.33
Low & High IRA	3696	20.43
Confirmed tuberculosis	41	0.23
Simple malaria confirmed	8154	45.08
Confirmed severe malaria	3591	19.85
Trichiasis	32	0.18
Eye trauma	8	0.04
Lower abdominal pain	18	0.10
Severe acute malnutrition	178	0.98
Underweight	41	0.23
Stunting	167	0.92
Pregnancy-related disorders	160	1
Injuries related to road accidents	608	3.36
Assault and battery	105	0.58
Domestic Accidents	53	0.29
Dental caries	12	0.07
Acute otitis	60	0.33
Angina	42	0.23

Table 3. Immunization; Target Population: 1380.

Antigen	Number of children vaccinated	Percentage (%)
BCG	3848	278,84
Penta3	4156	301,15
VAR	3947	286,01
YELLOW FEVER	3947	286,01%
TOTAL	15898	

Table 4. Reproductive health; Target Population: 1725.

Consultation	Number of women	Percentage
CPN1	2656	174%
CPN3	1238	81%
CPN4	1626	107%
VAT 2	1933	127%
CPON	1101	72%
FP Consultation	2091	137%

FP: family planning, CPN: antenatal consultation; CPON: Postnatal Consultation.

Table 5. Prioritization of problems in pregnant women.

Criteria/ Pathologies	Freq	Morbidity	Gravity	Company cost	Solutions	Accept- It is not possible to find a solution to the problem	Family cost	Score	Rank
Malaria	5	5	1	5	5	2	5	28	1st
Diarrhoea	4	4	1	3	2	2	4	20	3rd
IRA	3	3	1	2	2	2	1	14	4th
Trauma-related injuries To AVPs	4	4	1	5	2	2	5	23	2nd

Trauma: trauma; AVP: road accident; AKI: acute respiratory infection; Freq: Frequency; Scoring: Each criterion is rated from 1 to 5 points. The least important point (1) and most important from 5.

Table 6. Malaria resolution plan.

Health Problems	Causes	Solutions	Responsible Implementation	Responsible Follow-up	Delay Execution	Monitoring indicators
Malaria in women of childbearing potential and/or in pregnant women	1. Unsanitary conditions	- Concession and neighborhood cleaning	Community Communities And relay	ASACO + DTC	Immediately	- Number of concessions cleaned and weeded
	2. Herb Growth	- Desherbasse of the family and street				- Number of drains cleaned
	3. Water stagnation	- Cleaning of gutters				- Number of sprayed roosts
	4. Female Anopheles Beetle Outbreak	- pulverize the gites, - Sleep on MILD				- number of people sleeping on LLIN
	5. Absence of seasonal- chemoprophylaxis or IPT in MS	- Organize chemoprophylaxis days - Use curtains				

IPT: intermittent preventive treatment; SP: sulfadoxine pyrimethamine; DTC: CTO of CScom.

Table 7. Pla trauma resolution plan.

Health Problems	Causes	Solutions	Responsible Implementation	Responsible Follow-up	Delay Execution	Monitoring indicators
AVP-related injuries in women of childbearing age and/or pregnant women	Sec. 1. Failure to comply with traffic laws	- Raise awareness of the Highway Code in particular (drugs, helmet wearing, speeding)	Communities/ City Hall/State	ASACO/ Town Hall	Immediately	- Number of awareness sessions on the Highway Code
	Sec. 2. Speeding	- avoid excessive weight, drain cleaning				- Number of cases of PVA-related trauma
	Sec. 3. Drug use	- Compliance with technical visits				
	Sec. 4. Poor condition of vehicles					
	Sec. 5. Mauvais road conditions					

4. Discussion

Methods: We conducted action research. It is an approach and methodology of

scientific research that aims to carry out in parallel and in an intertwined way the acquisition of scientific knowledge and concrete and transformative actions in the field. To take this step we encountered difficulties namely: the socio-cultural and administrative problems which were corrected with the involvement of the Institute of Health Sciences of Mali and the village chiefs.

Health promotion and prevention activities for IMP: In developing countries, underutilization of maternal health care remains a problem, especially among rural populations [6]. Mali is among the countries where improving maternal health is a national priority. The many programs put in place include increasing women's use of prenatal consultations with qualified personnel [6] [7]. However, despite the actions taken, the results remain below expectations, particularly in urban areas (100% urban [4] [8] [9]). The involvement of the population is a key to ensuring the sustainability of program results. The community-based approach that is the basis of our project is one of the strategic areas of intervention to promote maternal health recommended by the WHO [2] [8]. It is defined as a process of social mobilization within a community that allows it to identify its health needs as well as the mechanisms of action to meet its needs [4] [8]. It allows for empowerment and the acquisition of a certain degree of empowerment in individuals, and thus it is widely recognized for its benefits in terms of improving maternal health, especially in the first line of care in different settings. The results depend on the degree of involvement of the population in the intervention actions [4] [5] [8] [9]. We have adopted the action research model to set up our project since it adapts to the context of our work [8] [9]. Out of an estimated target population of 1725 pregnant women during the study year, 1725 women consulted, which corresponded to a 100% participation rate for the expected incidence of pregnancies. The participants were young (average age 27), had low levels of education and had no health coverage. In view of local customs marked by early marriage, getting these young women to join was a positive outcome that shows a degree of empowerment engendered. In view of their age and social status, these women do not have decision-making power.

Regarding their maternal health, and decisions are usually made by spouses and family. Most of them were multiparous and yet had no previous contact with the health care system prior to the project (60%). The pregnancy follow-up rate was a proxy for family support. However, this assessment remains subjective due to the difficulty of measuring the link between women's empowerment and maternal health outcomes described in the literature [4]. Only 40% of respondents have ever received a CPN, which is still very low compared to the figures recorded in some urban neighbourhoods. Reported abnormalities during pregnancy, including malaria + anaemia (75%) and road accidents (3.36%) were estimated in this health area. This perception of risk by women was significantly related to adherence to pregnancy follow-up. It could implicitly express a request for special attention from stakeholders during the consultation. Indeed, in similar cultural contexts and in such conditions of socio-economic vulnerability, it is

important to take into account the social representations of the population in the analysis of demand in order to identify the real need: care, information, or simple listening in order to establish a relationship of trust and increase the use of care structures in the medium and long term. One of the objectives of our study was to increase the percentage of NPCs performed at the study area level. The local health centre, which serves a population of around 34,497, operated with 3 GPs and 4 midwives during the study period. The attendance of pregnant women in this facility was limited to complicated cases that required transfer to the 2nd or 3rd level of care of the Mali reference. Thus, through the mobilization of the community, there has been an increase in the number of NPCs registered compared to the previous year, a multiplication of 6 times, knowing that the birth rate is stable from one year to the next. The proportion of women who had three antenatal consultations was 6.7%, and those who consulted twice were 30.4%. There was no loss of follow-up, their contact and the community relays made it possible to find those lost to follow-up. Our continent, Africa, was among the areas most affected by these interventions, as it has a high maternal and infant mortality rate. However, the strategies, areas of intervention and duration differ from one study to another.

In Cambodia, Jon Skinner *et al.* reported a 22% increase in the rate of NPC following the involvement of several stakeholders (traditional birth attendants, midwives and villagers) in a participatory community approach during a one-year project [5] [10] [11]. Our project, which had a similar duration, increased the NPC rate to 100%. It is recognized that the use of antenatal care and adherence to the recommended number of visits influence the choice of delivery in a supervised setting [5] [12] [13] [14] [15]. The antenatal consultations were organized in parallel with awareness-raising and education sessions for maternal health, led by nurses and doctors with experience in facilitating mothers' classes which were held in the local language for better interaction with women at the health cohort follow-up. The adoption of a participatory approach and the re-orientation of services were the main lines of action, which led to a significant improvement in the number of antenatal consultations. The main limitation was the inevitable lost-to-follow-up bias. The ASACOSEKASSI area problem solving plan has led to local solutions to combat malaria in the area of: cleaning of concessions and neighbourhoods, weeding of families and streets, cleaning of gutters, spraying of breeding grounds, use of nets impregnated with long-lasting insecticides (LLINs) by pregnant women, Organization of chemoprophylaxis days, use of mosquito curtains. Similarly, we raise awareness of the highway code, particularly on drugs, wearing helmets, speeding, and compliance with technical inspections.

5. Conclusion

The promotion of maternal and child health is a health concern in developing countries due to high maternal and perinatal mortality. The active participation

of women and the population is a key to the success of health promotion programmes. The social and community mobilization approach improves the use and use of maternal and child care. Maternal health has a strong influence on child health, so it seems clear that poor management of maternal health has a de facto impact on child health. Community-based health promotion can be an alternative for addressing maternal and child health problems.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] World Health Organization (2002) Guidelines for the Organization of Health Promotion Activities in the Countries of the African Region. WHO, Brazzaville.
- [2] World Health Organization (2006) World Health Report 2006. WHO, Geneva.
- [3] Marie, B. and Thierry, P.T. (2000) *Diagnosis Communautaire in Community Health and Health Promotion Collection*. ASBL Santé Communautaire, 2000 3543/14.
- [4] Sebbani, M., Adarmouch, L., Amine, M. and Cherkaoui, M. (2020) Community Mobilization for the Improvement of Pregnancy Surveillance in Rural Areas in Morocco. *Pan African Medical Journal*, **35**, Article 73.
<https://doi.org/10.11604/pamj.2020.35.73.18328>
- [5] National Institute of Statistics (INSTAT), Planning and Statistics Unit for the Health Sector, Social Development and Family Promotion (CPS/SS-DS-PF) and ICF 2019 (2019) Mali Demographic and Health Survey 2018: Synthesis Report. INSTAT, CPS/SSDS-PF and ICF, Bamako, Mali and Rockville, Maryland, USA, 23 p.
- [6] Raeburn, J., Akerman, M., Chuengsatiansup, K., Mejia, F. and Oladepo, O. (2005) Building Community Capacity to Promote Health. Technical Report for 6th Global Conference on Health Promotion. Track 4 Sustainable Action: Leadership, Partnership and Mobilization, Bagkok, Thailand.
- [7] Bantuelle, M., Morel, J. and Dargent, D. (2020) Community Diagnosis. The Non-Profit Organisation “Health, Community, Participation”, 34 p.
- [8] Jordan, D., O’Neill, M., Dupéré, S. and Stirling, J. (2012) Forty Years on, Where Does Community Health Stand? *Public Health*, **24**, 165-178.
<https://doi.org/10.3917/spub.122.0165>
- [9] Motamed, S. (2015) What Is Community Health? An Example of a Participatory and Multisectoral Approach in a Municipality in the Canton of Geneva, Switzerland. *Psychiatric Information*, **91**, 563-567.
- [10] Simkhada, B., van Teijlingen, E.R., Porter, M. and Simkhada, P. (2008) Factors Affecting the Utilization of Antenatal Care in Developing Countries: Systematic Review of the Literature. *Journal of Advanced Nursing*, **61**, 244-260.
<https://doi.org/10.1111/j.1365-2648.2007.04532.x>
- [11] Michel, B. (2007) Community Health Today. *Journal of the Public Health Care-giver*, **4**, 12-15.
- [12] Jaunin-Stalder, N. and Pécoud, A. (2007) Community-Based Approach in Primary Care. *Primary Care*, **7**, 357-360.
- [13] Vieira, G., Courtois, R. and Rusch, E. (2017) Empowerment Approach of an African Community in the Diagnosis of Health Care in Two Countries: Guinea Conakry

and Congo Brazzaville. *The Pan African Medical Journal*, **28**, 276.

- [14] Parent, A.-A., O'Neill, M., Roy, B. and Simard, P. (2012) Between Public Health and Community Organization: Points of Convergence and Divergence in Community Development in Quebec. *Revue de l'Université de Moncton*, **43**, 67-90.
<https://doi.org/10.7202/1023978ar>
- [15] Edward, D.M. and Watt, R.G. (1997) Diet and Hygiene in the Lives of Gypsy Travellers in Hertfordshire. *Community Dent Health*, **14**, 41-46.