



Evaluation of the contribution of community relays in improving immunization coverage in the Ouélessébougou health district in Mali.

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Abstract

Introduction: Vaccination is an essential component of the human right to health, and an individual, collective and governmental responsibility.

The aim of this study was to evaluate the contribution of community relays in improving vaccination coverage in the Ouélessébougou health district.

Methodology: This was a two-component study (cross-sectional and retrospective) that took place between May and June 2016 in the Ouélessébougou health district. Inclusion criteria were: being a community relay and having given consent, being a mother of a child aged 0-11 months and having given consent. Data were analyzed using Epi-info version 7 software.

Results: One hundred and fifty-four participants were registered. Mean age was 30.9 ± 10.1 years, with a female predominance (84.3%). All participants were married, 34.6% were illiterate, 81.1% were housewives and 11% were farmers.

Only 16.9% of participants knew the EVP target age group, 61.5% knew the vaccination schedule, 63.4% knew at least eight EVP target diseases and 88.3% knew at least one vaccine side effect.

Effective vaccination coverage rose from 75% in 2005 to 85% in 2016.

Conclusion: This study shows that the contribution of the relays has had a positive impact on both vaccine coverage and mothers' knowledge. However, local strategies for improving EVP indicators and for effectively combating rumors need to be put in place, taking into account the realities and specificities of different zones.

Key words: Evaluation, contribution of relays, extended vaccination program, vaccine coverage, Knowledge

Abbreviations: BCG, Bacillus Calmette and Guérin, VAA, yellow fever vaccine ; VAR, Measles vaccine ; DTC-HB_Hib, Diphtheria Vaccine, Tetanus, Pertussis, Hepatitis B, Hib; Polio, Polio vaccine ; VAT, Tetanus vaccine ; Rota, rotavirus vaccine ; PCV Pneumococcal vaccine ; WHO, World Health Organization; UNICEF, United Nations Children's Fund; M \pm SD, Mean \pm Standard deviation; EPI, Expanded Programme on Immunization.

Introduction

The concept of vaccination grew out of that of inoculation, and both reflect the artificial induction of immunity to disease. Vaccination, which was an essential component of the second phase of the public health era, is still considered the most cost-effective public health intervention [1]. It also has proven economic benefits in terms of the growth generated by the induced increase in life expectancy. According to the WHO Regional Office for Africa, the number of measles deaths can be reduced by 350,000 cases per year through additional vaccination campaigns and the extension of vaccination coverage to 80%. According to the same source, 87,000 deaths attributable to maternal and neonatal tetanus could be avoided through additional vaccination and increased VAT2 coverage [2].

Vaccination is an essential component of the human right to health, an individual, collective and governmental responsibility. This is why Mali, like several other member countries of the World Health Organization (WHO), launched the Expanded Program on Immunization (EPI) in 1986 [3]. The aim of this program was to achieve full immunization of 80% of children aged 0-11 months against six initial diseases (tuberculosis, poliomyelitis, diphtheria, tetanus, whooping cough and measles), and of 80% of women of childbearing age against maternal and neonatal tetanus [4]. In Mali, three strategies are used to achieve these objectives: the fixed strategy, the advanced strategy and the mobile strategy. The mobile strategy is based on the distance separating villages from the health center. Thus, people living less than 5 km from the health center benefit from vaccination in a fixed center, those living between 5 and 15 km from the health center benefit from the advanced strategy, and those living more than 15 km from the health center benefit from the mobile strategy [5].

Community relays are volunteers living in a village or street, chosen by the inhabitants of this entity, who act as a bridge between individuals, members of this community and the health services, and who agree to devote part of their time to activities of community interest, with a view to providing preventive, curative, promotional and rehabilitative care in a health area. Since 2005, in the Ouélessébougou health district, the United Nations Children's

Fund (UNICEF), in collaboration with the Malian government, has been implementing a social mobilization strategy based on a performance contract using community relays in each village. The relay, who are volunteers, act as a link between the health services and the village population. They are involved in all health activities, particularly vaccination, through raising awareness, actively seeking out those who have been lost to follow-up, and assisting the vaccinator during vaccination sessions [6].

The aim of this study was to assess the contribution of community relays in improving immunization coverage in the Ouélessébougou health district, as well as the level of knowledge of these relays and mothers of children aged 0-11 months about the activities of the Expanded Programme on Immunization.

Methodology

This was a two-component study: a cross-sectional component aimed at assessing the level of knowledge of relays and mothers of children aged 0-11 months with regard to the Expanded Programme on Immunization (EPI), and a retrospective component which consisted in collecting data on immunization coverage one year before the implementation of community relays in the EPI and ten years after their involvement in order to assess changes in immunization coverage.

This study took place in the Ouélessébougou health district between May and June 2016.

The study population consisted of community relays and mothers of children aged 0 to 11 months. All community relays and mothers of children aged 0-11 months who gave their consent to participate in the study were included in the study. Mothers of children aged one year or more, and relays who had not given their consent to participate, were excluded.

For the selection of mothers, we used random sampling determined by cluster sampling. Clusters of at least seven mothers of children aged 0-11 months were drawn from the 16 health centers of the Ouélessébougou health district. A total of 128 mothers and 26 community relays were selected.

The necessary information was gathered by interviewing the participants, using the monthly reports and immunization registers from 2005 and 2015 from the 16 health centers. These data collected using a questionnaire designed for this purpose, were entered into Excel and then analyzed using Epi-info version 7 software. This analysis essentially involved describing the study sample. All quantitative variables were described in terms of mean plus standard deviation, and qualitative variables in terms of percentage.

The objective of the study was explained to the political and administrative authorities of the district as well as to the participants in order to obtain their consent. It was also explained to the district chief medical officer and to the management of the reference health center to solicit their support and support. . Verbal consent was obtained from all participants. Confidentiality and anonymity were respected throughout the study process.

Results

Sociodemographic characteristics of participants

A total of 154 subjects, including 128 mothers of children aged 0-11 months and 26 community relays, participated in this study. The mean age was 30.9 ± 10.1 years. Of the participants, 84.3% were women, 100% were married, 34.6% were illiterate, 81.1% were housewives and 11% were farmers (Table 1).

Participants' knowledge of the Expanded Program on Immunization (EPI)

Concerning the question on the EPI target age, only 26 participants answered this question, and all of them affirmed that the EPI target age is 0-11 months. Among the participating mothers, 93.75% and 88.54% said that vaccination takes place once a week in fixed centers and once a month in advanced strategies. Sixty-two percent knew the vaccination schedule, and 63.4% knew at least eight EPI target diseases. Fever, whether or not associated with local pain, was the side effect most frequently cited by participants, with (57.8%) and (17.2%) respectively. With regard to the theme of awareness-raising, 74.1% of respondents knew that the importance of vaccination is one of the themes for raising public awareness. The majority of respondents (88.54%) affirmed that children need to be vaccinated 5 times to be protected against EPI target diseases (table2).

Difficulties encountered by participants.

Mothers' absence from home during their visits was the main difficulty encountered by the community relays (69.23%). Of the 96 mothers of children aged 0-11 months who answered this question, 93.74% said they had not encountered any difficulties, and 3.13% said that, respectively, the time of vaccination was inconvenient and the waiting time was too long (table3).

Comparison of vaccination coverage rates before and after the involvement of community relays in the EPI: data from 2005 and 2016

Vaccination coverage for all areas one year before the relays' involvement in 2005 and 10 years after their involvement in 2016 was respectively: 89% for BCG in 2005 versus 95% in 2016, 75% for DTCP3 versus 83%, 75% for VAA and VAR versus 85% , 36% for Rota3 versus 63%, 56% for VAT2 versus 65%. Effective vaccination coverage for these different antigens has generally risen from 75% in 2005 to 85% in 2016 (**Fig1**).

Discussion

Involving community relays in immunization activities is a means of ensuring community ownership of this intervention. For this reason, the Malian government has decided to implement a social mobilization strategy based on a performance contract using community relays in each village. This study is part of an evaluation of the contribution of community relays to improving immunization coverage in the Ouélessébougou health district, as well as the level of knowledge of these relays and mothers of children aged 0-11 months about the activities of the Expanded Programme on Immunization.

In this study, a total of 154 participants were recorded, 84.3% of whom were female, with an average age of 30.9±10.1 years.

Participants' knowledge of the EPI generally varied from item to item. Concerning the questions on EPI target age and vaccination schedule, the majority of respondents knew at least eight EPI target diseases, and 61.5% knew the vaccination schedule. This relatively satisfactory result could be explained by the various training courses received by the relays. These relays are in possession of workbooks and generally conduct their activities correctly. A similar trend has been reported in the literature [7].

In terms of vaccine side effects, the most common were fever (75%) and injection site sore (13.3%). These rates are quite high for subjects who, for the most part, have not progressed beyond the basic level. They are the result of information and awareness-raising conveyed by the media during the various vaccination campaigns, as well as by community relays during their various visits to households. Our results differ from those reported by Cissé. MO, where 95% and 1.5% respectively cited fever and local sores as the main side effects [8]. Also, the vast majority of

respondents (88.54%) affirmed that children need to be vaccinated 5 times to be protected against EPI target diseases, which corroborates the results reported by the author [8]. With regard to the frequency of vaccination services, 93.75% of women surveyed knew that vaccination takes place once a week in fixed centers, and 88.54% once a month in advanced strategies. However, it is extremely important to point out that mere knowledge of vaccination dates or frequency is not necessarily necessary if it is accepted and if health workers regularly motivate people and check the vaccination status of the children they receive in curative consultations. Our percentages of women aware of the frequency of visits by vaccinators in fixed and advanced strategies are much higher than those found by the author [7].

The main difficulty mentioned by the community relays in implementing their activities was linked to the absence of children from vaccination sites due to the mobility of mothers, either for work in the fields or for other income-generating activities or fairs. This same difficulty was mentioned by the relays in the study conducted by the author [9]. On the other hand, most of the mothers interviewed with children aged 0-11 months reported no difficulty in having their children vaccinated. However, six women out of ninety-six reported that the waiting time was too long and that the time of vaccination was inconvenient.

Vaccination coverage improved significantly between 2005 and 2016. This can be explained not only by the combined efforts of the government and its technical and financial partners, but also by the involvement of communities through relays who play an important role in communicating, informing and raising awareness among the population. As volunteers, these relays act as a channel of communication between the health services and village populations. They are involved in all health activities, and particularly in vaccination, actively seeking out those who have been lost to follow-up, and assisting the vaccinator during vaccination sessions. Despite these efforts, vaccination coverage is still low. This low coverage can be explained by a number of factors, including low literacy levels among the population in general, low demand for health services by the population, late recourse to vaccination by pregnant women, women's mobility for various reasons, the persistence of socio-cultural beliefs and false rumors about vaccination. However, it is important to distinguish between acceptability, specific knowledge and motivation, since knowledge does not automatically lead to increased vaccination coverage. A study carried out in Zambia reported that only 57% of Zambian mothers knew that polio vaccination is given in three doses, yet coverage was 90% and less than half the women surveyed knew why tetanus toxoid is administered, although this did not prevent coverage from reaching 68% [10].

Obstacles to the use of health services include not only distance and organization, but also economic and social difficulties. Studies carried out in Sierra Leone [11] and Guinea Conakry [12] respectively confirm that distance and the mobility or occupation of mothers for economic needs are factors contributing to difficulties in accessing immunization services.

To all this must be added the quality of the inter-human relationship, i.e. between health workers and users of health services in general. Indeed, it is impossible to achieve the various vaccination objectives in the absence of trust and a good relationship between health providers and beneficiaries, which corroborates the data in the literature [13].

Study limitations

As with any other study, the limitations of our study included the following:

- Inadequate archiving of vaccination materials prior to 2005 (unusable tools).
- The low participation rate of community relays in the survey.

Conclusion

This study shows that participants' knowledge of the EPI is fairly acceptable. It also reveals that the contribution of the relays has had a positive impact on both vaccination coverage and mothers' knowledge of the EPI. There are, however, difficulties in sustaining this process. It would be necessary to set up a support mechanism for the relays to keep them highly motivated. It would also be useful to put in place local strategies for improving EPI indicators and strategies for effectively combating false rumors, taking into account the realities and specificities of different zones.

Acknowledgments

The authors thank all patients who agreed to participate in this study. They also grateful for the support provided by the staff as well as the referral health center of the Ouelessebougou for their good collaboration

Conflict of interest: the authors declare that they have no ties of interest.

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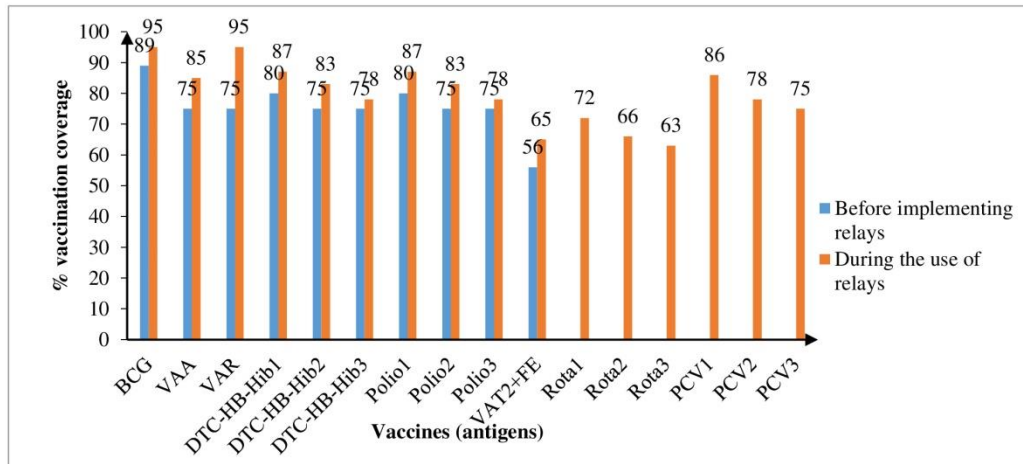


Fig1 : Comparison of vaccination coverage rates before and after the involvement of community relays in the EPI.

Table 1: Socio-demographic characteristics of participants (n=128)

Variables	Number	Percentages (%)	Meanstandard deviation*
Age (n=127)			30,9±10,1
Mother of children			26,4±6,6
Relays			45,5±6,5
Sex (n=127)			
Masculine	20	15,7	
Feminine	107	84,3	
Marital status			
Married	127	100	
Not married	00	0,0	
Level of education (n=127)			
Primary	57	44,9	
Secondary	8	6,3	
Quranic school	8	6,3	
Bambara alphabet	10	7,9	
Analphabets	44	34,6	
Profession (n=127)			
Farmers	14	11	
Housewives	103	81,1	
Others (matron, tailor, guide, seller) n= 127	10	7,9	

Table 2: Participants' knowledge of the Expanded Program on Immunization

Knowledge of the Expanded Programme on Immunization (EPI*).	N	%
EPI* Target age* (n=26)		

0-11 months	26	100
12-23 months	00	00
4-5 years	00	00
Vaccination schedule (n=26)		
Correct response	16	61,5
Incorrect answer	10	38,5
Diseases targeted by EPI (n=126)		
11 diseases	60	47,6
8 diseases	80	63,4
None	0	0,0
Vaccine side effects (n= 128)		
Fever	96	75
Local sores	17	13,3
No idea at all	15	11,7
Frequency of vaccination services (n=96)		
Once a week at a fixed location	90	93,75
Once a month in advanced strategy	85	88,54
Theme for raising awareness among women (n=27)		
Importance of vaccination	20	74,1
Vaccination schedule	7	25,9
Causes of active search for children (n=27)		
Sick child	2	7,4
Child's mother travels	25	92,6
How many times should a child be immunized against EPI target diseases? (n=96)		
Less than 5 times	11	11,46
5 times	85	88,54
Do not know	00	0,0

Table 3: Distribution of participants according to difficulties encountered during EPI activities

Difficulties encountered by participants	Relays (n= 26)		Mothers of children aged 0-11 months (n= 96)	
	N	%	N	%
Absence of the mother	18	69.23		
Sick child	08	30.77		
Unsuitable vaccination time			03	3,13
Long waiting times			03	3,13
No difficulties			90	93,74