



(RESEARCH ARTICLE)



Health care attitude and behaviour regarding vaccination campaigns and challenges encountered in the Bamenda Health District, Cameroon

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Abstract

The Bamenda Health District has frequently been hit by vaccine-preventable diseases, which are sometimes either not well reported or even neglected. This was the motivation behind the research topic “Health Care Attitude and Behaviour Regarding Vaccination Campaigns and Challenges encountered in the Bamenda Health District (BHD), Cameroon”. The main objective of the study was to carry out a survey of the health care attitude and behaviour regarding vaccination campaigns, as well as challenges encountered in the Bamenda Health District (BHD) by the population and public health actors and stakeholders. We carried out a descriptive, cross-sectional and explorative survey in which multistage random sampling was done to obtain a sample size of 414 participants. Key findings revealed negative attitude with regards to vaccination campaigns; mistrust of government information sources; adherence to rumours and negative campaign messages about vaccination programmes; inefficient cold chain system characterized by poor VVM monitoring; a precarious socio-political climate with accompanying insecurity; and Poor vaccination organization. There are massive flaws in the organization of vaccination campaigns in the BHD that need prompt attention. Every public health actor, stakeholder, and the government should therefore redouble their efforts to right the flaws and lapses, both in vaccinations and health promotion strategies. The government should create an enabling and safe environment for efficient and effective vaccination campaigns.

Keywords: Vaccination; Attitude; Behaviour; Promotion; Challenges; Safety.

1. Introduction

Disease prevention and control has been a major problem to the public health sector in Cameroon in general and in the North West Region in particular for a pretty long time. This has resulted to the emerging and re-emerging of many diseases and epidemics in the North West Region and elsewhere in Cameroon. The North West Region is currently experiencing an upsurge of epidemics of vaccine-preventable diseases such as Poliomyelitis, Measles, Cholera, and Tuberculosis. Meanwhile the current vaccination coverage for the North West region is 68%, far from herd immunity. This is probably due to an inefficient and ineffective vaccination programme over the years. The situation has become very challenging, compounded by the socio-political crisis and the raging war in the Region. Many families have been displaced into the bushes and refugee camps, the adverse consequences notwithstanding. These displaced populations are at very high risk of contamination, infection and epidemics, especially as they are staying in forests, slumps and overcrowded refugee camps.

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With such mass displacements, disease exposure, incidence and prevalence tend to rise significantly. Consequently vaccination and immunization as well as follow up by way of surveillance, and monitoring become even less efficient. Access to vaccination for newborns and the under-fives in such circumstances is either absent or inadequate.

We therefore require a more robust, flexible and mobile or transferrable vaccination and immunization system that caters for the affected and vulnerable populations and on a large scale. This requires sufficient resources, adequate capacity building of personnel, health education of the populations and appropriate health promotion strategies. This will go a long way to curb the upsurge of infectious diseases and improve access to health care for the most vulnerable people.

1.1. Problem statement

The eradication of some diseases such as Poliomyelitis is on the cusp of success, yet with some regions still maintaining transmission. Improving our understanding of why some regions have been successful while others have not, will help with both global eradication of the disease and development of more efficient and effective vaccination strategies for other pathogens. [1] Given these dynamic properties, attention ought to be given to intervention strategies that complement childhood vaccination. [1][2]

Currently there has been a decline of vaccination coverage in the Bamenda Health District from 77% in 2017 to 75% in 2018 and a decline from 78% to 62% coverage for the whole North West Region. Definitely Therefore, one can rightly say there is no herd immunity acquired. There are lapses and challenges in the Bamenda Health District that need to be addressed and improved upon, in order to ensure efficient and effective vaccination campaigns.

It was in the light of the ongoing situation that we perceived the need to investigate the flaws and lapses affecting vaccination programmes in terms of health care attitude and behaviour towards vaccination campaigns as well as challenges encountered, so as to build an efficient and effective Polio vaccination programme for the Bamenda Health District.

1.2. Objective of the study

The general objective was to carry out a survey of the Health Care Attitude and Behaviour towards Vaccination Campaigns and Challenges encountered in the Bamenda Health District.

2. Methodology

2.1. Research Design

The research design was a descriptive, cross-sectional, and explorative one.

2.2. Random Sampling

Sample size (n) = 414 Respondents.

This was determined by the Fisher et al formula: (Fisher et al 1998)[3]

$$n = \frac{Z^2 P (1 - P)}{d^2}$$

Where:

n = the desired sample size where the study population is equal to or greater than 10,000.

Z = Standard normal deviate corresponding to 95% level of confidence ($CI = 1.96$).

p = Estimated prevalence of characteristic of interest (unsound practices) = 0.5 (Since that of the Bamenda Health District is not known).

d = Level of precision (set at $\pm 5\%$).

3. Results

3.1. Attitude and behavior (n = 384)

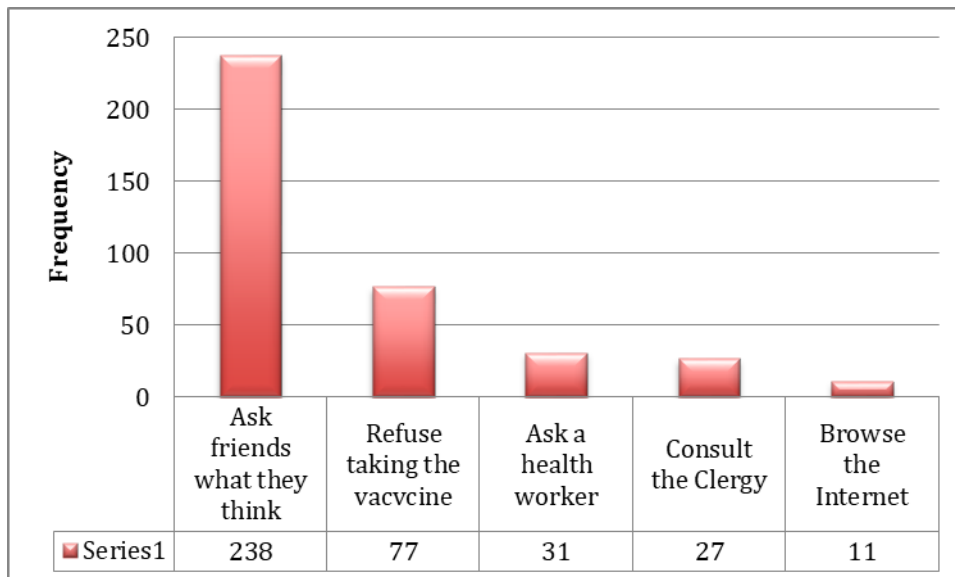


Figure 1 Reactions of Respondents on hearing a negative rumor related to vaccine(s)

When asked what the study participants would do when they hear a negative campaign message related to a vaccine, about three-fifths of them, 238 (62%) would ask a friend what they think about it and 77 (20%) would refuse to take the vaccine. Others would ask a health worker (8%), consult the Church authority (7%) or go to the Internet (3%).

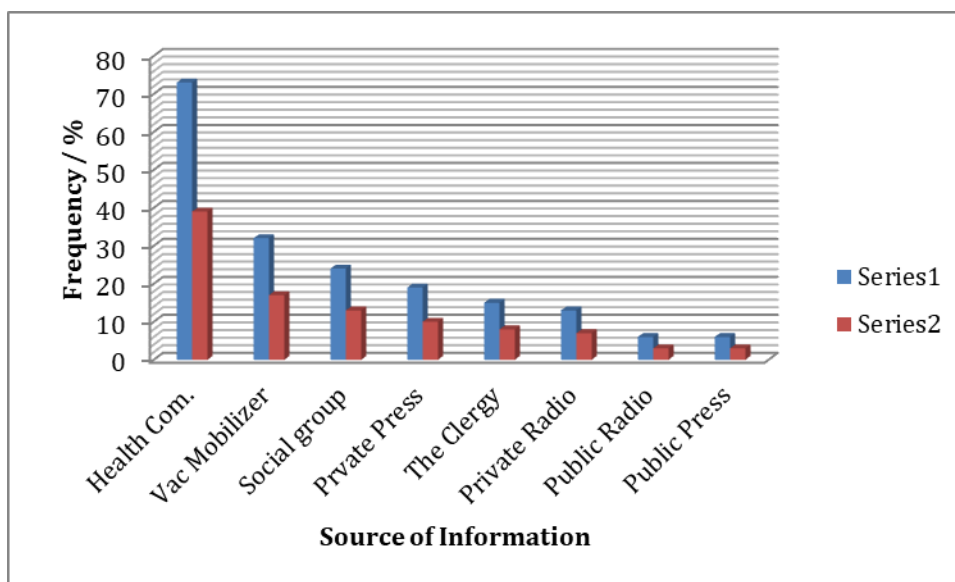


Figure 2 Most Trusted Source of Information

The study participants were also asked to mention the source of information about vaccination, which they trusted the most. Village committee was mentioned by 73 (39%) of respondents, followed by Vaccination mobilizer, 32 (17%). Social Meeting Groups, Private Press, the Church Pastor / Priest, Private Radio Television, Cameroon Radio Television and Government Press were mentioned by a minority of respondents.

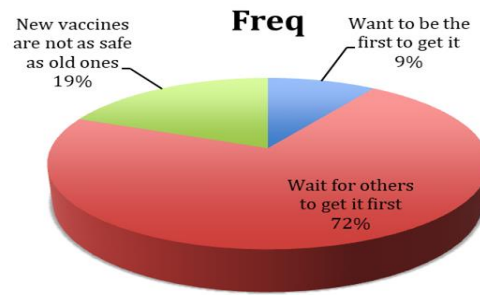


Figure 3 Responses of Participants on Introduction of New Vaccine or Formulation. (n = 384)

Nine per cent of the participants said they would want to be the first to take it the new vaccine; majority 72% said they would rather wait and see what other people do and 19% thought that newer vaccines are not as safe as older vaccines.

Table 1 Past Events that discouraged Respondents from getting Vaccinations (n = 384)

Brief description	Yes	No	Total
In the early 1990s Tetanus Toxoid was allegedly used to render women of childbearing age sterile for political reasons.	305 (79%)	79 (21%)	384 (100%)
In 2016 it was rumoured the Ebola Trial Vaccine in Bamenda was intended for the gradual reduction of the North West population.	371 (97%)	13 (3%)	384 (100%)
Last year political activists discouraged the populations of the Anglophone regions from receiving vaccines from the Cameroon government, describing them as having been poisoned.	376 (98%)	8 (2%)	384 (100%)

According to the respondents, in 2018 political activists discouraged all the populations of the Anglophone regions from receiving vaccines from the Cameroon government describing them as containing a poisonous substance. Another event cited was the 2016 rumour that the Ebola Trial Vaccine in Bamenda was intended for the gradual reduction of the North West Population. These two events discouraged 305 (79%) and 371 (97%) of them from getting vaccines respectively. Further more 305 participants (79%) mentioned that in the early 1990s Tetanus Toxoid was allegedly used to render women of childbearing age infertile or sterile for political reasons.

Table 2 Discouraging Past Events that let to vaccination boycott: (n = 384)

Test of Significance * CI = 1.96 - 95% and Significance Level = 5% (0.05); Software: Stata.

Variables	Yes	No	T-stat	P-value	DF
In the early 1990s Tetanus Toxoid was allegedly used to render women of childbearing age sterile for political reasons.	305	79	14.06	0.00	383
In 2016 it was rumoured the Ebola Trial Vaccine in Bamenda was intended for the gradual reduction of the North West population.	371	13	46.56	0.00	383
Last year political activists discouraged the populations of the Anglophone regions from receiving vaccines from the Cameroon government, describing them as having been poisoned.	376	8	61.65	0.00	383

*All variables have a P-value of less than 0.05. They are therefore significant to the prevalence in question.

Table 2 Gives the result of comparing averages between the two modalities of each variable. The assertions recorded in the table have P-values = 0.00 which is less than 5% threshold (0.05). The assertions are therefore significant.

Table 3 Multivariate Analysis of Attitude

* CI = 1.96 - 95% and Significance Level = 5% (0.05); Software: Stata.

Attitude statement on vaccine	Yes	No	T- stat	P-value	DF
Confused about number / scheduling of vaccines? (n=384)	134	250	- 6.2016	0.000	383
Satisfied with the Health Care Worker's answers to questions, (n=188)	111	77	2.5146	0.013	187
Trust for health care provider about risks and benefits of vaccines, (n=188)	85	103	-1.3153	0.190	187

Table 3 presents the results of significance testing for confirmation of assumptions about attitudes. To this end, the statements: "Confused about the number/schedule of vaccines" and "satisfied with the health worker's answers to questions" are confirmed at the 5% threshold. Indeed, we obtained P-values below 0.05 for these two assertions – 0.000 and 0.013 respectively. On the other hand, for the statement: "Trust for health care provider on the risks and benefits of vaccines", we rejected the assumption at the 5% threshold. Indeed, the P-value obtained is 0.19, which is well above 0.05 and therefore not significant.

Table 4 Focus Group Discussion: Challenges / lapses encountered: (*n* = 10)

What are the challenges / lapses that make the vaccination programme not the best?	
Response	Number (%)
Inefficient cold chain system characterized by poor VVM monitoring, etc.	10 (100%)
Poor organization (weak supervision, lack of itinerary maps, non-systematic revisit of missed homes.	10 (100%)
Insufficient financial, human and material resources.	10 (100%)
Weak involvement of related sectors, i.e. poor intersectorial collaboration.	10 (100%)
Weak routine Immunization activities.	9 (90%)
The surveillance & monitoring system is weak.	8 (80%)
Lack of effective advocacy and communication plans.	7 (70%)

All participants 10 (100%) agree that the following challenges (problems or lapses) make the vaccination/immunization program not the best:

- Inefficient cold chain system characterized by poor VVM monitoring, poor fridge repairs and maintenance, and lack of an appropriate contingency plans.
- Poor organization (weak supervision, lack of itinerary maps, non-systematic revisit of missed homes.
- Insufficient financial, human and material resources.
- Weak involvement of related sectors, i.e. poor intersectorial collaboration.

Nine (90%) of the participants agreed that weak routine immunization activities make the vaccination/immunization not the best.

Table 5 Key Respondents Comments (n – 20)

Major Problems Encountered during vaccination campaign (n = 20)

Major Problems	Freq. / %
Lack of effective and realistic micro-planning at implementing levels	20 (100%)
Inefficient cold chain system characterized by poor VVM monitoring, poor fridge repairs and maintenance, and lack of an appropriate contingency plan	20 (100%)
Lack of effective advocacy and communication plans.	20 (100%)
Poor organization (weak supervision, lack of itinerary maps, non-systematic revisit of homes etc)	18 (90%)
Weak surveillance, monitoring, etc.	17 (85%)
Lack of robust bottom up micro-plans for the campaigns.	16 (80%)
Weak involvement of related sectors.	15 (75%)

All 20 (100%) of the study participants list the following as the major problems encountered during vaccination campaigns:

- Lack of effective and realistic micro-planning at implementing levels
- Inefficient cold chain system characterized by poor VVM monitoring, poor fridge repairs and maintenance, and lack of an appropriate contingency plan
- Lack of effective advocacy and communication plans.

Eighteen (90%) encountered poor organization (weak supervision, lack of itinerary maps, non-systematic revisit of home) as a major problem, 17 (85%) encountered weak surveillance, monitoring, 16 (80%) encountered lack of robust bottom up micro-plans for the campaigns and 15 (75%) encountered weak involvement of related sectors.

4. Discussion

From the key findings one discovers a lot of misconception regarding vaccination. There are some double standards displayed by some respondents, probably undecided of what decision to make. This type of indecision is probably as a result of vaccination misconception. This corroborates with the findings of Ndipowa J.A.C. et al (2016) [4] on Vaccination and Immunization Misconceptions in Cameroon. The findings revealed that the resistance against and refusal of vaccines by some populations has marred the efficiency and efficacy of vaccination campaigns against diseases of epidemic potential such as Poliomyelitis, Measles, Yellow Fever, Tetanus, etc. This phenomenon has been observed in many regions of Cameroon, particularly in the North West, Littoral, Centre, East and West Regions of the country. In 1990, there was massive refusal of the Tetanus Toxoid vaccine (TT), followed by the refusal of the Human Papillomavirus Vaccine (HPV), and the persistent refusals of the Poliomyelitis Vaccine by some families and communities. Very recently there has been massive anti-campaigns leading to the boycott of the Ebola Trial Vaccine in Bamenda and Yaoundé. Effective vaccination and immunization coverage in Cameroon, therefore, needs to be reviewed and revamped.

The claims of discouraging past events leading to vaccination resistance and refusal is in line with, or reflects Prince William's argument for urgent depopulation efforts in Africa in which he claims it is necessary in order to save the animal population from extinction due to human population pressure. On Tuesday November 7, 2019, a report from Life Site news based on Dr. R's assertions from Kenya stated that vaccines were contaminated with poisonous chemicals targeting women of reproductive age from the black race of African descent. In fact to further substantiate this news declaration, in 2014, a Polio vaccination campaign in Kenya faced an unlikely opponent: The country's Conference of Catholic Bishops declared a boycott of the World Health Organization's vaccination campaign, saying they needed to "test" whether ingredients contained a derivative of oestrogen. Dr. Wahome Ngare of the Kenyan Catholic Doctor's Association alleged that the presence of the female hormone could sterilize children. [5] It further stated that the Tetanus Toxoid vaccine duly supplied from official sources was poisoned with a chemical known as Human Chorionic Gonadotropin (HCG). This was after the TT vaccine was analyzed in a South African laboratory and was found to contain HCG. It is believed that this chemical (HCG) causes a woman to form antibodies, which will further kill the foetus in utero leading to spontaneous abortion and long term sterilization or infertility.

This is purely a race-based medical crime against women of African descent. That notwithstanding, according to Tara C Smith (2017) [6] in his research on Vaccine Rejection and Hesitancy: “A Review and Call to Action”, there are many different sub populations of individuals with divergent reasons for not vaccinating or delaying vaccines. This may be due to a variety of factors, including:

- Complacency (low-risk perceptions of vaccine-preventable diseases).
- Lack of convenient access to vaccine services.
- Lack of confidence in vaccines due to concerns about safety and other vaccine issues.

A growing number of parents are expressing concerns about the safety of vaccines, often fuelled by misinformation from the Internet, books, and other non-medical sources. Many of these concerned parents are choosing to refuse or delay childhood vaccines, placing their children and surrounding communities at risk for serious diseases that are nearly 100% preventable with vaccination. Interventions to address this emerging public health issue are mandatory.

In effect, resistance to childhood vaccination is a concerning public health issue. However, in attempting to address vaccine resistance, it's important to keep in mind that parents are just trying to do what is best for the health of their children. Many parents who worry about the risks of vaccination sift through an immense amount of material on vaccines, and physicians often find themselves having to contest the misinformation during short check-up visits at which there are other important topics to cover. It's clear that we need better ways to inform and engage vaccine-hesitant parents.

Ultimately, successful interventions will be those that build trust, reduce concerns about unfounded risks of vaccines, and help parents understand that vaccinating on schedule is in the best interest of everyone, including their own children.

Taking a critical look at the challenges (problems and lapses) affecting the vaccination programme in the Bamenda Health District (BHD) as revealed by the FGD and Key Informants, one would definitely attribute them to inadequate policy and poor management as a result of less effective governance. One is of the opinion that if governance, policy and management were improved upon, that would be a tremendous step forward in achieving an efficient and effective vaccination and immunization programme. Effective policy, planning and management are key measures for successful service provision of vaccination, as well as close collaboration between commissioners, service providers and data system managers, a team skill mix with experienced staff, pro-active engagement with stakeholders and service providers equipped to respond to community concerns.

This situation is similar to the one that involved HPV vaccination declining rates in adolescent girls in England. P Paterson, S Mounier-Jack, et al (2019) [7] in their article “Strengthening HPV vaccination delivery” had as objective to maintain and improve the HPV adolescent girls' vaccine coverage rates achieved in England, in the context of an expanding school-based immunization programme, it was essential to strengthen the organizational capacity of the delivery system. In his findings, systematic planning and accurate data management systems was viewed as key for the successful service provision of HPV vaccination, as well as close collaboration between commissioners, service providers and data system managers, pro-active engagement with schools, and service providers being equipped to respond to parental concerns. Organizational and logistical aspects (e.g. skill-mix, obtaining consent, administrative capacity in schools, data management) of school-based vaccination were identified as factors, which could influence vaccination coverage.

In 2011 the vaccination programme was going through similar challenges in Kano State. The most important thing done was getting political commitment at all levels, with the engagement of the President, religious and traditional leaders, as well as the community networks. By improving accountability frameworks with clearly described roles and responsibilities, establishing health camps in some of the very difficult-to-reach areas and developing new strategies to vaccinate children, substantial progress was made.

5. Conclusion

Resistance to vaccination and immunization programmes is a concerning public health issue. There are massive flaws in the organization of vaccination campaigns in the Bamenda Health District that need to be addressed. The government needs to revamp the health care delivery system and re-enforce health education and health promotion.

Recommendation

Every public health actor, stakeholder, and the government should redouble their efforts to right the flaws and lapses, both in vaccinations and health promotion strategies. The Cameroon government should create an enabling and safe environment for efficient and effective vaccination campaigns.

Suggestions for further research

- Effective Vaccination and Immunization Coverage of Displaced Populations in Cameroon: Serum Immuno-Antigen level of Various Pathogens.
- KAP study on Disease Prevention, Control and Health Promotion in Bamenda Health District.

Compliance with ethical standards

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Disclosure of conflict of interest

We declare we have no competing interests. The research article is original and has not been submitted or accepted for publication elsewhere.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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