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Knowledge, Attitudes, and Practices Regarding Human Papilloma Vaccination among Healthcare Workers at the Ngog-Mapubi District Hospital in Cameroon in 2023

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Abstract

Introduction: The vaccine against human papillomavirus (HPV) is an effective preventive measure against cervical cancer. The involvement of healthcare personnel is crucial for the success of vaccination campaigns. This study aimed to assess the knowledge, attitudes, and practices of the healthcare staff in the vaccination unit of the Ngog-Mapubi health district regarding the HPV vaccine. **Methods**: This was a descriptive and cross-sectional KAP study conducted among health workers in the Ngog-Mapubi District in Cameroon. It covered a period of 6 months from July to December 2023. Data were collected through a structured questionnaire and analyzed using GraphPad Prism version 8.0.1. **Results**: A total of 28 health workers participated in the study. Seventy-three percent (73%) of the workers knew that both genders are eligible for the vaccine, 59.99% were aware of the age range of children who should receive the vaccine, and 87% knew the dose to be administered. Ninety-three percent (93.33%) of the workers were convinced that the HPV vaccine helps to combat cancers caused by HPV. The entire staff adopted awareness-raising as a means of managing vaccine refusal. Awareness sessions on the vaccine were conducted by 92% of the staff in the Health Facility. **Conclusion**: Good

knowledge about the vaccine and the pathophysiology of the HPV virus are asset for a positive perception of vaccination by the vaccination team and could consequently contribute to vaccination coverage.

Keywords

Human Papillomavirus, Vaccination, Personal Health, Knowledge, Cameroon

1. Introduction

Cervical cancer is a major public health problem, particularly in low- and middle-income countries where screening programs are poorly accessible and mortality rates are high [1]. Globally, it is estimated that more than 600,000 new cases are diagnosed each year, with more than 85% of deaths occurring in developing countries, a high proportion of which are in sub-Saharan Africa [1]. The human papillomavirus (HPV) is the main etiological agent, and vaccination against this virus is an effective means of prevention [2]. In Cameroon, the HPV vaccine was integrated into the Expanded Program on Immunization (EPI) in 2021, targeting girls and boys aged 9 to 13 years [3]. However, the successful introduction and widespread use of this vaccination also depend on the commitment and competence of health personnel, particularly those in vaccination units [4]. Due to their key role in informing and guiding patients, healthcare workers can effectively contribute to raising awareness, providing information and motivating people to get vaccinated [4]. Their level of knowledge, attitudes towards the vaccine and professional practices directly influence community uptake and vaccination coverage [5]. This study therefore aimed to assess the level of knowledge, attitudes and practices of vaccination staff in the Ngog-Mapubi Health District in order to identify the levers and barriers to optimal implementation.

2. Methodology

2.1. Type and Framework of the Study

This is a descriptive and cross-sectional study carried out between July and December 2023 in the Ngog-Mapubi Health District, Nyong-et-Kellé department, Central region of Cameroon.

2.2. Study Population

We used the exhaustive sampling method. After obtaining informed consent, the staff of the vaccination unit of the district hospital were included in the study.

2.3. Data Collection Method

Data were collected using a structured questionnaire administered during individual interviews. The questionnaire consisted of three sections addressing staff knowledge and attitudes, vaccination strategies adopted, and refusal management

strategies related to HPV vaccine.

Staff knowledge was assessed and quantified according to the criteria of Essi et al (2013), it has 4 levels (poor, insufficient, average and good) [6]:

- Less than 50% correct answers = Wrong
- Less than 65% correct answers = Insufficient
- Less than 85% correct answers = Average
- More than 85% correct answers = Good

Regarding attitude, the analysis grid includes 4 criteria [6] (correct, approximate, erroneous and harmful):

- Less than 50% correct answers = Harmful
- Less than 65% correct answers = Incorrect
- Less than 85% correct answers = Approximate
- More than 85% correct answers = Correct

The analysis of the practice was established in 3 levels (harmful, inadequate, adequate) [6]:

- Less than 50% correct answers = harmful
- Between 50% and 85% correct answers = inadequate
- More than 85% correct answers = adequate

Data were analyzed using Graphpad software version 8.0.1. Descriptive analysis (frequencies and percentages) was performed.

2.4. Ethical Considerations

Ethical clearance was obtained from the Ethics Committee of the Faculty of Medicine of the University of Yaoundé I and administrative clearance was granted by the Ngog-Mapubi health district.

3. Results

3.1. Professional Characteristics of the Vaccination Staff of the Ngog-Mapubi DS

In this study, 28 people from the district's vaccination service were examined. Nursing assistants were the most represented at 47%, followed by state-registered nurses at 32%. Four staff members had 11 years of seniority (16%), and the longest-serving staff (18 years of seniority) were represented at 13% (**Table 1**).

Table 1. Distribution of staff according to their grade.

Grade	Number	Percentage (%)
Caregiver	13	47
State-certified nurse	9	32
Midwife	2	7
Others	4	14
Total	28	100

3.2. Staff Knowledge and Attitudes towards the HPV Vaccine

The proportion of staff knowing the age of the children to be vaccinated was 59.99% and 73.33% of staff knowing that both sexes are eligible for the vaccine. Regarding the dose, 87% of staff were noted to know the dose to be administered. In addition, 93.33% of staff, based on their knowledge of the vaccine and the pathophysiology of HPV cancers, believe that the HPV vaccine is the ideal solution to reduce morbidity related to HPV cancers. Seven percent (7%) believe that the vaccine has no effectiveness against the virus. These results show that staff knowledge about the age of the children concerned by the vaccine, the sex and the dose to be administered are respectively insufficient, average and good. While their attitudes towards the vaccine are considered good (Table 2).

Table 2. Distribution of personnel according to knowledge of the target of the HPV vaccine.

Sex	Percentage
Female	26.66%
Male	0.00%
Both	73.33%
Age	**Percentage**
9	33.33%
9 - 12	6.66%
9 - 13	59.99%

3.3. Practices

3.3.1. Vaccination Strategy Adopted by Staff

All staff in the vaccination service adopted the fixed strategy of vaccination, or routine vaccination, which takes place in the health facility, as their vaccination strategy for the HPV vaccine.

3.3.2. Health Staff Strategies for Responding to Vaccine Refusal

All staff surveyed use awareness-raising as a means of managing HPV vaccine refusal. This awareness-raising is done by 13% of staff during community education sessions and by 92% during educational discussion sessions at the Health Center with some staff involved in both types of sessions. Vaccination staff approaches regarding vaccine refusal management are considered good. However, according to 91% of these staff, these awareness-raising strategies do not always lead to the desired results.

4. Discussion

In rural areas, nursing assistants are the most represented compared to state-certified staff but have adequate references on vaccination [7]. In this study, of the 28 staff members examined, nursing assistants were the most represented with 47%,

followed by state-certified nurses with 32%. Health care providers have an important role to play in overcoming prejudices about vaccines and their importance, because their recommendations are a factor in the acceptance of vaccines by people who need them [3] [4]. As for seniority, it is an indicator of performance in vaccination activities, the longer the staff is in the exercise of a task, the more efficient they become [8]. Finding a study that reinforces the arguments on the seniority of staff.

A generally variable level of knowledge among vaccination staff was observed. Although the majority are aware of the HPV vaccine and its importance, gaps remain regarding vaccination recommendations and target groups. This insufficient knowledge can hinder the identification, and referral, of individuals who require HPV vaccine. On the other hand, the messaging and engagement strategies may lack precision and fail to generate the intended outcomes. This finding may also reflect broader gaps in training, supervision, or access to updated program guidelines. Perfect knowledge of the target group regarding vaccination is a major indicator that reflects the quality of vaccination services. Good vaccination performance cannot be achieved if staff do not have a basic understanding of the target group [9].

In the study population, 100% of vaccination personnel adopted the fixed strategy of vaccination, a result close to that of Ngomba *et al.* (2016), where 81.4% of health facility staff did not carry out any advanced strategy, the vaccination sessions were carried out using a fixed strategy, which also justifies the low vaccination coverage (22%) observed [10].

It was also observed that 92% of the staff conduct awareness sessions only during discussion sessions at the Health center, thus, the lack of community outreach to raise awareness among the population could be a justification for the low HPV vaccination coverage of 1.6% throughout the central region of Cameroon and therefore in Ngog-Mapubi, which is a district of this region [11] [12]. This gap may indicate a potential disconnect between message delivery and audience needs or contexts.

Conversely, the perception among 91% of staff that current awareness strategies are not fully effective highlights critical gaps in communication efforts and suggests a need for strategic adjustments. It indicates that existing methods (mainly reliant on health facility settings) are not resonating with the intended audiences. The staff recognize the need of enhancing their existing efforts with complementary approach that will help to achieve more meaningful, lasting results.

5. Conclusions and Recommendations

This study reveals that despite generally positive attitude and good practices, there are some gaps in knowledge of the health facility staff regarding HPV vaccination. The strong perception among staff that their communication methods are ineffective reinforces the need for complementary approaches as community-based outreach, while the insufficient staff knowledge of target populations highlights

the need of targeted training.

An experimental study should be conducted to evaluate the effect of an advanced strategy on HPV vaccination coverage.

Therefore, it is recommended to:

- Implement continuous training sessions to ensure target population identification by the staff, to update staff on vaccination guidelines, communication strategies and community engagement technique. This will improve service delivery, and communication.
- Enhance community-based outreach strategies and shift from predominantly institutional awareness efforts to more localized, face-to-face engagement in order to improve acceptance of HPV vaccination in the Ngog-Mapubi Health District.
- Promote advanced HPV vaccination strategies.

Conflicts of Interest

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

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