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Challenges of Immunization in Africa: Overcoming Barriers to Achieve Universal Vaccination

Okotel Richard

Spotlight on Africa Uganda Foundation P.O. Box 1966, Mbale – Uganda

***Corresponding author:** Okotel Richard, Spotlight on Africa Uganda Foundation P.O. Box 1966, Mbale – Uganda.

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Abstract

Immunization is a critical public health intervention that has significantly contributed to the reduction of morbidity and mortality rates worldwide. However, Africa continues to face numerous challenges in achieving universal immunization coverage. This is partly attributed to lack of awareness leading to low uptake of immunization services in rural communities. This publication aims to explore the key in vaccine uptake end obstacles hindering successful immunization programs in Africa, including limited access to vaccines, weak healthcare systems, vaccine hesitancy, and inadequate funding. With data obtained in the period of study various aspects that could have contributed to low coverage are highlighted. Additionally, it highlights potential strategies and interventions to overcome these challenges and ensure equitable access to life-saving vaccines for all African populations.

Keywords: Immunization, Low Vaccine-Uptake Challenges, Interventions and Vaccination

Introduction

Immunization is a cost-effective and proven strategy to prevent infectious diseases and safeguard public health. Its coverage across Africa has greatly increased with corresponding reductions in disease mortality and morbidity. Future increases in coverage are anticipated to return large health benefits however, coverage rates in many countries across the continent are far from achieving national targets, with many rates stagnating or falling [1]. This incomplete coverage across Africa is still a major contributor to child mortality and morbidity. The common immunizable diseases that affect Africa are polio, Measles, BCG, TD0 and DPT. The most affected age is <5 year. The progress that has been experienced are reduction in mortality arising from immunizable diseases. In Africa this has been attributed to deliberate attempts by Governments to address the health challenges affecting the communities. In some country's attempts were employed and progress was realized. Despite significant progress in recent years, Africa still lags behind in achieving optimal immunization coverage [2]. This publication sheds light on the immunization trends and multifaceted challenges faced by communities in African countries in their efforts to immunize their populations effectively.

Methodology

The Study Area

The data was collected from the health facility involving the community residing in Bukasakya area. These include the following parishes; Bukasakya, Tsabanyanya, Marale, Nabitiri, Musoto, Masanda, Bugema A and B, Nabitiri, Namabasa, Bwana, Doko, Salem, Kolonyi A and Kolonyi B). In Nakaloke It was done in Nakaloke Town Council. The total population of 551,200 persons, with a population density of 401.5 people per sq km by reside in this community according to (UBOS, 2021). Secondary information was obtained from the district health reports of Mbale District Local Government), Namatala Health Centre IV (Public Health Facility) Nakaloke Health Centre (Public Health Facility) Kolonyi Health Centre IV (Partnered with government to provide affordable health care services).

Study Design

The study adopted a descriptive study design involving data collected over a period of 2 years from the visits by clients to the health facilities. In addition, information was collected through in-depth interview with mothers and other patients that visited the health facility. Data collected from registers was entered in excel spread sheet as means and percentages generated. Both qualitative and quantitative data with questionnaires designed to capture information on factors attributed to immunization. Data were captured in record books and compiled using Excel spread sheets prior to analysis using STATA computer statistical package, summarized in frequencies and percentages, presented in graphs and tables forms. The information obtained highlighted factors that affect immunization coverage in the community.

Results and Discussions

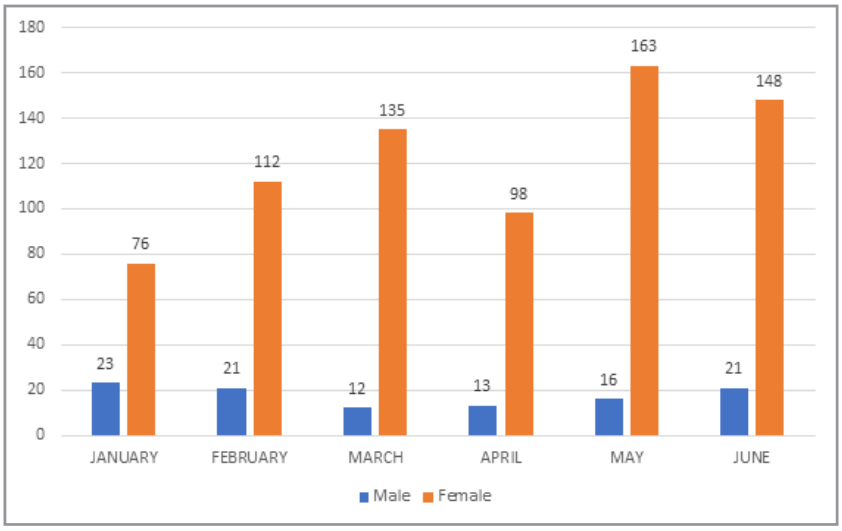

Figure 1: Number of Visits to the Health Center by Gender

In Fig. 1 above shows that there are more women than men who visit the health facility and most of these visits is associated with the time of pregnancy, child birth end preliminary visit after child birth. It is that period immunization is taken by these women or after child birth the mothers are the majority that take care of the need for immunization. There involvement implies that for Africa to achieve universal immunization coverage mothers ere e critical mess to involve end sensitise. Involvement of women would address the challenge of vaccine hesitancy, fuelled by misinformation, myths, and cultural beliefs, is a growing challenge in Africa. Misconceptions surrounding vaccine safety and efficacy contribute to low vaccine acceptance rates. Addressing vaccine hesitancy requires targeted communication campaigns, community engagement, and collaboration with local leaders and influencers.

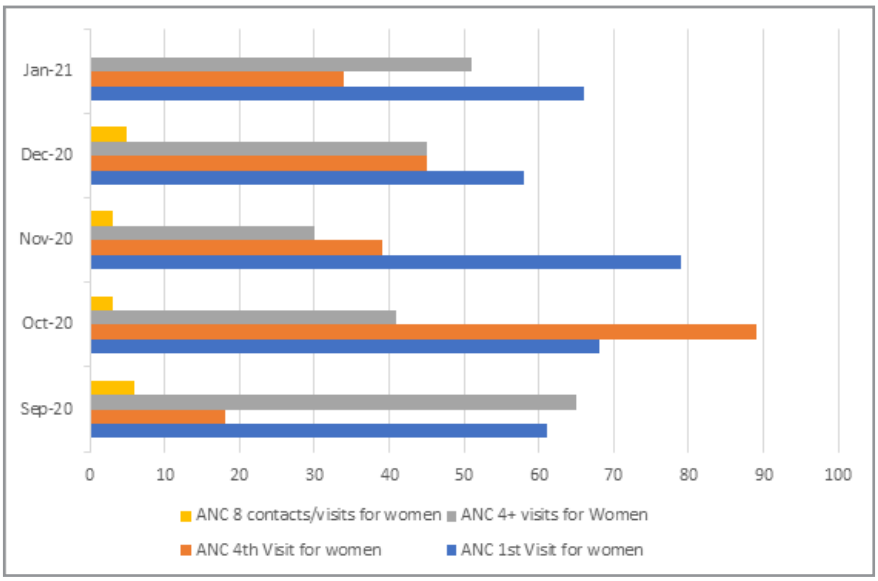

Figure 2: ANC Visits from September to January 2021

In Fig. 2 above it was observed that the majority of women only visit once to the health facility end this has implication on taking vaccines meant for pregnant mothers. It was observed that there are very few mothers who visit antenatal go for more than 8 times.

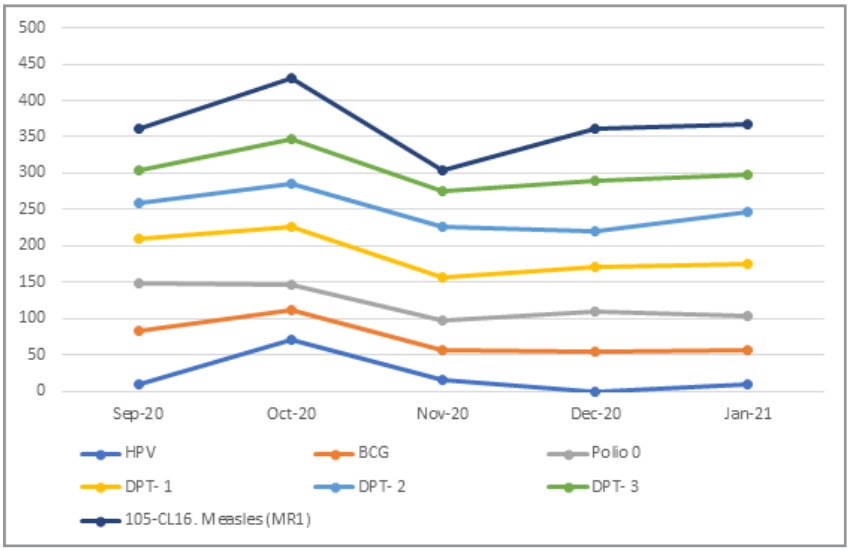

Figure 3: Comparison of Vaccine Uptake by Clients

Fig. 3 above presents results on vaccine uptake end reveals that measles is had received the highest number of clients during the study period. Measles is followed by DPT 3, DPT 2, DPT 1, Polio 0, BCG and lastly HPV. This provides the reality in terms of the most utilized vaccine in the health facility. The vaccines are used to control common diseases that effect the population. Implying that the more the vaccine is utilized probably explains its availability and the disease pressure on the population. The requirements for good vaccination system are a very good health care system, which currently are nonexistence in most African setting. This could explain the low levels of clients that take in the vaccines. The weak healthcare systems in Africa poses a significant challenge to immunization programs. Insufficient healthcare infrastructure, shortage of skilled healthcare workers, and inadequate data management systems hinder the effective access end delivery of vaccines. The lack of trained personnel to administer vaccines and monitor adverse events further exacerbates the problem.

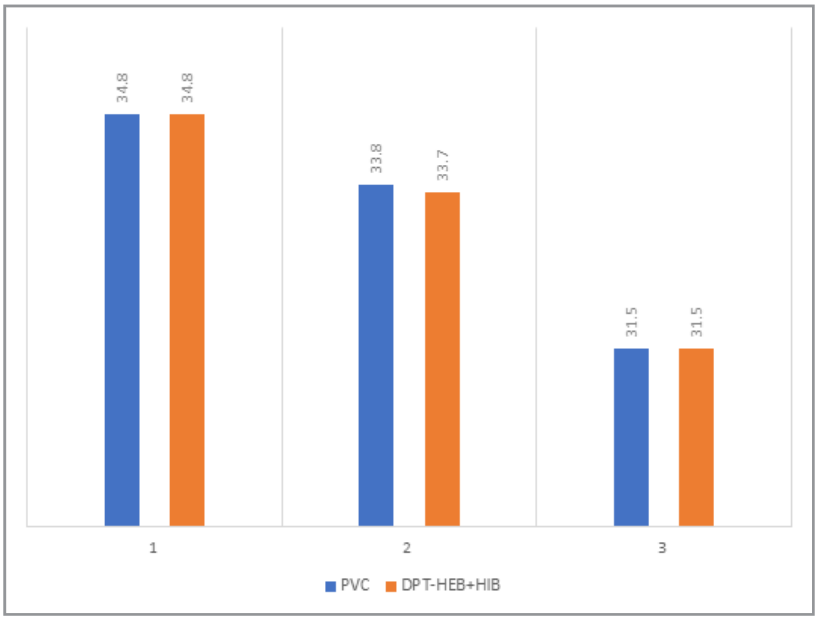

Figure 4: PVC and DPT-HEPB+HIB Vaccination Trends During the Study Period

In Fig. 4 results revealed that the majority of clients that take these vaccines do it first time and a few returns for the consecutive doses. The situation worsens with the second and the third doses. The third dose recorded few clients, this could be due to the failure of the responsible parents to return for this vaccination. This is not a good practice if we are to achieve universal vaccination in Africa. The recommended dose is three times and there is need for one to undertake all the vaccines. This is a challenge to universal vaccination achievement.

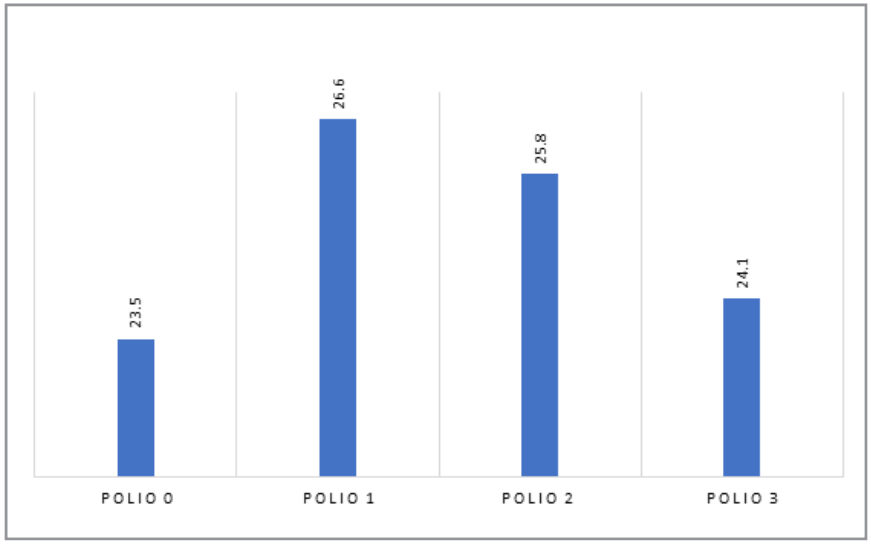

Figure 5: Vaccination Trends During the Study Period

In Fig. 5 above it was observed that there were fewer administration of polio 0 vaccine and thereafter more clients that were given Polio 1, followed by Polio 2 and polio 3 es the trend followed by other vaccines. It implied that not all those that received Polio 1, went back for polio 2 and 3. It is also possible that such clients could have taken Polio 2 and Polio 3 from another health facility and is not possible to verify this but with data observed is can be reported that few clients were taken for subsequent Polio vaccine doses. The trend for the two vaccine types reveal that these vaccines are often given to clients at once.

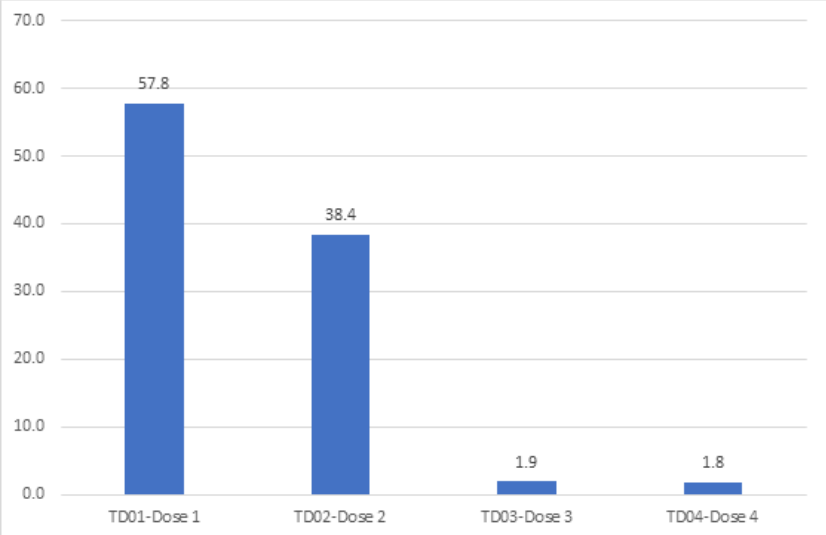

Figure 6: TD0-Dose Trends During the Study Period

The TD0 vaccine trends reveal that the clients ere given the first dose and subsequent dose clients reduced as the doses increased. It was observed that the majority who take this vaccine take first and second doses. The two other doses 3 and 4 have reduction in the number of clients that take it. Given the recommended dose uptake of at least 4 times, this poses a challenge to achieving universal vaccination. It is possible that such people may not easily access the vaccines and incidences have been reported where the clients return for vaccination and fail to access the vaccine due to limited doses provided for. The factors such as inadequate vaccine supply chains, high costs, and geographical barriers contribute to limited access to these vaccines. Many African countries heavily rely on external sources for vaccine procurement, making them vulnerable to supply chain disruptions. Additionally, the lack of cold chain infrastructure poses a significant hurdle in maintaining the potency of vaccines, especially in remote and resource-limited areas. In such a case challenge of not allowing the vaccines to be accessed by all. According to Borus 2004, low immunization coverage could be attributed to inappropriate vaccination experience by the clients.

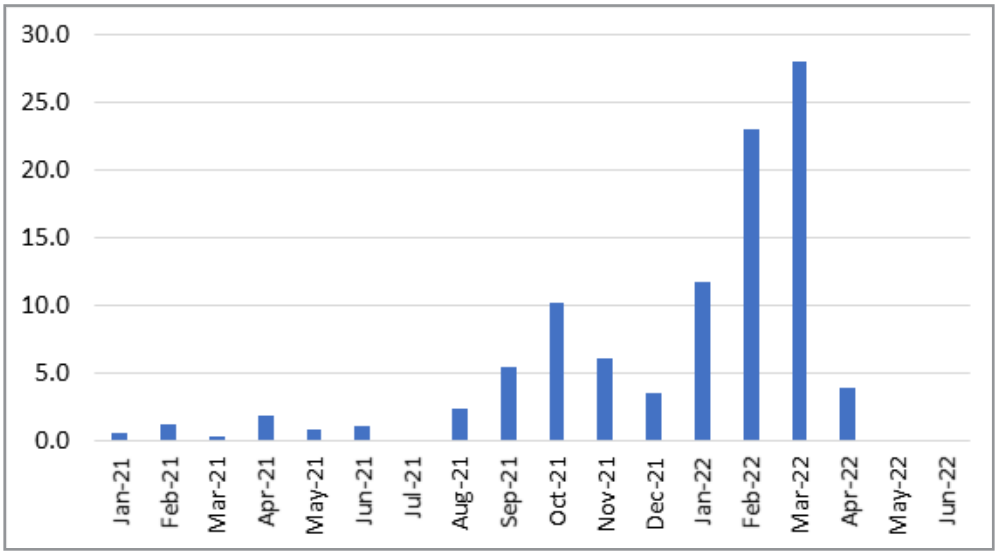

Figure 7: HPV Vaccination Trends for the two Years

HPV vaccine is crucial for control of diseases end reducing mortality among the children. The report shows that in the last 2 years, there were only 1,964 persons vaccinated in Bukasakya against HPV. The oobservation is that first dose was received by 92.8 % of all the vaccinated persons. The second dose (HPV2-Dose 2) was received by only 7.2 % of the vaccinated persons this agrees with findings of Awoh & Plugge where low vaccine coverage was observed among the young in urban areas [3]. Various option could explain this result possibly the second dose vaccination was taken elsewhere or the vaccination was not taken at all after the first dose. Implying that there were many that received the first dose as compared to the second dose. This has implications on the control of the disease in the population. It indicates the poor performance in vaccination attempt in the community. Further study is needed to establish whether truly the persons do not often go for the second dose of the vaccination. The other option is that the majority go to other health facilities to access the second dose or they ignore it totally This could possibly cause increase in the resistance of the virus to the disease and has implication in the future challenges in disease management

Challenges that Could have Influenced Vaccine Coverage

In Africa generally, there are challenges that have been observed to influence vaccination coverage among them are mainly limited access to vaccines, vaccine hesitancy, inadequate funding Harrington, Woodman & Shannon [4]. Insufficient funding remains a significant obstacle to achieving universal immunization coverage in Africa. Many countries struggle to allocate adequate resources to immunization programs due to competing priorities, limited budgets, and dependency on external funding [5]. Sustainable financing mechanisms, increased domestic investments, and innovative partnerships are crucial to ensure long-term funding for immunization programs. The same was reported by [6]. On the same note reduced EPI budget resulting in funding shortfall for vaccination activities, weak advocacy and high-level support for EPI due to competing priorities were observed as the key challenges to sustaining immunization activities [7, 8].

Strategies to Overcome Challenges

To overcome the challenges of immunizations in Africa, several strategies can be implemented. Strengthening vaccine supply chains, improving cold chain infrastructure, and enhancing healthcare systems are essential [9]. Additionally, investing in training healthcare workers, improving data management systems, and implementing robust surveillance mechanisms can enhance immunization coverage [10]. Addressing vaccine hesitancy through targeted communication campaigns, community engagement, and accurate information dissemination is vital [11]. Lastly, increasing domestic funding, exploring innovative financing mechanisms, and fostering partnerships with international organizations and donors can help sustain immunization programs [12].

Conclusion

Achieving universal immunization coverage in Africa requires concerted efforts to overcome the challenges of limited vaccine access, weak healthcare systems, vaccine hesitancy, and inadequate funding. By addressing these obstacles through targeted interventions, African countries can ensure equitable access to life-saving vaccines, reduce the burden of infectious diseases, and improve overall public health outcomes. Collaboration between governments, healthcare providers, communities, and international stakeholders is crucial to overcome these challenges and achieve universal immunization coverage in Africa [13].

Acknowledgement

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