

Original Research Article

The Roles of Pharmacists in Maternal and Child Health of Primary Health Care system

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Abstract: The study was designed to access the involvement of Pharmacists towards achieving the goals of Primary Healthcare activities, especially the childhood components within Asaba and its environs. Patients data (children and pregnant women) were obtained from the public health department of Federal Medical Centre, Asaba including the schedule for immunization, types of vaccines at birth, six weeks, ten weeks, fourteen weeks, six months, nine months and their respective route of administration for the complete stimulation of the immune system. The pregnant women registered for tetanus toxoid injection for 1st, 2nd, 3rd, 4th and 5th doses to complete tetanus toxoid for life, were also obtained. These data were carefully analyzed to checkmate the contributions and involvement of Pharmacists in immunization/vaccination and other public health activities. Three months data was used for the study. It was observed that the Pharmacists in the health facility play little or no role in the childhood components of Primary Healthcare. Although the vaccines were stored in the central store of the facility, the custodians of the vaccination activity were the nurses in the public health department of the facility. The most frequent administered vaccines among all were oral polio vaccine, followed by pentavalent vaccine, while measles vaccine was the least. For the tetanus toxoid, there was serious non-adherence issues based on the data analyzed. Pharmacists has a key role to play in educating mothers and families on the safety and adverse reactions of vaccines, as well as practical involvement of public health activities to achieve the ultimate goal of primary healthcare, hence proper compliance and reduction of vaccine preventable diseases.

Keywords: Primary healthcare, child health, nutrition, vaccine, Probiotics.

INTRODUCTION

Primary health care (PHC) is an essential health care based on scientifically sound and socially acceptable methods and technology that make universal health care accessible to individuals and families in a community. Level of health care includes tertiary healthcare, secondary healthcare and primary health care [1].

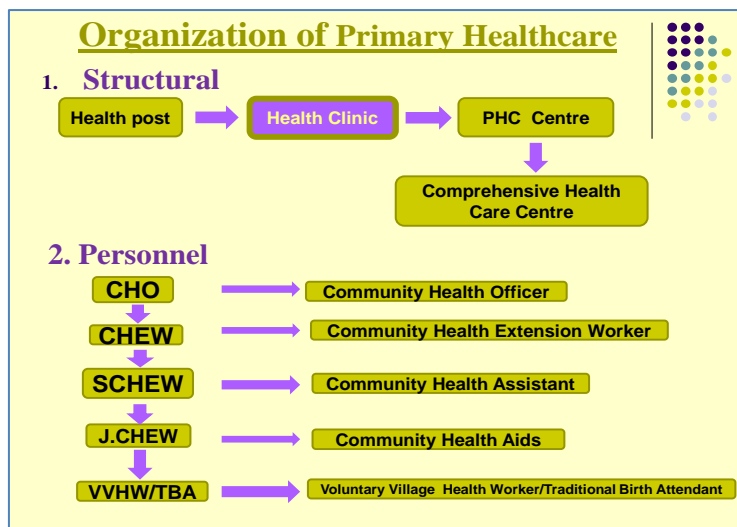


Fig-1: Organization of Primary Healthcare

The Pharmacists’ role is embedded in the health clinic where drugs and consumables are procured, distributed, dispensed etc, within the health facility [2]. Primary Healthcare’ approach is beyond the traditional health care system that focuses on health equity-producing social policy. It includes; access to health services, safe environment, and lifestyle modification and improvement [3] The PHC was adopted in the declaration of the International Conference on PHC held in Alma Ata, Kazakhstan in 1978; “Alma Ata Declaration”, inspired by the Barefoot doctors of China [4]. The ultimate goal of Primary Healthcare is ‘Better health for all’. Attainment of a level of health that will enable every individual lead and live a socially and economically productive life in the community, [4].

Some vital requirements for a sound and Primary healthcare include; appropriateness, availability, adequacy, accessibility, acceptability, affordability, accountability, comprehensiveness, Continuity, etc. Principles of Primary Healthcare; equitable distribution of health care, community participation, health work force development, use of appropriate technology, multi-sectional approach [1]. Components of Primary Healthcare include; health education, mother and child health, expanded program of immunization, nutrition, safe water and sanitation, control of endemic diseases, provision of essential drugs, treatment of endemic diseases. There are several approaches to Primary healthcare, the most suitable for this study is the Selective PHC approach, which is an economic feasible approach that targets specific areas of health, and choosing the most cost effective treatment plan, e.g. GOBI-FFF: Growth monitoring of infants to understand needs for better/early nutrition; Oral rehydration therapy: to combat dehydration associated with diarrhea; Breastfeeding; Immunization; Family planning (birth spacing); Female education; and Food supplementation - iron and folic acid to prevent deficiencies during pregnancy [5].

The childhood components of Primary Healthcare - mother and child health, expanded program of immunization and nutrition. Mother and Child health; this encompasses providing optimal pharmaceutical care through antenatal to childhood for both the mother and child.

Immunization; is the process whereby a person is made immune or resistant to an infectious disease by administration of a vaccine [6]. Vaccine - a preparation of suspended killed or attenuated microorganisms, or derivatives, intended to produce immunity against specific disease by stimulating antibodies production [7]. By administering global immunizations, the World Health Organization works to wipe out major infectious diseases, greatly improving overall health globally [8]. Vaccines; are safe, cost-effective and efficient means of preventing illness, and death from certain preventable infectious diseases, (whooping cough, Haemophilus Influenzae type B, meningitis, tuberculosis, hepatitis B, Polio, Yellow fever and measles, etc.). They improve the quality of life; minimize financial burdens on families, increase community awareness and participation [7]. Annually, vaccine-preventable diseases kill more Americans than breast cancer, HIV/AIDS, or traffic accidents. [9]. Vaccines are procured at a standard maintained temperature, in a systematic procedure known as cold chain. Nutrition: as part of the childhood component, mothers should be advice to use formulas that contains Probiotics, especially those that doesn’t wish to indulge in exclusive breast feeding, but no formulae can take the place of breast milk [2]. Probiotics are attenuated microorganisms (bacteria or yeast) that enhance the host immunity when administered in adequate amount [10].

Probiotic Strain	Claimed Potential Effect
<i>Bifidobacterium lactis</i>	Immune system maturation/protection & allergy prevention.
<i>Bifidobacterium longum</i>	Relief abdominal pain/discomfort, bloating and constipation in children.
<i>Bacillus coagulans</i>	Improve abdominal pain and bloating, immune response to viral challenge.
<i>Lactobacillus acidophilus</i>	Reduce antibiotic therapy side effects.
<i>Lactobacillus reuteri</i>	Reduce infantile colic pain, fever, antibiotic-associated side effects, children diarrhea and number of sick days in adult.
<i>Saccharomyces boulardii</i>	Inhibits antibiotic-associated diarrhea and acute diarrhea.

Fig-2: Probiotics research - extracted from functional and Nutraceuticals magazine, p36; 2007

METHODS

Patients data (children and pregnant women) were obtained from the public health department of the Federal Medical Centre, Asaba including the schedule for immunization, types of vaccines at birth, six weeks, ten weeks, fourteen weeks, six months, nine months and their respectively route of administration for the complete stimulation of the immune system. The pregnant women registered for tetanus toxoid injection for 1st, 2nd, 3rd, 4th and 5th doses to complete tetanus toxoid for life, were also obtained. These data were carefully analyzed with other reported journal articles to checkmate the contributions and involvement of Pharmacists as the most accessible healthcare providers in immunization/vaccination and other related public health activities in the health facility. Three months data was used for this study.

RESULTS AND DISCUSSION

Table-1: Vaccination schedule in the health facility

Vaccine	Age	At birth	6 weeks	10 weeks	14 weeks	6 months	9 months	Route
<i>Bacille Calmette-Guérin</i>		BCG						ID, SC or IM
Hepatitis B Vaccine		HBV						IM
Oral Polio Vaccine		OPV	OPV	OPV	OPV			Oral
Pentavalent Vaccine			PENTA	PENTA	PENTA			SC, IM
Vitamin A vaccine						VIT A		Oral
MEASLE Vaccine							Measles	SC
Yellow Fever vaccine							Yellow fever	SC

Key: PENTA – pentavalent vaccine, BCG – *Bacille Calmette Guérin*, OPV – oral Polio vaccine, HBV – Hepatitis B vaccine

Table-2: Tetanus Toxoid schedule for pregnant women – First contact

Dose	Stage of Pregnancy	Route
1 st dose (T.T ¹)	Fourth (4) month	IM
2 nd dose (T.T ²)	1 month after first dose	IM
3 rd dose (T.T ³)	6 months after T.T ²	IM
4 th dose (T.T ⁴)	1 year after T.T ³	IM
5 th dose (T.T ⁵)	1 year after T.T ⁴	IM
<i>At this stage T.T is completed for life.</i>		

Table-3: Monthly Immunization (Vaccination) Statistics

Vaccine	No. of Patients 1 st Month	No. of Patients 2 nd Month	No. of Patients 3 rd Month
BCG	106	132	216
HBV	109	126	195
OPV	292	341	608
PENTA	183	214	411
VIT A	124	146	-
MEASLES	109	74	84
YELLOW F	126	103	100
TOTAL	1,049	1,136	1,614

Table-4: Monthly Tetanus toxoid vaccine statistics

Tetanus Toxoid Vaccine	No. of Patients 1 st Month	No. of Patients 2 nd Month	No. of Patients 3 rd Month
T.T ¹	124	100	116
T.T ²	63	94	69
T.T ³	1	4	3
T.T ⁴	3	2	4
T.T ⁵	4	9	6
TOTAL	195	202	198

Following the data obtained from the study, it is pertinent to note that there was non-compliance issues. Starting with immunization, a total of 1,049 were recorded in March, out which 292 for OPV, and 183, 126, 124, 109, 109 and 106 for PENTA, Yellow fever, Vitamin A, HBV, Measles and BCG respectively. Out of the three months recorded, OPV tends to have a constant increase in administration 292 in the first month, 341, second and 608 in the third month, compared to other vaccines. This could be due to the route (oral) of administration of OPV, whereas the other vaccines are either given intramuscularly, intradermal or subcutaneously. On the other hand, measles vaccine experienced marked decrease, indicating that the fight against measles in the developing world is yielding positive outcome.

For the expectant mothers that were placed on tetanus toxoid injection in bid to counter any infection during the gestation period, the number responded after the first contact decreased significantly. In the first month, 124 expecting mothers received their first dose, but 63 were seen to come for their second dose, amazingly, only one showed up for the third dose while 3 took their fourth dose and only 4 completed the tetanus toxoid for life recorded in table 4 above.

Several factors could contribute to this observed non-adherence, including change of environment, inability to meet financial demands, change of healthcare facility/physician, fear of health premises, natural disaster, lack awareness and health benefits of immunization/vaccination, lack of involvement of the Pharmacist to provide adequate information on the safety, efficacy, efficiency and reliability of immunization of children, mothers and the general public.

Therefore, Pharmacists, as the most accessible, cost-effective health care professionals, can be instrumental in providing patients with pertinent information to make informed choices when it comes to immunizations, in terms of benefits, expiry date, storage condition, route of administration and product efficacy, etc., [11]. Pharmacists are strongly recommended to participate fully in public health activities and contribute to ensure the achievement of the ultimate goal of Primary Healthcare in the developing world. Hence, below are some suggested roles of pharmacists in the childhood components of primary healthcare: access, prepare, obtain, store, secure, distribute, dispense, *administer* and dispose medical products; Provide effective medication therapy management that prevents childhood mortality; [12]; Contribute to improved effectiveness of the health-care system and public health [12]. Identify those patients in target groups for certain vaccinations; Educate and ease the fears of patients via providing facts and the risks associated with not being vaccinated [7]. Maintain proper documentation history and screening of patients; Patient counseling and Patient/Public education and awareness to eliminate common misconceptions regarding vaccination. [7]. Therefore Pharmacist Council of Nigeria (PCN) in collaboration with the Pharmaceutical Society of Nigeria (PSN) and other government agencies should make efforts to ensure that Pharmacists are employed in local health centres (Primary Healthcare centres). Also, Pharmacists should take active roles in politics and be part of the National Primary Health Care Development Agency (NPHCDA) where policies are made.

Furthermore, Pharmacists should involve in public health advocacy and make valuable contributions that will make them relevant and should strive to see to actualization of the ultimate goal of Primary healthcare in their field of practice.

CONCLUSION

From the data obtained, it is very vital that, Pharmacists in addition to dispensing of medicines can play a fundamental role in increasing immunization rates as well as improving patient's quality of life. Pharmacists should develop competencies in vaccine safety, dosage, immunologic reactions, storage, valid contraindications to vaccination and disposal. This will make it possible for Pharmacists to function properly as vaccination advocates, practitioners as well as provide more value added services to their profession and overall improvement in the patient quality of life.

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