INTERNATIONAL JOUNAL OF: SOCIAL HEALTH AND MEDICAL RESEARCH

TIMBOU-AFRICA ACADEMIC PUBLICATIONS
INTERNATIONAL JOURNAL, NOVEMBER, 2023 EDITIONS
VOL. 15 NO. 3 ISSN: 2373-1340

AN EVALUATION OF HEALTH INTERVENTION OF MATERNAL NEONATAL AND CHILD MORTALITY REDUCTION IN PRIMARY HEALTH CENTRES KALTUNGO LOCAL GOVERNMENT AREA OF GOMBE STATE

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ABSTRACT

Maternal neonatal and child morbidity and mortality indices in Nigeria have been alarming particularly in Gombe state situated in the north East region. The maternal mortality rate in Gombe is 1002/100,000 live birth and infant mortality rate is 20.7/1000 live birth and under-five mortality is 104/1000. The primary Health care system is reduction of this indices through

Introduction

Children and women who are close to having children are certainly the most disadvantaged demographics in our society since they are often more susceptible to the negative impacts of the majority of prevalent health issues (Roelen, Keetie, and Rachel, 2017). The case is not any different in Nigeria as it

access to health care specific interventions. This study was therefore aimed to evaluate the effectiveness of interventions parameters. The study is descriptive non-randomised, non-controlled outcome evaluation of intervention packages rendered through the Primary Health Centres (PHC) in Kaltungo LGA. A structured questionnaire in the form of an assessment sheet study instrument was used to collect data on documented intervention specific to maternal neonatal and child mortality control and it was measured against the outcome over a period of ten years (10) years intervention period (2012-2021). That out of the eight (8) interventions are: Malaria control, administration of Haematinics, Prevention/Immunization, Post-Natal care, Focus Ante Natal Care, Breast feedings Infection Control, and complimentary Feeding were correlated with outcome Morbidity and mortality and inference were drawn from statistical analysis as effective and non- effective. The documented measurable intervention packages inputs (in form of number of pregnant women, neonates and children that benefited from each category of the intervention) were correlated against the documented measurable outcomes (in form of number of deaths recorded that are specific to the categories of the intervention packages). The results show that of the eight (8) sets of interventions/outcomes for all the PHCs at level of significance of 0.05, only two intervention types (malaria control – p-value = 0.015 and administration of haemotonics – p-alue = 0.036), equivalent to 25% of total intervention sets are signinficant enough to be regarded as effective in reducing maternal mortality. In other words, all intervention packages for reduting Perinatal mortality, neonatal mortality and under 5 mortality are not significantly effective to reduce number of deaths.

Keywords: Evaluation, Appraisal, Effectiveness, Prevention, Mortality, Interventions

features a maternal death rate (MMR) of approximately 580 deaths out of 100,000 actual births. More so it's expected to have new born mortality rates of 69 per 1,000 live births and children younger than 5 years mortality rates of 128 per 1,000 live births. The effects of

pregnant women's poor health are much more severe in northern Nigeria, where the MMR is thought to be above 1000 fatalities per 100,000 live births.

Recent studies on Nigeria's sectoral maternal child and neonates' health conditions reveals a more worrisome health indices in some parts of the country: In the northern part of Nigeria for instance estimates that the maternal mortality rate in rural regions is 828 deaths per 100,000 live births, compared to 351 deaths per 100,000 live births in urban areas (Lassi, Zohra, and Zulfiqar, 2015). Gombe is one of the states with worse state maternal neonate and child health (with indices that is worse than the Nation's average), with mothers death rate of 1002/100,000 live births and an infant death rate of 20.7/1000 live births, an under 5 mortality rate of 104/1000 (GSHDP, 2010).

There is no gain saying that the health status of the mothers as well as that of children are of immense important to any nation. It is in the recognition of this that the United Nations adopted specific goals 2, 3, 4 and 5 in its Millennium Summit in 2000. Its Millennium Development Goals hinges on the wellbeing of mothers and children (ref). The main focus of the nation's approach at the grassroot level is cantered at provision of health care programs and services to vulnerable communities in primary health care. This is basically introduced to cater for the most basic health needs that pertains to the mothers as well as children in the society (Aigbiremolen, Alphonsus, Innocent, Ejemai Eboreime, and Abejegah, 2014).

An effective and efficient Maternal and Child Health (MCH) Programmes for covering numerous health care needs of maternal, children and neonates are only implementable via a functional Primary Health Care system (PHCs) to if the needed goals must be achieved. The Primary Health Centres (PHC), which are typically built close to rural areas, are designed to carry out a variety of programs targeted at

bringing down morbidity and death rates to a manageable level. In a similar vein, Only through active and generally functional PHCs can an integrated health care program for mothers and children which includes vaccination, prenatal and post-natal care, access to contraception, management of poor nutrition, early detection and treatment of disease, supply of safe water for drinking, and effective waste management reach the target population and accomplish the desired goals **Error! Bookmark not defined.** Oh, uh. In get to deal with three delays the truth that prevent women via obtaining appropriate maternal medical care, plenty of studies proposed increasing the use of Skilled Birth Being (SBA), notably due to better primary medical care (PHC). Because Nigeria has over thirty four thousand people primary health centres (PHCs), which provide care to all hospital wards and hard-to-reach places.

Therefore, it is likely that enhancing PHC accessibility, availability, affordability, and service quality would be necessary to reduce Nigeria's high rate of new born and maternal mortality. Primary healthcare, which serves the majority of the underserved rural population in the country which accounts for more than 60% of the total population and is the level of treatment that is closest to the communities as a whole, is created to meet their most pressing medical prerequisites PHC is mostly applied through services supplied through home visits and primary health centres. The minimum service requirements for PHC, which are particularly connected to these services, are outlined by WHO/UNICEF Alma-Ata Public statement on Primary Health Care of 1978 (WHO, 2017). Given the foregoing, it is safe to say that a program integrated into the operational structure and operations of primary health care will be able to reach a larger proportion of the country's population.

The goal of this study is to evaluate the effectiveness of Basic Health Care (PHC) intervention packages in reducing Maternal Neonatal and Child Mortality in primary healthcare settings in Kaltungo Local Government Area of Gombe State. We describe the technique for selecting the specific PHC intervention packages in the trial in order to lower maternal neonatal and child mortality. We also outline the technique used to assess how Primary Health Care intervention packages in Gombe State's Kaltungo Local Government Area affected indices of maternal, neonatal, and child mortality.

Statement of the Problem

Since the early 1990s, Nigeria has seen widespread issues with poor mother and child health, too. The truth that Sustainable Creation Goals are established on several modern reviews on Maternal, Neonatal And Children Health (MNCH) and mortality, however, many broad array from interventions have really been implement within the previous couple of years in the PHC level to make sure the truth that Nigeria is within track to encounter these goals. The Gombe state from Nigeria has one particular of the worst type of maternal and new born mortality rates in the world. There are 43 innovative homes in the area born deaths per 1,000 live births, 260 children per 1,000, and 1549 mothers per 100,000[3].

Maternal, neonatal, and child health issues are among those being addressed in Gombe state through active engagement of all levels of government in health programs in order to achieve the MDGs, with a focus on objectives 4 and 5 (GSHDP, 2010).The disturbingly high MNC death rate suggests that despite the ongoing administration of intervention packages in PHCs, it is unclear if these packages are successful in lowering MNCH mortality in the research area (Abera, 2015). Therefore, the purpose of this study is to evaluate the efficacy

of PHC packages for MNCH at the primary healthcare facilities of Kaltungo Local Government Area in Gombe State.

Review of Related Literatures

Notably in many sub-Saharan African nations, the high rate of maternal, neonatal, and infant death continues to be a significant problem for global health. The largest average maternal mortality rates (MMRs) in the continent, for instance, are found in 18 other sub-Saharan nations, such Sierra Leone (1360/100000 live births). MMRs in African countries, including Nigeria, are thought to range from 500 to 9993. Due to the region's poor health systems, which are made worse by, among other things, conflicts, disasters, and forced relocation, mothers and children are more at danger of dying there (Say, Lale, Doris, Alison, Özge, Ann, Jane, Gülmezoglu, Marleen, and Leontine, 2014).

Despite these advancements, more than 500,000 women still pass either during pregnancy or within a few weeks after giving birth, with the majority of them residing in developing nations. Today, more women and kids live than ever before. However, despite significant advances every 11 seconds, somewhere in the globe, a pregnant woman or a baby passes away; these fatalities may be prevented with the use of specialized care before, during, and after childbirth.

About 75% of all maternal fatalities are caused by the following four main issues: acute bleeding, primarily bleeding during delivery. Seventy-five percent of all maternal fatalities are attributable to the following four main issues: infections; acute bleeding, mainly during delivery; acute bleeding (usually after childbirth)

- Increased BP during pregnancy (pre-eclampsia and eclampsia)
- Issues associated to delivery, including unsafe abortions.

The remaining ones are brought on by or connected to chronic illnesses like heart disease or diabetes, as well as infections like malaria (Lassi, Zohra, Rehana, Jai, and Zulfiqar, 2016).

Primary Health Care

Primary healthcare is a type of necessary medical treatment that is widely accessible to individuals and families in the neighbourhood via full involvement, at a cost that the society and the nation can afford to sustain, and in an atmosphere of self-reliance and self-determination. It is founded on useful, ethically sound scientific principles and contemporary technologies (Sanders, David, Nikki, and Suraya, 2016).

Primary health care is a crucial component of the nation's healthcare system and a focal point for the social and economic growth of every town. It is the first point of contact with the national health system for people, families, and communities as a whole. Despite being the first stage of a continuing healthcare process, primary health care strives to provide healthcare services as close as possible to individuals, regardless of where they reside or work. The Federal, State, and Local Government levels make up the three tiers of government in the Federal Republic of Nigeria Similar to this, the health system in Nigeria offers preventive care at the local levels and secondary treatment at the state level.

At the Federal level, including secondary and tertiary care. The primary point of interaction with the health care system for the majority of Nigerians is Primary Health Care (PHC), which is the cornerstone of the country's health policy. As a result, standards must be established in order to manage healthcare services effectively and provide high-quality MNCH care.

Maternal Health

The term "maternal health" describes the condition of women throughout pregnancy, childbirth, and the immediate postpartum

period. To guarantee that women and their unborn children enjoy each stage, attain their highest level of health and well-being. Maternal death, as defined by the WHO, is the dying away of a woman while she is pregnant or six weeks after the end of her pregnancy owing to any reason connected to the pregnancy or its care, excluding unintentional causes. Because it has the potential to save the lives of millions of women who are of reproductive age, maternal health is a global priority. Maternal mortality is a problem in the majority of developing nations despite efforts to improve maternal health care services (Kifle, Dereje, Telake, Yalemzewod, and Yayehirad, 2017).

The most prevalent immediate causes of maternal mortality include excessive bleeding, infections, high blood pressure, botched abortions, and difficult deliveries. Maternal mortality is also influenced by indirect factors such anemia, malaria, and heart disease. One of the most crucial topics in public health for a long time has been maternal and child health (MCH). During the 1990s, the worldwide community made significant efforts to decrease the morbidity and mortality of new mothers and infants. Currently, there are both Millennium Development Goals (MDG) and Sustainable Development Goals (SDG) (MDG) that support the health and welfare of women and children are highlighted (Saturno-Hernández et al, 2018). The first major measures for improvement were enhancing access to health services, the number of births in hospitals, and the number of births handled by medical professionals staff. Although there was a comparable drop in maternal and newborn morbidity and death as a result of the improved accessibility (Saturno-Hernández et al, 2018).

Interventions on Maternal Neonatal and Child Health

The two major problems in global health continue to be maternal and new born mortality. Even though the Millennium Development Goals

era saw significant advancement, every day, about 810 women still pass away from issues associated with pregnancy or childbirth. 94% of these deaths occur in LMICs, which are nations with low and intermediate incomes, proving that this is particularly true there. Additionally, about 7000 newborns every day die, accounting for 47% of all fatalities among children under the age of five. Of these deaths, 36% take place during the first 24 hours of delivery and 73% do so within the first week. Despite the fact that increasing prenatal care (ANC), skilled birth attendance, and postnatal care for both the mother and child have been shown to be beneficial can reduce high rates of maternal and neonatal mortality, data from current surveys still show that these interventions are not having a significant impact (Hák, Tomáš, Svatava, and Bedřich, 2016).

Effectiveness of the PHC Intervention Packages in Improving MNCH

All MNCH initiatives aim to achieve the sustainable improvement of maternity, neonatal, and child health (MNCH). However, projects with special funding that are subject to evaluation often have a relatively brief lifespan of five years or fewer. country's population and health Surveys may reveal long-term national improvements in children's health, but it can be It is difficult to identify the programming components that have led to these advancements in MNCH (Aregbeshola, Bolaji, and Samina, 2017). When analyzing the intervention that will be employed, it is impossible to make any firm statements about the caliber of the evidence, the size of the effect for any chosen intervention for implementation strategy, or the intended use of any given intervention or implementation strategy. This is because the following considerations will be made when implementing the intervention: (1) the kinds of therapies utilized; (2)

how they were used; and (3) the outcome measures employed to evaluate results.

It is also outside the purview of this study to address the crucial problem of how to most effectively include interventions into a well-balanced package of services such that the demands for adopting one intervention do not exceed those for implementing another. In addition, it is necessary to consider ways to enhance health systems more generally in order to better encourage the adoption of PHC treatments that are effective in enhancing child health. According to the data, 77% of all infant fatalities occur in regions with skilled birth attendance coverage of 50% or even less. Neonatal deaths can be prevented by taking measures to reduce maternal fatalities. Simple treatments like washing the umbilical cord and promoting early and exclusive breastfeeding can greatly lower the incidence of baby infections during sanitary deliveries with skilled delivery attendance. Furthermore, providing delivery staff with fundamental tools trainings is a low-tech, low-cost method to lower new born mortality. The major causes of new born fatalities are low birth weight (LBW) and complications from preterm birth, with preterm birth requiring more complex care. When low-cost therapies like kangaroo mother care (KMC) are adopted, new born mortality is decreased by 51% (Kumar, Sanjiv, Neeta, and Saxena, 2016).

Method of Data Collection and Analysis

Data was obtained using a structured questionnaire (as research data tool) administered for collection of documented interventions that are specifically targeted at reducing maternal neonates and child mortality. The measurable documented study intervention input data taken from the various PHCs were in the form of number of pregnant

women, Neonates and children that benefited from specific relevant interventions for each of the intervention types.

In the same vein, the measurable documented study intervention output data taken from the various PHCs were in the form of number of pregnant women, Neonates and children that that died during the intervention period for each of the intervention types. The study data was collected for ten (10) years period from the study baseline year (Intervention period – 2012 - 2021).

The result outcome (output) of the interventions were correlated against the intervention inputs for each of the intervention types in each of the PHC in the study area. Again, the variabilities of relationships between input and outcomes among the individual PHCs based on their correlation coefficient was also analysed. Subsequently upon that, the overall intervention input/output was summarised and also subjected to correlation analysis to arrive at overall correlational coefficient for each of the intervention type rendered in all the PHCs.

Analysis of cummulative Intervention data for all the PHCs

Summary of pre and post intervention mortalities for the various mortality groups in PHC centers in Kaltungo local government, Figure 1.0 depicts the Pictorial summary of the Mortalities in the various mortality groups. The intervention baseline year being 2012, while the intervention period is from 2012-2021, as a result of the interventions, there was an overall reduction in mortality rate of 21.03%. This is made up of individual changes in various mortality groups; There were reductions in Neonatal mortality by 48.61%, reductions in Maternal mortality by 25.03%, reductions in Under-five mortality by 10.95%, however, there was an observed increase in Perinatal mortality ratio by 4.53%.

Table 1.0 Summary of Pre/Post Intervention Mortalities

Mortality Category	Pre-Intervention (2002 ≤ 2012 <)	Post-Intervention (2012 < 2021 ≤)	% reduction in mortality
Maternal Mortality	11049	8283	25.03
Perinatal Mortality	3374	3527	-4.53
Neonatal Mortality	1870	961	48.61
Under- Five Mortality	950	846	10.95
	17243	**13617**	**21.03**

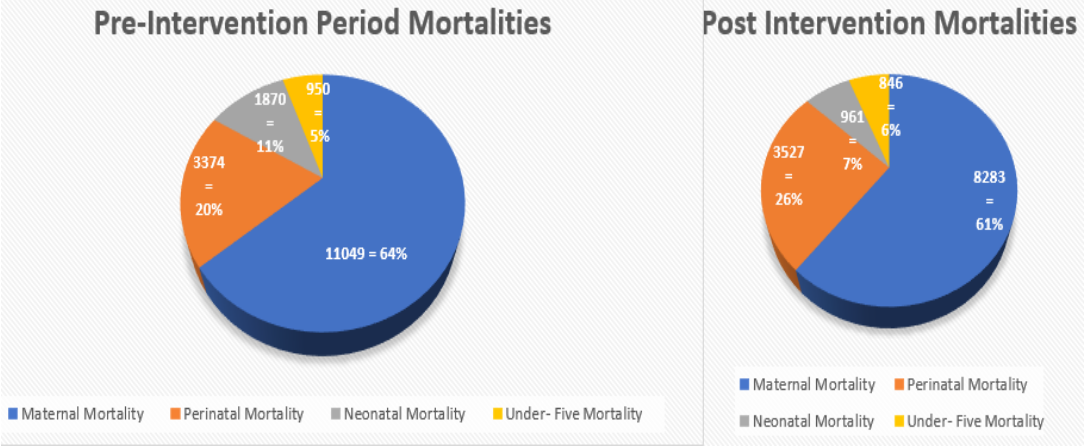

Figure 1.0 Chart of Pre/Post Intervention Mortalities

Table 1.1 shows the summary of intervention packages for all the PHCs in Kaltungo LGA. From the table, Interventions for reducing maternal mortality are categorised into four main groups: malaria control, administration of haematonics, Posnatal care and disease prevention/immunization. The result for matarnal mortality category shows that only malaria control (r = -0.74, p-value = 0.015) and administration of haematonics (r = 0.55, p – value = 0.036) are ineffective. Interventions for disease prevention (r = 0.86, p-value = 0.001) and that of post natal care (r = 0.68, p-value = 0.031) were ineffective.

		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Malaria control	MC - Mortality	100	130	144	150	127	100	97	99	137	116	120	107	52	107	87	99	40	62	36	41
Haematonics	HAE -Mortality	80	77	73	72	71	77	74	75	60	74	103	46	160	83	165	244	156	209	360	421
Prevention	PRE - Mortality	543	553	543	540	510	500	372	482	493	487	91	116	219	254	236	238	474	378	1158	394
Post-Natal Care	PNT - Mortality	1070	1022	1008	390	300	48	92	54	40	69	112	106	147	117	101	308	205	264	503	164
Focus ANC	FANC - Mortality	100	210	137	78	32	47	85	210	43	46	109	101	107	88	173	251	252	178	193	325
Breast-feeding	BF - Mortality	244	211	674	249	396	157	200	85	96	74	61	50	206	57	297	242	229	220	186	202
Infection	IF - Mortality	0	0	0	106	480	174	160	260	320	370	96	106	230	94	109	65	41	99	38	83
Complimenary Feeding	CF - Mortality	120	140	100	80	90	60	50	120	100	90	186	117	148	73	82	37	55	43	37	68

Table 1.1: Trend of Mortality Analysis in all PHC's Over 20 years

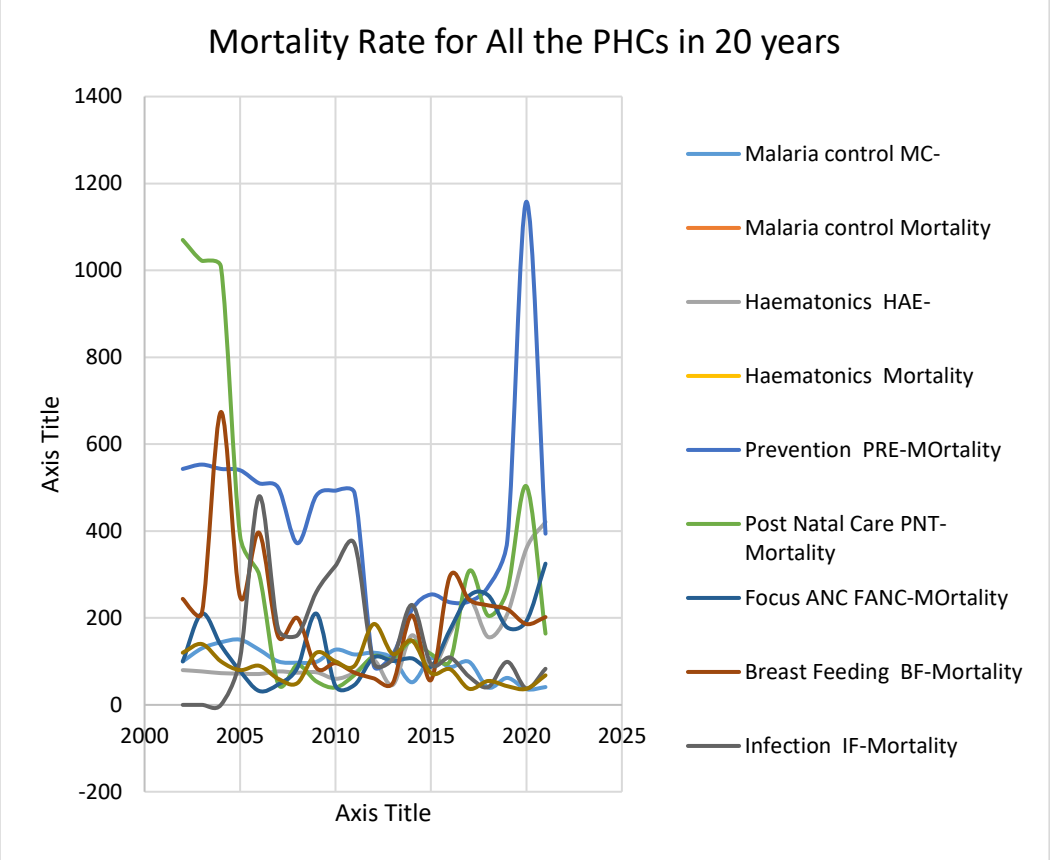

Figure 1.1: Mortality trend analysis charts of all age groups in all PHCs over 20 years

Figure 1.1 shows the intervention trend chart for both pre intervention and inverventon period for all the intervention types accross all PHCs in the study area. while fig 1.1 shows mortality trend chart for Maternal, neonates and children for both preintervention period (2002 - 2011) and intervention periods(2012 - 2021). As seen in figure 1..2, prevention control recorded the highest number of intervention beneficiaries during the intervention periods. However, despite this high increase in prevention contol intervention, MCH Mortalities (fig 1.1) does not reduce during the intervention period as there is no downward movement if the chart trendline for desease prevention control.

The second intervention that recorded high number of beneficiaries is as depicted in fig 1..2 is Haematinics during the intervention Period (2012 - 2021). However, although haemotinics realted mortalities during the preintervention period ia significantly lower than mortalities during the intervention periods, it can be see from the cart that mortalies relative to heamotinics are inconsistent with increasing number of haenotinics related baneficiaries.

		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Malaria control	MC - Intervention	3	2	4	6	9	3	8	6	5	7	104	50	31	49	632	613	1210	1710	2646	3306
Haematinics	HAE - Interventio	5	6	14	15	14	16	17	16	13	14	488	484	1310	1679	2470	3470	4888	4490	4471	3709
Prevention	PRE - Intervention	0	0	0	0	0	0	0	0	0	0	2361	2879	2366	3819	4905	5810	5665	5826	13393	10802
Post-Natal Care	PNT - Interventio	0	0	0	0	0	0	0	30	38	40	648	593	1173	1422	1483	2187	2428	1965	2560	2500
Focus ANC	FANC - Interventi	0	0	0	0	0	0	7	3	6	4	271	199	539	650	1217	2295	3180	2740	2241	2122
Breast-feeding	BF - Intervention	297	24	67	86	234	766	246	533	321	275	506	338	453	755	1115	1106	1163	1171	1299	1070
Infection	IF - Intervention	0	0	0	0	0	0	0	11	14	15	66	55	202	807	1675	1641	1520	1372	1342	1287
Complimenary Feeding	CF - Intervention	120	220	90	210	360	210	140	170	70	110	1808	1272	1554	1440	1804	1348	869	945	617	584

Table 1.2: Trend of Intervention in all PHC's over 20 Years

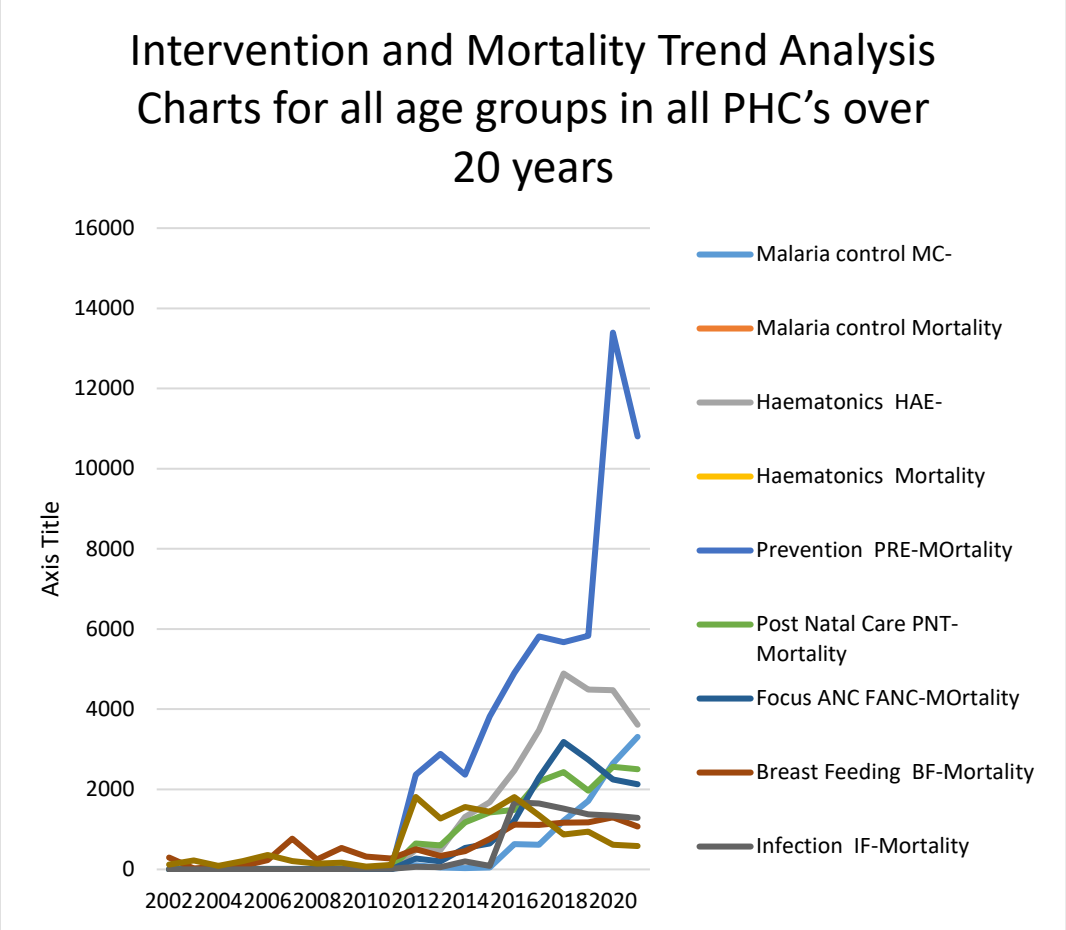

Figure 1.2: Intervention and Mortality Trend Analysis Charts for all age groups in all PHC's over 20 years

Cummulative PHCs Intervention Packages Effectiveness Analysis Table

Mortality category	Intervention type	Input/Output	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	r	p-value	α	Inference
Maternal Mortality	Malaria control	Intervention	104	50	31	49	632	613	1210	1710	2646	3306	-0.74	0.015	0.05	Effective
		Mortality	120	107	52	107	87	99	40	62	36	41				
	Haematonics	Intervention	488	484	1310	1679	2470	3470	4888	4490	4471	3709	0.67	0.036	0.05	InEffective
		Mortality	103	46	160	83	165	244	156	209	360	421				
	Prevention	Intervention	2361	2879	2366	3819	4905	5810	5665	5826	13393	10802	0.86	0.001	0.05	Ineffective
		Mortality	91	116	219	254	236	238	474	378	1158	394				
	Post-Natal Care	Intervention	648	593	1173	1422	1483	2187	2428	1965	2560	2500	0.68	0.031	0.05	Ineffective
		Mortality	112	106	147	117	101	308	205	264	503	164				
Perinatal Mortality	Focus ANC	Intervention	271	199	539	650	1217	2295	3180	2740	2241	2122	0.79	0.007	0.05	Ineffective
		Mortality	109	101	107	88	173	251	252	178	193	325				
	Breast-feeding	Intervention	506	338	453	755	1115	1106	1163	1171	1299	1070	0.70	0.024	0.05	Ineffective
		Mortality	61	50	206	57	297	242	229	220	186	202				
Neonatal Mortality	Infection	Mortality	66	55	202	807	1675	1641	1520	1372	1342	1287	-0.56	0.092	0.05	Ineffective
		Mortality	96	106	230	94	109	65	41	99	38	83				
Under- Five Mortality	Complimenary Feeding	Intervention	1808	1272	1554	1440	1804	1348	869	945	617	584	0.65	0.04	0.05	Ineffective
		Mortality	186	117	148	73	82	37	55	43	37	68				

Ho	r = 0
Ha	r ≠ 0
α	0.05

Table 1.3 Cummulative PHCs Intervention parkages of Effectiveness Analysis

TIJSHMR
ISSN: 2373-1340

1. Interventions for reducing maternal mortality are categorised into four main groups: malaria control, administration of haematonics, Posnatal care and disease prevention/immunization. The result for matarnal mortality category shows that only malaria control (r = -0.74, p-value = 0.015) is effective and administration of haematonics (r = -0.67, p – value = 0.036) is ineffective. Interventions for disease prevention (r = 0.86, p-value = 0.001) and that of post natal care (r = 0.68, p-value = 0.031) were ineffective.
2. Interventions for reducing Perinatal mortality are categorised into two main groups: Focus AnteNatalmalaria and breast feedings. The result for Neonatal mortality category shows that Focus AnteNatal is Ineffective (r = 0.79., p-value = 0.007) and Breasat feedings (r = 0.70., p – value = 0.024) are Ineffective.
3. Interventions for reducing Neonatal mortality is Infection Control. The result for Neonatal mortality category shows that Inffection control is Ineffective (r = -0.56., p-value = 0.05) is Ineffective.

		AT Shamaki P	Awak PH	Baule G.	Gujuba PH	Kalorgu	`Kalting	Lakidir I	Ture B. P	Wange I	Yiri PHC
Maternal	Malaria control	Ineffective	Effective	Ineffective	Ineffecctive	Ineffectiv	Ineffective	neffective	Effective	Ineffectiv	Effective
	Haematonics	ineffective	Ineffectivve	Ineffective	Ineffecctive	Ineffectiv	Ineffective	neffective	Ineffective	Ineffectiv	Ineffective
	Prevention	effective	Ineffectivve	Ineffective	Ineffecctive	Ineffectiv	Ineffective	neffective	Ineffective	Ineffectiv	Ineffective
	Post-Natal Care	Ineffective	Ineffectivve	Effective	Ineffecctive	Ineffectiv	Ineffective	neffective	Ineffective	Ineffectiv	Ineffective
Perinatal	Focus ANC	Ineffective	Ineffectivve	Effective	Ineffecctive	Effective	Ineffective	neffective	Ineffective	Ineffectiv	Ineffectiv
	Breast-	Ineffective	Ineffectivve	Ineffective	Ineffecctive	Ineffectiv	Ineffective	Effective	Effective	Ineffectiv	Ineffective
Neonatal	Infection	Ineffective	Effective	Ineffective	Ineffecctive	Ineffectiv	Effective	Ineffective	Ineffective	Effective	Ineffective
Under-Five	Complimentary Feeding	effective	Ineffectivve	Ineffective	Ineffecctive	Ineffectiv	Ineffective	neffective	Ineffectiv e	Effective	Ineffective

Table 1.4 Geo-Demographic Analysis of Effectiveness

Interventions for reducing Under five mortality is Complemantary feedings. The result for Under five mortality category shows that Inffection control is Ineffective (r = 0.65., p-value = 0.04) is Ineffective.

- The shows geo-demographic analysis of effectiveness of interventions across the 10 PHC's over the period of 10 years.
- Based on the Geo-demographic distribution, Malaria control and Infection control have
- The highest number of effectiveness across the PHCs:

Malaria control is effective in Awak, Ture-Balam, and Yiri PHCs while Infection control is effective in Awak, Kaltin and Wange PHCs. FocusAnte-Natal, Breast Feeding and Complimentary feeding interventions are effective in two PHC's each:
Focus ANC intervention is effective in Baule Gari and Kalorgu PHC while; Breast Feeding intervention is Effective in Lakidir and Ture Balam PHC and; Complementary feeding/nutrition is effective in AT Shamaki and Wange. While some of the PHCs have the lowest number of effectiveness Like: Prevention/immunization is effective in ATshamaki and Post-Natal Care is effective in Baule –Gari, administration of Haemotonics intervention is ineffective in all of the PHCs.

Discussion of Findings

Nigeria accounts for more than 34% of all material deaths worldwide. In contrast to the 1 in 4900 lifetime risk in wealthy countries, a Nigerian woman has a 1 in 22 lifetime risk of dying during pregnancy and after an abortion. Nigeria accounts for more than 34% of all material deaths worldwide. In contrast to the 1 in 4900 lifetime risk in wealthy countries, a Nigerian woman has a 1 in 22 lifetime risk of dying during pregnancy and after an abortion.

Summary of Findings

The summary of Cummulative intervention packages for all the PHCs and that of each of the PHCs in Kaltungo LGA. From table A1, of the eight intervention types inputs that were correlated against there measurable outcomes, three intervention types (equivalent to 37.7% of the total number intervention types): malaria control, administration of haemotonics and desease and Infection control have negative correlation coeficients (r) of -0.74, -0.55 and -0.56 respectively.

This means that by verture of correlation coeficients of the set of interventions/outcomes for all the PHCs over ten years period (2012 to 2021), only two intervention types (Malaria control and Administration of Haematonics) are signinficantly effective in reducing maternal mortality in the PHCs over the study period. In the same vein, neonatal mortality reduces due to infection control intervention type. However by verture of the p-values of the eight (8) sets of interventions/outcomes for all the PHCs over ten years period (2012 to 2021) at level of significance of 0.05, only two intervention types (malaria control – p-value = 0.015 and administration of haemotonics – p-alue = 0.036), equivalent to 25% are signinficant enough to be regarded as effective in reducing maternal mortality. On other words, all intervention packages for reduting Perinatal mortality, neonatal mortality and under 5 mortality are not significantly effective as level of significance of 0.05. The analised data shows divergent variabilities of effectiveness of intervention types from PHC to PHC. The Table 5.1 below show list of intervention types that were effective in reducing mortalities in their respective PHCs within the intervention period.

Conclusion/Recommendations

Ten years (2012 to 2017) documented intervention data (Intervention Input) were grouped into intervention types against Mortality age

groups (Intervention outcomes) which they were designed to reduce mortality. Each of the intervention type's Input was correlated against the intervention outputs for all the PHCs and for each PHC. From the corelation coeficients (r) results obtained, only two out of eight (25%) of intervention types (Malaria control and Administration of Haematinics) are signinficantly effective in reducing maternal mortality in the PHCs over the study period. In the same vein, neonatal mortality reduces due to infection control intervention type. However by verture of the p-values of the eight (8) sets of interventions/outcomes for all the PHCs over ten years period (2012 to 2021) at level of significance of 0.05, only two intervention types (malaria control – p-value = 0.015 and administration of haematinics – p-alue = 0.036), equivalent to 25% are signinficant enough to be regarded as effective in reducing maternal mortality. On other words, all intervention packages for reducing Perinatal mortality, neonatal mortality and under 5 mortality are not significantly effective at level of significance of 0.05.Invention corelated with outcome and inference was drawn from statistical analysis as effective or ineffective. The research recommend that:-

i. Interventions in all the PHCs in Kaltungo LGA should be reengineered and intensified to achieve the ultimate goal of significantly reducing maternal neonatal and child mortality.

ii. Further studies should be carried out to evaluate the structure and process of interventions with a view to understanding the adequacy and efficiency in reducing the high mortality rate of pregnant women, neonates and children.

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