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School Health Services and Millennium Development Goals

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ABSTRACT

Background: School health services are geared at preventing, protecting and improving the health status of the school population to enable them benefit fully from the school system. The year 2015 is the target date for the attainment of the eight Millennium Development Goals adopted by world leaders at the Millennium Summit in September 2000. Coverage of immunisation against measles and prevalence of underweight children under five years are both indicators for tracking attainment of Millennium Development Goals (MDGs) 1 and 4 – eradicate extreme hunger and poverty and reduce child mortality.

Aims and Objectives: The objective of this study was to determine the immunization and nutrition status as well as general well-being of primary school children through pre-enrolment medical examination.

Methods/Study Design: A rural community in southern Nigeria was chosen for this pilot study, which was cross-sectional in design and conducted in 2010. The study instrument was a pre-enrolment medical examination form adopted from that provided by the State Ministry of Health. All newly enrolled school children in all three primary schools in the community were examined by medical doctors who completed the section on physical examination of the form. Nurses and volunteer assistants took the heights and weights of the children. Personal details and medical history of the examined children were thereafter obtained from the parents/guardians who were requested to give the dates their children received routine immunization, with photocopies of the immunization record where available. The heights and weights of the children were used to assess nutritional status by comparing with growth standards from the WHO Multicentre Growth Reference Study. Data were analysed using Epi Info version 3.5.1.

Results/Findings: A total of 95 children were examined males being 54.7% while females were 45.3%. Medical history was provided for 46 children, 54.3% of which had evidence of completing routine immunization including measles. Calculation of height-for-age revealed stunting and severe stunting in 16.3% and 18.6% of children respectively. Of those whose weights-for-age were calculated, 2.6% were underweight while 7.9% were severely underweight. Scarification marks were found on the abdomen of 34.7% of the children examined, denoting traditional treatment for a previous episode of severe febrile illness such as malaria. Splenomegaly was detected in 9.5%.

Study Limitation: The study was limited by the poor response from parents and guardians in providing personal details and medical history from examined children.

Conclusion: School health services can provide data for monitoring, evaluating and improving child survival strategies beginning at the community level.

Keywords: School health services, MDGs, immunisation, nutrition

Introduction/Background

School health services are geared at preventing, protecting and improving the health status of the school population to enable them benefit fully from the school system. The school provides a unique opportunity for health education and a means of establishing a firm foundation for the healthy habits of the future adult population of any nation. An objective of Nigeria's National School Health Policy is coordination of community, governmental and non-governmental efforts towards achieving a child friendly school environment.¹ The activities to be carried out in a well organized school health programme include²:

- i. Pre-enrolment medical examination;
- ii. Periodic medical inspection;
- iii. Health Education;
- iv. Maintenance of sanitary condition of the school environment;
- v. Pre-employment medical examination of teachers and food vendors including cooks;
- vi. Provision of first aid materials;
- vii. Maintenance of sickness absence records as well as collection of data on medical examinations

Some of the benefits of the school health programme will be the early detection of physical and psychological defects that may impede learning and the tracking of immunization defaulters.²

In 2000, the global community made a historic commitment to improve health and other socio-economic indicators of the world, predicated on eight millennium development goals which the world leaders were committed to achieve by 2015. World leaders concretised what people in the development world had been thinking for decades into time-bound goals that reflect a vision for the future representing a world with improved standard of living, reduction in hardship, eliminating threats to human well-being, a better and safer environment, fair and easier access to opportunities.

Nigeria has received a lot of support from donor agencies for the improvement of the health sector but the results fall short of expectation so far. According to the 2008 Nigeria Demographic Health Survey, the country's maternal mortality ratio is still as high as 545 per 100,000 live births while routine immunization coverage is as low as 23%.³ Lack of accountability and transparency, poor coordination of donor support and dysfunctional health systems have contributed to the situation.⁴ The preponderance of vertical programmes that result in disjointed services cause negative impact on horizontal programmes by distracting health workers especially when financial incentives are provided.^{5,6} A number of studies have demonstrated that Millennium Development Goals will be a mirage for low-income countries if their health systems are not strengthened.^{7,8,9} Some developing countries like Chile, Malaysia and Thailand which showed sustained political commitment to primary health care have been experiencing great improvements in health.¹⁰ Primary health care is not just essential to the attainment of Millennium Development Goals 3,4 and 5 but all the other five goals in addition. Primary health care services such as

school health facilitate the attainment of Millennium Development Goal 2 whose target is to ensure that by 2015 children everywhere, boys and girls alike, will be able to complete a full course of primary schooling. School health services also facilitate the tracking of indicators for goals 1 and 4.¹¹

Goal 1: Eradicate extreme poverty and hunger

Target 1C: Halve, between 1990 and 2015, the proportion of people who suffer from hunger.

Indicator 1.8: Prevalence of underweight children under five years of age

Goal 4: Reduce Child Mortality

Target 4A: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate

Indicator 4.3: % of 1 year old immunised against measles

Aims and Objectives

The objective of this study was to determine the immunization and nutritional status, as well as general well-being of primary school children through pre-enrolment medical examination.

Methods/Study Design

A rural community in southern Nigeria was chosen for this pilot study, which was cross-sectional in design and conducted in 2010. The study instrument was a pre-enrolment medical examination form adopted from that provided by the State Ministry of Health.

Advocacy to the Local Government health and education officials and authorities of the

concerned schools was conducted in order to solicit their cooperation in the exercise. Written permission was obtained from the Local Government health officials before commencement of the programme. There was no ethical review committee available in the study location at the time of the study to submit an application for ethical approval.

A team of two doctors, two nurses and two volunteer assistants were constituted and appropriate dates for the pre-enrolment medical examination were chosen. All newly enrolled school children in all three primary schools in the community who made themselves available were included in the study. The doctors examined the children and completed the section on physical examination of the form. The nurses and volunteer assistants took the heights and weights of the children. Thereafter, a copy of the form with the name and class of each child, along with the date of the examination, was given to the children to take home for their parents/guardians to fill their medical details including dates routine immunizations were taken, and provide a photocopy of the child's immunisation record. Children were given plastic plates as incentive for returning forms and those who were identified as having health problems were given notes to their parents/guardian with advice for further action.

Data from completed forms were analysed using Epi Info version 3.5.1. Frequency tables were obtained for variables namely: name, school, class, age, sex, height, weight, immunisation status, and any significant abnormal finding. Nutritional status was assessed using the growth standards from the WHO Multicentre Growth Reference Study.¹² Data collected on age, height and weight enabled the authors to measure nutritional status by calculating the height-for-age and the weight-for-age of the children.

Results/Findings

A total of 95 children were examined, males being 54.7% while females were 45.3%. Their ages ranged from one year to 13 years. All classes from kindergarten to primary six were represented. Medical history was provided for only 46 children. Of these, 54.3% had evidence of completing routine immunization including measles. Table I gives details of the immunization status of the children. Weight-for-age could be calculated for only 39 children. This was because 3 children did not have their age indicated while 4 were above the cut off age of 10 years for weight-for-age growth standards. Of the 39 children, 1 child (2.6%) was underweight having a Z-score below minus two standard deviations (-2 SD), while 3 (7.7%) were severely underweight with Z-scores below minus three standard deviations (-3 SD). Forty-three children had their height-for-age calculated 16.3% of which were stunted (short for age) with a Z-score below minus two standard deviations, while 18.6% were severely stunted having a Z-score below minus three standard deviations. Nutritional status was not assessed for the 49 children whose parents did not return their forms, as that made it impossible to determine their exact age from their date of birth.

Scarification marks were found on the abdomen of 34.7% of the 95 children examined, denoting traditional treatment for a previous episode of severe febrile illness such as malaria. Splenomegaly was detected in 9.5%. Significant abnormal findings on examination are given in Table II.

The study was limited by the poor response from parents and guardians in providing personal details and medical history from examined children. However, this pilot study has shown the need for proper sensitization of parents and guardians to comply with the request for medical history and immunization

record of children when plans for scaling up are being made. Eye tests were done but since many of the children were not yet able to read the alphabets on the Snellen's chart, the findings were not included in this study.

Discussion

Primary health care workers are expected to provide school health services in all communities in which they work. Statistics from the national study of the school health system in Nigeria in 2003 reveal that only 14% of head teachers indicated that pre-enrolment medical examination was mandatory in their schools and 30% of the students had low body mass index. Common causes of absenteeism included fever, malaria, headache, stomach ache, and respiratory infection.¹ Another study in Edo State which is also in the southern part of Nigeria by Ojogu revealed that primary school children were not provided with health examination services which made them vulnerable to preventable diseases.¹³

Anthropometric data collected during the 2008 Nigeria Demographic health Survey indicate that 23% of children under five years are underweight, 9% are severely underweight, 41% are stunted and 23% are severely stunted.³ They used the same growth standards from the WHO Multicentre Growth Reference Study¹² as was done in this study. The nutritional status of the school children in this community studied appear to be better than what is obtained in Nigeria as a whole even though this study included children beyond the age of five years. Geographical and cultural differences could have also played a role in this study. According to the United Nations Children's Fund (UNICEF) manual on Child Friendly Schools, geographical and cultural differences were also observed in the quality of schooling for both males and

females in Nigeria.¹⁴ Assessment of height through school height census can be a unique tool for locating the areas of greatest poverty and need in a country.¹⁵

As the school is the most common means through which every society prepares its young for the future, establishing efficient school health services is crucial for addressing several gaps in child health.^{15,16} While surveys in Ghana and Tanzania reveal the potential some school health programmes such as provision of anthelmintics and micronutrient supplements have for improving the health and education of school children,¹⁷ South Africa uses the health promoting schools movement to address the historical inequities brought on by several years of apartheid policies.¹⁸ In Brazil, child stunting was used as an indicator for assessing socio-economic disparities.¹⁹

Insufficient staff training, lack of commitment by teachers and community members, competing needs for the time of staff as well as language barriers could hinder efforts at promoting nationwide scale up of effective school health services.²⁰ The United Nations Educational, Scientific and Cultural Organization (UNESCO) however, promotes the utilization of school health education to achieve the objective of education and health for all.²¹ Improving immunization and nutrition requires a concerted effort in rendering effective primary health care services. As the health system gets strengthened, the effects will spill over to improve other aspects of child health such as breastfeeding, control of diarrhea and provision of food supplements. Lind and Smith analysis of community health nursing in Canada, described school health as an area of significant public health investment with the potential of strengthening health systems,²² even though other authors have identified that in European countries the provision of these

services varies with political and institutional cultures.²³

Conclusion

The findings from this study provide a baseline for monitoring the health status of school children and evaluating several of the child survival strategies being implemented in this community. Advocacy for prevention and early treatment of malaria, improved nutrition, as well as routine immunisation is highly recommended.

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Table I: Immunisation status of school children

Immunisation status	No. (%)
Immunisation record available and complete including measles immunization	19 (41.3)
Immunisation record available but incomplete	2 (4.3)
Immunisation record not available but complete according to dates given	6 (13.0)
Immunisation record not available but incomplete according to dates given	5 (10.9)
Immunisation status not indicated	14 (30.4)
Total	46 (100.0)

Table II: Significant abnormal findings obtained on examination of school children

Significant abnormal finding	No. (%)
Poor oral hygiene	5 (5.3)
Lymphadenopathy	13 (13.7)
Abdominal scarifications	33 (34.7)
Splenomegaly	9 (9.5)
Respiratory Tract Infection	1 (1.1)
Down's syndrome	1 (1.1)
Conjunctivitis	1 (1.1)
Sickle Cell Disease	1 (1.1)
Candidiasis	2 (2.1)