*Annals of African Medicine*
*Vol. 6, No.4; 2007:142 – 156*

# INVITED ARTICLE

## CSE Global Theme Issue on Poverty and Human Development

# Effects of Poverty on Child Health and Paediatric Practice in Nigeria: An Overview

**H. Ahmed**

Department of Paediatrics, Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria
*Reprint requests to: Professor H. Ahmed, Department of Paediatrics, Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria. E-mail: profhahmed@yahoo.com*

**Introduction**

Child health, pediatric practice and research anywhere in the world are greatly affected by environmental circumstances – including level of poverty, which is substantially affected not only by the amount and nature of resources available, but also by politics.[1-6] The political content of medicine has long been recognized. The great 19th century German pathologist –Rudolf Virchow (1821 – 1902) once remarked that ``medicine is a social science and politics is nothing but medicine on a larger scale".[4,7] In recent years, Hendrickse (1991)[3] explained that improved health care for children depends on political will, and it seems idle to expect significant and lasting improvement in child health in countries where unjust and unstable political institutions frustrate the development of agriculture, industry, housing, safe water supplies, education, communication and medical services that together, determine a country's potential for health.[3] Children are frequently the unrecognized victims of unjust political regimes, and it often takes courage as well as knowledge and ability to try to promote their heath and well-being.[3]

Sanders (1985)[2] was of the view that improvement in health care could only be made by popular progressive political struggle, which must involve health workers, against the international forces which cause underdevelopment. Nigerian peadiatricians, such as Azubuike, (2007)[5] noted that lack of adequate resources is a very serious constraint on the development of health services in many developing countries and this is worsened by the little equity in most developing nations. The welfare of children tends to reflect this unjust and unstable political situation, which is found in many of the tropical and subtropical countries. It has been observed that at local and national level, political considerations frequently lead to inappropriate expenditure and initiatives to promote health. For political reasons expensive buildings and equipment, even in the absence of staff to use them, may take precedence over maternal and child health services or effective immunization programmes allowing serious, common, but vaccine preventable childhood disease, like neonatal tetanus, measles, tuberculosis and poliomyelitis to cause untold misery and death in child population.[3,5] Although very low budgetary allocations to health service in those countries is a reflection of national poverty, health is accorded lower priority than it actually deserves.[5] A recent World Health Organization (WHO) document (2002)[6] has thrown more light on the complex issues of national poverty, poor budgetary allocation to health and the disparities in the per capita expenditure on health between the rich nations of the world and the developing countries of the tropics.

There is no region of the world that is free from poverty,[8-13] but the level, depth and extent of the poverty is more severe and less relenting in sub-Saharan Africa than in any other region of the world[14,15] Africa is devastated by foreign debt,[14] economic reversal[15] and HIV/AIDS.[16] Consequently, it is the only region of the world whose human development index (HDI) has stagnated in the last 3 decades.[14,15]

Peadiatricians, as physicians who assume responsibility for children's physical, mental and emotional progress from conception to maturity, are also concerned with social and environmental influences which have major impact on health and well-being of children and their families, as well as with particular organ systems and biologic processes.[3,4,17] Peadiatrics is unique among clinical disciplines in adopting advocacy role for its patients.[18.] Those concerned with peadiatrics need to become vigorous advocates of child health and legislation which favors mothers and children. This requires persistent education, persuasion, and in political terms, lobbying of those in control of budgetary priorities and national policy.[4,7]

This review comprises of two major sections.

The first half of the review focuses on the current concepts on the effects of poverty on child health and development, and includes a comparative analysis of the various situations in industrially developed countries and the developing world-with special reference to sub-Saharan Africa and Nigeria. The second half of the article highlights the effects of poverty on pediatric practice drawing mainly from the Nigerian experience.

The paper is aimed at providing information, advice and guidance that may begin to move those in power, particularly in Nigeria, toward implementation of policies which can genuinely reduce childhood poverty and improve child health. The article also aims at stimulating the pediatrician and other clinicians, especially in Africa, not only to read more on this complex and extremely broad subject, but also to participate actively in advocacy and in the search for practical ways to reduce socioeconomic inequalities and the effects of poverty on the health of African children.

## Effects of Poverty on Child Health and Development

There is currently a vast body of literature demonstrating the link of poverty and child health.[1-24] Much of the burden of child mortality in developing world lies within poor countries crippled by the burden of external debt, and the consequences of structural adjustment programmes and stagnant economies.[20] Furthermore, the importance of inequality and inequity (defined as unfair inequality)[13,20] in health is well recognized.[8-22] There is ample evidence that indicates that within each country – whether technologically developed or developing – children from the poorest families are most likely to die,[8,9,20] suffer more from the consequences of chronic malnutrition[11] exhibit higher morbidity rates,[8-22] and higher rates of impairment of cognitive development and have poorer educational performance and higher rates of drop-out from school.[8,9] Poverty and socioeconomic inequalities have impact on child health and survival through multiple pathways.[20,22] Children from poor families, all over the world,[8,9] and particularly those in the low-income developing countries have inadequate access to preventive, curative and emergency care.[8-22] It is not surprising, therefore, that the first goal of the Millennium Development Goals (MDG) is to eradicate extreme poverty and hunger, and that the global challenge on this goal is to halve, by 2015, the proportion of people living on less than one US dollar a day, and those who suffer from hunger.[23, 24]

While Africa's economic performance has seen some improvement since the mid-1990`s, large pockets of poverty remain in most countries including Nigeria and only a very few countries are likely to attain the MDG of halving poverty levels by 2015.[24] The difficulty in attaining the target of the first MDG is partly dictated by the magnitude of poverty in Africa. Current estimates given by the African Development Bank (ADB), as at 2007, is that close to half of Africa's population of over 800 million lives in absolute poverty – ie, living on less than one US dollar per day. [24.] While in absolute terms, Africa is not the world's poorest region, it is the only region where the number of the poor people is increasing significantly. Although the number of the poor people in developing countries has generally decreased, Africa has continued to have significant increase in the number of its poor. Africa, currently (in 2007) accounts for 30% of the poor in the developing countries, compared with about 16% of its share of the poor in the mid 1980`s.[24]

The net effect of this poverty, with regards to the main social indicators, is that Africa lags behind other developing regions. Thus, the crude death rate is about 15 per 1000 people compared with 8.0 for Asia and 7.0 for South America.[24] The current (2006) infant mortality rate for the African continent is about 82.5per 1000 live births, which compares unfavorably with the average of 58.3 for all other lower income countries. And only 7.4 for developed countries. Furthermore, only about 60% of the African population have access to health services compared to 80% average for developing countries as a whole. About 26% of all African children are severely malnourished or stunted.[24]

Furthermore the current United Nations Development Programme (UNDP) rating of 177 countries of the world, based on their human development index (HDI) – a measure incorporating aspects such as life expectancy, education and income levels, to estimate the quality of life-has classified all African countries, except four (Seychelles, Libya, Mauritius and Tunisia) in the bottom half of the 177 countries covered. Again of the 32 countries with the lowest HDI in the world, 30 are in Africa. These poor rankings highlight Africa's widespread poverty and low human capital development. Consequently, the challenge of reducing widespread poverty remains at the center of the development strategy of the continent.[24]

In order to clearly understand how poverty and the culture of economic deprivation surrounding it cause significant and pervasive impact on health and development of children, it is important to be conversant with how poverty is currently defined, measured and classified at the international level and within different countries. This entails understanding concepts and definitions of the relevant economic and human development indicators.

## Concepts and Definitions of Some Economic and Human Development Indicators

Definitions of some macroeconomic indicators, human development indicators, external sector economic indicators and poverty indicators are given in current publications of the African Development Bank.[24-26] For the purpose of this review a selection of the relevant indicators is made, and these concepts are explained below.

***Macroeconomic indicators***

Commonly mentioned, macroeconomic indicators of various countries in pediatric texts,[5] WHO[6] and UNICEF[27] documents include Gross Domestic Product (GDP), Gross Domestic Product per capita, Gross National Income (GNI) and GNI per capita. The peadiatrician should be conversant with these economic terminologies.

*Gross domestic product*

Measures the total final output of goods and services produced by a national economy excluding provisions for depreciations. It is a measure of the `size` of a given country's economy. GDP per capita of a country is defined as GDP in current United State (US) dollars ($) divided by the corresponding mid-year population of given country.

*Gross national income (GNI)*

Measures the total domestic and foreign value – added claimed by residents of a given country. It comprises of GDP plus net factor income from abroad which is the income residents of the country received from abroad for factor services less similar payments paid to non-residents who contribute to the domestic economy. The data on GNI is calculated using the World Bank Atlas method.[25]

*GNI per capita* figures are obtained by dividing GNI in current US $ by the corresponding mid-year population.

***Human development indicators[24,25]***

Indicators on demography, health, education, food security and labor force which are used to assess progress in social development are called human development indicators. Indicators such as crude death rate, life expectancy, infant mortality, under-five mortality, immunization coverage, prevalence of child malnutrition, ratio of infants with low birth weight (LBW) and maternal mortality rates are human development indicators that provide indirect measure of the physical well-being of the population. Similarly, human development indicators such as literacy rate among adults and school enrolment ratios give some indication of progress made in education.[24] Some of the human development indicators are also called environmental indicators,[24] These include access to sanitation, safe water and access to health services. Other human development indicators include daily per capita calorie, protein and fat supplies, and public expenditure on health and education. *Access to health services* is assessed by the percentage of the population that can reach appropriate local health services by the local means of transport in no more than one hour.[24,25] *Access to safe water* is measured by the percentage of the population with access to treated surface water or untreated, but uncontaminated water (eg, from springs, sanitary wells and protected boreholes).[24,25] *Adult illiteracy rate* is the proportion of the population 15 years of age and older who cannot with understanding read and write a short simple statement on everyday life.[24,25] *Under-five mortality rate* is the number of deaths of children between the ages of one and five years per 1000 live birth in a given year.[24,25] *Infant mortality rate* is the number of deaths of infants under one year of age per 1000 live birth in a given year.[24,25] *Crude birth rate* is the number of births per 1000 population in a given year. *Crude death rate* is the number of deaths per 1000 population in a given year.[24] *Life expectancy at birth* is the number of years a newborn infant would live if prevailing patterns of mortality at the time of birth were to stay the same throughout life.[24,25] *Maternal mortality rate* is the number of deaths of women from pregnancy related causes per 100 000 live births in a given year.[25] *Child immunization coverage* is the rate of vaccination coverage of children under one year of age with the antigens used in the universal immunization program.[24,25] Daily calorie supply per capita is computed from the energy equivalent of net food supplies in a country. Available supplies comprise domestic production, imports less exports and changes in stock Net supplies exclude animal feed, seeds used in agriculture and food lost in processing. Per capita supplies are calculated from the total supplies available for human consumption divided by total population.[24,25] *Prevalence of child malnutrition* is the percentage of children under 5 years of age defined as wasted (weight for height less than 2 standard deviation (SD) from the median)[11,24] or stunted (chronic malnutrition) if the z-score of height for age is more than 2 SD below the median of international reference.[24,25] *Public expenditure on education* is the percent of GNI accounted for by public spending on public education plus subsidies to private education at the primary secondary and tertiary levels.[24]

*Public expenditure on health as % of GDP*[24] is the percentage of GDP accounted for by public spending on health which consists of recurrent and capital spending from government budgets, external borrowings and grants and social health insurance funds. *External sector economic indicators*[25] indicators include external trade, balance of payments, external debt and debt service. For the purpose of this review definition of the external debt and debt service will suffice. *The total external debt* is the amount at any given time, of disbursed and outstanding contractual liabilities of residents of a country to non residents to repay principal with or without interest, or pay interest with or without principal. It is the sum of public and public –guaranteed short and long term debt, private non-guaranteed short and long term debt and the use of IMF credit.[25] *Total debt service* is the sum of principal repayments and interest actually made. It is debt service payments on short and long term debt (public and publicly guaranteed and private non-guaranteed) and use of IMF credit.[25]

*Poverty indicators[24]*

Many of the human development indicators mentioned can be used alone or in combination as poverty indicators also.[24] Poor access to health services, low immunization coverage, low calorie supply to the population, high prevalence of child malnutrition, low expenditure on health and education

are regarded by both economists and health experts as some indicators of poverty of a given country.[24]

Other single economic indicators used to assess poverty of a country include GDP, GNI per capita, national poverty lines, percentage of population living below one US dollar per day, percentage of the population living below 2 US dollars per day.[24] The use of GDP as a measure of poverty (or well-being) of the population of a country has recently been sharply criticized, because it does not always correlate income of the country with the well-being of its people.

*Human development index (HDI)*

Since 1990 HDI has been used to assess overall well-being of the population of a given country.[15] HDI looks beyond GDP to a broader definition of well-being of the people of a given country. The HDI provides a composite measure of three dimensions of human development. Living a long and healthy life (measured by life expectancy), being educated (measured by adult literacy and enrolment at primary, secondary and tertiary level), and having decent standard of living measured by purchasing power parity, PPP, income). The HDI (using these three measurements) is assessed on a scale ranging from 0 to 1. For example the United Nations Human Development reports of 2006[15] shows that Norway has the highest HDI among 177 countries assessed. Norway is ranked as No, 1, with a HDI of 0.965 and Niger ranked No.177 with HDI of 0.311. Nigeria's ranking is no 159 with HDI of 0.448. The HDI measures the average progress of a country in human development. The higher the HDI the more developed the country is and the more well off the people are.[15]

*Human poverty index (HPI-1)[15,24]*

Other indicators of poverty that use combination of factors include Human Poverty Index (HPI). The Human Poverty Index for developing counties (HPI-1) focuses on the proportion of people below a threshold level in the same dimensions of human development as the human development index. The HPI-1 measures severe deprivation in health by the proportion of people who are not expected to survive age 40 years; education is measured by the adult illiteracy rate; and a decent standard of living is measured by the unweighted average of people without access to an improved water source and the proportion of children under age 5 years who are underweight for age. HPI-1 is measured on a scale of 0 to 100. The higher the HPI-I the more economically deprived is the population. By looking beyond income deprivation, the HPI-1 represents a multidimensional alternative to the $1 a day (PPP US $) poverty measure. The HPI-1 value for Uruguay the least deprived developing country is 3.3 and is ranked No.1 among 102 nations surveyed,[15] while Mali has HPI-1 of 60.2 and is ranked as the worst (ie, ranked No 102). The HPI-1 value for Nigeria, according to the 2006 report,[15] is 40.6 and is ranked 76th among the 102 developing countries for which the index has been calculated. Indices such as HDI and HPI-1 have, however, been criticized as not very useful in measuring inequality and inequity among different socio-economic groups,[11,15] and do not incorporate degree of gender imbalance in these achievements.[15] Other poverty indices include the Gini index (or coefficient),[15,28,29] poverty gap index[15,30,31] household wealth index,[11] household wealth inequality quintiles[11] and World Bank Asset Index.[12] These indices are meant to capture inequalities in wealth distribution which HDI alone cannot show. The gender –related development index (GDI) was introduced in Human Development Report of 1995 and captures inequalities in human development indicators between men and woment.[15]

*The Gini index (or Coefficient)*[15,28,29] is a measure of inequality of income distribution (or consumption) or inequality of wealth distribution among individuals or households within a country. The index is expressed as a measure of the extent to which income deviates from a perfectly equitable distribution across all persons within a country. A value of 0 represents perfect equality; a value of 100 represents absolute inequality. The Gini coefficient was developed by the Italian statistician Corrodo Gini in 1912. The coefficient ranges between 0 and 1. O = corresponds to perfect equality – eg, every one has the same income, and 1 corresponds to perfect inequality eg, one person has all the income, while every one else has zero income. The *Gini index* is the Gini coefficient expressed as a percentage and is equal to the coefficient multiplied by 100. While most developed European nations have Gini index of 24% to 36%, the USA has a GINI index of over 40%-indicating that the United States has greater inequality of income distribution. [29.] Nigeria's Gini index of 50.6% is even worse and is one of the worst in Africa.[24]

*Poverty gap index (or ratio)*.[24,30,31] The measure reflects the depth of poverty as well as its incidence. Poverty Gap index (or ratio) is the mean distance below the poverty line ie, below $1 (1993 PPP US $) a day expressed as a percentage of the poverty line. The higher the ratio the poorer is the populace. Among the 34 African countries with data on poverty gap ratios,[24] the worst four countries are Zambia (62.2); Malawi (60.5), Nigeria (59.5) and Niger (54.6) in that order. The best four are: Tunisia (1.3), Morocco (1.3) Algeria (3.6) and Egypt (11.3). South Africa also has a fairly good ratio (12.6).

*Gender- related development index (GDI)*[15] This is, simply, HDI adjusted down for gender inequality. GDI measures the percentage achievement for females in the same dimension using the same 3 indicators as for HDI. The greater the gender disparity in the three human development indicators used to calculate HDI, the lower is a given country's GDI relative to its HDI. For example, Nigeria has a HDI of 0.448. It has a GDI of 0.443. The ratio of GDI divided by HDI multiplied by 100 gives GDI as % of HDI; ie, $0.443/0.448 \times 100 = 98.9\%$. Nigeria's GDI value is 98.9% of its HDI value. This is not good, because out of 136 countries with both HDI and GDI values, 81 countries have a higher ratio than Nigeria.[15]

***Definition of poverty and methods of measuring poverty***

Despite the vast amount of literature on the effects of child poverty on health and development there has been no consensus on how to operationalize poverty.[8] This is important because how we characterize the effects of poverty on child health and development depends on how the term poverty is defined.[8] Economic growth is typically defined as the increase in the value of goods and services produced by an economy. Traditionally this growth has been measured by the percentage rate of increase in a country's GDP. While the GDP is a key measure by which policy makers estimate how well the economy is doing, it provides little information on how individuals and families are faring.[32] Some of the disadvantages of the economic and human development indicators used for measuring poverty have been briefly mentioned. It is difficult to disentangle poverty from the low levels of education and other disadvantageous conditions common in poor families.[11-15] Nevertheless, I find the recent definition given by Wood[9] acceptable even if inadequate for defining childhood poverty. Poverty is defined as economic state that does not allow for the provision of basic family and child needs, such as adequate food, clothing and housing.[9]

*Poverty line, poverty level, poverty threshold and poverty measures*

These terms are used interchangeably in the medical[8,9] and economic literature.[24,25,32,33] The concept of poverty line was first entered into Encyclopedia Britannica in 1901 and connotes a level of personal or family income below which one is classified as poor according to governmental standards.[34]

*National poverty line.* This is the poverty line deemed appropriate for a country by its authorities. National estimates are based on population – weighted subgroup estimates from household surveys. The poverty rates are usually expressed as the percentage of the population living below the specified poverty line. Because the definition of poverty differs from country to country, this indicator is of limited use when conducting comparisons across countries.[28]

*International poverty lines.* The human Development reports of the UNDP and African Development Bank and other international agencies[15,24,25] use population living below US$2.00 per day to define poverty level and below one US $ a day to define extreme poverty. [24,25.] These data are adjusted for purchasing power parity (PPP) and therefore allow country comparisons because it is based on the same adjusted measure.[28] The PPP (Purchasing power parity) is the rate of exchange that accounts for price differences across countries, allowing international comparisons of real output and income. At PPP US $ rate as used in Human Development reports of the United Nations and ADB,[24,26] PPP US $1 has the same purchasing power in the domestic economy as $1 in the USA.[28] The international poverty lines have been accepted by international agencies for assessing human development and for comparisons of this, particularly among developing nations of the world. For the technologically developed countries these levels are exceedingly low and cannot be accepted for their development and welfare objectives,[8,35,36]

***Poverty line in the United States and other developed nations***

In 1995 the USA Federal Government poverty threshold was $12, 158 per family of three and $15 569 for a family of four.[8] Five years later (in 2000)[35] the poverty level of a family of three was an annual income of $13, 874; and for a family of four (with 2 children) the level was $17 603. In 2005 the official poverty level was $19 971 per year for a family of four.[36] Using these figures the amount of US $ per person per day can be calculated (Table 1). According to the US Census Bureau, the Federal Government body responsible for setting poverty levels for the country,[32,33] in 2005 approximately 37 million people in the USA – nearly 13% of the total population lived below this poverty line (of $13.68 per day, see Table 1).

*The child poverty rate* is the proportion of families with children who have incomes below the nationally established poverty line.[9]

***Comparisons of poverty levels among developed nations***

For comparisons of levels of poverty, developed countries use a comparable metric of 50% of the country's medium income for defining poverty level. Between 2000 and 2005 – using this comparable metric of 50% of a country's medium income for defining poverty level, 22% of the children in the USA were poor- the highest child poverty rate among all the developed countries. The poverty rates for some other developed countries are as follows: Canada and Australia 14% (next highest child poverty rate), U.K and Israel 10%, Italy and Germany 7%, and Norway and Belgium only 4%. [8.9] With the use of USA census data and definition of poverty levels, 16.2% of people younger than 18 years in the USA in 2000 were considered poor, down from a level of 20.8% in 1995. Children between ages 0 and 5 years have higher rates of poverty. In 1995 about 22% were poor.[8,9] Wood[9] asserts than more than 1 in 5 children in the USA grow up poor and are frequently deprived of a supportive environment to grow and develop.[9] Almost 10% of children who are poor are extremely poor (<50% of poverty level (see Table 1). Poverty rate for families that are headed by parents with less than high school education is much higher than families that are headed by parents with college education- 62% vs 15.2% respectively, while the rate is only 2.8% if a parent has a college degree. Thus, parental education, even in the USA, is the single best predictor of family income.[9]

The methods of measuring poverty in the USA have been sharply criticized.[8,9,32] The Census Bureau of the US Federal Government is responsible for establishing poverty threshold amount annually.

Parents or families below this amount are for statistical purposes and federal assistance (see Table 2) is considered to be living in poverty.[32,33] The poverty line in the USA was first set in 1965. It was based on the estimates of money individuals and families of various sizes need to purchase 3 times the cost of the basic food basket for a family size, or number of children. This amount was deemed minimally adequate based on the living standard in 1965. [9] Since then, each year, the Census Bureau adjusts the level using the consumer price index. [32.] Critics emphasize that since 1960`s the cost of housing, transportation and other non-food essential items have increased much faster than the cost of food.[9] Other items initially considered not essential, such as child care have become necessities,[9] and currently represent a significant proportion of families expenses.[8,9] Furthermore, there are those families that are *transitory poor*, who briefly fall into poverty, but after brief periods are able to escape. There are also those that are *persistently poor* - whose poverty extends over longer periods.[8] Using a fixed poverty line therefore may not be appropriate in the determination of poverty that constantly changes.[8,9] It is argued that household wealth may be a more reliable index.[8,11] Household wealth is expressed in terms of net worth of fixed assets minus liabilities and debts. Thus, it is argued, that despite income deficits, some poor families may, nonetheless, enjoy additional assets. Some writers have compared the assets enjoyed by the Americans living below the poverty line with the poor Europeans and claim that the average poor American is better of then his European counterpart in household wealth.[37] For example the typical poor American has more living space than the average non-poor individual in Paris, London, Vienna or Athens.[32] Overall, the typical American defined as poor has a car, air-conditioning, a refrigerator, washing machine, a microwave, 2 color television sets, cable or satellite TV reception and is able to obtain medical care.[32]

**Table 1.** Poverty lines in the USA: 1995 to 2005

| Year | Reference | Poverty level established by US census Bureau $/annum | Family size: Adults and children | Amount of US $ per person per day |
|---|---|---|---|---|
| 1995 | Aber et al,[8] | 12,158.00 | 3 | 11.1 |
| 1995 | Aber et al,[8] | 15,569.00 | 4 | 10.66 |
| 2000 | Dalaker,[35] | 13,874.00 | 3 | 12.67 |
| 2000 | Dalaker,[35] | 17,603.00 | 4 | 12.06 |
| 2005 | Cook,[36] | 19,971.00 | 4 | 13.68 |

**Table 2.** Examples of US government cash and non-cash assistance to the poor families and individuals (2004)

| S/No | Name of program | Purpose | Amount US $ | Nigerian Naira equivalent |
|---|---|---|---|---|
| 1 | Temporary assistance for needy families (TANF) | Cash aid. Permits a state to give cash aid to families that include minors or pregnant woman. Work and other requirement must be met | $10.4 billion | N1352 billion |
| 2 | Earned income tax credit (EITC) | Cash aid that provides a refundable loan to workers with and without children | $37.9 billion | N4927 billion |
| 3 | Food stamp program | Food and nutrition assistance for purchasing of food items for the eligible poor | $27.2 billion | N3536 billion |
| 4 | Special supplementation nutrition program for women, infants and children (WIC) | Food and nutrition assistance for low income mothers, infants and children considered to be At risk | $4.5 million | N585 million |
| 5 | Medicaid | Medical support in the form of payments to health care providers for eligible poor families and eligible aged or disabled | $176 billion | N22 880 billion |
| 6 | State children's health insurance program | Medical assistance to states from federal government to provide health insurance to poor children | $4.6 billion | N598 billion |
| 7 | Child care and development block grant (CCDBG) | Funds to poor parents for child care | $6.9 billion | N897 billion |

Adapted from US Government Accountability Office www.gao.gov-bin.gent.rpt Gao 07-343, 2007

Whatever the arguments for or against the definitions of poverty in the USA. The Federal Government of the USA spent over $400 billion on 84 programmes in 2004 alone, for poverty alleviation. These program, provided cash and non cash benefits to individuals and families with poor incomes.[32,33] Examples include those listed in Table 2. These programmes have recently been criticized by both pediatricians[8,9] and social scientists in the USA as not really reducing the percentage of people in poverty, particularly children.[8,9] There seems to be agreement that one way to reduce child poverty in the USA is to increase the earnings of parents with low market skills and encourage and support married couple.[8,9] Unfortunately for eligibility for some of the poverty alleviation programmes, the mother has to be single (baby born out of wedlock) and must not be married to a person earning good wages.[37]

***Poverty in Nigeria***

Although Nigeria is currently listed (ADB Reports of 2007)[24,25] as the third largest economy in Africa among ten largest economies on the continent, based on its GDP of 116 billion USA $, it is still classified in the same reports as among the low income countries because of its low GNI per capita ($560) which is within the group of countries with GNI capita of $785 or less.[24,25]

Table 3 and 4 summarize the human development indicators and poverty profile of Nigeria and give comparison of Nigerian data with the rest of the world.

**Table 3.** World ranking of Nigeria on some human development indicators: 2006

| **Human development index (HDI)** | | |
|---|---|---|
| **Rank** | **Country** | **HDI Value** |
| No.1 | Norway | 0.965 |
| No.158 | Rwanda | 0.450 |
| No. 159 | Nigeria | 0.448 |
| No.160 | Guinea | 0.445 |
| No.177 | Niger | 0.311 |
| **Life expectancy at birth years** | | |
| No.1 | Japan | 82.2 |
| No.165 | Congo, DR | 43.5 |
| No.166 | Nigeria | 43.4 |
| No.167 | Equatorial Guinea | 42.8 |
| No.177 | Swaziland | 31.3 |
| **Combined primary, secondary and tertiary Gross enrolment ratio %** | | |
| No.1 | Australia | 112.2 |
| No.139 | Yemen | 55.4 |
| No. 140 | Nigeria | 55.0 |
| No.141 | Togo | 55.0 |
| No. 172 | Niger | 21.5 |
| **Gross domestic product per capita (PPP US $)** | | |
| No. 1 | Luxemburg | 69,961 |
| No. 153 | Burkina Faso | 1,169 |
| No. 154 | Nigeria | 1,154 |
| No. 155 | Kenya | 1,140 |
| No. 172 | Sierra Leone | 561 |

Source: UNDP Human Development Report, 2006; PPP: Purchasing power parity

**Table 4.** World ranking of Nigeria on selected indictors of human poverty (2006)

| **Human poverty index (HPI-1)** | | |
|---|---|---|
| **Rank** | **Country** | **HPI-1** |
| No.1 | Uruguay | 3.3 |
| No. 75 | Papua New Guinea | 40.5 |
| No, 76 | Nigeria | 40.6 |
| No. 77 | Yemen | 40.6 |
| No.102 | Mali | 60.2 |
| **Probability of not surviving age 40 (%)** | | |
| No. 1 | Hong Kong. China | 1.5 |
| No. 159 | Rwanda | 45.5 |
| No.160 | Nigeria | 40.6 |
| No. 161 | Burundi | 46.3 |
| No. 172 | Swaziland | 74.3 |
| **People without access to improved water source (%)** | | |
| No. 1 | Bulgaria | 1 |
| No. 115 | Guinea | 50 |
| No. 116 | Nigeria | 52 |
| No 117 | Fiji | 53 |
| No 125 | Ethiopia | 78 |
| **Children 0-5 y under weight for age (%)** | | |
| No. 1 | Chile | 1 |
| No 112 | Sri lanka | 29 |
| No. 113 | Nigeria | 29 |
| No. 114 | Maldives | 30 |
| No .124 | Nepal | 48 |

Source: UNDP Human Development Report 2006

Table 5 compares some macroeconomic and human development indices of the ten largest economies in Africa (based on GDP) and and highlights the position of Nigeria in Africa and the world in relation to human economic and social development. The level of equity in income distribution among the ten African countries are also compared using the Gini index (Table 5). Table 6 compares some selected poverty indices and the status of child health in the ten largest African economies. The data in Tables 3, 4, 5 and 6 demonstrate that Nigeria's human development indicators are very poor. Table 5 and 6 clearly show that GDP of a country does not necessarily reflect the well-being of a country's populace. Nigeria's poverty rate is the highest among the ten largest economies in Africa. Furthermore, among 53 African countries, only Uganda and Zambia have higher poverty rates.[24,25] In Uganda the proportion of people living below one US dollar per day (ie, extreme poverty) is 84.9%, and below two US dollars (ie, in poverty) is 96.6%. Zambia's corresponding figures are 75.8% and 94.1% respectively, while Nigeria's rates for extreme poverty and poverty are 70.8% and 92.4% respectively.

Furthermore, the Gini index- which measures equity in wealth distribution – demonstratives gross inequity in Nigeria.[24,25] The Gini index for Nigeria, according to international assessment[24] is 50.6. This figure agrees with Nigeria`s own official figure

given by the National Bureau of Statistics which puts the Gini index at 55.4 for urban areas and 51.9 for rural Nigeria.[38] Nigeria's Gini index is one of the worst in Africa.[24,25] Among the 10 largest economies in Africa, with data on Gini index, Nigeria's index of 50.6 is only better than South Africa's index of 57.8. Nevertheless, South Africa's poverty gap is only 12.6 compared to Nigeria's 59.5 (Table 5). This means that poverty in Nigeria is deeper than in South Africa and Nigeria, overall, has poorer populace than South Africa.[24,25]

Nigeria's child immunization coverage of only 35% (see Table 6) is the worst among the ten largest African economies, and the second worst among 53 African nations.[24] Nigeria's immunization rate, among the 53 African countries, is better only than Chad's 23%. The consequences of Nigeria's extreme poverty are reflected in the poor status of the health of its children (Table 6).

**Table 5.** Comparison of economic and human development index (HDI) among the ten largest economies in Africa (2006)

| Ranking of size of economy based of GDP | Country | GDP billion US$ | Population millions | GNI per capita US $ | GNI per capital ranking | Economic group | HDI | HDI rating among the ten countries | HDI rating in the world among 177 | Gini index | Poverty gap index |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1st | South Africa | 251.099 | 47.6 | 4.960 | 2nd | Upper middle income | 0.653 | 5th | 121 | 52.8 | 12.6 |
| 2nd | Algeria | 126.284 | 33.4 | 2.730 | 4th | Lower middle | 0.728 | 3rd | 102 | 35.3 | 3.6 |
| 3rd | Nigeria | 116.377 | 134.4 | 560 | 9th | Low income | 0.448 | 9th | 159 | 50.6 | 59.5 |
| 4th | Egypt | 107.687 | 75.4 | 1.250 | 7th | Low middle | 0.702 | 4th | 111 | 34.4 | 11.3 |
| 5th | Morocco | 64.908 | 31.9 | 1.730 | 5th | Low middle | 0.589 | 6th | 123 | 39.5 | 1.3 |
| 6th | Libya | 50.363 | 5.9 | 5.530 | 1st | Upper middle | 0.798 | 1st | 64 | ND | ND |
| 7th | Angola | 47.260 | 16.4 | 1.350 | 6th | Low middle | 0.439 | 10th | 161 | ND | ND |
| 8th | Sudan | 38.896 | 36.9 | 640 | 8th | Low middle | 0.516 | 7th | 141 | ND | ND |
| 9th | Tunisia | 30.245 | 10.2 | 2.890 | 3rd | Low middle | 0.760 | 2nd | 87 | 39.8 | 1.3 |
| 10th | Kenya | 23.712 | 35.7 | 530 | 10th | Low income | 0.491 | 8th | 152 | 47.5 | 27.5 |

Compiled from data supplied by ADB on African countries[24,25]
Upper middle income: $53.116 – 9636; Low middle income: $5786 – 3115; Low income: $785 or less
ND = No data

**Table 6.** Selected poverty indices and status of child health in ten largest economies in Africa (2007)

| Size of economy | Country | Population below national poverty line % | International poverty lines | | Child health status | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | <1$day | <2$/d | Imr per 1000 | U5mr per1000 | Malnutrition % under weight | Malaria cases/100,000 | Measles immunization % |
| 1 | South Africa | 45 | 10.7 | 34.1 | 47 | 73 | 11.5 | 143 | 82 |
| 2 | Algeria | 12 | 1.8 | 15.1 | 32 | 35 | 10.4 | 2 | 83 |
| 3 | Nigeria | 65.6 | 70.8 | 92.4 | 109 | 191 | 28.7 | 30 | 35* |
| 4 | Egypt | 16.7 | 3.1 | 43.9 | 31 | 36 | 8.6 | - | 98 |
| 5 | Morocco | 19.0 | <2 | 14.3 | 33 | 39 | 10.2 | - | 97 |
| 6 | Libya | ND | ND | ND | 17 | 19 | 4.2 | 2 | 97 |
| 7 | Angola | 68 | ND | ND | 132 | 23 | 30.5 | 8,773 | 45 |
| 8 | Sudan | ND | ND | ND | 75 | 109 | 40.7 | 13,934 | 60 |
| 9 | Tunisia | 4.2 | <2 | 6.6 | 23 | 22 | 4.0 | 1 | 96 |
| 10 | Kenya | 51.8 | 22.8 | 58.3 | 64 | 109 | 19.9 | 545 | 69 |

Source: ADB Report[24,25]
ND: No data
• Only Chad (23%) has measles immunization less than this among 53 African countries
IMR: Infant mortality rate; U5MR: Under-five mortality rate

**Table 7.** Some poverty alleviation programmes of the federal government of Nigeria in the last two decades (1986 to 2007)

| S/No | Year of establishment | Name of program | Purpose |
|---|---|---|---|
| 1 | 1986 | Directorate for food roads, and rural infrastructure (DFRRI) | Build and improve feeder roads, improve rural water supply and electricity |
| 2 | 1986 | National directorate of employment (NDE) | Provide training finance and guidance to unemployed youths |
| 3 | 1987 | Better life program (BLP) | Improve economic and health condition of rural women |
| 4 | 1989 | Peoples bank of Nigeria (PBN) | Encourage savings and credit facilities for under privileged in rural and urban areas |
| 5 | 1990 | Community bank (CB) | Make banking facilities available to rural populace and encourage micro enterprise in urban areas |
| 6 | 1994 | Family support program (FSP) | Improve health care delivery, child welfare, youth development for rural families |
| 7. | 1997 | Family economic advancement program (FEAP) | Credit facilities to support establishment of village industries |
| 8 | 2000 | National poverty elimination program (NAPEP) | Loan schemes training in various self-employed trade and small scale industries |
| 9 | 2002 – on going | National health insurance scheme (NHIS) | Ensure that every nigerian has easy access to qualitative health care at affordable cost |
| 10 | 2004 – on going | The national economic empowerment and development strategy (NEEDS) of the federal government and the State economic empowerment development strategies (SEEDS) of the state government | Focus on economic growth and poverty reduction through better service delivery, reforms and overcoming corruption. |

Source: Modified and completely updated from Ogwumike FO. Economic and Financial Review (Central Bank of Nigeria) 2002; 39: 4

**The Effects of Poverty on Child Health**

Recent comprehensive evaluation of child mortality indicates that, globally, almost 11 million children under 5 years of age die annually.[20] More than 90% of these deaths occur in the poorest countries in sub-Saharan Africa and South Asia.[20] There is evidence that indicates that within each country children from the poorest families are most likely to die.[20] In the recent (2003) Bellagio conference that addressed methods of reducing child mortality in the world-with special reference to the developing poor nations, it was concluded that two-thirds of the deaths of children in the under developed countries could be prevented by simple low cost interventions such as oral rehydration and childhood vaccination, which have great life saving potential, but were yet un available in many deprived settings.[20,21] The pattern of morbidity and mortality among children affected by poverty vary depending on the region of the world.

In the economically developed countries of North America and Europe children from poor families have been shown to have higher rates of asthma, increased risk of lead poisoning, higher rates of lower respiratory tract infections, higher risk of physical abuse and neglect, poorer cognitive development, higher rates of conduct and behavior disorders, higher risk of drug abuse and are more likely to suffer the adverse consequences of low birth weight and have higher risks of obesity than children from the richer strata of society.[8,9] In the USA violence and crime are more concentrated in neighborhoods of families with low income. In such neighborhoods there are few safe places for children to congregate and play. Such environment has detrimental impact on the intellectual, emotional and physical development of children.[8,9] Cognitive development is generally poorer in children who belong to poor families in the USA[8,9] and the 1Q scores among such children may be 6 to 13 points lower than the average for the children in wealthier environments.[9] Developmental delays, learning disability, conduct disorders, anxiety, depression, hyperactivity are commoner in poor children. Impaired cognitive development in poor children leads to increased school dropout rates

(21% for poor children against 9.6% for children who are not poor).[9] With regards to physical health indicators, deaths during 0 to 14 years among children who are poor is 1.2% compared to only 0.6% in children who are not poor in the USA.[9] While percentage of children with blood lead levels of more than 10 µg/dl is 16.3% in children who are poor, the corresponding percentage in those who are not poor is only 4.7% - reflecting more exposure to lead in poorer homes.[8,9] Again, while infant mortality among the poor families in the USA can be as higher as 14 to 16 per 1000 births it can be as low as 4 to 8 per 1000 in wealthier families.[8,9]

In the poor developing countries of the world diseases of poverty are dominated by malnutrition, diarrhea, measles, respiratory infections and tuberculosis,[5,21] with malaria and HIV infection responsible for a large number of deaths in many countries of Africa and Asia.[20, 21] It has been established, however, that the scope of pediatric diseases of poverty is enormous and includes not only these diseases but all complexities of childhood diseases seen in developed countries, further compounded by the effects of poverty, overcrowding malnutrition and inadequate health measures and supplies.[1,7]

In the poor developing countries of Africa, Asia and Latin America there is also obvious unequal distribution of disease burden among socioeconomic groups.[11,13] Thus, in Bangladesh, the prevalence of stunting in children less than 5 years of age is 25% among the children from the richest families (5th quintile) while it is up to 54% among children from the poorest families (1st quintile).[11] Similarly, in Nigeria, where poverty rate is higher in rural than urban areas,[38] percentage of stunted children is 29% in urban areas, but up to 40% in rural.[12] In Brazil the under-5 mortality rates (U5MR) per 1000 live births for the richest is 9, while for the poorest it is 89. The corresponding figures for Kenya are 54.6 for the richest families and up to 128 for the poorest.[13] While U5MR in Nigeria is currently 191per 1000 live births[24,25] (Table 6), there is an obvious inequality in this rate between the rich and the poor segments of the populace. The U5MR for the richest quintile is 120, while it is up to 240 for the poorest quintile.[39] Similarly, although the immunization coverage of children is 35% in Nigeria as a whole,[24,25] this coverage is up to 58% for the richest quintile and as low as 13.9% for the poorest quintile.[39]

It is obvious that there are child health inequities not only between the developed nations of the world and the poor nations,[24, 25] but also within individual countries,[8, 9, 11, 13]- with inequity more prevalent in the underdeveloped countries of the world.[11,13] This widening inequalities between the rich and the poor have stimulated international and national organizations to focus on the health and nutrition of the poor in developing countries.[11,13,39,40]

***Effects of poverty on paediatric practice in Nigeria***

Role of the pediatrician in resource-poor environment. For the last one decade, Nigeria's per capita expenditure on health has been about 5 US dollars. This amount is far below the 14 US dollars recommended by World Bank for Africa,[41] and much lower than the 34 US dollars per capita recommended by WHO for low income countries to provide basic health care services.[6,42,43] It is in this resource deficient tropical environment that Nigerian pediatricians work and conduct research.[1,44-52] These pediatricians struggle to fulfill their obligations as what Jelliffe (1991)[4] coined the ``complete pediatricians`` - who must be generalists in thinking, training and action, who must realize the wide range of actions needing consideration in child health work, and who must strike a balance between curative and preventive approach in child health care and research in less technically developed countries, like Nigeria.

Working in underdeveloped areas of the world, pediatricians cannot afford the luxury of limiting their practice to a particular subspecialization, even if they are experts in a particular pediatric subspecialty. This reality of pediatric practice in Nigeria has been reflected by eminent Nigeria pediatricians in their lectures in the last one decade, organized by the National Postgraduate Medical College of Nigeria.[44,51] As Seear (1990) summarizes it, apart from needing a broad knowledge covering the range of tropical pediatric conditions, the social roots of diseases of poverty requires the developing world pediatricician to be a child advocate, an activitist, epidemiologist, funds raiser, social worker and policy planner.[1,44-51] Paediatricians anywhere in the world, especially in technically less developed countries, do realize the wide range of factors needing consideration in child health and often engage in responsibilities beyond the confines of the clinics and wards.[1,44-52]

Paediatricians in Nigeria do a lot of advocacy for child health through the Paediatric Association of Nigeria (PAN). Every year the Association, in the last forty years, writes communiqués which are published and widely circulated to Nigerian governments and international organizations, drawing their attention to the current problems of Nigerian children and proffering solutions to these problems.[1,47]

Sound clinical work as in hospital environment is vital and will always remain a major need, anywhere in the world.[1] But this approach alone cannot touch all the major issues of child health in a resource – poor environment.[1] Some of these may be beyond the scope of the pediatrician or medical science – and border on politics.[1-7] Nevertheless an awareness of the need for advocacy role for children's well-being has to be cultivated.[19,20]

The last two decades have been marked by advances in medical sciences and technology accelerating the understanding of management of many pediatric disorders and constantly revealing new possibilities and approaches to pediatric care. Bearing this in mind, doctors anywhere face moral and practical dilemmas in deciding which of these technological advances are desirable and feasible in their circumstances.[3] It is recognized that in developing countries what is feasible usually

falls short of what is desirable in the provision of medical services and in conducting clinical research of good quality.[1,6] Paediatricians in Nigeria have continued to struggle in both practice and research to include investigations and treatments which are considered desirable in any good pediatric practice, within the limits of feasibility. [45.53] There is a general consensus in international child health, that lack of optimal facilities is never an excuse for condoning wrong practices in pediatric care.[53]

*Paediatric practice during the Nigerian oil (economic) boom*

In order to appreciate the effects of poverty on clinical pediatric practice, it is relevant to recall the differences in the provision of care during the oil (economic) boom and afterwords.[1] The boom began in the mid-1970`s and ended in the early 1980`s.[54] During the boom period, treatment in all government hospitals was entirely free. The hospitals were better funded. Even treatment in voluntary agency institutions was heavily subsidized by most Nigerian governments.[55] The poor people of all ages were adequately catered for. Clinical subjects (ie, patients) and the resources and materials to manage them and conduct research were readily available[1,55]

In one emergency pediatric unit in a Nigerian teaching hospital, everything available was made accessible, free of charge to all patients.[1] No patient or caregiver was ever given a shopping list and the Drug Revolving Fund (DRF) did not exist[1] Medical care-covering drugs, feeding, accommodation, all feasible investigations, physiotherapy, transfusion of blood and blood products, minor and major surgical operations – was entirely free and available to all sick children irrespective of their socio-economic status.[1] It is true that more sophisticated investigatory facilities such as computerized tomography, were not widely available then in the Nigerian teaching hospitals,[56] but the poor patients, during the boom period did not suffer from the consequences of out of pocket payments (OPP) health care system that is currently predominant in Nigeria[1,57] - (as the recently introduced National Health Insurance Scheme (NHIS) has not yet covered the entire populace).[57,58]

*Practice of pediatrics after the Nigerian oil boom, and the external influences on poverty and child health*

With the end of the oil boom in the mid 1980`s came the collapse of the free health care system. This was attributed to major cutbacks in public expenditure on health following decline in oil revenues.[59] The crude oil output fell from 2.3 million barrels per day in 1973/1974 and 2.0 million per day in 1980 to only one million a day in 1986. The price also fell from $40.0 per barrel in 1980 to $10.0 in 1986. This led to external accumulation of debts and huge reduction in government expenditure on social services.[54,59] The debt burden increased from $14 billion dollars in 1980 to about $32 billion in 2000. The decline in government expenditure on health and education served to aggravate the incidence of poverty-which continued to rise.[54]

It must be recalled that during this period African countries (south of the Sahara) including Nigeria were all devastated by external debts. Each year the bill for repayment of capital and interest (Since 1994) comes to about $30 billion. This is an impossible amount and only $10 billion is actually paid. The next is simply added to the total owed. The $10 billion a year paid is a crippling burden, equal to four times as much as Africa expends on its health services, and far more than is spent on health and education of all the sub-continent's children.[14] The total cost of meeting human goals in Africa for health, nutrition and education would be about $9 billion a year. This is less than what Africa needs to find for the sake of paying of only one third of the interest due on a colossal burden of debt, most of which, as every expert agrees, can never be repaid. In addition to the mistakes of its own leaders, as UNICEF in 1994 indicated, Africa is being exploited by the outside world in its hour of greatest needs.[14]

To further compound the problem, the international donor agencies (Paris Club, IMF) insisted on the African and Nigerian governments to implement the Structural Adjustment Programmes (SAP) as one of the conditionality on indebted nations. The aim of SAP was to restructure an ailing economy. SAP, as Yakubu[51] recently summarized its aim, is a means through which IMF and World Bank control and manage the economies of indebted underdeveloped nations of the world. SAP required that indebted nations liberalize their economies through deregulation of trade, privatization of services and state-owned companies, reduction of funding of social services and retrenchment of the work force. By imposing SAP on Nigeria and other poor indebted nations, the IMF ensured the availability of huge funds from these poor nations to be transferred to the advanced countries, to the detriment of the African populace.[51]

In the mid 1980`s Nigerian governments complied with SAP and introduced user fees in government health institutions through the Drug Revolving Fund Schemes (DRF). By 1987 the Nigerian Federal Government accepted that there was serious crisis in the health sector and declared its intention to meet the crisis by establishing the National Essential Drugs Programme (NEDP), which would reform or strengthen drug supply and quality assurance and introduce equitable cost recovery.[59] The cardinal principle of the Drug Revolving Fund (DRF) was that full cost recovery must be ensured.[59] Subsequently, cost recovery by imposing user fees was extended to cover not only drugs, but also other health services including investigations and surgical materials. It has been shown that introduction of user fees has led to the decline in the use of health services by the poor segments of African people – including children, and the improvement in quality of care has also been questionable.[6]

*Out of pocket payment (OPP) health care delivery and its challenges to pediatric practice*

Currently, (and this has been prevailing for almost 25 years)[1,57] health financing in most developing countries – including Nigeria, relies predominantly on out of pocket payments (OPP) by individuals at the time of treatment.[58] Although a National Health Insurance Scheme (NHIS) has recently been introduced in Nigeria,[57,58] the scheme is still in its initial stages of implementation, and has not yet covered all Nigerians including the poor, unemployed and the rural populace.[57]

The OPP system often denies basic care to the poorest members of society.[57] With OPP, even the middle income families are vulnerable to impoverishment if one of their members has to pay for expensive health care, or a family breadwinner can no longer work as a result of sickness or disability.[60] A further problem with health care systems that rely heavily on OPP is that they leave public responsibilities such as disease surveillance, preventive programmes and control of epidemics severely under funded.[6,61] A recent study in poor semi urban community in northern Nigeria demonstrates that OPP is the main source of health care financing for the under five illnesses and most of the patients have low capacity to pay because of extreme poverty.[57]

Another consequence of OPP is what is currently termed catastrophic health costs (CHC) or catastrophic household health expenditure (CHHE). Xu et al [61 defined] CHHE as spending 40% or more of household income on health problem after meeting subsistence needs. Countries are ranked according to CHHE as very low rate – ie, <0.05% eg, Slovakia, France, South Africa, UK or very high –i.e. >5%, eg, Argentina, Cambodia, Lebanon, and Vietman.[60] Nigeria's rate of CHHE is perhaps within the high range.[1] This is so because all the three components leading to CHHE are prevalent in the country ie, health services requiring payments, low capacity to pay and lack of repayment or health insurance.[60]

It is known that because of the burden imposed on the poor and sick children by the OPP health care system, pediatricians directly involved with the care of these children in the Nigerian environment, often have to use their own personal money in order to save the children's lives.[1]

It is therefore obvious that providing optimal patient care to the poor, in situations where OPP health care is predominant, is very difficult.[1,57] OPP and CHHE often lead to delays in the treatment of the poor, often with serious consequences.[1,60] It is of utmost importance that the proposed package for under-five care clearly spelt out in the under-five social health insurance program of the NHIS[57,58] be implemented all over the country. This need has been highlighted by several Nigerian health care workers.[57,58]

Parry[63] agrees that there is ample evidence world-wide that poverty is deleterious to health, and that the poor are disadvantaged throughout Africa. The list of disadvantages is very long. But with regards to hospital care, Parry,[62] reminds us that the poor are often unable to find costs of travel and lodging pay for hospital registration or card fees, pay for prescribed treatment, find money for supplement feeding, etc. Parry[63] suggests that health care staff should take the lead in every effort to relieve poverty and find ways to make all necessary services available to the poor. Even in advanced countries like USA and UK, pediatricians are making concerted efforts to advocate for and ensure improvement of provision of preventive, promotive and curative health care to the poor children.[8,9,19,64]

In Nigeria the efforts of health workers alone cannot be enough in tackling poverty and improving health care of the populace. Modern governments all over the world have the responsibility to cater for the poor and improve the health status of their population.[44,52] We have given examples (Table 2) of the cash and non-cash assistance the USA Government gives to poor families and individuals with special reference to health care.[32,33] It is important to examine what the Nigerian governments have been doing in the last two decades with regards to poverty alleviation and what should be done to improve the human development indicators – including the health indicators of Nigerian children.

*What have the Nigerian governments done to alleviate poverty?*

In the last 2 decades (from 1986 to date) successive Federal Governments of Nigeria have made efforts to alleviate poverty by initiating many different programmes targeted at improving the economic and health status of the population (Table 7). It is obvious from Table 7 that the objectives of these programmes are laudable. It is worth noting that some of these programmes were introduced during the implementation of SAP in the late 1980`s and the de-regulation programmes of the 1990`s.[54] There is evidence that many of these programmes had varied positive impact on poverty alleviation but could not be sustained.[54] Furthermore, it seems that the negative effects of SAP eroded whatever positive effects these programmes had on child health in Nigeria. Thus, in 1990 the immunization coverage of Nigerian children reached 80%, but by 1993 it has declined to 32.9% and has remained below 40% since then.[24,51] Furthermore, the unnecessary politicization of the oral polio vaccination compounded the problem of poor coverage in Nigeria.[49,51] But poor immunization coverage is not the only possible negative effect of SAP. In 1994 Nigeria's under-five mortality rate (U5MR) was 191 per 1000, it has remained the same in 2006. The infant mortality rate (IMR) of the country was 114 in 1994 and there has been little improvement in 2006 with IMR of 109 per 1000. The poverty indicators have worsened in the last two decades.[14,24] Whatever the positive effects of some of the programmes listed in Table 7, UNICEF has provided evidence that SAP in developing countries resulted in unnecessary deaths of poor children.[14] Data are not available to enable assessment of the impact of the ongoing poverty alleviation

programmes (Table7), but positive impact can only be ascertained if there is obvious improvement in the measurable human development and child health indicators.

*What should the Nigerian governments and its people do to alleviate poverty and improve child health status?*

There are many excellent programmes, devised by the Federal Government to improve the human development indicators – including child health indicators of Nigeria (Table 7). A new strategy is also being devised currently by the Federal Ministry of Health to address various aspects of health care of the population.[63] Government must gather the political will to implement the ongoing programmes effectively and transparently and should learn from the mistakes of defunct programmes. The WHO 4 - point strategy for poverty reduction and improvement of health of the population devised for Indonesia[40] can also be adapted by Nigerian government at the community level with full participation of the people.

Government must intensify dialogue with the development partners on MDG No.8 ie, pursue responsible economic aid, debt relief and fair trade.[23] All governments, both at Federal and State levels, must pursue exploitation of alternative sources of wealth generation in addition to petroleum, and also pursue other MDG vigorously including reduction of environmental degradation, women empowment and improvement in education at all levels.[23] There must be focus on improving equity in wealth distribution. Government must adopt the well known economic policies that can influence level of income inequality. Nigeria's high Gini Index can be addressed through policies affecting taxation, public transfer, education and migration.[24,25]

There is a general agreement that the fight against corruption must be taken seriously and must reach the doorsteps of the Nigerian local governments.[52] Without some reasonable level of transparency, accountability and equity, increase in wealth generation of the nation will not improve the status of the poor.

It has been suggested that substantial amount of money accruing from the recently gained debt relief should be channeled to health.[51] There is enough justification for doing this, if we recall that, according to UNICEF, in 1999, Nigeria was forced to use 87% of its GNP to repay external debts. The remaining 10% of GNP went on defense, about 2% on education and 1% on health.[27]

Some Nigerian State Governments (especially the oil-rich states of the Niger Delta) have recently embarked on provision of fee medical care to the populace. This is reasonable. I however agree with Njokanma,[52] that free medical care will be more effective and sustainable, if there is community participation in decision making and ownership of the program. This will ensure the culture of maintenance and increase the efficiency of service delivery.[52]

## Conclusion

In recent years, even the international donor agencies have increasingly realized that the world community has an overriding task in the new century to make life better for the hundreds of millions of poor people who do not receive their fare share of the world's health, wealth and opportunities. They have recognized that the developed world must act in the interests of human security – because poverty breeds despair and provokes frustrations. Securing the resources needed to improve and protect the health of the poor is a key part of that response.[6]

Recently, Bhutta[20] asserts that there is crisis of global leadership in child health and lack of political will at the international level to address and support maternal and child health issues in deprived regions of the world. It is our hope that policy makers in Nigeria will urgently recognize that in this country children constitute about half of the entire population and therefore a significant part of our present, and all of our future. To guarantee that future, Nigerian children deserve more than what is currently given to them in terms of health care, education and other opportunities for development in a competitive world.

## References

1. Ahmed H. From medical education to paediatric neurology: the struggles of a Nigerian paediatrician for high-quality research in a resource-poor environment. Inaugural Lecture Series (3rd Edition). Usmanu Danfodiyo University (UDUS), Sokoto, Inaugural Lecture series (3rd edition), 2004; 1-70.
2. Sanders D. The struggles for health: medicine and politics of underdevelopment. Macmillan, London, 1985; 1-232.
3. Hendrickse RG. Child health in developing countries: an overview: In: Hendrickse RG, Barr DGD, Mathews TS, (Eds). Paediatrics in the tropics, Blackwell, London, 1991; 1-14.
4. Stanfield JP. Diseases of children in the tropics and subtropics, Edward Arnold, London, 1991.
5. Azubuike JC. Determinants of health and diseases in the tropics. In: Azubuike JC, Nkanginieme KEO (Eds). Paediatrics and child health in a tropical region. African Educational Services, Owerri, 2007; 5-14.
6. Investing in health, investing in development. World Health Organization (WHO). Geneva, 2002; (WHO HDE/02.1)1-19.
7. Seear M. A manual of tropical paediatrics. Cambridge University Press, Cambridge, 2000.
8. Aber JL, Bennett NG, Conley DCLJ. The effects of poverty on child health and development. Annu Rev Public Health. 1997;18:463-483.
9. Wood D. Effect of child and family poverty on child health in the United States. Pediatrics. 2003;112:707-711.
10. Phipps S, Curtish L. Poverty and child wellbeing

in Canada and the United States. Does it matter how we measure poverty? Final report for Human Resources Development, Canada. September 2000. http://www.hrsdc-drhc.gc.ca/sp-ps/orb-dgra
11. Hong R, Banta JE, Betancourt JA. Relationship between household wealth inequality and chronic childhood malnutrition in Bangladesh. Int J Equity Health. 2006;5:15.
12. Fotso JC. Child health inequities in developing countries: differences across urban and rural areas. Int J Equity Health. 2006;5:9.
13. Houweling TA, Kunst AE, Mackenbech JP. Measuring health inequality among children in developing countries: does the choice of the indicator of economic status matter? Int J Equity Health. 2003;2:8.
14. The state of the world`s children. UNICEF, Geneva, 1994.
15. Human Development Report. UNDP, 2006 http://www.hdrundp.org/hdr2006/statistics/countires/countryfactsheets/ctyfsNGA.html
16. Global H. IV/AIDS Report. UNAIDS, 2006.
17. Behrman RE. Overview of pediatrics. In: Behrman RE, Kliegman RM, Arvin AM (Eds). Nelson Textbook of Pediatrics. Saunders, Philadelphia, 1996; 1-5.
18. Charney E. The Field of Pediatrics. In: Oski FA (Ed). Principles and practice of pediatrics. Lippincot, Philadelphia, 1994; 5-11.
19. Roberts I. Poverty and child health. BMJ. 1996;313:371.
20. Bhutta ZA. Beyond Bellagio: addressing the challenge of sustainable child health in developing countries. Arch Dis Child. 2004;89:483-487.
21. The Bellagio Child Survival Study Group. Knowledge into action for child survival. Lancet. 2003;362:323-327.
22. Waterston T. Inequity in child health as a global issue. Pediatrics 2003; 112 (parts 2): 739-41.
23. Millennium Development Goals. United Nations http://www.un.org/millienniumgoals
24. Gender, poverty and environmental indicators on African countries. Economics and Social Statistics Division, African Development Bank (ADB), Tunis, 2007 (Volume VIII); 1-302.
25. Selected statistics on African countries. Economic and Social Statistics Division, African Development Bank (ADB). Tunis, 2007 (Volume XXVI); 1-300.
26. Compendium of statistics on bank group operation. Statistics Department, African Development Bank (ADB), Tunis, 2007 (Volume XXX);174.
27. The Progress of Nations. UNICEF, New York, 1999.
28. Sexuality policy watch. Glossary and Definitions http://www.sexpolitics.org/mambo452index.phb?/option=com
29. Gini coefficient http://en.wikipedia.org/wiki/Gini-coefficient
30. Glossary of statistical terms: poverty gap index, percentage. World Bank Indicators, OECD, 2005 http://stats.oecd.org/glossary
31. Conagarajah S, Thomas S. Poverty in a wealthy economy: the case of Nigeria. J Afr Econ. 2001;10:143-173.
32. Poverty in America. Consequences for individuals and the economy. US Government Accountability Office, 2007 www.gao.gov/cgl.bin/getrpt?GAO07-343T
33. Poverty in America. Economic research shows adverse impacts on health status and other social conditions as well as the economic growth rate. US Government Accountability Office, 2007 www.gao.gov/cgl.bingetrpt?GAO-07-344
34. Poverty line. Encyclopedia Britannica, 2004.
35. Dalaker J. Poverty in the United States 2000. Current Population Reports. US Census Bureau Series P60-214, Washington DC, 2001.
36. Cook RC. Poverty in America. Progressive schemes to reduce poverty will fail without monetary reform. Global Research, June, 2007 http://www.globalfresearch.ca
37. Rector RE, Johnson KA. Understanding poverty in America. Backgrounder. Heritage Foundations, 2004 No.1713 http://www.heritage.org/research/welfare/hg1713cfm
38. Poverty, Profile for Nigeria. Federal Republic of Nigeria, National Bureau of Statistics, Abuja, 2005.
39. Diderichsen F. Resource allocation for health equity: issues and methods. The International Bank for Reconstruction and Development/World Bank, Washington DC, 2004.
40. Increasing investments in health outcomes for the poor Investing in health: a process for developing long term investment plan – Indonesia. World Health Organization, Geneva, 2003.
41. Lambo E. Making good health a real dividend of democracy for Nigeria. Federal Ministry of Health, Abuja, 2003.
42. Macroeconomic commission and health. Investing in health for economic development: Report of the commission on macroeconomic and health. World Health Organization, Geneva, 2001.
43. Palmer N, Muller DH, Gilson L, Mills A, Haines A. Health financing to promote access in low income setting. How much do we know? http://www.thelancet.comvol364 October9, 2004.
44. Azubuike JC. Celebrations around the Nigerian child. Faculty lecture. Faculty of Paediatrics, National Postgraduate Medical College of Nigeria, Lagos, 1997.
45. Omene JA. HIV Infections in Africa: Progress made and ethical controversies in perinatal research. Faculty of Paediatrics, National Postgraduate Medical College of Nigeria, Lagos, 1999.

46. Johnson AOK. Paediatric nutrition and international child health. Faculty of Paediatrics, National Postgraduate Medical College of Nigeria, Lagos.2000.
47. Okeahialam TC. Four decades of paediatrics and child health in Nigeria. Faculty lecture. Faculty of Paediatrics, National Postgraduate Medical College of Nigeria, Lagos 2001.
48. Grange AA. The ethnos of child survival in a changing world. Faculty lecture. Faculty of Paediatrics, National Postgraduate Medical College of Nigeria, Lagos, 2003.
49. Familusi JB. The Polio imbroglio and other child health Issues. Faculty lecture. Faculty of Paeduatrics, National Postgraduate Medical College of Nigeria, Lagos, 2004.
50. Okolo AA. Quality of care for the Nigerian child: review, reflections and reappraisal. Faculty lecture. Faculty of Paediatrics, National Postgraduate Medical College of Nigeria, Lagos, 2005.
51. Yakubu AM. Hepatitis viruses and hepatocellular carcinoma in children: facts, myths and proposal for control of hepatocellular carcinoma in adults. Faculty of Paediatrics, National Postgraduate Medical College of Nigeria. Lagos, 2006.
52. Njokanma OF. That our children may survive. Inaugural Lecture Series (34th edition), Lagos State University 2007; 1-38.
53. Southal D, Coutter B, Ronald C, Nicholson S, Parke S. International child health care. Child Advocacy International, London, 2003.
54. Ogwumike FO. An appraisal of poverty reduction strategies in Nigeria. Economic and Financial Review. 2002;39:4. Central Bank of Nigeria.
55. Gyoh S. Comments on Nigerian health system. Afr Health. 2003;25:13-14.
56. Ahmed H. The status of paediatric practice and research in Nigeria with special reference to genetics: a plea for the establishment of national medical genetics research centre. Ann Afr Med. 2003;2:88-98.
57. Sambo MN, Ejembi CL, Adamu YM, Aliyu AA. Out of pocket health expenditure for under-five illnesses in semi-urban community in Northern Nigeria. Journal of Community Medicine and Primary Health Care. 2004;16:29-32.
58. Airede LR. Implementing the national health insurance scheme: The dawn of a new era in health care financing in Nigeria. Sahel Medical Journal. 2003;6:1-5.
59. Tafida DS. Federal essential drugs project policy framework. Federal Ministry of Health and Social Services, Lagos, 1994.
60. Xu K, Evans DB, Kawabata K, Zerandini R, Klavus J, Murray JL. Household catastrophic health expenditure: a multi-country analysis. Lancet. 2003;362:111-117.
61. Ahmed H. Medical referrals abroad: experience of a paediatrician and the lessons for Nigeria. Niger J Med. 1996;5:83-89.
62. Parry E. People and their environment. In: Parry E, Godfrey R, Mabey D, Gill G (Eds). Principles of medicine in Africa. Cambridge University Press, Cambridge 2004; 9-44.
63. Grange A. Vision for the health care sector. Address of the Minister of Health of the Federal Government of Nigeria in a seminar on investing in health for national development, organized by the Nigerian Federal Ministry of Health and WHO, Abuja, 22nd October 2007.
64. Waterston T. Poverty and child health (book review). Arch Dis Child. 2001;85:349.