



Parental Income as A Determinant of Child Mortality in the Rural and Urban Areas of Akwa Ibom State, Nigeria

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Abstract

This study sought to investigate how parental income determined child mortality levels in the rural and urban areas of Akwa Ibom State. Data was collected with the use of questionnaire from 600 randomly selected respondents, aged 14-49 years in three rural (Ibiono Ibom, Oruk Anam, Urue-Offong/Oruko) and three urban (Uyo, Ikot Ekpene, Oron) centers. The study also adopted the descriptive survey research design and was guided with the assumptions of the proximate determinants framework of child survival. Three types of estimates, namely, number of children ever born to women of a particular age x ; death and survival probabilities for children from birth to exact age x ; and, mortality index for women in a certain age and socio-economic categories were computed as preconditions for adopting the Brass Model. Findings showed that income varied higher for the urban respondents and lower for the rural respondents, but generally, the amount of earned income in both areas related inversely with the level of child mortality. On the basis of the findings, it was recommended that free and compulsory door-to-door immunizations and vaccinations be given to every new born in the state, adequate law and enforcement against parents who fail to produce their children for the campaigns.

Keywords: Newborn, Health, Death, Survival

1. Introduction

The survival of most newborn babies and growth to maturity in parts of Africa and other third world societies is still a serious challenge despite the remarkable progress in child survival in the past decades, and indeed the successes and achievements credited to the erstwhile Millennium Development Goal (MDG) and the Sustainable Development Goal (SDG). Despite the global decline in infant and child mortality rates to about 40.8 in many parts of the world, the rate in which children, age zero to five, in Africa and other backward societies die of various causes is still higher. According to Yaya, Bishwajit, Okonofua and Uthman (2018), the rate of under-five mortality in sub Saharan African

region has remained unabated. WHO (2020), UNICEF (2019) and WHO (2019), among others report that an estimate of 5.3 million children under the age five died across the world in 2018. According to WHO (2020), the risk of a child dying before completing five years of age is still highest in the WHO African Region (76 per 1000 live births), around 8 times higher than that in the WHO European Region (9 per 1000 live births). An observation of the world's mortality records reveals that the under developed countries are still faced with the problem as about half of the 5.3 million global deaths involving children under five occur in sub-Saharan Africa. The current figure which is less than 12.9 million deaths reported by UNICEF in Ogunjuyigbe (2004), could have implied a huge relief to women and guardian, the family, society and government but for its effect and pains associated with the loss.

Across the world, some children are at risk of death than others. The risk is also higher for some countries and lower for others. Many previous studies (Oluwadare, 2009; UNICEF, 2009; APHRC, 2008; NBS, 2007; FOS, 1999; FOS, 1996; FOS, 1990), have reported a high level of infant and child mortality in many parts of the world; particularly in the undeveloped countries than in developed and technologically advanced countries. The studies showed that a child born in a least developed country was almost 14 times more likely to die during the first 28 days of life than one born in an industrialized country (UNICEF, 2009). A similar report by the African Population and Health Research Centre, APHRC (2008) indicated that infant mortality rate in Africa was as high as 82 per 1,000 live births while in Nigeria, it was 100 per 1,000 live births. Under-five mortality rate was equally high in Africa, where the sub-Saharan countries alone, experienced over 160 deaths per 1000 live births (NPC, 2004). This translated to a close to one million children dying each year (FMOH & World Bank, 2006) in NBS (2007).

Recent observations documented in several literature have shown that under-five mortality rate has decreased by 59%, from an estimated rate of 93 deaths per 1000 live births in 1990 to 39 deaths per 1000 live births in 2018. This is equivalent to 1 in 11 children dying before reaching age 5 in 1990, compared to 1 in 26 in 2018 (WHO, 2020). According to UNICEF (2019), the current trend shows a remarkable progress in child survival in the past few decades, as millions of children have better survival chances than it was the case in the 1990s. WHO (2019) also posits that half of all under-five deaths in 2018 occurred in just five countries such as India, Nigeria, Pakistan, Ethiopia and the Democratic Republic of Congo. Indeed, India and Nigeria alone account for about a third of the total number of deaths reported in 2018. Evidence from many studies show that morbidity and mortality of new born and adults vary depending on the socio-economic status of the family (Poerwanto, Stevenson & Klerk, 2003). Many other findings (Ogunjuyigbe, 2004, Caplan, 1993; Mouldon, 1986), also posit a direct and indirect influence of socio-cultural and biological factors on levels of child mortality in many societies.

In the Framework of Proximate Determinants of child Survival, Mosley and Chen (1984) argued that infant and child mortality result from the interaction of proximate determinants, namely, the social, economic, cultural, environmental, and geographical variables that operate through maternal factors such as hygiene conditions, nutrition, injury, and level of medical care. To Kapungwe (2003), all social and economic determinants are said to operate through these variables to affect child survival. A child's death is the cumulative consequence of multiple disease processes including their biological interactions. As posited by Mosley and Chen (1984), under a normal circumstance or condition, only less than five per cent of new born infants will die before reaching their first

birth day and; a higher probability of new born death in any society is caused by the effects of social, economic, environmental, and biological forces that operate through (five categories of) proximate determinants (intermediate variables) of the risks of disease process. The variables include maternal factors - age, parity, birth interval; environmental contamination - air, food/water/fingers, skin/soil/inanimate objects, insect vectors; nutrient deficiency - calories, protein, micro-nutrients (vitamins and minerals); Injury – accidental, intentional and; personal illness control - personal preventive measures, medical treatment” (Kapungwe:2003).

Furthermore, according to Oluwadare (2009), Furuta and Salway (2006) and Caldwell (1994) higher family income correlated with low level of child mortality and vice versa. Population mortality rates, including infant mortality, are strongly related to persistent low income and income uncertainty as well as the extent of income inequality in a population (Goldani, Barbieri, Bettiol, Barbieri & Tomkins, 2001). The variations of parental education, occupation, and residential location like household income, (UNICEF, 2009; Mwale, 2006; Jegede, 2002; Dooley & Curtis, 1998; FOS, 1999; Leslie, 1991; Heller & Drake, 1979; Behrman & Wolfe, 1984; Onyemunwa, 1988; NDHS, 1990) affect provision and consumption of better medical care, clothing, shelter, adequate nutrition, and sanitation as well as safe drinking water which eventually leads to deaths of newborns. In the metropolitan part of Ohio, a study showed an inverse association between infant mortality and the overall income status of residents in the area (Stockwell, Goza & Balisteri, 2008). According to Ahonsi (1992) and Bailey (1988) mother’s work outside the home and on non-white collar occupations influence positively higher child mortality since their occupation determines level of family income, time spent with the child, and time use for other domestic activities.

In addition to the fore going, however, it is important to note that while families in the developed societies have improved health security for their children, in the developing societies, most families are still getting it worse. Health institutions in most Third world countries including Nigeria is in horrible state: health infrastructures are not only dilapidated but inadequate. Akwa Ibom State in the South-South region of Nigeria is a case on note. Revealing statistics (by the state’s Ministry of Health and Hospital records) showed that child mortality rate is as high as 74 per 1,000 live births. These records showed that the major causes of infant and child mortality included anemia, chronic asthmatic attack, acute plasmodiais, dysentery, cholera, measles, tetanus, diarrhea, pneumonia, malaria, injuries, severe birth asphyxia, gross deformity at birth, severe neonatal jaundice, malnutrition, convulsion, cellulites, sepsis, and marasmus among others.

This revelation is both alarming and threatening. Much painful is the fact that despite the global concern demonstrated in the efforts towards reducing child mortality and promoting the well-being of families through the efforts of Primary Health Care Programmes (PHC), the Sustainable Development Goal (SDG) and other programmes focusing on poverty reduction especially in the third world nations, unhealthy families are rather increasing in number and child mortality exacerbated. In Akwa Ibom State, it is pathetic that in spite of the efforts of governments and voluntary organizations in this direction, the situation is still challenging. Poverty margin continuously widen, family income gets lower, nutrition gets poorer, food security almost uncertain and the population is susceptible to diseases and child death continues to increase. Apart from this, most parents and families in the rural areas and the poor in urban areas consider services given at Primary Health Centre, Clinic and Hospital as secondary and a referral, only when the

traditional herbs, concoction, fasting, prayer, and spiritual invocation seemed not to yield the expected result.

The ugly experience informs that both the society and families are in danger of continuously losing its newborns in numbers. The government is overstretched to provide health facilities and services needed by the poor and incapable families alone. It also becomes dogged in a never realized effort of determining actual population size because of continuous, and none record of deaths. The combined effects of poverty, diseases and death ridden situations of families weaken not only the social, economic, and political fabrics of the society but also adversely affect social life. Thus, bearing in mind these terrible situations in the rural and urban areas of Akwa Ibom State, this study is poised to investigate the determining effect of parental income on child mortality incidence in the state. This is with the intention of forestalling explosive population depletion in both rural and urban communities of Akwa Ibom State and Nigeria as a whole.

2. Objectives of the Study

The study was aimed to achieve the following objectives:

- i) To find out the monthly income of parents in the rural and urban areas of Akwa Ibom State
- ii) To investigate if parental income has a direct effect on child mortality in the rural and urban areas of Akwa Ibom State
- iii) To make recommendations on how to check the incidence of child mortality in the rural and urban areas of Akwa Ibom State.

3. Materials and Method

This study adopted the survey research design. Data were collected from 300 respondents randomly sampled from three urban areas (Uyo, Ikot Ekpene, Oron), and another 300 respondents from three rural areas (Ibiono Ibom, Oruk Anam, Urue-Offong/Oruko). The respondents comprised parents (males and females) aged 15 to 49 years. Where there was no parent (father or mother, alive), a caregiver who could give adequate fertility and mortality information of the family was selected. Data was all dichotomous in nature and was collected using questionnaire. Simple percentage method; the modified Sullivan Method of Infant and Child Mortality Estimation Technique, and Logistic Regressing Model were used in data analysis. However, in order to determine the levels of child mortality, a version of Brass Technique for Estimating Levels of infant and Child Mortality as modified by Sullivan (1972) cited in Kpedekpo (1982) was adopted. This required the computation of three types of estimates, namely, number of children ever born to women of a particular age X; death and survival probabilities for children from birth to exact age X; and, mortality index for women in a certain age and socio-economic categories.

4. Model Determination for Data Analysis

The estimated equation is presented as:

$$LCM(P/1-P1) = a + b1 FI + b2 PE + b3 RL + b4 FS$$

Again, where

P1 = probability that the family socio-economic variables affect the level of child mortality.
P1/(1 - P1) = the odd ratios of the probability that family socio-economic variables affect level of child mortality

LCM = Level of Child Mortality; a = constant term; b = Co-efficient
 Note: except Parental or Family Income, other variables were held constant.

5. Data Presentation

Table 1: Distribution of the respondents by sex

Areas	Sex of respondents	No. of respondents	%
Uyo	Male	63	10.6
	Female	107	18.0
Ikot Ekpene	Male	36	6.1
	Female	41	6.9
Oron	Male	34	5.7
	Female	15	2.5
Ibiono Ibom	Male	81	13.6
	Female	50	8.4
Oruk Anam	Male	62	10.4
	Female	58	9.7
Urue-Offong/Oruko	Male	30	5.0
	Female	18	3.0
Total		595	100

Table 1 shows the distribution of the respondents by sex. This table presents data pertaining to all the respondents sampled in both the urban and rural areas of Akwa Ibom State. The table shows a large population of males (306) or 51.4 percent and females (289) or 48.6 percent. This variation was due to the fact that more males than females showed interest in the problem of study, by accepting to answer the questions in the questionnaire. Based on data presented in table 1, the male respondents from Uyo Local Government Area were 63 (10.6%) while the female respondents (107) constituted 10 per cent. This implied that more females than the males in Uyo took part in the study. As in Uyo, more females (41) or 6.9 percent responded in the study than males (36) or 6.1 percent in Ikot Ekpene Local Government Area. The experience varied in Oron Local Government Area where more males 34 (5.7%) than females 15 (2.5%) responded to the questionnaire. The table (table 1) shows that in the three rural Local Government Area covered in this study, more men than women accepted to fill and return the questionnaire. From the table, 81 men or 13.6 percent of the respondents and 50 (8.4%) women respondents were sampled in Ibiono Ibom Local Government Area. In Oruk Anam, 62 (10.4%) males and 58 (9.7%) female respondents were covered in the study while in Urue-Offong/Oruko, a total of 30 (5%) males and 18 (3%) females were studied.

Table 2: Age distribution of the rural and urban respondents

Age group	No. of respondents rural	%	No. of respondents urban	%
15-19	17+39	5.7	8+34	2.8
20-24	40	13.4	30	10.5
25-29	69	23.1	52	18.2
30-34	59	19.7	50	17.5
35-39	33	11.0	36	12.6
40-44	19	6.4	38	13.6
45-49	23	7.7	37	13
Total	299	100	285	100

Table 2 shows the distribution of the rural and urban respondents by five year age cohort. The table shows a total of 299 respondents in the rural areas and 285 in the urban areas from whom data were collected concerning their age. The variation from the 300 persons targeted in each case to elicit information is due to the fact that at the point of retrieval of the questionnaire, one person in the rural area did not return the copy given to him. In the urban areas, 11 respondents did not give data of their age while four persons given the questionnaire to fill, did not return same to the researcher. However, data in the table show 17(5.7%) respondents in the rural areas and eight (2.8%) respondents in the urban areas which reported their ages in the cohort of 15 – 19 years. A total of 40 (13.4%) rural and 30(10.5%) urban respondents said they were aged 20 – 24 years, while 69 (23.1%) rural and 52 (18.2%) urban respondents reported that their ages fell between 25 and 29 years.

Table 3: Distribution of the rural and urban respondents by level of monthly income

Monthly income	No. of respondents-rural	%	No. of respondents-urban	%
₦10,000 or less	58	35.2	27	13.8
₦11,000-₦30,000	63	38.2	99	50.8
₦31,000-₦50,000	24	14.5	42	21.5
₦51,000-₦70,000	7	4.2	13	6.7
₦71,000-₦90,000	6	3.6	4	2.1
₦91,000-₦110,000	2	1.2	1	0.5
Above ₦110,000	5	3.0	9	4.6
Total	165	100	195	100

Table 3 shows the distribution of the rural and urban respondents by monthly income. It shows a population in which the majority of the people lived on monthly income that is relatively low; ranging from 10,000 or less to 50,000. Based on these data, this population is poor; families can neither feed the young ones (zero to five years) nor adequately provide other types of services necessary to support their survival. It also shows that only 15 (9%) of the respondents in the rural areas earned a monthly income of 51,000 to 110,000. In the urban areas, a few number of respondents (18) or 9.3 percent also earned monthly income of between 51,000 and 110,000. The number of respondents in the rural areas who earned above 110,000 in a month were five (3%) while in the urban areas those who reported a monthly income of 110,000 and above were nine (4.6%).

Model of Estimating Levels of Child Mortality

William Brass is associated with the best-known and most widely applied method of mortality estimation (Chowdhury, Islam and Hossain, 2009). This model is sensitive to;

- i. Number of children ever born by women,
- ii. Proportions dead of children from those ever born by women classified in five year age cohort; and
- iii. The probabilities of dying before age X.

The model cited in Chowdhury, Islam and Hassain (2009) is given thus: $q(x) = D(i) k (i)$, the multipliers, $K(i)$ is calculated by fitting regression coefficients $a(i)$, $b(i)$ and $c(i)$ into the following equation: $K(i) = a(i) + b(i) P_1/P_2 + c(i) P_2/P_3$

Where $K(i)$ is as defined above and P_1, P_2 and P_3 are the mean parties of the respective age groups 15 – 19, 20 – 24, and 25 – 29. The values of the coefficients $a(i)$, $b(i)$ and $c(i)$ are given in the UN (1983).`

The original Brass model has been modified by a number of authors, notably Sullivan (1972), who extended the method to groups of women classified by age. In the modification of Brass’s technique, Sullivan developed a simple linear regression model which takes the form: $q(x)/D(i) = A + B (P_2/P_3), 1 = 2,3,4.$

Where A and B are two constants of the regression, estimated from the model life table. Later, Trussell (1975) expanded the model based on estimation methods. Trussell’s model has been presented in the following form: $q(x)/D(i) = a(i) + b(i) [P_1/P_2] + c(i) [P_2/P_3].$ Where value of $a(i)$, $b(i)$ and $c(i)$ are estimated from the model life table.

Table 4: Distribution of the rural and urban respondents (women) by mean number of children ever born at current age

Current age of women	No. of respondents	Total No. of CEB	Mean No. of CEB
Rural 15-19	2	5	2.5
20-24	5	15	3
25-29	26	86	3.3
30-34	33	109	3.3
35-39	17	99	5.8
40-44	8	60	7.5
45-49	7	71	10.1
Total	98	445	4.5
Urban 15-19	0	0	0
20-24	5	9	1.8
25-29	19	46	2.4
30-34	26	104	4
35-39	13	103	7.9
40-44	13	133	10.2
45-49	5	136	27.2
Total	81	531	6.6

Table 4 shows the distribution of the rural and urban respondents by mean number of children ever-born at current age. The table shows that although the mean parity for women in both the rural and urban areas increased with the age of the women, in the rural areas stability occurred in the mean parity for women in the groups of 20 – 34 years. In the urban areas, there was no stability in parity among the women. According to data presented on the table, the mean number of children ever born by the rural respondents at the completion of reproductive cycle was 4.5 and 6.6 in the urban areas. The variation observed was caused by the rural respondents (women), who reported less number of children; most of them said they started reproduction late as they were also late into marriage. Although, early marriage is not higher among the urban respondents than the rural respondents, because of the period of schooling the urban women often undertake. The rural respondents said they stay longer in maternity due to complete reliance on traditional methods and practices of the further children. Within the inter-period, new pregnancy is delayed unlike the urban respondents who prefer to have desired number of children all in a stretch.

Table 5: Proportion dead of children (PD) by age of mother in the rural and urban areas

Age group	CEB	No. of dead	Probability of surviving: Coale Demeny North Model Values	Proportion dead
Rural				
15-19	5	3	0.45576	0.273456
20-24	15	1	0.49549	0.330327
25-29	86	3	0.53257	0.018578
30-34	109	10	0.56730	0.0520459
35-39	99	16	0.59996	0.0969633
40-44	60	4	0.63075	0.04205
45-49	71	7	0.65986	0.0650566
Total	445	44		
Urban				
15-19	0	0	0.45576	0
20-24	9	0	0.49549	0
25-29	46	2	0.53257	0.0231552
30-34	104	5	0.56730	0.027274
35-39	103	8	0.59996	0.0465988
40-44	133	14	0.63075	0.0663948
45-49	136	9	0.65986	0.0436672
Total	531	38		

Table 5 shows proportion dead (PD) of children by age of mother in the rural and urban areas. The table indicates less number of child deaths at the beginning of reproduction by the women, which later diminished from the age of 44 years, that is, as the women grow old. According to the table, child mortality rate was higher for women in the age cohorts of 30 – 34 and 35 – 39 years, and up to the age cohort of 40 – 44 years for urban respondents, before it started reducing. The proportion of dead determined from the probability of surviving using Coale-Demeny North Model values was higher for the first two age groups (15 – 19 and 20 – 24) than others for the rural respondents while among all age groups in the urban areas, the proportion dead of children remained low. Table 5 also shows a total of 44 child mortality cases in the rural areas, as being higher than the number (38) reported in the urban areas of Akwa Ibom State.

Table 6: Life table estimation of probability of surviving, dying and mortality rate among the rural and urban respondents' children

Rural					
	x	lx	Lx	Dx	qx
	0	87	1000	92	0.092
	1	79	908	80	0.0881057
	2	72	828	81	0.0978261
	3	65	747	34	0.0455154
	4	62	713	12	0.0168303
	5	61	701	0	0
	6	0	755	755	1
Urban					
	X	lx	Lx	Dx	Qx
	0	86	1000	105	0.105
	1	77	895	58	0.0648045
	2	72	837	58	0.0692951
	3	67	779	0	0.0

4	67	779	24	0.0308087
5	65	755	0	0
6	0	755	755	1

Table 6 shows that the probabilities of dying decreased with age in the rural and urban areas but with accompanying increase in the probabilities of surviving. According to the table, the rate of infant deaths, 92 per 1000 live births in the rural areas and 105 per 1000 live births in the urban areas, decreased and the probabilities equaled zero in later years of the children lives. The variation infant deaths observed, between these areas was accounted for by the differences in the data reported by the respondents, which seeded by under estimated in the rural areas.

Where x = age of children in years.

I_x = number alive at the beginning and the number observed at each age or stage

L_x = probability of children surviving to the next age or stage survivorship

dx = number dying at age

qx = probabilities of dying

Table 7: Logistic regression result of socio-economic determinants of levels of child mortality in rural and urban areas of Akwa Ibom State

	Coefficient	Standard error	t value
Rural: Constant	.052	.010	5.166
PI factor	.024	.014	1.673**
N	98		
Urban: Constant	.038	.002	16.386
PI factor	-.003	.004	-.700**
N	81		

** implies significance at 0.05, since data was tested at 95% confidence level.

Given the study assumption that parental income did not affect the level of child mortality in the rural and urban areas of Akwa Ibom State, the result yielded:

t* = 1.673 < CMI = 5.5 and , t* = .700 < CMI = 1.124, respectively.

where t* = calculated Parental Income Index

CMI = child Mortality Index

In both areas, based on the results as shown above, t* is less than the CMI, hence, the null hypothesis (H₀) was accepted and the alternative hypothesis (H₁) rejected. It implied by the results that income of parents did not exert direct effect on the level of child mortality in the rural/urban areas of Akwa Ibom State. The effect or relationship that existed between the variable is inverse because the value of the independent variable (t*) was less than the dependent variable (CMI). Thus, instead of income of parent depending on the level of child mortality, it is the level of child mortality that depends on the income of parent. However, because t* value (in the case of urban areas) carried a negative sign which signified inverse relationship between the variables, it meant that the level of child mortality in the urban areas of Akwa Ibom State was inversely related to the income of parents.

Child death is unfortunate and unexpected occurrence. It occurs to both the rich and poor parents. In the study, some high income parents reported high rate of child mortality likewise some low income parents. The reverse was equally reported by low income parents that experienced low child mortality, and high income parents that also experienced low child. The coefficient of regression (.024) (see table 7) at 95% confidence

interval was highly insignificant, i.e, (2.4) proportion to 100 percent significant level. Although income was generally believed to have inverse relationship with level of child mortality, this generalization did not hold true, due to realities peculiar to the study society. The generalized view is that mortality level lowers as parent income increases, whereas the lower the parental income, the higher the level of child mortality.

The deviation in the rural areas of Akwa Ibom State could be due to supports from relatives and friends which normally augment the parent's resources to care for their children. It could also be due to other factors not considered in paired situation with the income variable such as attack from the environment, level of schooling, number of children ever born, and marital status (divorce, separated or widowed). For instance, attack from witches and wizards could suppress the effect of income on the child health (Ogunjuyigbe, 2004; Offiong, 1983); even the parent's ability to make meaningful income. Similarly, high income parents with poor schooling; who had large (polygamous) family and those that managed a single-parent family structure, experienced high mortality.

Child birth beliefs and practices including care were not exclusive of the parents but activities jointly carried out by other relatives and the family in general. The findings from a study on child birth beliefs, attitudes and practices among Ibibio women and their families by Abasiokong (1997) were found to be in agreement with this fact. Among Akwa Ibom people, patterning is valuable and is practicable till today. Soon after delivery, the mother with her child is taken for patterning by the family of the wife (in law) and later by the family of the husband, or vice versa. Although in recent practice, the husband contributes to the upkeep of the family where his wife is kept on patterning, it is believed that during such periods the husband is relieved of certain commitments of caring for the child and the mother. In some families, the husband is not bordered about the cost of feeding and other needs of the child and the mother throughout the patterning periods. Elder sisters, brothers, uncles and aunties sharing patrilineal and matrilineal relationship could also give assistance that subsidizes a man's (or couple's) efforts in caring for their child until maturity. A former master or mistress of the husband or wife may also give similar assistance. Thus, the effects of patrilineal and matrilineal assistance in circumstance of needs for child care is stronger enough to remedy the excesses of the socio-economic status determinants on people living in the rural areas, and vice versa.

6. Findings and Discussion

Income is one variable that has been critically examined throughout this work. It is a factor acknowledged in the literature to influence a decrease or increase in both fertility and mortality levels in many societies. It was observed among the study population that parental income level was essential even as Weeks (2008) asserted that it is frequently associated with the ability of a nation to provide, or an individual to buy, adequate medical protection from disease. Although a large number of respondents did not give data of their monthly earnings, for those that did, it was observed that income level was higher in the urban areas than in the rural areas. The least income (10,000 or less) was reported by 58 rural respondents compared to only 27 urban respondents that reported equivalent amount. For a monthly income of more than 110,000, only five respondents in the rural areas against nine respondents in the urban areas reported they earn equivalent of that amount. It was also revealed from the study that for the reported monthly income of spouse, data varied between high in the urban areas and low in the rural areas.

Another observation was that income or monthly earning was highly valuable by the people (in both rural and urban areas). This was because it equipped one with the capacity to acquire all that is needed in time. Among the urban respondents, high income influenced low child mortality while in families with low income, child mortality level tended to increase. In the rural areas, it was observed on the contrary that income did not relate with the level of child mortality. Certainly, this observation was in contradiction with the general believe that in all cases, high income corresponds with low mortality, likewise low income and high child mortality. A road side view revealed that children of insane parents who make no income at all, normally live healthy and grow in unsanitary conditions. They are never immunized, neither do they visit hospitals, clinics, primary healthcare centre or dispensary. Besides, serious and complicated child health problems or sicknesses are often reported by the rich in the urban areas whereas poor parents observably give birth to twins, triplets and quadruplets that are cared for from charities but they survive to adulthood without much health problems. It is possible however, that income may not remain a strong determinant of level of child mortality as observed among the rural respondents. According to Dooley and Curtis (1998), severe childhood health problems may reduce family income by limiting the paid work of one or both parents. Also, the stress arising from severe health problems might also influence the likelihood of separation, divorce or remarriage.

7. Conclusion and Recommendations

An increasing number of studies have examined the health situations of newborns and the proximate determinants of their survival in different societies. In the studies, findings varied depending on the society, mortality levels also change back and forth despite the sustained efforts through such agencies as the Fourth Foundation, safe Motherhood, the United States Agency for International Development (USAID), MDGs and SDGs and other programmes such as Primary Health Care (PHC), Expanded Programme on Immunization (EPI), Kick out Polio, Family Support Programme (FSP), Family Economic Advancement Programme (FEAP), Child Development Trust (CDT), Child Survival Initiative (CSI) among others, adopted and implemented at the state and national levels to check the ugly experience. While certain verified evidence has pointed at the effects of factors such as low parental income as being associated with high child mortality level in different parts of the developing countries, the observation in the rural and urban areas of Akwa Ibom State based on the study data indicate on the contrary an inverse relationship between the two variables. The unfortunate high level of under-five death in parts of the state could be due to other factors such as the failure of parents or guardian to accept full immunization for their newborns. Based on this, the study recommends a free and compulsory door-to-door immunizations and vaccinations to every new born in the state, adequate law and enforcement against parents who fail to produce their children during the campaigns.

References

- Abasiokong, E. M. (1997). Children beliefs, attitudes and practices of Ibibio women and their families in South-East Nigeria. An Unpublished study Reports Submitted to the International Development Research Centre. University of New Foundland Canada.
- African Population and Health Research Centre (2008). 2008 Africa population data sheet. Downloaded from www.aphrc.org on 16/07/2019

- Ahonsi, B. A. (1992). Development implications of early mortality factors in Nigeria. Journal of Social Development in Africa, Z (1): 67-85
- Bailey, M. (1988). Factors affecting infant and child mortality in rural Sierra Leone. Journal of Tropical Pediatrics, 12 (3): 301-325
- Behrman, J. R. & Wolfe, B. L. (1984). More evidence on nutrition demand: income seems overrated and women's schooling underemphasized. Journal of Development Economics, 14 (0): 105-128
- Caldwell, J. C. (1994). How is greater maternal education translated into lower child mortality? Health Transition Review, 4 (2): 224-229
- Caplan, A. L. (1993). The concept of health, illness and diseases. In Bynum, W. F. & Porter, R. (eds). Companion Encyclopedia of the History of Medicine, 1 (1): 233-248
- Chowdhury, Q. H. Islam, R. & Hossain, K. (2009). Levels and patterns of child mortality: Application of Indirect Techniques. Downloaded from <http://www.demographicresearch.org> on 16/07/2019
- Dooley, M. D. & Curtis, L. (1998). Child health and family socio-economic status in the Canadian National Longitudinal Survey of Children and Youth. Downloaded from <http://www.demographic-research.org> on 16/07/2019
- Federal Ministry of Health (2004). Revised National Health Policy. Nigeria
- Federal Office of Statistics (1999). Nigeria demographic and health survey. IRD/MACO International, Inc.
- Federal office of Statistics, and UNICEF. (1999). Nigeria multiple indicator cluster survey 1993. IRD/Macro International. Inc. Maryland. USA.
- Federal Office of Statistics (1996). Socio-economic profile of Nigeria. Lagos/Abuja: Dii Prints
- Nigeria Demographic and Health Survey, NDHS. (1990). Nigeria demographic and health survey 1990. IRD/Macro International. Inc. Maryland. USA.
- Federal Republic of Nigeria/UNICEF (1990). Children and women in Nigeria: A Situation Analysis. Ibadan: John Printers and Stationeries
- Furuta, M. & Salway, S. (2006). Women's position within the household as a determinant of maternal health care use in Nepal. International Family Planning Perspectives, 32 (1): 17-27
- Goldani, M. Z. Barbieri, M. A. Bettiol, H. Barbieri, M. R. & Tomkins, A. (2001). Infant mortality rate according to socio-economic status in a Brazilian City. Rev. Saude Publica, 35(2) Downloaded from www.demographic-research.org. on 16/07/2019
- Heller, P. & Drake, W. (1979). Malnutrition, child mortality, and the family decision process. Journal of Development Economics, 6 (21): 3-235
- Jegede, A. S. (2002). Problems and prospects of health care delivery in Nigeria: issues in political economy and social inequality. Malthouse Social Science Studies, (212-226). Lagos: Malthouse Press Limited.
- Kapungwe, A. (2003). Health-seeking behaviour and under-five mortality: a case study of two districts in Luapula Province in Zambia. South-South Journal of Culture and Development, 5 (2): 153-189.
- Kpedekpo, G. M. K. (1982). Essentials of demographic analysis for Africa. London: Heinemann.
- Leslie, J. (1991). Women's nutrition: the key to improving family health in developing countries? Health Policy and Planning, 6 (1): 1-19
- Ministry of Economic Development, MEOD. (2005). Akwa Ibom State socio-economic study report. Akwa Ibom State, Nigeria
- Mosley, W. & Chen, L. C. (1984). An analytical framework for the study of child survival in developing countries: Supplement on Child Survival, 1 (10): 25-45.

- Mouldon, J. (1986). The effects of malaria disruption on children's health. *Demography*, 1 (4): 154-182.
- Mwale, M. W. (2006). Infant and child mortality. Downloaded from <http://www.demographic-research.org> . on 05/10/2019
- National Bureau of Statistics/World Bank (2007). Nigeria poverty assessment 2007. Federal Republic of Nigeria, Abuja.
- National Population Commission, NPC, (2004). The national policy on population for sustainable development. Abuja, Nigeria.
- Ogunjuyigbe, P. O. (2004). Perception and Attitudes of the Yorubas towards the existence of "Abiku". *Demographic Research*, 11 (2). Downloaded from <http://www.demographic-research.org>. on 05/10/2019
- Oluwadare, C. (2009). The social determinants of routine immunization in Ekiti State of Nigeria. *Ethno-Medical Journal*, 3 (1): 49-56.
- Onyemunwa, P. (1988). Health care practices and use of health services as factors affecting child survival in Benin City, Nigeria. *African Population Conference: Dakar*, 2, 3(1): 41-55.
- Offiong, D. A. (1983). Social relations and witch beliefs among the Ibibio of Nigeria. *Journal of Anthropological Research*, 39 (1).
- Poerwanto, S., Stevenson, M. & de Klerk, N. (2003). Infant mortality and family welfare: policy implications for Indonesia. *Epidemiol Community Health*, 1 (57): 493-498.
- Stockwell, E. G., Goza, F. W. & Balistreri, K. S. (2008). Infant mortality and socio-economic status: new battle, same old wine. Downloaded from <http://www.bgsu.edu/organizations/cfdr/main.html> on 09/11/2019
- UNICEF, (2019). Under-five mortality. Downloaded from www.unicef.org. on 09/11/2019
- UNICEF, (2009). The State of the World's Children 2009: Maternal and New born Health. Downloaded from www.unicef.org. on 09/11/2019
- WHO. (2020). Global Health Observatory (GHO) data on child health: Child mortality and causes of death. Global Strategy for Women's, Children's and Adolescents' Health (2016-2030) data portal, Geneva. Downloaded from www.who-newbornmortality/globaldata/. on 09/11/2019
- WHO. (2020). Children: reducing mortality, Geneva. Downloaded from www.who-newbornmortality/globaldata/. on 09/11/2019
- Weeks, J. R. (2008). *Population: an introduction to concepts and issues* (eds.). Australia: Thomson Wadsworth.
- Yaya, S., Bishwajit, G., Okonofua, F. & Uthman, O. A. (2018). Under five mortality patterns and associated maternal risk factors in sub-Saharan Africa: A multi-country analysis, 13(10):