

Health Status of Female Farmers and Farmers' Children: Empirical Evidences from Gombe State of Nigeria

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ABSTRACT This paper examined the health status of farmers and farmers' children in Kaltungo Local Government Area of Gombe State. The study demonstrates high morbidity and micro-nutrient deficiency in the study area. Only 40% of pregnant women farmers were immunized against tetanus. Mother's did not strictly observe children's immunization calendar. Age, education and income of farmers were found to influence health-seeking behaviors of mothers. Constraints to effective and efficient health care practices include inadequate access to education, income and credit as well as extension services. Also, other constraints identified by farmers were heavy workload, time, labour, energy, poor family and community support. Since there is a general high morbidity and poor health status as a result of micro-nutrients deficiency and malnutrition, it is recommended that improving the level of mother's education which is the most important influence on her survival rate and that of her children, family and nation at large should be vigorously pursued particularly in the study area, state and the nation at large.

1. INTRODUCTION

Some of the numerous problems currently facing the world's population, especially in developing countries are food insecurity, hunger, malnutrition and diseases. Optimum food production, adequate nutrition and good health seeking behaviours are positively correlated to good health. By implication the health status of farmers has a direct bearing on their agricultural output, hence, it is imperative to look into the health status of food producers with particular focus on women who bear multi burden in family survival mechanisms.

In the recent past the view has been firmly asserted that in Nigeria and other developing countries that the eradication of hunger, diseases, under nutrition and food insecurity among farmers and future generation of farmers depend on three factors; household and individual food security, access to health services and healthy environment characterized by adequate provision of behaviors that have the collective label care. These are behaviours mostly provided by women (Engle et al., 1997; FOS, 1999).

Female farmers in Nigeria contribute significantly to the household with products and cash needed for its up keep. Conversely, their maternal and domestic roles lay the foundation

and provide the farm with the required labour for bringing the agricultural production to fruition. Within the rural community the farm/household complex form one single unit of scientific research of extension, and to treat them with others without due regards to their unique circumstances would amount to a distorted picture of the situation. This paper therefore investigated the health status of farmers and farmers' children (future farmers). In particular it seeks to examine their micro-nutrient, immunization and morbidity status. In addition, it seeks to identify their socio-economic characteristics and health seeking behaviours.

2. METHODOLOGY

The data for this study were obtained from a random sample of three hundred female farmers from Kaltungo Local Government Area of Gombe State. It is situated in the Northern Guinea Savannah at longitude 11.30¹ to 11.40¹ East and latitude 9.30¹ to 10.30¹ North. It has short rainy season starting from June to October and dry season of more than six months. The rainfall averages 1600mm. The soil type is sandy solid – drift soils low in nutrients (Ezenwa, 1986).

A sampling frame, consisting of 1,264

registered female farmers was obtained from the Women –In – Agriculture (WIA) unit of Kaltungo Local Government Area Extension Service. Using a simple random procedure a total of 300 respondents was selected. A structured questionnaire was administered to the respondents who are predominantly farmers. For the purpose of this study, socio-economic characteristics of farmers and farmers' children were assessed in order to highlight their health status. Age, Education, income and family and community support were considered. Also age, sex, and number of children of female farmers' children were considered to present background information on the female farmers. Descriptive statistics - frequencies and percentage were used to analyse data collected.

3. RESULTS

Findings from the study as shown in table one, reveals that age of female farmers ranged between 18-60 years and female aged 18-40 years constituted the majority (50.6%). there were more female farmers' children (60.7%) while only 39.2% were male. The number of children per farmer ranged from one to twelve with a mean of 8.25. Children under the age of five years (59.4%) constitute the majority.

In terms of education, 21.3% were non-literate while 20% and 16.6% attended and completed primary school and adult literacy respectively. As shown in table one, the income status of farmers ranges from less than ₦1000 (36.7%) to ₦ 1000 – ₦ 2999 (33.3%) and ₦ 3000 – ₦ 4999 (16.6). Majority (60%) indicated they never enjoyed family and community support. With respect to number of children, 40% of the respondents have children under 5 years and 30% have between 5 and 7 years of age.

Table 2 reveals the immunization status of mothers and children in the study area. For female farmers who were found pregnant during survey, more than one third of the total sample (40%) was immunized against tetanus while 60% were not.

Data on farmers' children reveal that 62.2% were immunized against various diseases. The remaining 37.8% were not. Some of the diseases children were immunized against are BCG/polio (24.2%); DPT/polio 1 (17.8%); DPT/polio 2 (10.7%); DPT/polio 3 (15.0%); measles (14.2%); poliomyelitis (8.9%) and tetanus (8.9%). The has

Table 1: Socio-economic characteristics of respondent.

<i>Socio-economic characteristics</i>	<i>Frequency</i>	<i>Percent of Total</i>
<i>(a) Age Group (Years)</i>		
Under 21	29	9.6
21-30	40	13.4
31-40	86	28.7
41-50	100	33.3
51 and above	45	15.0
Total	300	100.0
<i>(b) Education</i>		
Non-literate	64	21.3
Adult literacy	50	16.7
Primary uncompleted	43	14.3
Primary completed	60	20.0
Secondary uncompleted	35	11.7
Secondary completed	16	5.3
Teachers college	32	10.7
Total	300	100.0
<i>(c) Average Income (N)</i>		
≤ 1000	110	36.7
1000-2999	100	33.3
3000-4999	50	16.7
≥ 5000	40	13.3
Total	300	100.0
<i>(d) Family/Community Support</i>		
Never before	90	60.0
Often	140	46.7
Very often	70	23.3
<i>(e) Number of Children</i>		
Under 5	120	40.0
5-7	90	30.0
8-10	50	16.7
11-13	40	13.3

Table 2: Pregnant farmers and children less than 5 years immunized by mothers

<i>Immunization</i>	<i>Frequency</i>	<i>Percentage</i>
<i>(a) Pregnant Farmers Immunized Against Tetanus</i>		
Yes	40	40.0
No	60	60.0
Total	100	100.0
<i>(B) Children Immunization</i>		
Immunized	560	62.2
Not Immunized	340	37.8
Total	900	100.0
<i>Immunized Against</i>		
BCG/polio	136	24.2
DPT/polio 1	100	17.8
DPT/polio 2	60	10.7
DPT/polio 3	84	15.0
Measles	80	14.3
Poliomyelitis	50	8.9
Tetanus	50	8.9
Total	560	100.00

great implication for health education and strategic advocacy efforts in the study area and northern Nigeria in general where socio- cultural hindrances borne out of ignorance has done more harm than good. This is evident in the 2003/2004

poliomyelitis vaccine administration crisis in the entire northern region of which the study area is inclusive.

As seen in Table 3, vaccinations by age of mothers indicated that the modal category (41-50 years) vaccinated children the most (28.6%). However, with reference to immunization of their young ones, mothers who completed secondary education achieved that than others (25%). Female farmers of high-income status ($\geq$ ₦5000) ranked highest (36.3%) in immunization efforts of their young ones. Therefore, it can be deduced that mothers with reasonably good education and most glaringly with high income immunized their children against deadly childhood diseases though immunization causes little or nothing as government finances immunization in most locations in Nigeria.

Table 3: Distribution of children vaccinated by mother's age, education, and income

	Frequency	Percentage
<i>I Age</i>		
Under 21	90	16.1
21-30	80	14.3
31-40	100	17.7
41-50	160	28.6
51 and above	130	23.2
Total	560	100.0
<i>II Education</i>		
Non-literate	40	7.1
Adult literacy	40	7.1
Primary uncompleted	50	8.9
Primary completed	100	17.8
Secondary uncompleted	70	12.5
Secondary completed	140	25.0
Teachers college	120	21.4
Total	560	100.0
<i>III Income (Naira)</i>		
Under 1000	101	18.1
1000-2999	102	18.2
300.49999	150	26.7
5000 and above	207	36.4
Total	560	100.0

Table 4 highlights pattern of farmers and farmers' children's morbidity. For female farmers those who reported sick (50%) and not sick (50%) carry equal weight. Type of sickness reported by respondents includes stomach ache (26.7%), fever (20%), rheumatism (16.7%), diarrhea (13.3%), Hookworm (13.3%) and food poisoning (10.0%). These sicknesses were reported to be affecting farmers very often (53.3%).

Farmers' children morbidity indicated that majority of them (58.1%) were reported sick by

Table 4: Pattern of female farmers and farmers children's morbidity

Pattern of morbidity	Frequency	Percentage
<i>A (i) Farmers Morbidity</i>		
Sick	150	50.0
Not sick	150	50.0
Total	300	100.0
<i>(ii) Type of Sickness</i>		
Stomach ache	40	26.7
Fever	30	20.0
Rheumatism	25	16.7
Diarrhea	20	13.3
Hook worm	20	13.3
Food poisoning	15	10.0
Total	150	100.0
<i>(iii) Occurrence</i>		
Never before	10	6.7
Often	60	40.0
Very often	80	53.3
Total	150	100.0
<i>B (i) Child Morbidity</i>		
Child sick	880	58.8
Child not sick	635	41.2
Total	1515	100.0
<i>(ii) Type of Sickness Affecting Children</i>		
Fever	168	19.1
Diarrhea	150	17.1
Cough	132	15.0
Respiratory infection	120	13.6
Malaria	160	12.5
Measles	100	11.4
Pneumonia	100	11.4
Total	880	100.0
<i>(iii) Occurrence</i>		
Never before	30	10.0
Often	120	40.0
Very often	150	50.0
Total	300	100.0

mothers. Most common sickness among children includes; fever (19.1%), diarrhea (17.1%), cough (15%), respiratory infection (13.5%), Malaria (2.5%), measles (11.4%) and pneumonia (11.4%). As found in mothers' case, occurrences of these sicknesses very often (50%) affect their children too.

Table 5 reflects children's morbidity by mothers' age, education and income. Children of younger mothers (18-40years) were mostly sick (73.4%). Similarly, those of illiterate's mothers (26.7%) and low income (66.7%) were also mostly sick.

As seen in table 6, micronutrients intake in both mothers and children are poor. Vitamin A levels in mothers (13.3%) and children (22.2%) indicated mild deficiency. But iodine levels in mothers (33.4%) and children (38.8%) showed severe deficiency. Similarly, hemoglobin in

Table 5: Morbidity in children by mothers age, education, and income

	<i>Frequency</i>	<i>percentage</i>
<i>a. Age</i>		
Under 21	100	33.4
21-30	40	20.0
31-40	60	20.0
41-50	40	13.4
51 and above	40	13.2
Total	300	100.0
<i>b. Education</i>		
Non-literate	80	26.7
Adult literacy	78	26.0
Primary uncompleted	40	13.3
Primary completed	20	16.7
Secondary uncompleted	40	13.3
Secondary completed	24	8.0
Teachers college	18	6.0
Total	300	100.0
<i>(c) Income (Naira)</i>		
Under 1000	120	40.0
1000-2999	80	26.6
300.49999	50	16.7
5000 and above	50	16.7
Total	300	100.0

Table 6: Micro-nutrient level in mothers and children

<i>Micronutrient</i>	<i>Mothers</i>	<i>Children</i>
<i>(i) Vitamin A Levels</i>		
Serum retinol concentration		
< 20.0 ug/L (Mild deficiency)	13.3	22.2
< 10.0 ug/L (severe deficiency)		
<i>(ii) Iodine Levels</i>		
TSH > 5.0 ug/L (Mild deficiency)		
T4 < 50.0 Ug/L (severe deficiency)	33.3	38.8
<i>(iii) Hemoglobin</i>		
HB < 12g/dL (Mild deficiency)		
HB < 11g/dL (Mild deficiency)	20.0	
HB < 7g/dL ((severe)	55.0	60.0

mothers (55%) and children (60%) respectively are found to be in severe deficiency.

4. DISCUSSIONS

Respondents were highly proactive with high child dependency ratio of vulnerable category. They were poor from all indices - education, income, extension contact, credit, time, labour, and family in addition to absence of community support structures.

Farmer characteristic enumerated in the findings are some of the resources that a farmer draws on in caring for herself, her child, family and performs her domestic, maternal and farm work. The quality of these resources count from the perspectives of efficiency and effectiveness

and to guarantee her personal care and that of her children and family in terms of health, nutritionally, domestically, and occupationally. This finding is further corroborated by previous efforts (Joesks 1989, Guldan 1993 and Hadad and Hoddinot 1994) where women were reported to be incapacitated by poor resource base especially human resources.

4.1 Immunization Status of Mothers and Children

The study showed that very few pregnant mothers were immunized against tetanus and majority of farmers children were partially immunized against childhood killer diseases. Children are usually given immunization protection against some deadly and contagious diseases within the first twelve months after birth. Vaccinations are given specifically to protect against tuberculosis, diphtheria, polio, measles, pertusis, and tetanus. The Expanded Programme on Immunization (EPI) was embarked upon in Nigeria inline with WHO guidelines for vaccinating children. For a child to be fully vaccinated the child must have received BCG within one week of birth, three doses of DPT and polio in the first six months of life, booster doses are given later, but before the age of six years. Results showed that more than half of the children were immunized against childhood killer diseases, never the less; the sequence was not fully adhered to by mothers.

Therefore, it could be inferred that farmers did not strictly observe children's immunization calendar, hence, it can be concluded that children in the study area were not fully immunized. This finding is consistent with what was reported for the country (UNICEF 1998) where only 17% of children were fully immunized. This is not a good step towards optimum health practices in the study area. It is therefore imperative that more work needs to be done that will encourage mothers on the need and importance of good health practices through health and extension education.

4.2 Socio-Economic Status of Women Farmers and Children's Immunization

The number of children vaccinated was higher for the older mothers (41-50years) constituting 28.57%. Also, women with formal education were

more disposed to taking their children for immunization. Again, women of high-income status were also prone to taking their children for immunization. This study agrees with Ware (1984), and Thomas et al (1990) that reported that mother characteristics have significant influence on their offspring's nutritional status, health, growth and development.

4.3 Morbidity of situation of Women farmers

In Nigeria, the most common ailments of females are Gastro or stomach related, and the highest occurring during pregnancy. Others are fever, sexually transmitted diseases and anemia (Robinson, 1995). In this study, half of the female farmers were reportedly sick and majority indicated stomachache.

Females are important target group in any health, nutrition, and childcare programmes because the maintenance of health particularly of infants and children is a maternal role. Mothers are crucial links between the family and health care systems and in addition, produce, purchase, prepare and serve food and provide a clean and safe environment. Inadequate maternal and childcare are therefore some of the underlying causes of under nutrition, ill- health, low-productivity and poverty. Too many frequent illnesses as indicated in the study and a greater workload reduce the mother's capacity to work as a farmer, care for herself, her children and other family members. Precise indicators of mothers morbidity used in the study were the number of farmers sick during the survey, type of sickness and the frequency of occurrence.

4.4 Morbidity of Farmers' Children

Childhood survival and development in Nigeria are undermined by high rates of childhood morbidity. Available community and hospital base studies shows that the commonest causes of morbidity among children under five are fever, diarrhea, and acute respiratory infections (UNICEF. 1998). This finding highlight further the pattern of morbidity among children less than five years. Majority of farmers children were reported sick by mothers with diarrhea, cough, respiratory infections, measles, malaria and pneumonia. The poor health status of children in the study area was affirmed by the high frequency of occurrence of illness.

Childhood morbidity was higher among children with young mothers, uneducated and with low income. This study is in line with Ware 1984 and Thomas et al 1990 that reported significant influence of socio-economic characteristics of mothers on children's health.

4.5 Micro Nutrient levels in Women Farmers and children

Vitamin A, Iodine and Hemoglobin status of female farmers and their infants were assessed to throw more light on their health status earlier assessed.

Vitamin A: The status of Vitamin A among sampled farmers and children were assessed by measuring the concentration of retinol in serum by specialists. Serum retinol concentration less than 20mg/L is indicative of mild or moderate deficiency, less than 10mg/L is indicative of severe Vitamin A deficiency. Result further showed that children were more susceptible. Also, clinical examination of mothers and children revealed vitamin A deficiency where 8% of mothers suffer from night blindness and 3.3% had ulceration, 20% of the children had eye sores. This finding is similar to WHO 1998 that found as high as 16% prevalence of vitamin A deficiency in North Eastern Nigeria.

Iodine: Iodine status of mothers and children was assessed by the determination of serum levels of the iodine containing hormones endothyromine (T_3) and Thyroxin (T_4) and of thyroid stimulating hormone (TSH). Serum T_4 concentration less than 50 nml/L and TSH greater than 5.0 mg/L are indicative of iodine deficiency. On the criterion of low serum (T_4) more than 30% of mothers and almost 40% of children were found to be iodine deficient. Clinical examination revealed prevalence of goitre (16.67%) in mothers. This affirmed WHO 1998 report of 40% prevalence of endemic goitre in North East sub region.

5. CONCLUSIONS AND RECOMMENDATIONS

Attempts have been made in the study to assess health status of female farmers and that of their children in the study area. The study showed high morbidity and micro nutrient deficiencies. Very few pregnant mothers were immunized against tetanus and mothers did not strictly comply with children's immunization

calendar. Farmer's characteristics were found to influence their health seeking behaviours. Majority of the respondents were experienced but incapacitated by inadequate access to education, income, labour, time, extension service, credit, family and community support. Ample time and labour would have reduced the heavy workload women need to bear and enhance adequate health practices.

In view of the above findings and conclusions drawn, the following recommendations are made to promote good health for women and children, build their capacity, empower them and enable them fulfill their potentials.

1. Quality education for women helps them and their offspring. It enables them attain better nourishment and stay healthier in life. Intensive grassroots formal and non formal education training targeted at improving the educational status of women for the betterment of themselves, their families, communities and the nation at large is of utmost urgency.
2. Optimum food production, adequate nutrition and good health seeking behaviors need to be encouraged for good health therefore, it is imperative to identify farming, nutrition, and health constraints facing women farmers who are the food producers of the nation in all the three tiers of government.
3. Agriculture is the basic link in the chain of life and it is linked with nutrition and health status achieved by the people. Progress in agriculture contributes to progress in nutrition and health and vice-versa. Therefore, there is need for integrated extension approaches especially to women farmers who are the crucial elements in this linkage. This integrated approach requires pooling of data and input from health, nutrition, and psychosocial care in addition to agriculture in order to have the true picture of the majority of farmers in Nigeria.

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REFERENCES

- Engle, P.L., Lhotska, L. and Armstrong, H.: *The Care Initiative Guidelines For Analysis, Assessment and Action to Improve Nutrition*. UNICEF, New York (1997).
- Ezenwa, M.S.I.: Shelter-Belt. *The Nigerian Journal of Agricultural Extension*, **4(1)**: 12-20 (1986).
- Federal Office of Statistics: *Poverty Profile For Nigeria (1980-1996)*. FOS, Abuja (1986).
- Guldan, G.S., Zeitlin, M. F., Beiser, A. S., Super, C. M., Gershoff, S. N. and Datta, S.: Maternal Education and Child Feeding Practices in Rural Bangladesh. *Social Science and Medicine* **43(2)**: 209-219 (1993).
- Hadad, L. and Hoddinott: Women's Income and Boy-Girl Anthropometric Status in the Cote'd'Ivoire. *World Development* **22(4)**: 543-553 (1994).
- Joeekes, S.: Women's Work and Social Support for Childcare in the Third World. In: *Women, Work and Child Welfare in the Third World*. J. Leslie and M.Paolisso (Eds.). West View Press, Boulder, Colorado (1989).
- Robinson, C.: *Breastfeeding and Women's Work Report Prepared For The Population and Development Programme*. International Labour Office, Geneva (1995).
- Thomas, D., Strauss, O. J. and Henriques, M. H.: How Does Mother's Education Affect Child Height?" *Journal of Human Resources*, **26(2)**:183-211 (1990).
- United Nations Children's Education Fund: *The State of the World's Children" Report Focus on Nutrition*. UNICEF (1998).
- Ware, H.: Effect of Maternal Education, Women's Roles and Childcare on Child Mortality. *Population and Development Review*, **10(Supplement)**: 191-214 (1984).
- World Health Organization: Expert Committee On Maternal and Child Health. Public Aspects of Low Birth Weight" *Technical Report Series*. No 217, Pp3-8 (1998).