

Malnutrition – A Reappraisal of the Major Predisposing Factors

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SUMMARY

Fagbule D. Malnutrition – A Reappraisal of the Major Predisposing Factors. *Nigerian Journal of Paediatrics* 1990 17:7. The major socio-economic factors predisposing to malnutrition were investigated among 250 mothers of malnourished children. Factors identified included family instability, poverty, ignorance, poor environmental sanitation and a large family size. The vicious cycle of poor socio-economic status, poor nutrition and disease can be effectively broken by a well-structured health education, emphasizing the importance of breastfeeding, improved weaning methods, small families and family planning as well as improved environmental sanitation.

INTRODUCTION

MALNUTRITION in early childhood is a well known cause of death¹. It is fairly well established that social and economic factors are the most important determinants in its aetiology.²⁻⁶ Ransome Kuti, Gbajumo and Olaniyan⁶ identified some of the major predisposing factors over a decade ago. To our knowledge, there has been no reappraisal of the factors vis-a-vis continuing health education in Nigeria. This study was therefore, carried out to identify the major predispos-

ing factors to malnutrition in Ilorin, and discover any differences that may exist over the last decade.

Materials and Methods

Using a semi-structured interview schedule, 250 mothers of malnourished children attending the University of Ilorin Teaching Hospital and other health centres in Ilorin between September and December 1985 were questioned in order to identify some socio-economic factors predisposing to malnutrition in their children. Ilorin is the capital of Kwara State, a midland state in Nigeria. The data obtained included:

- (a) age and sex of the children,
- (b) their residential addresses
- (c) the socio-economic status of the family including accommodation and sanitation,

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- (d) educational status, income and religion of the parents,
- (e) the knowledge, beliefs and practices of the mothers regarding the feeding of their children,
- (f) the mother's knowledge of the cause of kwashiorkor and marasmus.

All the children were examined to detect any precipitating or associated illness.

Results

The children were aged 6 to 36 months, with a peak at 13-24 months (48%). There were 146 males and 104 females, giving a male : female ratio of 1.4:1. Two hundred and forty-eight (99.2%) of the children came from the high-density urban and peri-urban areas of Ilorin. Only 2 (0.8%) came from the low-density urban areas. Fifty-six (22.4%) children had marasmus, 62 (24.8%) had kwashiorkor while 132 (52.8%) had marasmic-kwashiorkor (according to the Wellcome classification).

Socio-economic status of the Family

Two hundred and eleven (84.4%) parents were living together, 38 (15.2%) were separated or divorced, and 1 (0.4%) mother was contemplating divorce because her husband was not giving any financial support. Twenty (8.0%) were separated because the husbands had their business activities outside the town. Six (2.4%) were single-parent families, and seven (2.8%) were divorced because the husbands were not giving adequate financial support. These mothers had returned to their parents.

One hundred and twenty-six (50.4%) families had had between 1 and 4 children, and 18 (14.29%) of these had had one death each. One hundred and twenty-four (49.74%) families had had between 5 and 10 children, and 84 (67.74%) of these had had

between 1 and 5 previous deaths. Of the surviving children, 218 (87.2%) were living with either parent, while 32 (12.8%) were living with relatives or grandparents. In 14 (5.6%), the mothers had gone to care for their own sick mother and left the children in the care of either parental grandmother or other relations. Seven (2.8%) children were fostered because their father did not have enough money to cater for them. In 6 (2.4%) cases, mothers were school girls and had returned to school to complete their post-primary education. Five (2.0%) mothers had physical illnesses and were unable to care for their children.

One hundred and sixty-six (66.4%) mothers came from polygamous homes while 84 (33.6%) were monogamous. One hundred and eighty-four (73.6%) mothers were married for the first time, 48 (19.2%) had remarried once, and 18 (7.2%) had remarried twice. Pipe borne water was available to 206 (82.4%) children, while 44 (17.6%) used well water. In 226 (90.4%), refuse disposal was in open space or bush around the residence. Only 24 (9.6%) had incinerators and water closets. No family lived in a self-contained house or flat. Most mothers shared one room with their children and other dependents.

Parents' Educational Status

Mothers of 152 (60.8%) malnourished children had no formal education. Eighty (32.0%) attended primary school, while only 18 (7.2%) had a post-primary education. None of the mothers had a University education. Ninety-seven (38.8%) fathers had no formal education. One hundred and four (41.6%) completed primary school, 48 (19.2%) had post-primary education, and only 1 (0.4%) was currently a University undergraduate.

Income of Parents

Two hundred and thirty-two (92.8%) of the mothers were engaged in small-scale trading, 6 (2.4%) were junior civil servants, and 12 (4.8%) were full-time house-wives relying completely on their husbands for financial support. Ten (4.0%) mothers were not sure of their monthly income. Ninety (36.0%) mothers earned less than ₦100.00 per month. One hundred and twenty (48.0%) mothers earned between ₦100.00 and ₦300.00 per month. while 18 (7.2%) earned up to ₦500.00.

Two hundred and eighteen (87.2%) fathers were engaged in semi-skilled jobs like driving, farming, motor repairs, and teaching in koranic schools. They earned less than ₦200.00 per month. Twelve (4.8%) each were primary school teachers, and students. Eighteen (7.2%) were senior civil servants earning up to ₦500.00 per month. Two hundred and ten (84.0%) families had a combined income of less than ₦500.00 per month, 30 (12.0%) earned more than ₦500.00 per month; reliable information was not available in the remaining 10(4.0%).

Religion

Most parents were of the same religion. One hundred and seventy-seven (70.8%) families were Muslims, while 60 (24.0%) were Christians. Of the remaining 13, 5 (38.46%) mothers were christians married to muslims, while 8 (61.54%) mothers were muslims married to christians.

Feeding habits

Most mothers (82.4%) breastfed for 12 – 24 months. Thirty-nine (15.6%) mothers breastfed for 6 – 12 months, and only 5 (2%) breastfed for less than 6 months. Fifty (20.0%) children are still breast-feeding.

One hundred and fourteen (45.6%) mothers stopped breastfeeding their malnourished children because they felt the children were old enough, 24 (9.6%) for mother's convenience, and 19 (7.6%) each, because of poor milk-flow and maternal illness (Table I). Two (0.8%) mothers stopped because of Child's current illness.

All mothers started offering artificial milk to their malnourished children in the first month of life. Reason for starting artificial milk were varied. One hundred and twenty-

TABLE I
Reasons for Discontinuing Breast-feeding in 200* Malnourished Children

Reasons	Number of Respondents	% of Total
Child old enough	114	57.0
Mother's convenience	24	12.0
Poor milk flow	19	9.5
Maternal illness	19	9.5
Child refused it	17	8.5
Mother back in school	5	2.5
Because of child's current illness	2	1.0
Total	200	100.0

*Fifty children were still being breastfed.

TABLE II
Reasons Why Mothers Stopped Giving Artificial Milk to their Malnourished Children

Reasons	Number of Respondents	% of Total
Too expensive	105	42.0
Child old enough	72	28.8
Not tolerated by child	43	17.2
Not necessary since child had pap	30	12.0
Total	250	100.0

eight (51.2%) mothers started because of inadequate breast-milk, 49 (19.6%) on medical advice, and 13 (5.2%) on the advice of friends of relatives. Eighteen (7.2%) mothers started because they saw others use it, and 12 (4.8%) just took a fancy to it. Thirty (12.0%) mothers gave no reason for starting artificial milk.

Supplementary feeds used by the mothers of the malnourished children included maize gruel (pap), *Cerelac* and a variety of traditional concoctions. All the mothers had introduced these feeds by 3 months. Thirty (12.0%) mothers had various taboos about food which prevented them from feeding essential food items to their malnourished children. Four (1.6%) mothers would not give meat, because "it is wrong" to give meat to children. Eight (3.2%) would not give fish because it makes children develop a habit of wanting more; and 12 (4.8%) would not give eggs because it is not well tolerated by children (produces diarrhoea or constipation.)

Prior to clinic attendance or hospital admission, all the mothers had discontinued milk feeds for various reasons (Table II). One hundred and five (42.0%) mothers could not afford it, 72 (28.8%) felt that the children were old enough. Forty-three (17.2%) believed that it produced diarrhoea and so was not beneficial to their malnourished chil-

dren. Thirty (12.0%) mothers thought it was no longer necessary since the children were already on maize gruel.

History of siblings with Kwashiorkor/Marasmus

Twenty-four (9.6%) mothers have had one previous child each with malnutrition, out of which 6 (25.0%) died. Six (2.4%) mothers had had 5 children each with malnutrition, of which 18 (60.0%) died.

Mother's belief as to the cause of malnutrition

Seventy seven (30.8%) mothers believed that it was due to lack of good food and 31 (12.4%) thought it was "an act of God". Eighteen (7.2%) thought it was a consequence of weaning or the prodromal phase of childhood convulsion, or a complication of teething (Table III). Fifty two (20.8%) mothers were ignorant of the cause.

Diseases found in association with malnutrition

All the malnourished children had one form of infection or another preceding or associated with malnutrition. The commonest was gastroenteritis in 156 (62.4%) (Table IV). It was followed by pneumonia in 52 (20.8%) and measles in 20 (8.0%) children. Four (1.6%) children were confirmed cases

TABLE III
Mother's Beliefs as to the Cause of Malnutrition

Causes Suggested	Number of Respondents	% of Total
Lack of good food	77	30.8
No idea	52	20.8
An act of God	31	12.4
Complication of teething	18	7.2
Prodromal phase of convulsion	18	7.2
Consequence of weaning	18	7.2
Consequence of measles	17	6.8
Worms	13	5.2
Inadequate blood	6	2.4
Total	250	100.0

TABLE IV
Diseases Found in Association with Malnutrition

Disease	Number of Cases	% of Total
Gastroenteritis	156	62.4
Pneumonia	52	20.8
Measles	20	8.0
Anaemia	10	4.0
Pulmonary tuberculosis	4	1.6
Malaria	3	1.2
Oral candidiasis	3	1.2
Otitis Media	2	0.8
Total	250	100.0

of pulmonary tuberculosis. Ten (4.0%) children had associated iron deficiency anaemia.

The size of family desired by mother

Only 5 (2.0%) mothers wanted 4 children or less. One hundred and two (40.8%) mothers wanted 5–6 children, while 72 (28.8%) wanted 7–10 children. Seventy-one (28.4%) mothers wanted “as many as God gives”, even more than 10.

Discussion

This study has shown that family instability, poverty, poor environmental sanitation and ignorance are major determinants of malnutrition in this community.

There was a divorce/separation rate of (15.6%). This is similar to 11.5% reported from Lagos,⁶ another urban centre in Nigeria. As shown elsewhere,^{7 8} maternal de-

privation increase the susceptibility to childhood malnutrition. The various reasons for divorce/separation are similar to those reported by Ransome-Kuti, Gbajumo and Olaniyan.⁶ Cruelty on the part of the husband and lack of financial support were prominent reasons for divorce.

Majority of the malnourished children were from the high-density areas of Ilorin, the slum areas of the town. This is closely related to poor home facilities and poor environmental sanitation. The high rate of infection in the present study is therefore, not surprising. This is similar to reports from Lagos,⁶ Guatemala and Costa Rica.⁸ Since 92.8% of the mothers and 80.4% of the fathers of the malnourished children and either no formal education or attended primary school only, ignorance must play a significant role in the aetiology of malnutrition. There is no doubt that these children came mainly from poor families. The few who came from richer homes did not enjoy the benefit because of ignorance on the part of the parents. The current austere economic situation in Nigeria makes poverty a major determinant of malnutrition.

There is convincing evidence that a large family size is associated with high childhood mortality,¹⁻³ some of which may result from malnutrition. More surprising still in this survey is that past experience of a child with malnutrition did not prevent a recurrent of, or mortality from the disease.

Similar to other reports,⁶⁻⁹⁻¹⁰ breast-feeding was universal, and most mothers breastfed for 12 - 24 months. Reason for discontinuing breast-feeding were varied. Majority (45.6%) thought the children were old enough, but failed to substitute a sufficiently nutritious diet. Two mothers discontinued

breast feeding because of the child's current illness (malnutrition), another evidence of ignorance on the part of such mothers. All the malnourished children in this survey as elsewhere,⁶⁻⁹ were given infant formula very early. In this study and elsewhere,⁶⁻⁸⁻¹⁰ inadequate breast milk was a prominent reason for commencing artificial feeds.

The WHO collaborative study of 1981¹¹ showed that in most countries, many infants were receiving supplements by the age of three months. This was confirmed in this study. A more significant fact is that mothers supplement with items which have a poor nutritional value.⁶⁻⁹⁻¹¹ In addition, there are the various taboos about meat, egg and fish, and evidence of widespread ignorance.

Prior to presentation in the clinic, all the mothers had discontinued milk feeds. It is evident therefore that the onset of the disease is closely related to the age and practice of weaning.

The beliefs of the mothers as to the cause of malnutrition were varied. Almost a third of the women thought it was due to intake of energy-sparse and non-nutritious food as they had been informed at the hospital or clinic. This indicates that a properly structured health education programme could play a very vital role in eradicating the disease. Widespread ignorance was demonstrated by the large numbers who attributed it to the "act of God", prodromal phase of convulsion, consequence of weaning, worms, complication of teething, and inadequate blood.

The precipitating or associated disease were mostly infective, namely gastroenteritis, pneumonia, measles and tuberculosis, all of which are highly preventable.

It is clear from this study that any health education aimed at eradicating malnutrition in Ilorin must emphasize the importance of family stability, mother-infant bonding and small families. It must stress the importance of breast-feeding fully in the first 4 months of life, and its role in reducing childhood morbidity and mortality. It must take cognisance of an improved weaning method based on nutritious and cheap locally sourced food items. It must ensure a more effective primary health care delivery with regard to immunization and family planning. It should also generate public awareness of the cause of malnutrition, and wage a decisive war against taboos and superstitions about nutritious food items. Finally it should result in an improvement of the environmental sanitation and socio-economic status at the national level.

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