ANTHROPOMETRIC ASSESSMENT
OF THE NUTRITIONAL STATUS OF 5-YEAR
OLD GHANAIAN CHILDREN
AT CHORKOR IN ACCRA

ABSTRACT. — An anthropometric assessment of nutritional status was conducted at Chorkor — a suburb of Accra which involved the anthropometric measurement of 376 children (169 females, 209 males) age-range between 6 months to 5 years were examined. Heights — weights with age variables including head, chest, neck and upper-midarm circumferences, the assessment of breastfeeding, the quality and the quantity of food intake were assessed.

The results confirm that Ghanaian babies do better nutritionally than European children during the first six months of their growth and development period. But Ghanaian babies contrarily suffer later on from environmental malnutrition and diseases which consequently retard their continued growth and development.

There were no great increases in head circumference (fig. 3) for both sexes. Boys had (6.19 cms) increases while the girls gained (7.78 cms) in the size of the head. From the years (0.5—05) the boys had continuous mean increases of (7.45 cms) in chest circumference (fig. 5) compared with the girls’mean total increase of (5.44 cms). Neck and upper-mid-arm-circumference measurements (figs. 4, 6) were relatively constant (Bayle N. 1956). This relative constancy of the two measurements points towards mild child malnutrition. This observation is again reinforced by the less protein-caloric (Tab. 3) intake of the infant-children in the Chorkor environment, where mostly fish and kenkey or banku are the staple food of children during the three-meal patterns.

INTRODUCTION

Study area and its population


Chorkor is a fishing suburb of Ghana’s capital town — Accra and this area is bounded on the south by the Sea, Old and New Mamprobi and its surroundings on the North, Korle-Gonno and its Korle-Bu Teaching Hospital on the East and Abodwe on the West. Like any other suburbs in Accra (i.e. Nima, Sukura etc.), Chorkor has on the whole insufficient sanitary facilities (Aghenu, Ofose-Amaah et al. 1979) e.g., public incinerators and toilet closets etc, for refuse and sewerage disposals. But there are public standpipes, pit and public latrines, primary schools, Apostolic Church and fetish huts or houses. A child welfare clinic is held for under five children on Tuesdays which coincides with their market day, therefore not well attended.
MATERIALS AND METHODS

The present data were derived from the second year medical students' cross-sectional health and nutritional work (Aghene, 1975), carried out in 1976 at Chorkor which formed part of their introduction to Public Health Survey in the community under the supervision of the author and other colleagues in the Department of Community Health, of the Ghana Medical School in Accra. A total of 376 children (189 females, 209 males aged between 6 months to 5 years, Saller, E. J. 1957, Douglas J. W. B., 1955—1962) were examined (Tab. 1—2, Fig. 1—6).

Anthropometric instruments used in the survey include an improvised stadiometer with tailor's plastic measuring tape nailed onto it for measuring toddlers (Weinrein, J. S., Lourie, J. A. 1969, Aghene, 1976). Bathroom Weighing scales (UNICEF), Infan- tometers for measuring infant's heights. Weight was measured in kilograms, height and other variables (Grant, M. W. 1951, Aghene, 1977) were measured in centimeters and recorded onto already designed and prepared questionnaire.

RESULTS

Tabs. (1—2) show the various anthropometric- parameters measured, indicating its statistical and mathematical calculations in figures (1—6). Figure (7) shows a comparison between Ghanaian-infants' and Boston-infants' nutritional performances (Aghene, 1976). The Ghanaian babies were weighed during Child Welfare Clinic visits at the Children's Block at the Korle-Bu Teaching Hospital in Accra (Bob- bigger). That the nutritional performance of Gha- naian babies is better than that of the European babies during the first seven months of life (Fig. 1). The Ghanaian babies had gained in the graph (Stuart H. C. 1959). After the 7th month the Ghanaian babies' weight or nutritional performance generally began to fall behind their European counterparts in continued weight gains (Eggman, W. H., 1955). Referring to tab. (3) on types of food, the human breast-milk tops the list with 167 ml-infantfood habits, followed by cereals (146), milk and other beverages (38) and animal powdered milk (21). Egg (1) appeared not to be given to infants and toddlers at all. Breastfeeding (Morley David, 1973) has been traditionally accepted by African mothers as the surest way to healthy survival of their children at least during the first seven months of life (the baby's life). This opinion is again reflected in the analysis of this data where 167 mothers breastfed their babies as against 31 mothers who bottlefed their babies.

A total of 865 families fed their babies or infants and toddlers with various types of cereal foods as against 433 families who added starch roots and plantain to their meals in addition to a small quantity (162) of plant proteins. The size of eggs, fruits, vegetables and meats (animal foods) gives to children in this environment at the three pattern meals were surprisingly inadequate, not to mention fats and oil. Pigment which is popularly known to be very nutritious, was relatively given 15 times at the three meals and it also appeared to be a taboo in 17 fam- ilies (Larkin F. 1967). The intensification of nutritional and health education during Child Welfare Clinics in Chorkor in this direction cannot be over-emphasized. Tab. (5) indicates the number of children in each family at Chorkor in 1973. The largest four-child-family size is 86 i.e. 22.5% of the total population examined, could be compared with these present height and weight measurements of the age groups involved. The examination of both sexes' standing height (fig. 1) indicates that some infants are taller than the second year (02) where the girls gained 1.57 cm increases while the boys, i.e. a 1.53 cm in the size of the head. From the years 0.5—05 the boys had continuous mean increases of 7.45 cm in chest circumference (fig. 3) than the girls mean total increases of 5.45 cm. Neck and upper-arm circumference measurements (figs. 4, 6) were relatively constant (Bayle N. 1956, Burgess H. J. 1965). Similar findings show in weight gains (fig. 2) where the infant-boys are 0.74 kg, i.e. 1.84 kg heavier than their counterparts i.e. 6.87 kg from ages 01—05 years. In the first year of life the boys are 3.16 kg heavier than the girls 2.56 kg (Saller E. J. 1957, Da Costa Martins 1965).

There were no great increases in head circumference (fig. 5) for both sexes. Boys had 6.19 cm increases while the girls, i.e. a 7.88 cm in the size of the head. From the years 0.5—05 the boys had continuous mean increases of 7.45 cm in chest circumference (fig. 3) than the girls mean total increases of 5.45 cm. Neck and upper-arm circumference measurements (figs. 4, 6) were relatively constant (Bayle N. 1956, Burgess H. J. 1965).

TABLE 1. Anthropometric assessment of children's nutritional status at Chorkor in Accra

<table>
<thead>
<tr>
<th>Age (yrs)</th>
<th>Male</th>
<th>Female</th>
<th>Variables (in Cm/Kg)</th>
<th>Male</th>
<th>Female</th>
</tr>
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<tr>
<td>0.5</td>
<td>23</td>
<td>23</td>
<td>66.39 7.00 41.75 45.85 22.35 14.90</td>
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<td>23</td>
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<tr>
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<td>26</td>
<td>26</td>
<td>72.32 8.00 44.35 46.42 23.75 15.41</td>
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<td>25</td>
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<tr>
<td>1.5</td>
<td>23</td>
<td>23</td>
<td>71.12 7.00 41.75 45.85 22.35 14.90</td>
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<td>22</td>
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<tr>
<td>2</td>
<td>31</td>
<td>31</td>
<td>87.24 13.94 45.25 50.97 25.08 15.96</td>
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<td>30</td>
</tr>
<tr>
<td>2.5</td>
<td>34</td>
<td>34</td>
<td>90.74 14.73 48.26 51.29 25.96 16.99</td>
<td>33</td>
<td>33</td>
</tr>
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</table>

NUTRITIONAL STATUS OF GHANAIAN CHILDREN AT CHORKOR

FIG. 1. Standing Height
FIG. 2. Weight
FIG. 3. Head Cir.
are mainly eaten by the children during the three meals patterns.

The start of socioeconomic crises in Ghana seems to have affected the weight gain velocity more than the height of the children examined for, the velocity increments (Bayle N, 1956, Wellburn H. F. 1954) of the variables measured wasn’t well defined. But on the whole the child’s growth performance is not bad, despite the beginning of marked fluctuations in food prices and the non-availability of some essential commodities such as rice, sugar, milk, etc. around 1976 till 1980 in the Accra-markets and stores. There is therefore, a clear indication of extended physical growth of children at least in terms of an overall nutritional performance.

REFERENCES