ANTHROPOMETRIC STATUS IN PALESTINIAN CHILDREN LIVING IN REFUGEE CAMPS IN LEBANON

Objective: To study the relationship between anthropometric measurements and living conditions in infants and children living in refugee camps.

Design: Cross-sectional study.

Setting: Four Palestinian refugee camps in Lebanon.

Subjects: Thirty-three infants younger than two years of age and 234 children (106 males) younger than 15 years of age.

Methods: Weight and height were measured. Body mass index (BMI) was calculated as weight (kg)/length squared (m^2). A parent of the subject answered a questionnaire on employment status, household size, food, and financial assistance as well as child’s food consumption.

Results: Anthropometric measurements were standardized to the National Center of Health Statistics (NCHS) growth data as age- and sex-specific Z scores. No significant difference was seen between males and females. For all sites studied, the Z scores for weight (WAZ) and height (HAZ) of infants were not significantly different from zero. Among older children, WAZ, HAZ, and Z scores for BMI (BMIZ) were significantly less than zero. In infants, exclusive breast feeding, in addition to receiving financial help, correlated positively while meat and fruit consumption of less than three times per week correlated negatively with WAZ and HAZ. In older children, a mixed relationship was seen among the number of children younger than 10 years of age in a household, the child’s meat, vegetable, and fruit consumption less than three times per week, and WAZ and HAZ.

Conclusion: Living conditions and socioeconomic restrictions on Palestinian refugees living in Lebanon do not appear to influence growth of infants younger than two years of age but may contribute to the growth deficit in older children. (Ethn Dis. 2006;16:510–513)

Key Words: Anthropometric Measurements, Children, Infants, Palestinian, Refugees

INTRODUCTION

By the end of the year 2003, >4 million Palestinian refugees were registered by the United Nations Relief and Works Agency (UNRWA) for Palestinian refugees living in five main regions of the Middle East.1 Of these, almost 380,000 registered refugees are estimated to be living in 10 official refugee camps in Lebanon; children younger than 15 years of age make up ≈37% of the total refugee population.2

Most Palestinians in Lebanon work as daily paid laborers with an average monthly income per family of $304, and 9 out of 10 families have incomes below the United Nations specified poverty line.2,3 Refugees are almost fully dependent on outside aid, and camp residents have an overall unemployment rate of 60%.1

Many adverse social and living conditions are risk factors for suboptimal nutrition and growth.4 However, no data are available about the impact of such conditions on the status of growth among children in this population. This study is a survey on the growth of infants and young children living in four camps in Lebanon.

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SUBJECTS AND METHODS

Subjects

Subjects chosen for this study were those enrolled at the center in activities ranging from daycare services to summer school activities such as art, reading, and sports. Other subjects living in the camp but not enrolled in the center who were brought by a parent or a guardian who heard about the study were included as well. Profiles of the four camps visited are listed in Table 1.

Methods and Study Design

This was a cross-sectional survey on growth measurements in infants and children at four refugee camps in Lebanon conducted during the summer of 2004. Each subject had an initial physical examination performed by a pediatrician accompanying the investigators to rule out medical conditions such as cerebral palsy that could affect growth of the child.

Weight was measured for each subject by using a portable infant

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