

Effects of Selective Dropout on Infant Growth Standards

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Abstract

Exclusively breastfed (EBF) infants have higher weight gain during the first 2 months, and lower thereafter. The explanation for this phenomenon is not clear. Longitudinal data from the Social Medical Survey of Children Attending Child Health Clinics study with a cohort of 2,151 Dutch children were analyzed according to a pattern mixture model. It appears that higher than average growth of EBF infants during the first 2 months is primarily attributable to selective dropout. Furthermore, between months 2 and 6, light nonEBF infants gain more weight than light EBF infants. Both factors aid in explaining differences in growth between EBF and nonEBF infants. The WHO Child Growth Standards for weight-for-age have been calculated from a subgroup of 903 infants (out of 1,743) that complied with strict feeding criteria. If similar dropout mechanisms operate in the Multicentre Growth Reference Study, then the WHO weight-for-age standards are expected to be systematically different from those for the entire group of 1,743 infants.

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Introduction

In 2006, the World Health Organization (WHO) released growth standards for children 0–5 years [1]. These WHO Child Growth Standards (WHO-CGS) are based in the WHO Multicentre Growth Reference Study (MGRS), a population-based study conducted between 1997 and 2003 in Brazil, Ghana, India, Norway, Oman, and the United States. A novel aspect of the WHO-CGS is the very careful selection of children that are being raised in circumstances that promote optimal, rather than maximal, growth. The WHO-CGS portray the variation in growth of children living in socioeconomic conditions favorable to growth.