Nutrition - Stunting in children

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Definition

A healthy child grows by 5 – 7 cm each year from the age of one until adolescence. There are cut-offs for height or length based on globally accepted standards. [1] Stunting is present when a child's height-for-age is less than -2 standard deviations from the mean. A child, whose height-for-age score is less than -3 standard deviations, is severely stunted.

Prevalence of stunting in children, by province, 1999 & 2005

PROVINCE	STUNTING		SEVERE STUNTING	
	1999	2005	1999	2005
Eastern Cape	20.5	18.0	6.3	6.5
Free State	29.6	28.2	10.8	7.0
Gauteng	20.4	16.8	5.4	5.2
KwaZulu-Natal	18.5	15.1	5.2	3.0
Limpopo	23.1	23.8	6.9	8.3
Mpumalanga	26.4	17.8	10.4	5.7
North West	24.9	15.1	5.2	4.9
Northern Cape	29.6	27.7	14.1	8.5
Western Cape	14.5	12.0	3.1	0.5
South Africa	**21.6**	**18.0**	**6.5**	**5.1**

Source Kruger HS, Swart, R, Labadarios, D, Dannhauser A & Nel JH (2007) Anthropometric status. In: Labadarios D (ed) (2007) The National Food Consumption Survey – Fortification Baseline (NFCS-FB): The knowledge, attitude, behaviour and procurement regarding fortified foods, a measure of hunger and the anthropometric and selected micronutrient status of children aged 1 – 9 years and women of child bearing age: South Africa, 2005. Pretoria: Directorate: Nutrition, Department of Health.

Labadarios, D. (ed). Supported by: Steyn, N., Maunder, E., MacIntyre, U., Swart, R., Gericke, G., Huskisson, J., Dannhauser, A., Voster, H., and Nesamvuni, A. 1999. The National Food Consumption Survey (NFCS): children aged 1-9 years, South Africa, 1999. Pretoria: Department of Health.

What do the numbers tell us?

The United Nations Children's Fund [2] states that the necessary conditions for nutritional well-being are access to adequate and safe food; adequate care of children and women; access to basic health services; and a healthy environment. Dietary intake and the prevalence of infectious diseases affect children's nutritional status and physical growth. [3]

A healthy child grows by 5 – 7 cm each year. Stunting is present when a child's height-for-age measurement is less than two standard deviations from the globally accepted reference cut-off point. A child whose height-for-age score is less than three standard deviations is severely stunted. Stunting in children is considered a consequence of chronic poor nutrition. It is associated with developmental delay and impaired cognitive function and is considered the strongest predictor of child mortality in children younger than five years. [4]

Stunting remains the most common nutritional disorder affecting children in South Africa, and the National Food Consumption Survey (NFCS) found that 18% of children aged 1 – 9 years were affected in 2005. Stunting prevalence rates had decreased since 1999, with the greatest improvement in rural areas. Nevertheless, the NFCS found that children living in formal rural areas (commercial farms) remained worst off, with one in four children stunted, and one in five children living in "tribal" areas stunted. Children in informal urban areas were slightly more likely to be affected (19%) than those in formal urban areas (16%). The provinces with the highest stunting rates were the Free State (28%), Northern Cape (28%), and Limpopo (24%). According to World Health Organisation criteria, these rates indicate a medium prevalence of stunting. [5]

Nationally, 5% of children showed signs of severe stunting, which is much more serious. Children living in "tribal" areas were most affected. Nearly a quarter of children in the 1 – 3-year age group (23%) were affected by stunting, and 6% were severely stunted. High rates of severe stunting (7% or more) are of concern in the Northern Cape, Limpopo and Free State provinces.

Technical notes

For children younger than three years, height was determined by means of a measuring board. The average of two readings was used. If the two readings varied by more than 0.5 cm the procedure was repeated. For children three years of age and older, height was determined by means of a stadiometer. The average of two readings was used. If the two readings varied by more than 0.5 cm the procedure was repeated.

For each child, a z-score (the number of standard deviations [SD] from the reference population median) was calculated for height-for-age. If a child had a z-score below -2 SD, he/she was classified as stunted. If a child had a z-score below -3 SD, he/she was classified as severely stunted. [6]

Strengths and limitations of the data

The 2005 National Food Consumption Survey [7] consisted of a cross-sectional survey of a nationally representative sample of children aged 1 – 9 years in South Africa, using the Census 2001 data. The survey population consisted of all the children aged 1 – 9 years (12 – 108 months) and women of reproductive age living in the same households in South Africa. This initial sample was adapted by means of 25% over-sampling to accommodate for children and women who would not be home at the time of the survey. A total of 226 enumerator areas (EAs) were included in the survey, 107 of which were urban-formal, 23 urban-informal, 15 rural-formal and 81 tribal areas. All qualifying EAs were selected with a known probability. A qualifying household for inclusion in the survey was defined as any household with at least one child aged between 1 – 9 years and at least one woman of reproductive age living in it.

Validated questionnaires were administered by trained fieldworkers and a blood and urine sample was taken from the respondents of each household to assess micronutrient status. Samples of tap water and maize were collected from each household and tested for iodine and vitamin A respectively, the latter at the household level. All questionnaires were translated in the country's official languages for use as appropriate. Quality assurance measures were employed throughout the survey.

Related Links

The Social and Economic Impact of South Africa's Social Security System
Samson M, Lee U, Ndlebe A, Mac Quene K, van Niekerk I, Gandhi V, Tomoko, H & Abrahams C 2004
Economic Policy Research Institute (EPRI) (www.epri.org.za/rp37.htm)

Food for Thought: A review of the National School Nutrition Programme
Kallman K 2005
In: Leatt A & Rosa S (eds) Towards a Means to Live: Targeted poverty alleviation to make children's rights real. Children's Institute, University of Cape Town [CD-ROM]
(http://ci.org.za/depts/ci/pubs/pdf/poverty/facts/Foodforthought.pdf)

South African HealthInfo™ network
Medical Research Council
(http://www.sahealthinfo.org/sahealthinfo.htm)

References

[1] Kruger HS, Swart, R, Labadarios, D, Dannhauser A & Nel JH (2007) Anthropometric status. In: Labadarios D (ed) (2007) The National Food Consumption Survey – Fortification Baseline (NFCS-FB): The knowledge, attitude, behaviour and procurement regarding fortified foods, a measure of hunger and the anthropometric and selected micronutrient status of children aged 1 – 9 years and women of child bearing age: South Africa, 2005. Pretoria: Directorate: Nutrition, Department of Health.

[2] UNICEF (1990) Strategies for improving the nutritional status of women and children in developing countries. In: Swart R, Sanders D & McLachlan M (2008) Nutrition: A primary health care perspective. In: Barron P & Roma-Reardon J (eds) South African Health Review 2008. Durban: Health Systems Trust.

[3] Swart R, Sanders D & McLachlan M (2008) Nutrition: A primary health care perspective. In: Barron P & Roma-Reardon J (eds) South African Health Review 2008. Durban: Health Systems Trust.

[4] Pelletier DL (1994) The relationship between child anthropometry and mortality in developing countries: implications for policy, programs and future research. The Journal of Nutrition, 124 (supplement): 2047S – 2081S.

[5] World Health Organisation (1995) Physical status: The use and interpretation of anthropometry. Geneva: WHO.

[6] Hendricks M & Hussey G (2004) The Field Assessment of Nutrition. In: Gershwin M, Nestel P & Keen C (eds) Handbook of Nutrition and Immunity. Tottowa, New Jersey: Humana Press.

[7] Labadarios D (ed) (2007) The National Food Consumption Survey – Fortification Baseline (NFCS-FB): The knowledge, attitude, behaviour and procurement regarding fortified foods, a measure of hunger and the anthropometric and selected micronutrient status of children aged 1 – 9 years and women of child bearing age: South Africa, 2005. Pretoria: Department of Health, Nutrition Directorate.

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