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Nutritional Status of Children in a Haitian Batey in the Dominican Republic: Anthropometrics and Caregivers' Perceptions

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Background

- Pediatric undernutrition continues to be one of the most common underlying contributors to morbidity and mortality of children in low- and middle-income countries (Muller & Krawinkel, 2005).
- Growth monitoring using growth reference values to identify growth faltering may be associated with significant reductions in child malnutrition and mortality if containing critical components (Ashworth et al., 2008). Successful engagement of caregivers of young children is an essential component for success with such programs (Sohal et al., 1998).
- Caregiver's perceptions of their children's growth and nutritional status, regardless of growth reference values, could significantly impact parental involvement in the monitoring and treatment of an undernourished child and thus impact the likelihood of recovery.
- The examination of caregiver's perceptions of their child's body size in comparison to WHO growth reference values may be important in informing the development of programs for addressing growth faltering in children.

Objective

To conduct a cross-sectional anthropometric assessment of young children in preparation for a growth monitoring and nutrition intervention program for the community of Lecheria in the Dominican Republic

Research Questions

1. What is the nutritional status of young children in the study community?
2. What are caregivers' perceptions of their children's body size?
3. What is the relationship between children's anthropometric values and their caregiver's perception of body size

Methods

- Sample:**
- All caregivers of children aged less than five years living in the community of Lecheria (a Haitian Batey in the Dominican Republic) were invited to participate in the study.
 - Complete data were available on 109 of 112 participants
- Measures:**
- Research staff completed anthropometric measures of children using standard procedures as described by Roche and Sun (2003).
 - To quantify perceptions of their child's body size, caregivers were asked about their perceptions of height and thinness with point Likert-type response options.
- Analysis:**
- Weight-for-height and height-for-age Z-scores were calculated using the WHO 2006 Anthro Software.
 - Relationships between children's Z-scores and caregivers' perceptions of their children's body size were examined using Spearman's correlations.

Table 1: Distribution of participants sociodemographic and anthropometric characteristics¹

	Mean(SD)
Child age in months	25.6(17.0)
Gender (female)	46.4(52)
Informant type	
Mother	83.9(94)
Aunt	6.2(7)
Cousin (female)	4.5(5)
Sister	3.6(4)
Other	1.8(2)
Weight for height/length	
≤-3 Z	0.0(0)
≤-2 and >-3 Z	2.7(3)
≤-1 and >-2 Z	17.3(19)
<0 and >-1 Z	35.5(39)
≥0 and <1 Z	28.2(31)
≥1 and <2 Z	12.7(14)
≥2 and <3 Z	3.6(4)
≥3 Z	0.0(0)
Height/length for age	
≤-3 Z	2.7(3)
≤-2 and >-3 Z	10.0(11)
≤-1 and >-2 Z	26.4(29)
<0 and >-1 Z	35.5(39)
≥0 and <1 Z	17.3(19)
≥1 and <2 Z	8.2(9)
≥2 and <3 Z	0.0(0)
≥3 Z	0.0(0)
Weight for age	
≤-3 Z	0.9(1)
≤-2 and >-3 Z	5.5(6)
≤-1 and >-2 Z	23.6(26)
<0 and >-1 Z	39.1(43)
≥0 and <1 Z	21.8(24)
≥1 and <2 Z	7.3(8)
≥2 and <3 Z	1.8(2)
≥3 Z	0.0(0)

Table 2: Caregivers' perceptions of their children's body size

Caregivers' perceptions	%(n)
Perception of child's thinness ¹	
Very thin	17.27(19)
Thin	28.18(31)
A little thin	20.90(23)
Good	21.82(24)
A little fat	8.18(9)
Fat	3.64(4)
Very fat	0.00(0)
Perception of child's height ²	
Very short	7.3(8)
Short	11.9(13)
A little short	13.8(15)
Good	43.1(47)
A little tall	14.7(16)
Tall	5.5(6)
Very tall	3.7(4)

Table 3: Relationship between anthropometric classifications of malnutrition and caregiver's perceptions of child's body size

WHO Classification	Caregivers' Classification	
		%(n)
WHZ > -2 & ≤ -1 (mildly wasted; n=18) ¹	"thinness"	
	good/fat	22.2(4)
	a little thin/thin	38.9(7)
WHZ > -3 & ≤ -2 (moderately wasted; n=3)	"thinness"	
	very thin	38.9(7)
	good/fat	0.0(0)
HAZ > -2 & ≤ -1 (mildly stunted; n=27) ¹	"height"	
	good/tall	63.0(17)
	a little short/short	25.9(7)
HAZ > -3 & ≤ -2 (moderately stunted; n=11)	"height"	
	good/tall	45.5(5)
	a little short/short	36.4(4)
HAZ ≤ -3 (severely stunted; n=3)	"height"	
	good/tall	33.3(1)
	a little short/short	66.6(2)
	"height"	
	very short	0.0(0)

Conclusions

- Rates of moderate and severe wasting and stunting in this community in children under 5 (3% and 13% respectively) were higher than national rates for the Dominican Republic (1% and 7%) and lower than those for Haiti (9% and 24%) (UNICEF, 2009).
- Caregivers' perceptions of their children's "thinness" had a stronger correlation to weight-for-height Z-scores than did perceptions of height to height-for-age Z-scores, indicating that caregivers were better at identifying children with low weight-for-height than children with low height-for-age.
- Most children (45.5%) who were classified as moderately or severely stunted according to WHO 2006 growth standards were rated by their caregivers as being a "good" height or tall.

Implications

- Because many caregivers' perceptions of their children's height did not agree with children's anthropometric outcomes, growth monitoring and nutritional programs may need to place emphasis on educating caregivers about stunting/ low height-for-age and the characteristics of growth faltering.
- Further studies are required to examine whether these perceptions influence caregiver participation in growth monitoring and nutrition programs

Acknowledgements

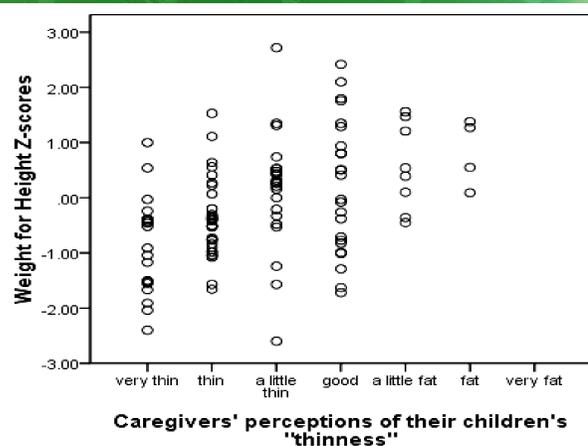
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USRP



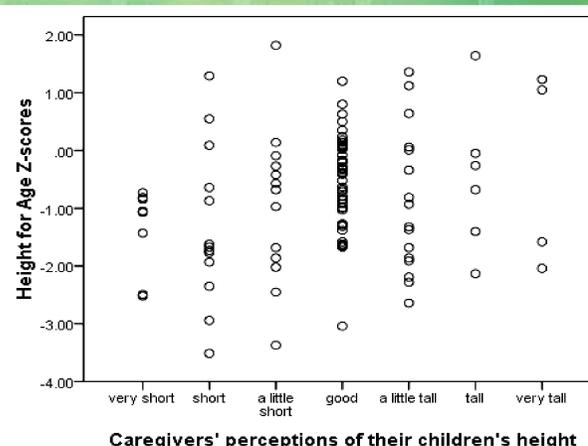
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Figure 1: Scatter plot of caregivers' perceptions of their children's "thinness" and child's weight for height/length Z-scores



Spearman's rho=0.449; p<.001
○ represents one case

Figure 2: Scatter plot of caregivers' perceptions of their children's height and child's height/length for age Z-score outcomes



Spearman's rho=0.193; p<.05
○ represents one case



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