Physician Assistant Student Assessment of Body Mass Index in Children Aged 3 to 5 Years Using Visual Cues

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Introduction: Greater than one out of three pediatric and adolescent patients are overweight. Overweight five-year-olds are four times more likely to become overweight or obese in adulthood when compared to normal weight children. Early identification of an overweight status has been found to lead to improved management of obesity. Waiting until a later age may inhibit clinicians from timely identification, diagnosis, and treatment of overweight or obese pediatric patients. Clinicians are not consistently assessing body mass index (BMI) in pediatric patients. Instead, clinicians often utilize visual cues but have a tendency to underestimate weight when relying solely upon visual cues.

Purpose: This study aims to determine physician assistant (PA) students' and recent PA program graduates abilities to accurately assess BMI in patients aged three to five years based solely upon visual cues.

Methods: Current PA students and recent PA program graduates completed an online survey to accurately categorize Body Mass Index (BMI) for age by visually assessing pictures of children. Pictures of three children (aged three to five; one obese, one overweight and one with healthy weight) were shown to respondents first with no additional height and weight data for visual assessment and then again with height and weight data provided. Respondents were requested to categorize the children in the proper Body Mass Index categorization. Responses were scored as accurate or inaccurate.

Results: There were a total of 98 PA students or recent graduates that completed the online assessment (28.9% Year 1, 39.8% Year 2, 31.6% Recent Graduates). Under half (39.8%) reported experience working with pediatric patients, but 50% reported having been trained to use the BMI-for-age growth chart. One fourth (26.5%) reported being confident to accurately predict BMI for age just by looking at a child. Almost all (92.9%) responded that BMI-for-age is important for child's overall health. Child 1 (obese 3 year old boy): no respondents (0%) accurately categorized with visual assessment alone; and 10% categorized accurately when height and weight data were provided. Child 2 (healthy weight 4 year old girl): 81.6% accurately categorized with visual assessment alone; 54% categorized accurately when height and weight data provided. Child 3 (overweight 4 year old girl): 6% categorized accurately with visual assessment alone; 15% categorized accurately with height and weight data provided.

Conclusions: Physician assistant student and recent graduate visual assessment for categorization of BMI is unreliable; however, categorization with height and weight data provided is improved but also not reliable. Training in BMI assessment may lead to early recognition of the pediatric patient's weight status, which can be advantageous in beginning interventions to prevent future health concerns.