LETTER TO EDITOR

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Considerations when Using Neck Circumference as a Screening Tool

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Dear Editor,

I read with interest the study by Taheri et al, entitled "Neck circumference as a useful marker for screening overweight and obesity in children and adolescents" published in the May issue of the Oman Medical Journal.[1]

The authors concluded that their study confirmed the results of previous studies on the usefulness and reliability of this screening method in children (especially central obesity).[1] In my opinion, such a conclusion should be cautiously taken based on the following five points.

Firstly, the scientific literature on the accuracy of neck circumference (NC) as a tool to identify overweight and obesity is especially scarce, mainly in the pediatric population. The suggested NC cutoff points in children varies among studies and some differences might be related to ethnicity and lack of standardization of the anatomical site used for measurement. There is a need to standardize site measures and establish comparable cutoff points between different populations.[2]

Secondly, universal agreement on the superiority of using NC to precisely detect overweight and obesity in children is not yet fully established.[3,4]

Thirdly, for a particular health problem to be screened in a given population, it needs to be sizable. A recently published systematic review and meta-analysis on the prevalence and trends of childhood obesity and overweight in Iran revealed that the overall prevalence of obesity and overweight remained relatively constant in the 2000s, at 5.1% (95% confidence interval CI, 4.4–5.8) and 10.8% (95% CI, 10.2–11.4), respectively.[5] Since the trend in the prevalence of childhood obesity in Iranian children is not considerably high, the rational for screening is not fully justifiable. However, the escalating trend of excess weight among young children is alarming and interventional preventive programs should be considered at national and regional levels.[5]

Fourthly, in the clinical setting, there are many parameters used for assessing overweight and obesity in children, namely weight-for-height (WH), body mass index (BMI)-for-age, mid-upper arm circumference (MUAC)-for-age, and triceps skinfold thickness (TST)-for-age. These parameters were studied in Iranian school children and adolescents and showed that there was an excellent agreement between WH and BMI for detecting both thin and obese children in almost all subgroups ($p < 0.001$). Additionally, MUAC had an excellent agreement with BMI in prepubertal individuals ($p < 0.001$). However, TST had a weak agreement with the other three indices for detecting thinness and a weak to good agreement for classification of obesity. The study concluded that the performance of the four anthropometric-based measurements varied by sex and maturity level. Moreover, MUAC as a simple and low-cost screening tool could be advocated as an alternative to BMI for obesity assessment among prepubertal groups.[6]

Finally, large scale multicenter studies are needed to determine the accuracy and reliability of NC in identifying overgrowth and obesity in the Iranian pediatric population and to compare it with other assessment parameters (namely WH, BMI, MUAC, and TST) before recommending it as a screening tool in pediatric care and/or research.

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