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Underestimation of weight status in children and adolescent aged 0-19 years old: A systematic review and meta analysis

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Introduction: It is widely recognised that obesity in childhood is a worldwide public health issue. For any intervention, the first step is to identify overweight status which problematizes the child's current weight to legitimises action. This involves all those in the therapeutic triad: children themselves, parents and healthcare professionals. In policy and health promotion, it is generally accepted that a significant barrier to intervention is that parents (caregivers) of children with obesity underestimate their child's weight status. Furthermore, research has shown that healthcare professionals may be also be underestimating. The aim of this study is to systematically identify and critically evaluate relevant research to investigate the prevalence of, and factors associated with, underestimation of children's weight status.

Methods: Abstracts published between 2000 to 2017 were included, and where identified using the following search engines: CINAHL, EMBASE, PUBMED, and Psych-Info. References of relevant articles were hand-searched for additional studies and the "Related Articles" and "Cited by" functions in search databases were also used. Both qualitative and quantitative research that assessed caregivers, children and healthcare professional's perceptions of children's weight using Likert scale questions, classification into weight categories, pictorial methods, or reporting of height and weight, and were then compared with documented standards for defining overweight for example (IOTF, CDC) based on anthropometric measurements were included. Publication language had no bearing on the nature of the included studies, nor did the publication location. In the meta-analysis, pooled effect sizes were calculated using random-effects model.

Results: A total of 87 articles were included. In the quantitative studies, the random effect sizes revealed that 55% (95% confidence interval 49%–61%) of (caregivers) and children underestimated their degree of overweight. HCPs shared this misperception (but limited studies prevented meta-analysis). Furthermore, underestimation was positively associated with a number of factors such as: child's age, gender (male), current BMI and parental weight status, education and ethnicity. In the qualitative studies, parents commonly describe their children in terms other than obese such as "big boned," "thick," and "solid", and demonstrated a strong desire to avoid labelling their child with medical terminology.

Conclusion: This review clearly demonstrates that underestimation of child weight status is endemic. Furthermore, underestimation was positively associated with a number of factors such as: child's age, gender (male), current BMI and parental weight status, education and ethnicity.