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Healthcare utilization in obese and overweight children: a systematic review and meta-analysis

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Introduction: Obese and overweight individuals are at an increased risk of developing a number of medical conditions. This obesity associated morbidity leads to an increased health service use. However, unlike adulthood obesity, not much is known about the healthcare burden of childhood obesity. The objective of this review was to analyse the association of obesity and overweight with health service utilization during childhood.

Methods: We included observational studies published in the English language, assessing the impact of overweight and obesity on health service use in children (0-18 year). MEDLINE, EMBASE, PubMed, Web of Science and CINAHL databases were searched for studies up to June 2018. All studies meeting inclusion were backwards and forwards reference searched to identify other relevant studies. Risk of bias was assessed regarding study design, participant recruitment, exposure measures, outcome measures, and confounders. Pooled Rate ratios (RR) and 95% confident intervals Due to insufficient data in certain studies to statistically analyse the effect size measurement, we also used a narrative approach to synthesise the findings from all included studies.

Results: Thirty-five studies were eligible for this review. These studies reported on different measures of health service utilization. Thirteen studies reported on outpatient visits, nine on emergency department (ED) visits, five on hospital admission, and four on hospital length of stay. Only seven of these studies reported sufficient data to be included in the meta-analysis. In comparison with healthy weight children, obese (pooled rate ratio (RR), 1.36 [95% CI, 1.15 to 1.60]) and overweight (RR, 1.17 [95% CI, 1.04 to 1.30]) children were significantly more likely to visit emergency departments. The increase in outpatient visits was barely significant for obese (RR, 1.09, [95% CI, 0.99 to 1.18]) and was non-significant for overweight (RR, 1.01 [95% CI, 0.97 to 1.06]) children. Using a narrative approach on all eligible studies, an increase in the ED and outpatient visits was evident for obese and overweight children with variability in strength of association across studies. The findings for other health service measures were mixed, with some studies reporting an increase while some reporting a decrease in health service utilization.

Conclusion: This review and meta-analysis identified an increased use of emergency and outpatient services in obese children. Children with obesity had 1 to 2 times the risk of using ED services compared to normal weight children. This review also identified that health service use is defined by different parameters and further research is required to better understand the association.