Childhood obesity: Early intervention and web-based treatment

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Akademisk avhandling

som med vederbörligt tillstånd av Rektor vid Umeå universitet för avläggande av filosofie doktorsexamen framläggs till offentligt förvar i Aulan, hiss 8 vån 1 på Sundsvalls sjukhus, f,redagen den 11 februari, kl. 09:00. Avhandlingen kommer att förvaras på svenska.

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Childhood obesity is a threat to public health worldwide. In Sweden around 15% of children 5-19 years of age are overweight and 3-4% have obesity. Early prevention is crucial as are effective treatments for children and adolescents who have already developed obesity. The use of web-based treatment programs in childhood obesity are not yet established, this technology has been suggested to be a promising method for children and adolescents. The overall aim of this thesis was to examine whether rapid growth at an early age was associated with overweight later in life and to study the feasibility, parental experience, and effectiveness of web-based treatment of obesity in children. **Study I:** The study population comprised all children born in Sweden on the 15th of each month in 1981. Information on weight and height was collected for 3537 children. Results showed that weight at 12 months of age was associated with being overweight at both 16 and 18 years of age. Weight gain between 18 months and four years of age was the strongest risk factor for being overweight in late adolescence. **Study II:** Web-Childhood Obesity Prevention (Web-COP) was a prospective feasibility study with a pre-post design, offered to children with obesity 5-13 years of age. The intervention consisted of four group-based education sessions, physical activity on prescription, and a 12-week web-based program. Using a continuous algorithm, 42/51 (81%) of the children lowered their BMI-SDS. **Study III:** This was an interview study with an inductive qualitative approach. Data were collected from individual interviews with 14 parents to children with obesity. The overarching theme "A transformative journey of lifestyle changes for the whole family" described how the participation impacted the lifestyle of the whole family. The parents shared predominantly positive experiences of the intervention but also expressed feelings of guilt and struggled to address their child’s obesity. **Study IV:** The Web-COP RCT was a randomized controlled trial conducted in four cities and compared group sessions, physical activity on prescription, and a web-based program to standard care treatment for children with obesity. A total of 80 children were included in the analysis. BMI-SDS was significantly reduced in the intervention group compared to the control group six months after baseline. Rapid growth rate during early childhood was associated with an increased risk of having overweight later in life, emphasising the importance of early prevention. In treating young children with obesity, we added group sessions and a web-based programme (Web-COP) to standard care. Web-COP was feasible, and two thirds of included children reduced their BMI. Parents who participated in Web-COP found the program helpful for achieving healthier lifestyles for the whole family. When Web-COP was studied in a randomized controlled trial, the program had significant effect on BMI-SDS in children with obesity.

**Keywords** Weight gain, Body Mass Index, Childhood obesity, Treatment, Intervention