Poster Abstracts

8th Fribourg Obesity Research Conference (FORC-2015) Abstracts

'Nutrition, Movement & Sleep Behaviors: their interactions in pathways to Obesity and Cardiometabolic diseases'

P1

Mobile health information system tailored for obesity prevention and treatment (*PathMate*) in teenagers

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Introduction: Multi-professional programs for the management of obesity in teenagers, which combine physical activity, nutritional and psychological components, are well established today. However, due to limited resources available, only limited number of patients can be included in these programs, considering the high needs resulting from the generally high prevalence of obesity.

Objective: The objective was to develop a technical platform with a number of innovative, tailored and interactive health services via a tablet PC.

Methods: Six adolescents (13–17 years, BMI percentile >97 for age & gender) participated in an exploratory longitudinal field study. The following measurements were made at baseline, month 1, 3 and 4: 1. well-being, mental health, mood, eating disorders, and motivational interview all by validated questionnaires; 2. change in body weight and BMI_SDS, blood pressure, speed of eating (by sequential photogrametry), daily physical activity (PA by accelerometer, Fitbit), and degree of relaxation (by skin conductance and heart rate), all by objective measurements.

Results: Body weight loss at 4 months average 6.2 kg (range: 3.8 to 8.0 kg). Although the health services were developed together with the teenagers, a large inter-individual variability of the platform usage (inconspicuously measured) was observed. The mood monitoring, relaxing exercise and PA tracking services were perceived most useful.

Conclusions: For the MD's, it appears that this new tool can provide a useful aid to work, communicate and keep in touch with (pre)obese teenagers during and outside the on-site consultation.

P2

Does a Health Information Technology System developed by Children and their Parents improve Obesity Therapy? *

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Introduction: Existing treatment programs for obese children prove limited effectiveness and sustainability. Health Information System (HIS) enhanced interventions have the potential for higher accessibility and cost-effectiveness of multi-professional family-based obesity therapy. The aim was not only to modify the patient's behavior but also to positively influence their family system.

Methods: In cooperation with therapists, extremely obese children, their parents, computer scientists and information systems researcher, a mobile HIS was developed, consisting of a tablet PC with photo and patient's privacy services, relaxation tools and the ability to measure speed of eating by electronic stop watch, emotional parameters by self-assessment manikin mood scale and physical activity by 3-axes accelerometer, Fitbit, combined with telephone interviews. Three groups of each six extremely obese children (BMI > 99.5, median BMI z-score 3.0, age 13.2 ± 2.3 years) were assigned to therapy in either an (1) individual or (2) group setting with HIS, or (3) individual care without HIS. Physical activity, speed of eating and physical and emotional parameters were evaluated before and after 12 months of therapy. All patients and parents gave informed consent for adherence to therapy, monitoring and the use of tablet PC's.

Results: A total of 25% of extremely obese children with HIS and 60% without HIS decreased their BMI-SDS. Children using HIS did not reduce their obesity more than the control group without HIS, if parents did not support their children at home. Those children with parental support did use HIS for activity, mood and nutrition monitoring regularly.

Conclusion: In extremely obese children, home support with HIS is only effective, when children are guided by their parents while using HIS. To select appropriate families for HIS home support, careful examination of the family system including their motivation and psychosocial factors is needed.