A Smartphone App / Server Platform for Investigation of the Addiction Treatment Approach for Child/Adolescent Obesity

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BACKGROUND

Obesity remains a substantially frustrating and intractable health condition for millions of young people.\(^1\) New strategies are urgently needed. A decade of experience with a popular interactive, open-access website for overweight children/adolescents, revealed addictive patterns of eating in their bulletin board posts.\(^2\) These qualitative reports are complemented by emerging biological evidence that food and drugs of abuse exploit similar pathways (the dopamine and opiate systems) in the brain.\(^3,4\)

This poster describes a server-integrated smartphone app platform used to investigate an addiction-based obesity intervention for children/adolescents.

MATERIALS AND METHODS

The intervention focused on staged withdrawal from problem foods, snacking, and excessive amounts at meals. Withdrawal from problem foods was accomplished by abstinence from each self-identified food until cravings resolved. Withdrawal from snacking was accomplished by progressive snacking abstinence time intervals - morning, afternoon, evening, or night time - with the aim of zero snacks during the entire day. Withdrawal from excessive food amounts was implemented by weighing/recording typical amounts of all foods frequently served at meals. Once typical amounts of all mealtime foods were input, the smartphone app incrementally reduced all amounts and instructed the user via text and voice commands how much to weigh out at meals. Wireless food and body scales were used, interfaced to the smartphone.

RESULTS

Nearly all subjects (89% cohort 1 and 100% cohort 2) were able to identify one or more specific problem foods and successfully withdraw (cravings resolved) from one or more foods. The majority (70%,72%) completely eliminated snacking, while the remainder reduced snack frequency. Nearly all (92%,96%) reduced weighed amounts of foods consumed at home meals. Cohort 1: %OverBMI decreased by 7.1 (p<.01) and weighed amounts of foods at home meals was reduced to 51.1% of starting amounts

CONCLUSIONS

A smartphone app / server platform proved useful as:
1) A packaged intervention for child/adolescent obesity based on the addiction model.
2) A tool for investigating further addiction treatment methods and ways to overcome resistance.

REFERENCES