Development of a Medical Center Kiosk to Promote Pediatric Obesity Risk Reduction

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Abstract

Background: To assist with pediatric obesity risk reduction, pediatricians have partnered with the Expanded Food and Nutrition Education Program (EFNEP). Parents are referred by pediatricians to receive nutrition education provided by EFNEP at the medical clinic site. Objective: Development of an education kiosk to be placed in the clinic waiting room to facilitate pediatric obesity risk communication between parents of pediatric patients and pediatricians and increase referrals to the EFNEP intervention.

Description: Selection of kiosk content. Conduct formal planning meetings with researchers, medical clinic and IT (Information Technology) staff to determine type of kiosk plus location and content output (directly to patient or via medical personnel). Design and code kiosk program based on content selected and medical staff priorities. Pilot test kiosk with target audience. Evaluation: Content of kiosk was based on previous longitudinal validation results of two pediatric obesity risk assessment tools, Healthy Kids and My Child at Mealtime. Based on three meetings with clinic staff and physicians, and two meetings with IT staff, a small, mobile, iPad kiosk with attached receipt printer and location in the clinic were chosen. The kiosk programming generated tailored pediatric obesity prevention messages based on a 22-item survey. The tailored printout encourages the parent to discuss messages with their pediatrician plus the EFNEP intervention offered at the clinic. Parent pilot testing indicated that parents could quickly and easily complete the kiosk survey and were willing to share results with their pediatrician. Conclusions & Implications: Development of a medical center kiosk to facilitate pediatric obesity risk reduction requires collaboration between content experts, clinic staff, IT personal, design and programming experts. Printing nutrition messages via iPad kiosk proved challenging due to medical center Wi-Fi connectivity and security issues. Parents were receptive about the kiosk tailored messages and next steps include testing the kiosk impact on EFNEP enrollment.

Background

Although child obesity is the result of an imbalance between energy intake and expenditure, it is mediated by the child’s environment under the control of the parent. The Nutrition Education Program (EFNEP) provides nutrition education for limited resource families. EFNEP is traditionally not embedded within a medical clinic setting; the potential for synergism exists between EFNEP and physicians. EFNEP would benefit from physician referrals of low-income patients meeting EFNEP guidelines. Physicians and the medical clinic would benefit from parents/parents receiving nutrition education.

Currently, pediatricians are generating referrals and parents have been enrolled to receive nutrition education in the medical clinic site provided by EFNEP but the number of referrals are low. To stimulate parent interest and physician referrals, an iPad kiosk in the clinic waiting room is being developed. The kiosk is intended to provide parents with tailored family nutrition tips and encourage conversations between the parents and pediatricians about nutrition and the EFNEP intervention.

Objectives

Develop an interactive education kiosk to be placed in the clinic waiting room: 1. To facilitate pediatric obesity risk communication between parents of pediatric patients and pediatricians. 2. To increase referrals to the EFNEP intervention.

Methods

Formal planning meetings with researchers, medical clinic and Information Technology (IT) staff were conducted to determine type of kiosk, kiosk location and content output (directly to patient or via medical personnel). Researchers selected kiosk content to reflect evidenced based pediatric obesity determinants under the parents’ control. Next, design elements and programming code were developed based on content selected and medical staff priorities.

Parents participated in two rounds of pilot testing where they completed the Healthy Kids kiosk survey and then an individual interview with the lead author. Parents responded to interview questions about completion ease of the survey and printing, ideas to improve the kiosk experience, and the tailored printout to be shared with their child’s pediatrician. After round one of pilot testing, changes were made to the design and content. Based on feedback from parents and pediatricians, the printout was adapted for the purposes of this project and printed at the clinic. Parents reported difficulty with font size and design. In addition, easy button size made it "very easy" to complete the survey. Parents were able to easily print the results with more detailed instructions and new large "print" and "done" buttons. Parents also suggested in round two testing a desire to send the results sent via email in addition to the receipt printout.

Results

Content of kiosk survey was based on previous development and longitudinal validation of two pediatric obesity risk assessment tools, UC Davis Healthy Kids and My Child at Mealtime. Twenty-two nutrition, activity and parenting items were selected for completion by limited literacy, low-income parents while in the clinic waiting room. Based on survey results, algorithms previously used for a user guide goal setting intervention were adapted to produce tailored pediatric obesity prevention messages based on parent self-report survey. The tailored survey encourages the parent to discuss the nutrition messages with their pediatrician and to inquire about the EFNEP intervention offered at the clinic.

Development and initial validation of an assessment tool—Healthy Kids and My Child at Mealtime: A Visually Enhanced Self Report—was reported in Spring 2013, Vol. 18 (1). The tool is intended to provide parents with information about their child’s dietary and physical activity behaviors, and help them set goals and identify strategies to decrease risk factors for childhood obesity. The Healthy Kids and My Child at Mealtime tool is designed for parents of children ages 3-18 years and includes questions about dietary behaviors, physical activity, and screen time. The tool is divided into two sections: one for parents with children under 12 years of age and another for parents with children 12 years and older. The tool is designed to be completed by parents in a medical setting and includes a follow-up letter and a follow-up call. The tool is intended to help parents identify areas for improvement and set goals to reduce obesity risk factors. The tool is designed to be used by pediatricians and other health care providers as part of routine care. The tool is available online at http://Townsendlab.UCDavis.edu.

Conclusion & Implications

Development of a medical center kiosk to facilitate pediatric obesity risk reduction requires collaboration between content experts, clinic staff, IT personal, design and programming experts. Printing nutrition messages via iPad kiosk proved challenging due to medical center Wi-Fi connectivity and security issues. Pilot testing revealed that parents could quickly complete the kiosk survey and they were willing to talk with their pediatrician about the results. The next steps are to evaluate if the placement of the kiosk in the pediatrics clinic facilitates nutrition discussions between the parent and the pediatrician and if enrollment in the EFENP parent nutrition classes increases.

References and Resources

4. http://HealthyKidsUCDavis.edu

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