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Original article

Implementation and Evaluation of Two Educational Strategies to Improve Screening for Eating Disorders in Pediatric Primary Care

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A B S T R A C T

Purpose: Routine screening for disordered eating or body image concerns is recommended by the American Academy of Pediatrics. We evaluated the ability of two educational interventions to increase screening for eating disorders in pediatric primary care practice, predicting that the "active-learning" group would have an increase in documented screening after intervention.
Methods: We studied 303 practitioners in a large independent practice association located in the northeastern United States. We used a quasi-experimental design to test the effect of printed educational materials ("print-learning" group, n = 280 participants) compared with in-person shared learning followed by on-line spaced education ("active-learning" group, n = 23 participants) on documented screening of adolescents for eating disorder symptoms during preventive care visits. A subset of 88 participants completed additional surveys regarding knowledge of eating disorders, comfort screening for, diagnosing, and treating eating disorders, and satisfaction with their training regarding eating disorders.
Results: During the preintervention period, 4.5% of patients seen by practitioners in both the print-learning and active-learning groups had chart documentation of screening for eating disorder symptoms or body image concerns. This increased to 22% in the active-learning group and 5.7% in the print-learning group in the postintervention period, a statistically significant result. Compared with print-learning participants, active-learning group participants had greater eating disorder knowledge scores, increases in comfort diagnosing eating disorders, and satisfaction with their training in this area.
Conclusions: In-person shared learning followed by on-line spaced education is more effective than print educational materials for increasing provider documentation of screening for eating disorders in primary care.

IMPLICATIONS AND CONTRIBUTION

Print material alone is unlikely to change provider behavior and impact patient care. Multifactorial programs that use cognitive science principles and include commitments to shared learning and improvement are increasingly important in continuing medical education.

Eating disorders are a significant cause of morbidity and mortality in adolescents and adults [1,2]. Disordered eating behaviors often occur in adolescence, affecting over 7% of boys and over 13% of girls aged 9–14 years [3]. Despite this high

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prevalence, studies have found that physicians and psychologists in general practice have low self-rated confidence and competence regarding the diagnosis and treatment of eating disorders [4]. Commonly cited barriers to providing eating disorder care include lack of skill, case complexity, and lack of resources [4]. Review of medical claims data suggest that physicians are indeed missing a large proportion of adolescents who may be engaging in disordered weight control behaviors [5].

To address these issues, the Academy for Eating Disorders (AED) created the medical guide "Eating Disorders: Critical Points for Early Recognition and Medical Risk Management in the Care of Individuals with Eating Disorders," hereafter referred to as the AED guide. Best practices for improving the care of patients with eating disorders are an open area of investigation. Research in the areas of cognitive and educational science demonstrates that educational reading materials and one-time teaching sessions fail to produce lasting changes in memory and cognition [6]. Furthermore, even if new knowledge is retained from these strategies, knowledge alone rarely leads to behavioral change. Implementation of new knowledge requires motivation, self-efficacy, and a supportive environment. Many argue that optimal continuing medical education resources should activate prior knowledge in addition to requiring active practice with new material, ideally in learning communities in which actual clinical practice occurs [7–9].

This study aimed to evaluate the implementation of the AED guide in pediatric practices using these principles of cognitive and educational science. Specifically, we hypothesized that documented screening for eating disorder symptoms at adolescent preventive care visits would be greater for practitioners receiving the AED guide within a pediatric learning community (LC), using in-person shared learning followed by on-line spaced education, as compared with practitioners receiving the print AED guide alone. We also aimed to assess the impact of these two educational strategies on practitioners' knowledge of eating disorders and self-rated comfort diagnosing and treating eating disorders.

Methods

Study population

The Pediatric Physicians' Organization at Children's (PPOC) is an independent practice association affiliated with Boston Children's Hospital composed of 387 practitioners (271 physicians and 116 nurse practitioners or physician assistants) at the time of this project. These practitioners work in 85 pediatric primary care practices in Eastern Massachusetts and provide care to an estimated 400,000 children from Boston and surrounding communities. The mission of PPOC is to enhance its member providers' ability to deliver the highest quality of care to the children and families they serve as well as to improve the professional satisfaction and operational effectiveness of its members. Practices are required to participate in at least one LC per year, during which they focus on a particular area of care and work collaboratively over 9–12 months with experts from Boston Children's Hospital to develop and improve practice-based processes that will enhance the quality of care provided to their patients. In 2015, PPOC offered an adolescent medicine LC focused on confidentiality and legal issues, transition to adult care, anxiety, depression, obesity, and eating disorder screening and treatment. The 23 practitioners in the adolescent medicine LC were invited to participate in the active-learning group of the study; all 23 received equal instruction in each of the adolescent medicine LC topics over the course of the year. Of the remaining 364 PPOC practitioners, 84 were deemed ineligible for the print-learning group because they worked in a practice where another member of their practice was participating in the adolescent medicine LC and thus may have been exposed to the practice-based aspects of active learning. Thus, 280 practitioners were included in the print-learning arm of the study; these practitioners were enrolled in other LCs such as delivering basic orthopedic care in the primary care medical home or ambulatory risk management and did not receive adolescent specific content. The Boston Children's Hospital Office of Clinical Investigation approved this study.

Intervention

The intervention period occurred from March 2015 through July 2015. Each practice in the print-learning group received print copies of the AED guide to disseminate to all practitioners in their practice. Practitioners in this group were encouraged to read and implement concepts from the AED guide, but no further intervention was provided. Practitioners in the active-learning group participated in a 1-hour in-person interactive lecture on screening and treatment for eating disorders delivered by a board-certified adolescent medicine specialist on March 11, 2015. After this seminar, active-learning group practitioners were invited to review material from the AED guide via a mobile educational application powered by Q-stream, a form of on-line spaced education shown to improve retention of material by adult learners [10,11]. A total of 12 eating disorder questions derived from the AED guide were delivered to participants' computer and/or smartphone over 5 weeks (see Appendix 1). Two new questions were sent each week; questions were resent 8 days later if incorrect and 16 days later if answered correctly. Individual questions were retired for a learner after he or she had answered that question correctly two times. Sixteen of the 23 active-learning group participants fully completed the on-line spaced education course; five participants completed approximately 50% of the questions and two participants did not engage with the spaced learning. As a component of the LC, active-learning participants were also required to complete a quality improvement project within their practice related to the content of the LC.

Measures

To verify documentation of screening, we collected deidentified data from the electronic health record (EHR) on all patients aged 10–21 years who were seen for a well visit in the months of January 2015 (preintervention) and August 2015 (post-intervention). We determined the proportion of those visits for which an eating disorder screening question was documented in the EHR via a two-step process. First, to develop a method to screen a large number of charts electronically for eating disorder screening questions, two authors (H.G. and C.T.) reviewed 40 charts selected at random to generate a list of words or phrases associated with screening for an eating disorder. All coauthors' refined and approved the final list, which was designed to be as inclusive as possible. Next, all charts selected for the study were electronically screened for the list of key words/phrases; if no words/phrases consistent with an eating disorder screening