Effectiveness of Online CME in Improving Knowledge and Awareness Related to Emerging Management Approaches for Binge Eating Disorder

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Introduction

Binge eating disorder (BED) is the most prevalent eating disorder in adults,[Iacovino 2012] and has only recently become a distinct entity in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition*, or DSM-5.[APA 2013] It is believed that BED occurs in approximately 1 in 35 adults in the United States.[ANAD 2014] Data from the World Health Organization (WHO) World Mental Health Surveys indicate that BED is at least as common as bulimia worldwide, although fewer than half of lifetime cases of BED or bulimia nervosa receive treatment.[Kessler 2013] Diagnosis and treatment of BED are challenging, even for clinicians who specialize in management of patients with eating disorders.[ANAD 2014] In addition, numerous specialists are involved in the management of the obesity-related consequences of BED. There is significant need for clinicians—both generalists and specialists—to understand this disorder, to be able to utilize available assessments in order to provide an accurate diagnosis, and to be able to effectively manage BED from a psychosocial, medical, and pharmacologic perspective. Our objective was to determine the effectiveness of an online continuing medical education (CME) activity on BED in improving the knowledge and competency of psychiatrists and primary care physicians (PCPs).

Methods

An integrated, multi-article CME activity consisting of 3 interrelated topics on BED was designed specifically to address identified gaps in diagnosis, emerging management strategies, and patient communication approaches. The activity targeted psychiatrists and PCPs with an interest in eating disorders. The effects of education were assessed using a Linked Learning Assessment (LLA) consisting of 4 matched pre- and post-assessment questions.

An LLA compares individual participants' paired responses to questions before exposure to educational content (pre-assessment questions) with responses to the same questions after participation in the educational activity (post-assessment questions). An LLA shows the overall effect of the educational activity. With this method of analysis, participants serve as their own controls. Answers to pre-assessment questions indicate what participants know at baseline before they participate in the activity; responses to the repeated post-assessment questions indicate what participants have learned from the activity. Only participants who answered every assessment question are included in this analysis. Each question in the LLA is directly related to the learning objectives of the educational activity.

Assessment Question Number

For all questions combined, the McNemar's chi-squared test was used to assess whether the mean post-assessment score was different from the mean pre-assessment score. P values are shown as a measure of significance; P values less than .05 indicate a statistically significant result. Cramer's V was used to calculate the effect size of the activity by measuring the strength of association between the pre-assessment and post-assessment of linked learners. (Effect sizes of 0.00 are considered a very strong effect, 0.01-0.25 strong effect, 0.26-0.5 moderate effect, 0.51-0.75 weak effect, and 0.76-1.00 no effect.)

Definition

For each individual question, the LLA compared the differences in answers from pre-assessment to post-assessment. A Pearson's chi-squared statistic was used to determine significance. P values are shown as a measure of significance; P values less than 0.05 indicate a statistically significant result. Categories of participant responses are defined in the table below.

Participant Response Categories

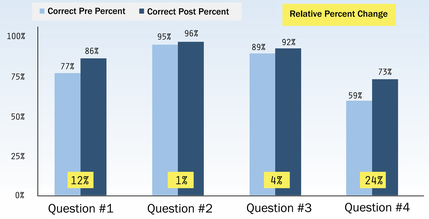
Category	Definition
Improved Learners (green in pie chart)	Any incorrect response on pre-assessment, correct response on post-assessment
Reinforced Learners (blue in pie chart)	Correct response on both pre-assessment and post-assessment
Unaffected Learners (purple in pie chart)	Any incorrect response on post-assessment (with either correct or incorrect response on pre-assessment)

Results

Data for all participants from March 26, 2014, to April 29, 2014, were collected. A total of 1053 psychiatrists and 757 PCPs answered all the assessment questions in the activity and are included in this analysis.

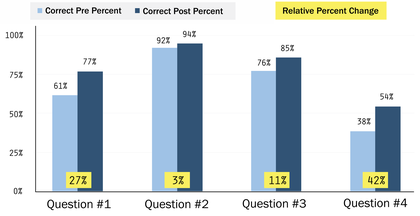
Psychiatrists

For psychiatrists who participated in the CME activity, the LLA demonstrated statistically significant improvements (n=1053; *P* <.05). Correct responses on post-assessment questions were between 1% and 24% higher after CME completion (compared with pre-assessment question responses), with the effect size of 0.53 (*P* <.0001).



PCPs

For PCPs who participated in the CME activity, the LLA demonstrated statistically significant improvements (n=757; *P* <.05). Correct responses on post-assessment questions were between 3% and 42% higher after CME completion (compared with pre-assessment question responses), with the effect size of 0.81 (*P* <.0001).



Question 1:

The diagnostic criteria for binge eating disorder (BED) include which of the following? (Correct answer is highlighted in yellow.)

Pre- and Post-assessment Answer Responses: Overall Counts and Percentages		Psychiatrists (n=1053)		PCPs (n=757)	
		Pre-assessment	Post-assessment	Pre-assessment	Post-assessment
		% (n)	% (n)	% (n)	% (n)
A	Compensatory behavior such as vomiting or laxative abuse	13% (141)	8% (80)	27% (201)	13% (97)
B	Consumption of more than 5000 calories per binge episode	6% (68)	4% (42)	9% (69)	6% (49)
C	Compulsive behavior around food preparation	3% (33)	2% (26)	4% (29)	4% (28)
D	A sense of lack of control over eating during the episode	77% (811)	86% (905)*	61% (458)	77% (583)*
		*P <.0001		*P <.0001	

Question 2:

With which of the following is BED often associated? (Correct answer is highlighted in yellow.)

Pre- and Post-assessment Answer Responses: Overall Counts and Percentages		Psychiatrists (n=1053)		PCPs (n=757)	
		Pre-assessment	Post-assessment	Pre-assessment	Post-assessment
		% (n)	% (n)	% (n)	% (n)
A	Depression	95% (**997**)	96% (**1011**)*	92% (**693**)	94% (**712**)*
B	Epilepsy	2% (**21**)	1% (**15**)	3% (**23**)	3% (**21**)
C	Asthma	1% (**7**)	0% (**5**)	2% (**18**)	1% (**9**)
D	Hypoglycemia	3% (**28**)	2% (**22**)	3% (**23**)	2% (**15**)
		*P =0.148		*P =0.059*	

Question 3:

Mary, a 36-year-old woman, comes to your office with complaints of a "sore back." She stands 5 ft 6 in tall and weighs 265 lb. A radiograph reveals no disc or vertebral problems. You are concerned that her sore back may be due to her weight. Which of the following is the most appropriate treatment approach? (Correct answer is highlighted in yellow.)

Pre- and Post-assessment Answer Responses: Overall Counts and Percentages		Psychiatrists (n=1053)		PCPs (n=757)	
		Pre-assessment	Post-assessment	Pre-assessment	Post-assessment
		% (n)	% (n)	% (n)	% (n)
A	Emphasize that she is obese and should go on a strict diet and exercise regimen	8% (84)	5% (54)	17% (129)	11% (84)
B	Ask, in the privacy of the examination room, if she has trouble with binge eating	89% (933)	92% (971)*	76% (579)	85% (641)*
C	Recommend physical therapy for her sore back	3% (28)	2% (20)	5% (36)	3% (23)
D	Tell her to take ibuprofen until her back soreness resolves	1% (8)	1% (8)	2% (13)	1% (9)
		*P <.0001		*P <.0001	

Question 4:

Mary acknowledges all of the criteria for BED and says she binges about 2 or 3 times per week. You tell her that there are treatment options available. Which of the following treatment options have good evidence for effectiveness? (Correct answer is highlighted in yellow.)

Pre- and Post-assessment Answer Responses: Overall Counts and Percentages		Psychiatrists (n=1053)		PCPs (n=757)	
		Pre-assessment	Post-assessment	Pre-assessment	Post-assessment
		% (n)	% (n)	% (n)	% (n)
A	Psychoanalytic psychotherapy and nutritional counseling	5% (57)	4% (43)	19% (141)	17% (127)
B	Cognitive-behavioral therapy and topiramate	59% (621)	73% (771)*	38% (285)	54% (405)*
C	Exposure-response prevention and selective serotonin reuptake inhibitors	17% (178)	7% (69)	18% (138)	6% (48)
D	Interpersonal psychotherapy and nutritional counseling	19% (197)	16% (170)	25% (193)	23% (177)
		*P <.0001		*P <.0001	

Conclusions

This study demonstrated the success of an online CME activity, consisting of a multi-article format covering 3 interrelated topics on BED and a video segment on effective patient communication skills, in terms of improving knowledge and competency of psychiatrists and PCPs related to management of patients with BED. The large sample size of psychiatrists and PCPs included in this study and the statistically significant improvements demonstrate the benefits of educating a large audience base with aptly designed educational activities using adult learning principles. Based on the results of this analysis, future education is needed related to understanding current diagnostic criteria and treatment options for BED.

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Notes

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