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Kasey Mary Cushman

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Screening for Bulimia Nervosa in the Primary Care Setting:

Educating Healthcare Providers on the use of the Most Valid and Reliable Screening Tools

A Project Presented

by

Kasey M. Cushman, RN

to

The Faculty of the Graduate College

of

University of Vermont Department of Nursing

In Partial Fulfillment of the Requirements

For the Degree of Master of Science

Specializing in Nursing

**Abstract**

There are currently no routine screening guidelines for eating disorders in the primary care setting, despite their high mortality rate. Bulimia Nervosa (BN) is one of the hardest eating disorders to diagnose due to the lack of physical features and its secretive nature. Primary care providers need to have knowledge of the most valid and reliable screening tools in order to better diagnose and treat BN. In order to assess the most valid and reliable screening tools for BN, current literature was appraised with the focus on tools specifically designed for detection of BN. The results of the literature were translated into an educational tool and presented to healthcare team members at a pediatric primary care office in Burlington, Vermont. Pre and post-presentation questionnaires were distributed to attendees to gauge current knowledge around BN screening tools and gauge the efficacy of the presentation.

*Keywords:* bulimia nervosa, eating disorders, screening tools

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## **Chapter 1**

### **Introduction**

Of all the currently identified mental health disorders, eating disorders have the highest mortality rate (ANAD, 2016). Up to 30 million people in the United States alone are currently affected, with over 200,000 new cases diagnosed each year. Bulimia nervosa (BN) is one of the most difficult eating disorders to diagnose because patients are often average weight or overweight and lack any physical symptoms. Eating disorders can manifest at any age. The age of eating disorder onset is now becoming younger and younger (Crow, et al, 2009). Incidence and prevalence of BN in children as young as age six has increased significantly over the years, which is why it is so imperative pediatricians and primary care providers know how to accurately screen for it (Rosen, 2010).

### **Problem**

Identification of BN is the first step in helping our patients get treatment. However, a nationwide survey conducted in 2009 revealed that less than one-third of diagnosed BN cases had been detected by healthcare professionals in a clinical setting (Keski, 2009). In addition to its high mortality rate, BN comes with a high cost to society. While exact numbers are difficult to calculate, some studies suggest that one patient with BN will need about \$20,000 of services annually (Crow, et al, 2013). So how do healthcare providers help their patients get the treatment they need? The first step is proper identification of eating disorders, which includes knowledge of the most valid and reliable screening tools.

### **Rationale**

The global problem is the significant morbidity and mortality of BN in the United States population. Further, primary care providers do not regularly screen for this problem. Given the significant morbidity and mortality of BN and the increasing prevalence of the problem, it is imperative to provide screening so that early diagnosis and treatment can occur. In order to screen for BN, health care teams need to be appraised of the most valid and reliable screening tools, and taught how to use them.

Continuing education is vital to this effort. Therefore, the purpose of this project is to enhance readiness for primary care team members to institute screening for BN.

### **Specific Aims**

The purpose of this project is to enhance provider's knowledge about BN by educating them on the most valid and reliable screening tools for BN. This will hopefully translate into earlier diagnosis and therefore earlier treatment interventions. The specific aims of this project are to:

- Perform a literature review to provide a synthesis of the BN research, identify gaps in knowledge, and appraise screening tools for BN
- Based on the literature review and known best practices, develop an educational presentation highlighting BN screening tools.
- Deliver the educational intervention to a pediatric primary care practice.
- Evaluate the educational intervention.

### **Implications for Advanced Nursing Practice**

This project highlighted several core competencies that all Advanced Practice Registered Nurses (APRNs) are required to fulfill in order to maintain their certification. Competencies all APRNs must fulfill include the use of best available evidence to continuously improve quality of clinical practice, translating new knowledge into practice, and integrating ethical decision making into clinical practice ("NPCoreCompsContentFinalNov20.pdf," n.d.). In addition to these competencies, APRNs build on the competencies of their previous registered nursing knowledge, with advanced assessment, diagnostic and intervention skills, along with a dedication to health promotion and disease prevention. This project helps illustrate these components by providing education to healthcare providers, which includes APRNs, about the best available evidence regarding BN screening tools. This project will help providers understand how to translate this new knowledge into direct patient care, and how crucial screening is in order to diagnose and intervene earlier.

While the entirety of the project helps address more abstract concepts critical to successful practice as an APRN, the actual tangible component of the project highlighted key competencies for APRNs as well. The educational component includes a pre- and post-test survey aimed to determine how competent healthcare providers feel about screening for BN, how comfortable they feel with their knowledge about screening tools, and if they knew which references to utilize if they did not feel comfortable screening for BN. The surveys were designed to help healthcare providers reflect on their current knowledge and any limitations to that knowledge. The educational PowerPoint is designed to bring awareness to which screening tools have been regarded as the most valid and reliable when screening for BN, and when and how they should be implemented in the primary care setting. Additional resources are also provided to healthcare providers, which supports the competencies of using the most valid and reliable screening tools based on evidence based research, implementing new knowledge into practice, and providing resources for further education.

## **Chapter 2**

### **Review of the Literature**

#### **Identification of Need**

There is a current lack of knowledge in the primary care setting around the most valid and reliable screening tools used to screen for bulimia nervosa (Linville, et al., 2010). In addition, over 80% of physicians polled reported that they did not feel comfortable screening or treating patients with eating disorders due to lack of education (Clarke & Polimeni-Walker, 2004). Given that the incidence of BN and eating disorders in general is increasing, it is more imperative than ever to know how to effectively screen for BN. In order to effectively screen for BN, valid and reliable tools need to be utilized. Lack of provider knowledge may prevent these tools from being utilized, which contributes to missed diagnosis, delayed treatment, and possible adverse health outcomes for patients.

Before the evaluation of which tools are most valid and reliable at screening for BN, it would be helpful to determine what symptoms may prompt a provider to need to screen for it. Common symptoms of BN may be difficult to identify because the patient is often average or overweight, and lacks any actual physical symptoms. In addition, stigmatizing attitudes towards eating disorders and patient shame may decrease the chances a patient seeks treatment, which only further complicates the difficulties of screening for BN (Rodgers et al., 2015). Symptoms that may prompt a healthcare provider to screen for BN may include self or family reports of binge-eating behaviors, laxative use, calluses on the hand or knuckles, facial or jaw edema, tooth decay or staining, depression, or anxiety. The patient may also have electrolyte imbalances, gastrointestinal symptoms such as constipation or diarrhea, acid reflux, or esophageal inflammation (“Bulimia Nervosa | National Eating Disorders Association,” n.d.). There is no single sign or symptom that would prompt a healthcare provider to screen for BN, rather a constellation of symptoms that would warrant screening. A physical exam may not be the only indicator for screening; screening may also include screening for comorbidities and lab work to paint a complete picture of the patient’s condition.

Once the provider has determined that screening for an ED is appropriate, the appropriate screening tools must be identified and implemented. This is where barriers to screening may occur. In one survey it was found that less than one-third of BN cases had been detected by a primary care provider in a clinical setting (Keski-Rahkonen et al., 2009). Could this be due to lack of screening? Another survey determined that 78% of providers had concerns about their patients with ED, however the providers were unsure how to proceed with screening or treatment. In the same survey, over 50% of providers strongly supported universal screening for ED (Linville, Benton, O’Neil, & Sturm, 2010). It is not that primary care providers are unwilling to screen for ED, it is that there is a lack of knowledge about which tools to use for screening. In addition, it appears that most healthcare providers strongly support universal screening for ED, which may serve a dual purpose: to eliminate confusion for providers and to increase ED identification.



If and when the provider decides it is appropriate to screen for ED, specifically BN, they need to determine which screening tool is the most valid and reliable. With so many tools currently available, which tool should be utilized? The focus of the following section highlights several promising screening tools for BN, which may or may not include questions related to anorexia nervosa (AN). As the two ED are commonly screened for together, most ED screening tools focus on questions that would help identify both.

### **Bulimia Nervosa Screening Tools**

#### **Rating of Anorexia and Bulimia Interview (RAB)**

The RAB is a 56-item interview style questionnaire developed in Sweden that screens for a “wide range” of ED symptoms including bingeing and restricting behaviors (Nevonen, Broberg, Clinton, & Norring, 2003). The questions group behaviors into one of three categories: not present, not fully verified, fully verified. Each answers correlates with a score, and the score is then used to help formulate a diagnosis consistent with current DSM-V diagnoses. The strengths of this tool include verified internal consistency, test-retest reliability, and no formal training necessary for implementation. Weaknesses of this tool include a provider needing “general knowledge” of EDs, symptoms needing to fall into the “fully verified” category in order to help generate a diagnosis, and the inability to diagnose a patient with more than one ED. If a patient’s symptoms were not “fully verified” the final score would be affected, which may lead to under diagnosis. If a patient was diagnosed with more than one ED, the tool only categorized them as having one. In addition, the tool is not readily available to download and there is a cost associated with obtaining the tool, which is around \$300 for 25 questionnaires. Despite these factors, the RAB is a valid and reliable tool to aid in the diagnosis of BN and other EDs, however may be cumbersome for providers given the time it takes to complete and score it.

### **Eating Disorder Brief Questionnaire (EDBQ)**

The EDBQ is a 32-item questionnaire that has been proven to be effective in identifying BN specifically (Bergin & Wade, 2014). Questions asked include attitudes about eating habits, weight, and body shape. The EDBQ has been administered in both clinical and nonclinical settings, and has proven a valid and reliable tool in both. Strengths of this test include its ability to be administered in both a clinical and nonclinical setting, its ability to specifically diagnose BN separate from other ED, demonstrated internal validity, and test-retest reliability. It is also easily available online for free (“Smart Eating,” n.d.), which may be attractive for patients who are unwilling or hesitant to answer questions in a clinical setting. Weaknesses of this test include the large female populations in which it has been administered, which have often excluded males. Although the test is reliable in detecting BN in females, the small male population test have not been verified (Bergin & Wade, 2014). Overall this tool is a valid and reliable one for screening for BN, and may be more easily accessible for patients who prefer to complete it at home.

### **SCOFF**

The SCOFF questionnaire is one of the widely used tools to screen for ED. The acronym “SCOFF” is derived from the five questions in the tool, which is designed to quickly screen for worrisome symptoms. A positive score on the SCOFF could then prompt providers to administer a longer, more detailed screening tool to patients. The SCOFF was meant to be inclusive for AN, BN, and eating disorder not otherwise specified (EDNOS). The SCOFF is administered in an interview style in a clinical setting. Strengths of the SCOFF are its brevity with only five questions included. It is free and easily accessible to download online. Despite only having five questions, it continues to have a high sensitivity. In addition, the SCOFF can be administered in written or verbal form, with written forms yielding more positive answers. It has demonstrated internally validity, test-retest reliability, and has been administered to males and females in both a clinical and nonclinical setting. No formal training is needed to administer the SCOFF. Although the SCOFF is a reliable and valid screening tool, it has its drawbacks. Given its low-item count, the SCOFF

is not specific and cannot specify which ED a person may have. Rather it is a tool to confirm that an ED may be present (“Microsoft Word - SCOFF Questionnaire handout.doc - scoffqairehandout.pdf,” n.d.). If the SCOFF is administered in an interview-style, patients were less likely to screen positive. This suggests that the written form is more sensitive and should be used over the interview style when possible (Hill, Reid, Morgan, & Lacey, 2010). This tool may be a “go-to” for healthcare professionals if they want to do a quick assessment for ED risk. However, given that there are more in-depth and specific tools available, the provider may forego this first step and administer a longer, more thorough test if an ED is highly suspected.

#### **Patient Health Questionnaire Eating Disorder Module (PHQ-ED)**

The PHQ-ED is another questionnaire style tool that aims to identify either BN or binge-eating disorders. There are six questions that ask about eating habits, specifically binge eating and purging habits, and how often or when the most recent episode of binging/purging occurred. In one study, the PHQ-ED was 100% sensitive and 92% specific in a large-scale population. This adds to the further strengths of this tool in that it is short, specific and sensitive, and can be administered in a clinical and nonclinical setting without any special training. In addition, it is available to download and print at no cost. Weaknesses were that it is not useful in identifying other EDs because it is very specific to BN and binge-eating disorder. In addition, the tool only addresses six specific behaviors. The provider may need to do additional interviewing to more accurately assess the specific behaviors the patient is engaged in, and to further differentiate between BN and binge-eating disorder (Striegel-Moore et al., 2010). As a tool for identifying BN and binge-eating disorder, this may be a go-to tool for providers given its specificity.

### **Eating Disorder Exam Questionnaire (EDE-Q)**

The EDE-Q is a 41-question tool that focuses on eating behaviors over the last 28 days. The questionnaire can be administered in both a clinical and nonclinical setting, address behaviors commonly seen in AN, BN, and binge-eating disorder, and there is no special training needed to administer the tool. Widely regarded as the “gold standard” screening tool, the EDE-Q helps measure how severe EDs are and can help lead to a DSM-5 diagnosis (“Measures,” n.d.). Among its strengths include its easy accessibility, it is free to download, it has strong test-retest reliability, and can be used in both males and females. Weakness include it’s length, which may be time consuming for patients, and was found to be better at identifying attitudes about eating than actual eating behaviors (Rose, Vaewsorn, Rosselli-Navarra, Wilson, & Weissman, 2013). This test is a valid and reliable tool to screen for ED, and given that it is hailed as the “gold standard” screening tool, providers may have more confidence in administering this tool.

### **Bulimic Investigatory Test, Edinburg (BITE)**

The BITE is a 33 item self-report questionnaire that aims to identify bulimic or binge-eating behaviors. It allows providers to gauge how often the symptoms occur and how severe the symptoms are. Answers to the questions are given scores, with the higher the score indicating a higher severity or more frequent occurrence. This tool was designed to be administered in a clinical setting. There is no formal training needed for administration, and it is free to download. The tool has proven valid and reliable across all ages (Pedrero, Baigrie, Piñeiro, Giráldez, & Fernández, 2011). Weaknesses identified in this tool were that male’s symptomology was less likely to be identified, and the test was much more sensitive for females. This could be attributed to males as they are less likely to self-report certain behaviors, leading to less sensitivity and thus less detection (Pedrero et al., 2011). Overall this tool is valid and reliable at detecting severity of ED symptoms, however it should be used in caution with males as its validity in this group has not been proven.

### **Eating Disorder Inventory (EDI)**

The EDI is a 91 item questionnaire designed to be administered in the clinical setting. It addresses multiple ED symptoms, including restrictive and bingeing behaviors, as well as self-esteem issues, insecurity, and alienation issues. It has been found to be an “excellent predictor” for BN, with consistently high sensitivity and specificity rates in females (Clausen, Rosenvinge, Friborg, & Rokkedal, 2010). The tool is reported as easy to use and aids providers in determining a DSM-V diagnosis (“EDI-3 (Eating Disorder Inventory--3),” n.d.). It must be ordered and it costs over \$300 for 25 screening questionnaires. Additional drawbacks to this tool are the roughly forty minutes of time needed to complete it, and its decreased sensitivity for detecting BN in males (Stanford & Lemberg, 2012). Overall, this tool is a valid and reliable tool to use in the detecting of BN, as long as patients and providers are not deterred by the cost and time it takes to complete.

### **Eating Attitudes Test (EAT)**

The EAT is “one of the most widely used screening tools” for patients who are deemed at risk for developing an eating disorder (“EAT-26 Self-Test :: Permission,” n.d.). The tool can be used in a clinical and nonclinical setting by anyone. There are two versions, a 26-item self-report questionnaire and a 40-item questionnaire that addresses questions regarding restriction, bingeing, and avoidance behaviors. The tool is online and can be taken anonymously for free. It has been demonstrated to be both valid and reliable across genders and ages (Maïano, Morin, Lanfranchi, & Therme, 2013). It has also been proven to effectively determine those at risk for developing an ED (Salazar Mora & Prado-Calderón, 2015). Highlights of this effective tool include free, anonymous access online, high efficacy at determining at risk patients, and its ability to predict risk in males and females. Weaknesses of this tool include the fact that it does not aid in a DSM-V diagnosis. Rather, it is a screening tool for patients at risk. It is also a two-step process. Once a patient has been deemed to be at risk, the provider must then administer a more specific tool to

determine which diagnosis is most appropriate (“EAT-26 Self-Test :: Permission,” n.d.). Overall this tool has been shown to be highly effective and reliable at identifying patients who are at risk for ED.

### **Choosing a Tool**

Choosing a screening tool for BN, or any ED, may seem like a daunting task, especially to those providers who have little or no experience in screening for BN. The provider may find it easiest to use whichever screening tool their practice uses, or use a short version like the SCOFF to screen quickly. There is no one right tool to use. It is completely dependent on the patient and how they are presenting. If the patient is highly suspected to have BN, the provider can then determine that short, nonspecific screening tools like the SCOFF is not appropriate. They may determine that the more sensitive and specific BITE or PHQ-ED are more appropriate. Given that most of these tools are free to administer and easily accessible online, they may be the first choice over more expensive tools like the EDI.

One analysis offers some guidance to providers about the most effective screening tools for BN. In this study, six of the most common tools to detect BN were analyzed to determine which was the most effective. Those analyzed were the EDE-Q, the EAT, the EDI, the Body Shape Questionnaire (BSQ), the BITE, and the Three Factor Eating Questionnaire (Sandberg & Erford, 2013). In this single study it was determined that while all six tools were accurate, they were each unique in what they identified. For example, the EDI and the EAT were the most reliable at assessing BN, but the EDE and the BSQ were more accurate at assessing body dissatisfaction. The take away from this article is that there is no one tool that should be used to assess for BN. Multiple tools will yield more accurate and specific results, which will allow providers to detect BN sooner. By detected BN earlier, providers can put appropriate interventions in place sooner, and hopefully reduce the effects BN has on patients.

## **Methods**

### **Site and Sample**

Healthcare team members at a pediatric primary care clinic in Burlington, Vermont were the participants in the continuing education session. Attendees included medical assistances, licensed nursing assistants, registered nurses, critical care support staff, nurse practitioners, physician assistants, and medical doctors.

### **Procedures**

Current literature was appraised using a variety of digital search engines include CIHNAL, Ebsco Host, PubMed, and Academic Search Premier. Key words used to obtain literature include bulimia nervosa, eating disorders, bulimia nervosa screening tools, bulimia nervosa screening, and eating disorder screening tools. Literature was appraised to determine the most valid and reliable screening tools for BN. The evidence was then translated into a PowerPoint presentation (Appendix A) tailored to members of the health care community.

A pre-presentation questionnaire was then administered to attendees to assess knowledge of BN and screening tools. A post-presentation questionnaire was also administered to attendees to assess if their knowledge was increased, decreased, or unchanged as a result of the information in the presentation. Attendees were asked what information should have been included in the presentation, and attendees were encouraged to give any additional feedback about the presentation.

### **Plan for Evaluation**

Pre and post-presentation (Appendix B) anonymous questionnaires evaluating clinicians' BN knowledge were collected and analyzed using descriptive statistics. Attendees' knowledge pre- and post-presentation were analyzed to determine if the presentation was successful in enhancing healthcare provider's knowledge of BN and appropriate screening tools. The project was considered successful if more than 50% of attendees found that their knowledge of one aspect of screening for BN was enhanced.

The following chapter provides an evaluation and discussion of the project, as well as a discussion about the stated objectives, results of the presentation evaluation, and where future research may be directed.

## **Project Evaluation and Discussion**

### **Evaluation of Objectives**

The first objective of this research included performing a literature review targeting the most valid and reliable screening tools for BN. This literature review was successful and results were summarized above, allowing this objective to be successfully met. The second objective was to create an educational PowerPoint presentation summarizing the results of the literature review (Appendix A). The third objective was to deliver the educational PowerPoint to a pediatric practice. This was presented to a pediatric primary care practice that included several different types of healthcare providers. The efficacy of the presentation was then evaluated by administering and interpreting pre and post-test questionnaires that the healthcare providers filled out anonymously and voluntarily. The results the evaluation are presented below.

### **Evaluation of Intervention**

The presentation on BN and screening tools was presented to seven healthcare providers at Timberland Pediatrics in Burlington, Vermont. Health care providers who were present included nurse practitioners, physician assistants, registered nurses, licensed practical nurses, medical doctors, and a medical student. Participants were asked to complete a voluntary and anonymous pre and post-test questionnaire before and after the presentation. The goal of surveying the health care team was to determine if knowledge about BN and screening tools was changed in any way as a result of the presentation. The answers to ten questions were based on a Likert scale, with responses ranging from “disagree” to “agree completely”. All seven participants submitted pre and post-tests, with a response rate of 100%. Overall the presentation took about twenty minutes, with a twenty-minute discussion



afterwards. The presentation was well received by all providers, who expressed that more training for screening for all types of ED would be beneficial. The discussion centered on which tools would be most feasible to implement in a primary care setting, and which tools might be better reserved for more specialized settings.

Questions presented were intended to determine providers level of comfort around their current knowledge of BN, screening tools for BN, where to find resources for screening for BN, and where to refer patients for treatment of BN. Of the providers present, 70% of providers felt comfortable screening for both general ED and BN before and after the intervention. The intervention did not change providers comfort level around screening for ED or BN. Only 42% of providers knew general screening tools for ED before the intervention, compared with 100% after the intervention. None of the providers knew screening tools for BN specifically before the intervention, while 85% reported knowing screening tools for BN after the intervention. Less than half of the providers felt they knew where to find resources for both general ED and BN before the intervention, while 100% reported knowing where to find resources after the intervention. All providers believed they needed more training around screening for ED and BN before and after the intervention. The number of providers who felt they knew where to refer patients with ED and BN was unchanged as a result of the intervention.

It was predetermined that any area in which there was a 50% increase in provider knowledge this would be considered a successful intervention. Using this measurement, it was determined that the intervention was successful at increasing provider knowledge in the following domains:

- Knowing general screening tools for ED
- Knowing specific screening tools for BN
- Knowing where to find resources for general ED
- Knowing where to find resources for BN specifically

**Table 1: Pre and Post-Presentation Questionnaire Results**

Question	Pre-test	Post-Test
Comfortable screening for ED	70% agreed (n = 5, N = 7)	70% agreed (n = 5, N = 7)
Comfortable screening for BN	70% agreed (n = 5, N = 7)	70% agreed (n = 5, N = 7)
Know general screening tools for ED	43% agreed (n = 3, N = 7)	100% agreed*** (n = 7, N = 7)
Know screening tools for BN	0% agreed (n = 0, N = 7)	85% agreed*** (n = 6, N = 7)
Know where to find resources for general ED	43% agreed (n = 3, N = 7)	100% agreed*** (n = 7, N = 7)
Know where for find resources for BN	28% agreed (n = 2, N = 7)	100% agreed*** (n = 7, N = 7)
Need more training around screening for ED	100% agreed (n = 7, N = 7)	100% agreed (n = 7, N = 7)
Need more training around screening for BN	100% agreed (n = 7, N = 7)	100% agreed (n = 7, N = 7)
Know where to refer patients with ED	57% agreed (n = 5, N = 7)	57% agreed (n = 5, N = 7)
Know where to refer patients with BN	43% agreed (n = 3, N = 7)	43% agreed (n = 3, N = 7)

\*\*\*Over 30% increase in provider knowledge

### Limitations

While this intervention was successful at increasing providing knowledge in four areas related to ED and BN, the intervention was only presented to a small population and thus cannot be generalized to all healthcare providers. In addition, all of the providers present were female. It would have been interesting to see how knowledge about ED compared between genders. The screening tools evaluated were originally developed in English, and the participants to which they were administered were English speaking. Perhaps there are tools in different languages that are more effective at screening for BN, but have not yet been translated into English. Finally, screening tools evaluated were tools most often used in the United States. Research did not look at tools currently being used in other countries.

### **Implications for Future Research**

Currently there is no established guideline for screening for ED as outlined by the United States Preventative Taskforce. It is up to provider discretion when and how to screen for ED and BN, which can lead to under diagnosis and poor outcomes for patients. The first step in future research might look at ways in which practices can implement uniform screening for all patients, or establish screening criteria guidelines that will help providers determine when and who to screen. This will require practices to be open to implementing regular screening for ED, which can take extra time and training for providers. Future research might also look at which tools are being utilized most often, which tools are most sensitive to detecting several different ED within one tool, or which tools are easiest to administer in a primary care setting.

### **Conclusions**

After a thorough literature review, is it still unclear which screening tool for BN is the most valid and reliable. There is such a wide range of tools to choose from, and they each have unique strengths. It appears that there is no definitive answer as to which tool is most useful in screening for BN. Factors that come into play are: time it takes to implement the survey, which eating disorders are being screened, where the survey is administered, the cost of the tool, and how in depth providers want the tool to be. Ultimately it is up to the discretion and comfort level of the provider when choosing which tool to use to screen for BN.

This project demonstrated that in a pediatric primary care office in Vermont, providers felt they needed more training around screening for BN and ED, even if they felt comfortable screening for BN and ED already. There was a general consensus among providers more training is needed around screening for both ED and BN specifically. In addition, providers felt they needed more information about where to refer patients with an ED once a diagnosis was made. This project contributed to an increase in providers'

knowledge in four key areas, including increased knowledge related to screening tools specific for BN; the ultimate goal of the project.

From the implementation and evaluation of this project, I believe that more provider training around eating disorder screening in general, and bulimia nervosa specifically. By increasing BN screening, we can hopefully implement earlier and more aggressive treatments. Earlier treatment interventions can help reduce the significant mortality and morbidity associated with BN, and provide better health outcomes for our patients.

This project was just one small step in assessing provider knowledge of BN screening tools, and will hopefully lead to further research and establishment of regular screening guidelines for not only bulimia nervosa but for all types of eating disorders.

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**Appendix A: Pre and Post-Test**

Please indicate your knowledge of eating disorders and bulimia nervosa by answering the following questions. Rate each item on the scale shown to indicate your level of agreement.

My formal title is (please circle one): Medical Assistant Registered Nurse Physician Assistant Nurse Practitioner Medical Doctor Doctor of Osteopathy Other:

1. I feel comfortable screening for eating disorders.  
Disagree      somewhat disagree      somewhat agree      agree completely
2. I feel comfortable screening for bulimia nervosa.  
Disagree      somewhat disagree      somewhat agree      agree completely
3. I know general screening tools to use to screen for eating disorders.  
Disagree      somewhat disagree      somewhat agree      agree completely
4. I know which screening tools are most appropriate to screen for bulimia nervosa.  
Disagree      somewhat disagree      somewhat agree      agree completely
5. I know where to find resources about screening tools for eating disorders.  
Disagree      somewhat disagree      somewhat agree      agree completely
6. I know where to find resources about screening tools for bulimia nervosa specifically.  
Disagree      somewhat disagree      somewhat agree      agree completely
7. I feel I need more training around screening for eating disorders.  
Disagree      somewhat disagree      somewhat agree      agree completely
8. I feel I need more training around screening for bulimia nervosa.  
Disagree      somewhat disagree      somewhat agree      agree completely
9. I know where to refer patients with eating disorders for treatment.  
Disagree      somewhat disagree      somewhat agree      agree completely
10. I know where to refer patients with bulimia nervosa for treatment.  
Disagree      somewhat disagree      somewhat agree      agree completely