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Highlights from the Virtual IAEDP Symposium

Genetic Advances Are Expanding Our Understanding of Eating Disorders.

This year, due to the COVID pandemic, participants in the 2021 International Association of Eating Disorders Professionals went virtual, visiting dozens of special classes and keynote speeches, as well as classes in Spanish. Joel P. Jahraus, MD, FAED, CEDS, President of the IAEDP Board of Directors, welcomed virtual participants to the symposium program, "As the World Turns, Unforeseen Challenges and Dynamic Solutions."

Among the wide variety of presentations was an update on global efforts to track the genetics of the most common eating disorders, particularly anorexia nervosa.

Exciting Advances in the Genetics of Eating Disorders

New advances in genetic research are making important inroads into greater understanding of AN, BN, and BED, according to keynote speaker Cynthia Bulik, PhD, FAED, of the University of North Carolina, Chapel Hill. Dr. Bulik is one of the leaders of new global efforts to better define the biological and psychological underpinnings of AN, BN, and BED. Dr. Bulik is an award-winning teacher, author, and researcher, and Professor and founder of the Center of Excellence for Eating Disorders at the University of North Carolina, Chapel Hill. She is also Professor of Medical Epidemiology and Micostatistics and Principal Investigator at the Centre for Eating Disorders Innovation at Karolinska Institutet in Stockholm, Sweden.

The EDGI Project

Dr. Bulik and her colleagues recently launched the Eating Disorders Genetics Initiative (EDGI), an effort to uncover the genes that cause AN, BN, and BED.* (Avoidant/Restrictive Food Intake Disorders, or ARFID, and Other Specified Feeding or Eating Disorders, or OSFED, will be added to the study in the future.) The EDGI study involves researchers in the US, Australia, the United Kingdom, New Zealand, and Denmark, with other countries such as Mexico, the Netherlands, and Italy lining up to join the study. Dr. Bulik and her colleagues plan to collect clinical information and saliva samples from more than 6000 people with a history of an ED and those without such a history. This is the largest eating disorders initiative in the world. Participants must have experienced symptoms of AN, BN, or BED, be 18 years of age or older, and live in one of the participating countries. The researchers mail a test kit to individual participants, who then mail the kit back. Participants also take an online questionnaire, and receive a $20 Amazon gift certificate for their participation.

Dr. Bulik added that EDs affect millions of persons worldwide, including 1% to 4% with AN, 1% to 4% with BN, and 1.5% with BED. One new and important finding is that EDs are affected by both environmental **and** genetic factors. However, current treatment for AN is limited, and relapse rates are high. In addition, there is currently no FDA-approved medication for AN.

The EDGI project is working to uncover metabolic, genetic, and anthropomorphic factors underlying EDs. In fact, Dr. Bulik stressed that AN, for example, may best be conceptualized as a metabolic-psychiatric

disorder. Greater attention to metabolic factors may improve outcome and provide an explanation for why adequate refeeding is important for preventing relapse. A major step toward treating disorders like AN will be understanding the underlying role of metabolic mechanisms.

"One goal is to identify persons who are more likely to develop more serious disease, "she noted. Part of the problem is that researchers haven't understood the underlying physiology of diseases like AN. The pathways uncovered by the study will help clarify the biological causes of AN," she added. "The genetic work also has the potential to lead to new medications for AN," she said.

In terms of genome-wide studies, new research has identified 8 regions, or loci, on the genome. Researchers have noted a diagnostic migration of patients who, for example, present with AN, but in the following years may cross over to BN or to EDNOS. The current study may help explain this change in diagnoses over time.

When asked why she got involved with the global studies, Dr. Bulik noted that "AN is perplexing and difficult to understand on a biological level and I like hard problems." She added that starvation is reinforcing to those with AN, especially in the early stages of the disease. The same is true for excessive exercise. Starvation calms people with AN both biologically and psychologically, she added. For example, while most people and animals enjoy fats and sugar, the opposite is true for those with AN. And, for them, activity is more reinforcing than food. Their "hyper-bodies" shift into hyperdrive and burn up calories, she added. The body reverts to a "settling point" (as opposed to the well-known term set point), she stressed. This is due to a biological force, Dr. Bulik added. The body reverts to a settling point, or to a weight the body is comfortable with. People may be discharged from treatment when they reach a prescribed BMI, but over time and due to an as-yet-unexplained biological component, they may fall back to a settling point with negative energy balance and low BMI. This is a dangerous state for anyone who has ever had AN, she said. Thus, long after initial recovery, this biological factor is a pitfall that can tip the scales and lead to relapse.

The ANGI Study

Dr. Bulik also described the results of an earlier ongoing study she and a team of global colleagues are leading, The Anorexia Nervosa Genetics Initiative, or ANGI. The ANGI Trial was an international collaboration designed to rapidly recruit 13,000 individuals with AN and ancestrally matched controls (*Contemp Clin Trials*. 2018.74:61). Participants and controls have been recruited from the US, Australia/New Zealand, Sweden, and Denmark. ANGI recruited from the United States (US), Australia/New Zealand (ANZ), Sweden (SE), and Denmark (DK). Recruitment was via national registers (SE, DK); treatment centers (US, ANZ, SE, DK); and social and traditional media (US, ANZ, SE). All cases had a lifetime AN diagnosis based on *DSM-IV* or *ICD-10* criteria (excluding amenorrhea). Recruited controls had no lifetime history of disordered eating behaviors.

Taking a Wider View

Genome-wide studies have revolutionized AN studies, according to Dr. Bulik,who added that while in the past researchers looked for a single AN gene, later results have revealed not 1 gene and not even 1000 genes are tied to AN. Dr. Bulik said that researchers need to take a much "broader, bird's-eye view" of the eating disorders. She noted that "We can see clearly that AN is a whole constellation of psychiatric, metabolic, and anthropomorphic traits that influence the risk of developing AN."

Guidelines for Clinicians

Dr. Bulik said that clinicians have a responsibility not to just do the science, but to package the information in a clear and meaningful way for patients and families. This also means clinicians need to make an effort to integrate genetics into their own cases and to become comfortable answering patients' and families' questions. However, she also advised clinicians to "Know your limits, and if you live in an area with genetic counseling, make use of your colleagues. If not, find other resources for families and

patients." There are also good ways to communicate the dos and don'ts of messages about EDs. She stressed that genetics is only one piece of the risk puzzle, and all-or-nothing thinking should be avoided

She reiterated that AN should be viewed as a metabolic-psychiatric disorder. For example, people with AN have a low BMI that allows them to get down to very low weights. This might be explained due to their very low settling points. Future studies will help explain this return to a negative settling point, as well as the negative correlations to BMI and positive correlations with cholesterol levels, Dr. Bulik explained. It might explain the paradox that those with AN feel better at negative metabolic points, and why they feel worse when they are renourished.

Dr. Bulik said she is a strong proponent of scientific communication and stressed the importance of providing information and following up with the patient and family. As clinicians and researchers, the challenge is to package information so that patients and families can see and understand it. She pointed out that people with EDs and their families are incredibly well informed, and clinicians have a responsibility to help them further; this will also help decrease the stigma toward patients with EDs.

Genetic Counseling

There is also a large role for genetic counseling, and the field needs more professionals, she said. Unlike genetic testing, genetic counseling has many benefits for those with ED. For example, genetic counseling for mental illnesses has been shown to help alleviate shame and stigma and to help correct common misconceptions. With genetic counseling, family members can be better prepared to intervene. Genetic counseling can also promote help-seeking behavior and will facilitate earlier recovery. She mentioned that she and her colleagues recently completed the only study thus far on genetic counseling and eating disorders.

Viewing AN as a metabolic-psychiatric disorder is an important step. She added, "I think this may be very important and may help explain why we have trouble keeping persons with AN well. On a science level, great—clinicians and families are excited, but how can this help us today and how can you use this with your patients and their families? It is irresponsible to throw out scientific information and not follow-up with the patient."

How can clinicians get science information into the hands of those who need it most? One challenging area is helping people understand vulnerability to an eating disorder and finding better ways to re-educate families and patients about "genetic destiny." Parents often fear that because they are vulnerable to an eating disorder, their children will be as well. They need to be reminded that that the genes come from two individuals, not just one, and that genes are only one part of the problem, she said, adding that parents also need to know that there is nothing we have less control over than which genes will be passed on to the next generation.

Dr. Bulik also urged ED professionals to change their language, for example, to stop using such terms as â€œnature or nurture,â€ since both are involved in the development of EDs, and to help with the challenge of underserved populations, such as African-American patients and Latino populations.

Dr. Bulik added that newspaper headlines announcing that a new gene for AN has been found are incorrect. She added that there is also no genetic test for AN, and this is not where research is headed. Instead, families should be prepared to intervene with health-seeking behaviors. She noted that parents dealing with EDs are some of the best-educated individuals and the most curious about ED findings. Despite this, misconceptions persist.

*[For more information about the EDGI program: telephone 984-974-3798; email **EDGI@unc.edu** or visit the EDGI website at **www.edgi.org**].

From Across the Desk

While so much of our attention is now directed at the pandemic and all the adjustments that have been made to improve safety, science steadily marches on. In this issue, two eating disorders specialists present global scientific advances and reflect patients' at-home challenges as well. In her article, author Sandra Wartsky uses case examples tp illustrate her observation that "Fortunately, some clients have been able to use this extraordinary time to approach their recovery in new and positive ways." In another article, Dr. Cynthia Bulik, a keynote speaker at the IAEDP Virtual Symposium, describes the worldwide advances made through genetic studies, particularly with new information about the genetic and biologic underpinnings of the most prevalent eating disorders, particularly anorexia nervosa. The advances from these global efforts may help us understand why treatment failures in AN are so common. Health misinformation via the Internet is yet another topic; where one study reported that 90% of younger viewers trust most health information they read over the Internet.

We welcome spring and the advances being made in ED knowledge and improved treatment.

— MS

Update: More Effects of COVID 19

The National Eating Disorders Association recently reported a 41% increase in messages to its telephone and online help lines in January 2021, compared with January 2020. And, in a 2020 study of about 1000 American and Dutch eating disorders patients, more than one-third reported that, due to pandemic restrictions, they were restricting their diets and increasing "compensatory behaviors" like purging and exercise ***(Int J Eat Disord*. 2020. 53:1780).** Among the Americans, 23% said they were regularly binge eating and stockpiling food. Body image has also been affected by physical and social distancing. In yet another study, the authors reported that anxiety and stress directly linked to COVID-19 could be causing a number of negative body image issues among women and men (*Pers Individ Dif*. 2021.15:170). Among 506 British men and women, anxiety and stress were associated with a greater desire for thinness, and a significant percentage reported having body dissatisfaction. Among the men, COVID-19-related anxiety and stress was associated with a greater desire for muscularity and dissatisfaction with percentage of body fat. Among the women, messages about self-improvement may have led to their increased body dissatisfaction and to a greater desire for thinness.

How Are Binge Eating and Binge Drinking Related?

Clinicians should remember to ask patients with binge eating about binge drinking as well.

We have long known that alcohol use disorders occur more often among those with eating disorders, and vice versa. Is there a link at the symptom level? Tamara Escriva-Martinez and colleagues (*Int J Environmental Research and Public Health*. 2020. 17:9451) recently sought to answer this question.

The authors conducted a cross-sectional survey of 428 Colombian undergraduates, three-fourths of whom were female. Participants completed the *Eating Disorders Examination*, 3 (*EDI-3*) the *Dutch Eating Behavior Questionnaire*, the *Binge-Eating Scale*, the *Yale Food Addiction Scale*, and a fat intake questionnaire to assess eating behavior. The undergraduates also completed the *Barratt Impulsivity Scale,* which assesses impulsivity, and provided self-reports of drinking behavior.

Just as the researchers had predicted, binge eating and binge drinking were significantly related, as were the amount of dietary fat intake and binge drinking. Binge drinking was also linked to emotional eating, and to higher scores on the *Yale Food Addiction Scale*. It is hard to know the exact nature of the link between these disorders because the study was cross-sectional, so no causal pathway could be determined.

The results also raise interesting questions about the relationship between these common public health issues, and clearly show the need for more research. Moreover, the results suggest that clinicians working with people who binge-eat should inquire not only about typical alcohol dependence symptoms, but also about binge-drinking patterns.

Are Emergency Room Physicians Prepared for ED Emergencies?

Nearly half felt their training was inadequate.

It may not happen each day but at some point an eating disorder patient may need emergency room care. Emergency department physicians are in a unique position to identify patients with eating disorders, and sometimes are the first clinicians to see such patients. Too often, however, emergency room physicians may not be prepared to care for ED patients, particularly those with more serious disorders such as AN. The results of a cross-sectional pilot study call for better educational preparation for emergency physicians who see and treat ED patients (*J Eat Disord*. 2021. 9:4).

In the first study to examine knowledge and perceptions of eating disorders and educational needs among emergency physicians in the US, Dr. Connie Ma and fellow researchers at the Department of Individual, Family, and Community Education at the University of New Mexico, Albuquerque, examined how well prepared emergency room residents are for recognizing and treating emergency patients with eating disorders. Results showed that only 1 in 50 had received specific training in eating disorders during residency training.

The study included 162 emergency room physicians and residents at numerous sites in the US. The authors measured the physicians' knowledge about a variety of resources, treatment options, and eating disorder organizations for patients with suspected or diagnosed ED disorders after the patients visited their emergency departments. To assess education and training needs, participants were asked to indicate their agreement to questions using a Likert scale.

An overview of the respondents

The median age of the 162 study participants was 31 years (range: 25-65 years), and most were female and Caucasian (73%). Overall, they had practiced for fewer than 5 years in the emergency department. Twenty-three states were represented and, based on the census bureau-defined regions, most (38%) practiced in the Midwest (38%).

Most felt their training was inadequate

Of those who did receive training about eating disorders in medical school, 68 (49.3%) felt their training in recognizing and managing patients with eating disorders was inadequate. Only three participants (1.9%) reported completing a scheduled or elective rotation on eating disorders during their residencies. The others noted that such training was not offered. Of those who did receive training about eating disorders, nearly half (68; 49.3%) reported they thought their training was inadequate. The majority (n = 152; 93.8%) reported they did not complete a scheduled or elective rotation on eating disorders during their residency; often such a course was not offered.

Most respondents (95) were not familiar with the *American Psychiatric Association's Practice Guideline for the Treatment of Patients with Eating Disorders* (see: **www.psychiatryonline.org**). And, few had heard of the publication on emergency care of patients with eating disorders by Trent et al. (*Am J Emerg Med*. 2013. 31:859). Respondents indicated that it was difficult for them to successfully screen and treat patients when they were uncertain about the course of treatment or did not have sufficient previous knowledge and training on eating disorders.

What can be done?

Better knowledge of resources in the community for patients with EDs is essential in order for an emergency physician to recommend follow-up specialty care, say the authors. Doing this requires little extra time by the emergency physician, and patients may be more likely to seek treatment after the physician makes his or her recommendations for further care. EM clinicians and nurses, social workers, and case managers should be aware of affordable and easily accessible resources. Some of these resources can be found on the Internet, such as from the National Eating Disorders Association, or NEDA, and the Alliance for Eating Disorder Awareness (**www.allianceforeatingdisorders.com**) sites.

A second suggestion is the need for a brief screening method for persons with suspected eating disorders. A number of respondents in earlier studies indicated their need for a brief screening tool to help them successfully screen and treat patients when they were unsure about the best course of treatment or did not have enough training or previous knowledge about EDs. One such screening tool is the SCOFF questionnaire, which has 5 questions specifically aimed at detecting eating disorders (*Eat Disord*. 2010.18: 110). A free copy of the SCOFF questionnaire is currently available on the NEDA website (**www.nationaleatingdisorders.org**).

Searching for Better Treatment for Diabetics with Eating Disorders

An app is designed to help this challenging patient population.

Conventional treatment approaches for patients with type 1 diabetes mellitus (T1D) and an eating disorder such as anorexia or bulimia nervosa are still largely ineffective (*Int J Eat Disord.* 2002. 32:13). It is easy to see why, considering the challenges of tailoring treatment for this special patient population and the unique demands to control blood glucose levels, diet, and exercise while addressing the many demands posed by an eating disorder.

Dr. Rhonda Merwin and her colleagues at Duke University Medical Center, Durham, NC, recently conducted an open pilot study using acceptance and commitment therapy (ACT) combined with use of a mobile application, or app (*J Eat Disord*. 2021. doi.org/10.1186/s40337-020-00357-6). The group designed the app, *i*ACT, for use between treatment sessions to help clients apply their ACT skills. iACT teaches use of mindfulness and acceptance as an alternative to avoidance and control, leveraging personal values to include encouraging willingness to manage T1D symptoms. The iACT app is a modified version of Recovery Record, an app used to help individuals with EDs recover (*Int J Eat Disord.* 2015. 48:972).

The study group

All participants were at least 17 years old, with T1D and clinically significant ED symptoms. The participants were recruited from endocrinology clinics at two major medical centers in the Southeastern US. After having baseline measurements and blood drawn to determine HbA1c levels and after completing a series of questionnaires, the participants participated in 12 weekly therapy sessions lasting

from 50 to 60 minutes. They also were offered 3 optional tapering sessions every 2 to 3 weeks. They had the option of using the app between sessions. Participants continued regular care with the physicians currently managing their diabetes. At each session, the participants completed a questionnaire describing the frequency and severity of hyperglycemia, edema, and physical and emotional symptoms. Participants also completed a series of diabetes and eating disorders questionnaires, including the *Eating Disorder Examination* (EDE).

ED and diabetic complications

Twenty of the original 28 participants completed treatment. Seventy-nine percent were Caucasian and all were female, and the average age of onset of T1D was 16.2 years. Eleven women (39%) reported using an insulin pump, rather than multiple daily injections, as their primary mode of receiving insulin. Seventy-five percent reported having major or minor complications associated with diabetes. The most common complication, which affected half of the women, was diabetic ketoacidosis after starting insulin therapy. Other problems included bladder, yeast, or other urinary tract infections (46%), stomach or intestinal problems (39%), and retinopathy (36%). Slow healing and decreased vision were also common among 25%; a smaller number had neuropathy (11%) and nephropathy (7%).

The participants also reported having clinically significant ED symptoms. Of the 24 participants who completed the diagnostic intervention, 75% met sub-threshold criteria for BN. (Sub-threshold bulimia was defined as meeting all criteria for BN except that the patient did not binge and purge often enough to have a full diagnosis.) One patient, who did not meet the criteria threshold, was withdrawn from the study and referred for more appropriate treatment. Twenty-five percent of the study participants had been treated for an ED in the past.

HbA1c levels ranged widely, from 6.1% to 15.5%. The study patients were very distressed about their diabetes, with baseline scores on the *Diabetes Distress Scale* ranging between 2.12 and 4.88 (a score between 2.0 and 2.9 indicates moderate distress; a score higher than 3.0 reflects severe distress). As for use of the app, 23 study participants who started treatment downloaded and accessed the app at last once (one participant discontinued treatment after 2 sessions).

Diabetic symptoms

Overall, the study group tolerated treatment well. According to patient logs, bloating and edema were common, especially when these were measured midway through treatment. Hypoglycemia was not a problem, although 6 patients reported having hypoglycemia several times a week. About 50% of participants had no hypoglycemia during the study. Four others had a mixed pattern, where hypoglycemia was problematic 40% to 60% of the time. None needed emergency interventions for hypoglycemia. However, during follow-up, 1 participant had a severe episode that required intervention. None of the study group were hospitalized during the intervention, but a 17-year-old with BN sought residential treatment after the last session. Her HbA1c improved during the 12 weeks of the study, and entering residential treatment was viewed as a positive step in her progress.

Improvement in ED symptoms

Participants reported significant improvements in ED symptoms from baseline to the end of treatment, as measured by the *EDE*. Diabetes self-management was significantly improved. The mean decrease in HbA1c was 0.9%. Fifty-three percent of participants whose HbA1c was greater than 7.5% at baseline had at least a 0.5% decrease in HbA1c measurements at the end of the study, which was clinically significant (*Behav Modif*. 2013. 37:459).

Emotional distress, as measured in the dietary diversity scores (DDS scores), which monitors nutrition, also decreased from baseline to end of treatment. Findings for depression and anxiety were mixed: while depression scores were significantly improved, anxiety scores were not.

Many participants asked for additional treatment, showing that not only was the treatment acceptable, but they believed they needed additional or continued support. A future study might examine whether the mobile app and its particular components are necessary and whether engagement with particular app features could predict outcomes or might lead to strategies to increase app use. Such a study might answer such questions as whether some patients respond to the app alone or if the app might be paired with single in-person contacts. Also, as the authors noted, one limitation of their study was that it included only Caucasian females, and a wider population sample would be valuable.

The Pandemic and Eating Disorder Treatment: An Opportunity for Growth?

By Sandra Wartski, PsyD, CEDS
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2020 proved to be an unusually challenging year for many reasons, and most clinicians have noticed that symptoms have become much more severe. For our clients with eating disorders, the challenges of increased isolation, fewer meal routines, more time alone with the mirror, and social media posts such as "Be careful to not gain the Quarantine 15 weight"* have created even more distress.

Fortunately, some clients have been able to use this extraordinary time to approach their recovery in new and positive ways. The following cases demonstrate some of the incredible insights made by brave individuals who continue to work further through the recovery process in the midst of this often-confusing and chaotic pandemic.

Anne
"Being quarantined is kind of like being in residential treatment. I can no longer be as distracted by other things in my life, and am forced to focus more on recovery."

"Anne" had been in treatment for a number of years, and had been making some forward progress toward decreasing restrictive eating, but she often pointed to her busy professional life as interfering with her ability to follow-through with various homework assignments and practice opportunities.

Being quarantined meant that many of her daily activities suddenly came to a screeching halt, forcing her to look at her self-care routines in a whole new way. She noticed that facing meals, time, goals, and herself was not just about not having had time to do so but was also about a strong sense of avoidance and fear. Without the usual excuses of "I don't have time to prepare a lunch," or "I was too tired to do any journaling about that," she has been launched into a much different way of approaching skills we have been circling around for years. She continues to struggle to approach these skills more mindfully and openly, but the increased time away from her hectic work has allowed a whole new level of awareness and has created some cracks in old beliefs she had about the possibility of change.

Jaycee
"Having this virus has been terrible, but not being able to taste my food is so eye-opening!"

"Jaycee," a young adult, had been stuck in binge-purge cycles for many of her teen years, and had done some good work on attempting to slow down, to savor food, and to accept fullness. However, it wasn't until she contracted COVID-19 and had the telltale signs of no smell or taste that she was been able to suddenly experience food in a whole new way. Contracting the virus did force her to slow down and be more mindful because she was now so fatigued and sluggish, but even more importantly, Jaycee was unexpectedly forced to experiment with eating because she was hungry. Her old patterns of feeling the

urge to binge on old favorites or to numb out feelings with food were abruptly shifted. She noted with amazement, "I don't remember the last time I have eaten just for hunger!" As she has begun to feel better and is slowly beginning to have more smell and taste receptors reawakened, she has noticed that some of the old urgency to eat more mindlessly has returned. Thus, we are now working on ways to hold onto some of the epiphany moments of having the virus and figuring out ways to weave them into new ways of approaching her work toward recovery.

Lauren
"I can't believe so many people care only about how I look!"

Despite the concern her treatment team expressed, last year "Lauren" decided last year to go ahead and have the weight loss surgery procedure that she hoped would make her more loveable and might also cure her eating disorder. Given the prescribed restrictive diet recommendations from the surgeon, who unfortunately seems not to have much understanding about EDs despite several attempted educative phone calls and letters, Lauren has lost a significant amount of weight. She has been pleased about some of the body changes; however, not surprisingly, her ED issues are now intensified and spiraling.

During the quarantine, she has not been able to see as many people in person, giving the shift to working online and so this results in her seeing family and friends much less often. Each time she sees others, she has begun to notice how they make many triggering comments, such as "You look great!" and "Keep it up!" and "What is your diet secret?" She is also noticing that they are not asking about how she is feeling and doing during this very isolating and uncertain time in our world. Although Lauren had always been driving for this type of recognition in the past and still has the toxic pursuit of thinness, the experience of hearing others focus only on the externals while ignoring her important internal world has provided some meaningful insight. This experience has been sad but sobering, and hopefully we can keep working on ways to reframe and reset some of the priorities in her life.

Living through a worldwide pandemic has been an intense experience for clinicians and clients alike, and there continues to be so much hardship and heartbreak. However, finding some of the silver linings and opportunities for growth does allow some moments of hopefulness to shine through.

*More about Reframing the Quarantine 15 (in video blog or article format):
membershare.iaedp.com/video-blog-reframing-quarantine-15-by-sandra-wartski-psy-d-ceds/

About the Author

Sandra Wartski, PsyD, CEDS, a frequent contributor to *Eating Disorders Review*, has been working with eating disorders patients for the past 25 years. She is a licensed psychologist and an outpatient therapist at Silber Psychological Services in Raleigh, NC. She enjoys providing presentations and writing articles on a variety of mental health topics, particularly eating disorders-related topics.

Internet Influence and Misinformation about EDs

Some websites produce an 'echo chamber' effect.

Each day the Internet brings us the best and the worst of worlds. One of the worst includes false or misleading health information. Internet users have increasingly used social media to seek and share health information. In fact, one-third of US consumers now use social media websites such as Facebook and Twitter to seek medical information and to track and share symptoms. They are also using the sites to vent about doctors, drugs, treatments, medical devices, and health plans. Twitter alone features an average of 1.6 billion searches on all topics per day.

The largest change has been in reliance upon social media for health and other information. In 2012 and 2013, 27% of adults relied upon social media sites, compared to 51% in 2017. In contrast, the percentage of Americans relying upon information from print news has dropped from 38% to 22%.

A survey of 1040 US consumers made by consulting firm PricewaterhouseCoopers includes data from a separate survey of healthcare and pharmaceutical executives on how social media is used in their business strategies (*Computerworld*. 2012. Apr 17). That survey and others showed that younger adults rely on social networks for healthcare information far more than do older Americans. The survey also found that more than 80% of young adults between the ages of 18 and 24 said they are likely to share health information through social media channels- and nearly 90% said they would trust information found there. By comparison, less than half (45%) of adults between the ages of 45 and 64 said they would be likely to share health information via social media.

Tracking down health misinformation

Drs. Victor Suarez-Lledo and Javier Alvarez-Galvez, from the Department of Biomedicine, Biotechnology and Public Health at the University of Cadiz, Spain, recently set out to identify Internet sources of health misinformation, including misinformation about eating disorders (*J Med Internet Res*. 2021 Jan; 23 (1) e17187). The authors defined "health misinformation" as a health-related claim based on anecdotal, false, or misleading evidence due to the lack of existing scientific knowledge. In addition, they pointed out that some health information is delivered through social bots (self-propagating malware that infects its host), which are designed to promote products and increase company profits rather than increase knowledge about health.

The author used a systematic literature review, with goals of specifically addressing the knowledge gap and identifying and comparing the prevalence of health misinformation topics on social media platforms, specifically Twitter, Facebook, Instagram, Flickr, Sna Weibo (a Chinese web blogging site), VK, YouTube, Reddit, MySpace, Pinterest, and WhatsApp. They evaluated studies in English published between January 2000 and March 2019.

Beginning with 5018 articles from PubMed, MEDLINE, Scopus, and Web of Science published before March 2019, and focusing on the study of health misinformation in social media, the authors identified a final group of 226 eligible articles. The most common data source was Twitter (43%), followed by YouTube (37%), and Facebook (9%). Six principal areas emerged: vaccines (22%), noncommunicable diseases (19%), pandemics (10%), eating disorders (9%), and medical treatments (7%). Twitter was the most commonly used source for studies of vaccines compared with eating disorders.

Studies focusing on diet and eating disorders represented 9% of the studies included. This set of studies identified pro-eating disorder groups and discussions within social media. Anorexia nervosa and bulimia nervosa were the most studied eating disorders; web-based discourses promoting fitness or recovery after an eating disorder were often compared with those sent out by pro-eating disorder groups. The researchers found that only 3% of the studies evaluated the quality of the content. Most especially focused on informative evaluations of videos; that is, the content was classified as "informative" when it described the health consequences of anorexia or pro-ana if, on the contrary, anorexia was presented as a boon to fashion or a source of beauty. Pro-eating disorder pages tended to identify themselves with body-associated pictures due to the importance they gave to motivational aspects of the pro-eating disorder communities. These claims contained information about weight loss practices, promoting a certain body type or characteristic of a body part, eating disorders, binge eating, and purging. The pro-eating disorder discussion also contained much social support in the form of tips and tricks such as, "Crunch on some ice if you are feeling a hunger craving." The post advised visitors that this would help them feel they were eating something substantial. Another discussion asked visitors how they felt about using laxatives for weight control (*Eat Weight Disord.* 2013. 18:413).

The author noted the importance of paying attention to the "community" regularly visiting a site. Although such communities of users can provide positive effect by giving social support, such as promoting social support and recovery, other groups promote pro-eating disorder identities. The authors describe such communities as closed "echo chambers," where members of the community are selectively exposed to content and thus only hear the arguments for behaviors and arguments they want to hear. In such cases, the echo chamber effect might explain why "information campaigns" are limited and often encourage polarization of opinions. Such sites may even reinforce existing divides in pro-eating disorder opinions, according to Dr. Suarez-Lledo.

With beauty as a final goal, misinformation about eating disorders was found to promote changes in the eating habits of social media users (*J Med Internet Res*. 2013. Feb 13;15(2):e301). The authors also found that social media made it easier to develop pro-eating disorder online communities, and this type of content promoted unhealthy practices while normalizing eating disorders.

Identifying misinformation was challenging, and the articles the authors identified underscored the difficulty of characterizing and evaluating the quality of health information on social media. However, despite the limitations of the conceptual definition of "health misinformation," the authors believe this study represents one of the first steps in advancing research involving health misinformation on social media.

(Note: Twitter is attempting to fight misinformation and highlighting credible sources of health information—in this case, by focusing on information from the COVID-19 pandemic. Twitter will include a blue verification label indicating that an individual, business, or organization is authentic, trusted, and a source of truth. The company reports that it is working with global public health organizations to identify experts and to get these experts verified as soon as possible.)

Anxiety, Depression, and Disordered Eating in Preadolescents

New data emerge from an understudied population.

While many studies have linked disordered eating, anxiety, and depression among teens and adults to later development of an eating disorder, little is known about these early warning signs among younger populations, particularly among preadolescents. A recent study in Wales has provided given us some new information (*Brain and Behavior.* 2021.11: e01904).

Drs. Kai S. Thomas, Marc O. Williams, and Ross E. Vanderwert, of Cardiff University, Wales, explored possible associations between disordered eating, anxiety, and depression during preadolescence. The researchers were particularly interested in uncovering any gender differences in disordered eating risk that might emerge during the pre-teen years, as has reported previously in adolescents. Their final study group included 213 children, 9 to 11 years of age; slightly more than half were males. Although the authors had initially contacted 111 community British primary schools, only a final group of 12 schools agreed to participate. Some of the barriers cited by the schools included the lack of fifth and sixth grades and prior commitment to other projects.

The authors used several self-report questionnaires, including the abbreviated adult *Eating Attitudes Test* (EAT-26), the *Children's Eating Attitude Test* (ChEAT), and the revised *Child Anxiety and Depression Scale (RCADS-25*). To make the test questions clearer to the students, the authors adjusted the wording of some of the adult questions. For example, instead of the original statement, "I have gone on eating binges where I might not be able to stop," the adjusted statement was "I have started to eat and then

felt like I cannot stop." This was to avoid confusion about what "binge" meant. In another statement where the word "vomit" was used, the statement for the younger participants read, "I am/become sick," which was more familiar to children.

The head teachers gave consent for the study to take place at their schools, and opt-in consent was required from parents or guardians. The teachers administered the questionnaires during class time, in a separate classroom. Five or six children were seated in the classroom with a researcher, either alone or accompanied by a teacher. The researcher and teacher were prepared to excuse any student who showed signs of emotional distress while the questionnaires were administered, but no such signs were noted.

Associations between disordered eating, and symptoms of anxiety or depression

The authors found significant associations between disordered eating and anxiety. Their study results did not show that depression was statistically linked to disordered eating in this younger population. The researchers also reported that the overlap between social anxiety and eating disorders was important when considering the mechanisms that might lead to an eating disorder. They did not find any significant differences in mean scores between the boys and girls.

The study results provided support for associations between disordered eating and anxiety during preadolescence, and this was true for girls and boys. The main implication from the study was the importance of early screening for this young population.

Questions and Answers: Pica

Q. I recently learned that one of my ED patients, who is 3 months pregnant, has a strong affinity for ice and admits to eating ice cubes nearly all day. Should we be concerned about this? (*J.L., Amarillo, TX*)

A. This person may have a form of pica. The *DSM-5* defines pica as eating non-nutritive, non-food substances over a period of at least one month. Incidentally, the word *pica* comes from the Latin, *pica-pica*, for magpie, due to the bird's curiosity and habit of eating all types of substances.

Risks for developing pica come from a wide range of causes, including stress, cultural factors, learned behavior, low socioeconomic status, an underlying mental health disorder, nutritional deficiency (including iron or zinc deficiency), neglect as a child, pregnancy, epilepsy, and familial psychopathology, to name a few. Ice ingestion, or *pagophagia,* can be specifically associated with iron deficiency, especially during pregnancy. Other complications include tooth decay and sensitivity. According to Dr. Yasser Al Nasser and colleagues at King Faisel University, Al-Hofuf, Saudi Arabia, primary prevention should be used to identify at-risk patients, such as children who live in old homes that may contain lead-based paint, and pregnancy. This could be achieved by screening for the condition among such populations (StatPearls [Internet]; StatPearls Publishing, Treasure Island, FL ; January 2021).

Currently there are no medications for pica, and it is usually a benign disorder if it has recently developed. Careful screening of the materials ingested will be needed to assess risks. Ingested materials can contain a wide variety of toxic contaminants, such as lead, mercury, arsenic, and fluoride. Exposure to these toxins can lead to a wide range of effects, including lead poisoning. Lead poisoning can lead to dire consequences, particularly among pregnant women, and high levels can result in seizures. Careful assessment for iron deficiency is needed.

In most pregnant women and in children, the condition spontaneously disappears without any sequelae. However, in intellectually impaired persons, pica may persist for years. When pica is long-term, it can result in bowel obstruction, bezoars, and even serious toxicity.

In the Next Issue

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Among the many keynote presentations were eating disorders among men, ketamine-assisted psychotherapy, and a spotlight on the role of the gut-brain axis and behavior.

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