Clinical Significance

Type of exposure of the pulp can be predictive of success in direct pulp capping. In clinical practice, most vital pulp exposures result from caries. These by definition include bacterial contamination of the pulpal tissues and periapical areas and this contamination contributes to subsequent inflammatory responses. Accurately diagnosing pulp inflammation directly influences how well the capped pulps will fare. The pulp exposures in these studies were obtained in aseptic conditions, so the healing responses may differ from those seen clinically.

Biodentine and CH

Biodentine has properties similar to those of MTA and CH, with the ability to promote reparative tertiary dentin formation. The results in short-term studies appeared to favor Biodentine over CH, but insufficient evidence is available regarding the long-term effects of Biodentine.

DISCUSSION

MTA was confirmed as a better choice for inducing hard-tissue barrier formation than other materials, including CH. Bonding agents were less impressive. Newer materials need to undergo more RCTs with larger sample sizes and longer follow-up times to provide better information about their performance.

Didilescu AC, Cristache CM, Andrei M, et al: The effect of dental pulp-capping materials on hard-tissue barrier formation. *J Am Dent Assoc* 149:903-917, 2018

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EATING DISORDERS

Dentists' role with patients who have eating disorders

BACKGROUND

Eating disorders (EDs) generally fall into the main categories of anorexia nervosa, bulimia nervosa, and binge eating disorder, with some acknowledgement of possible other feeding or eating disorders or atypical anorexia and bulimia. These psychosomatic diseases can be associated with serious psychological and somatic complications. Persons with ED tend to deny or hide their disease and avoid professional help, so it can be difficult to know the exact prevalence of EDs and difficult to recognize patients who require help. Oral complications can be among the early or the only signs of an ED, so the dentist may be the first health care professional to suspect the patient has a disorder. Among the oral complications, the most common is dental erosion, which is caused by gastric acid and is most often seen when self-induced vomiting is practiced. The intake of large quantities of acidic foods and drinks along with decreased salivary secretion contribute to the erosion. Patients with EDs have 5 times the odds of having dental erosion as healthy individuals. Because of the denial and concealment patients with ED practice, it can be difficult for dentists to broach the topic in a dental setting. Part of this difficulty is the fact that dental professionals often lack knowledge about how persons with ED would respond to such a discussion. The knowledge, experiences, ad attitudes of persons with EDs toward their oral health and oral health behaviors were investigated to determine how these individuals would view a dentist's communication with them regarding their ED.

METHODS

The study participants were a convenience sample of current or former ED patients recruited in a number of treatment facilities either by direct contact or through a bulletin posted in the facility. They completed a semi-structured questionnaire that consisted of 22 questions, 6 of which were open ended. Two hundred ninety persons responded to the electronic questionnaire, with 260 eligible for participation.

RESULTS

Oral Health Knowledge and Concerns

Seventy-three percent of the participants reported having much or some knowledge about how EDs can cause oral complications, but 7% reported no knowledge in this area. Those with present and previous disease showed equal levels of self-reported knowledge. Seventy percent of the subjects obtained their knowledge from the media and 24% from a dentist. Knowledge shared by other health care professionals, friends, relatives, and other people with EDs was also noted.

Forty-two percent reported having tooth damage by ED and 26% reported no damage. Thirty-two percent were unaware of whether or not their teeth had been damaged.

Oral health concerns were expressed by 84% of the participants. Those with bulimia were more concerned about their teeth than those with anorexia or atypical anorexia and bulimia. Having past or present disease did not change the level of concern. Ninety-five percent expressed their major concern was dental erosion and dental caries development. Just 37% were concerned about serious and irreversible tooth damage, with some fearing loss of their teeth and having to wear dentures. Some also worried that their damaged teeth would change their visual appearance and that any needed dental repairs would be very costly. Five percent mentioned the possibility of developing malnutrition because of their damaged teeth.

Participant Oral Health Experiences

Twenty-nine percent reported taking special care of their teeth, including engaging in comprehensive oral hygiene procedures, neutralizing the acid in their mouths after self-induced vomiting, avoiding tooth brushing immediately after self-induced vomiting, being cautious when consuming acidic foods and drinks, and brushing the teeth immediately after self-induced vomiting. Of those who chose to perform extensive oral hygiene procedures, several cleansed their teeth, used dental floss, and used mouth rinses more than 3 times a day. Some used special toothpastes. Although water was the most common choice for neutralizing acid, other agents included milk, chewing gum, and baking soda. Some participants used a straw to minimize exposure to acidic drinks.

Thirty-three percent of the subjects wanted to take better care of their teeth but weren't able to, and 38% didn't take any special care of their oral health. The inability to care for their teeth was related to lack of energy in everyday life, anxiety about how to manage their teeth, and uncertainty as to what to do. The levels of concern were the same among those with current or previous EDs.

When asked about dental visits, about a third visited their dentist 2 or more times a year, about a third visited once a year, and about a third visited less than once a year. Sixty-one percent of respondents said their ED did not influence how often they visited the dentist, with 9% visiting more often because of their ED, and 30% less often.

Thirty-two percent of the participants had told their dentist about their condition, with half having a good or very good experience. A third believed the experience was neither good nor bad, and 15% rated it as bad or very bad.

Attitudes Toward Dentist Involvement

Forty-eight percent of the subjects wanted the dentist to give advice about their tooth damage and address the ED problem. Thirty-five percent wanted the dentist to limit discussion to the tooth damage, and the rest didn't know what would be desirable (Table 5). Those who felt a dentist should be involved in their ED believed the dentist's attention could be an important element in early self-awareness, diagnosis, and treatment of the problem. The desired attitude they sought from the dentist was one of empathy and recognition. Those who felt a dentist should not be involved in their ED believed the worst-case scenario of this intervention would be the patient no longer coming to the dentist or feeling even worse than before. A few patients expressed ambivalence toward the involvement of the dentist in their ED.

Table 5. Attitudes Toward What to Expect from the Dentist: Results from Content Analysis

Question (open-ended): *A patient presents tooth damage probably caused by an eating disorder (ED). How should the dentist handle this – and why should the dentist handle it like this?*	
Response categories	***n* (%)**
Answers from participants who want the dentist to address both the teeth and the ED[*]	
Dental advice on the teeth in order to treat and prevent further damage is important	78 (67)
Attention from the dentist may prove as help toward the ED	37 (32)
General concern and empathy from the dentist is considered valuable	26 (22)
Answers from participants who want the dentist to address the teeth only[†]	
An eating disorder is a private matter	19 (22)
Involvement by the dentist may intimidate the patient	13 (15)
Dentists lack sufficient knowledge about eating disorders	8 (9)

[*] In total, 116 participants wanted the dentist to give advice on the teeth and mention a suspicion about an eating disorder.
[†] In total, 85 participants wanted the dentist to give advice on the teeth only.
(Courtesy of Dynesen AW, Gehrt CA, Klinker SE, et al: Eating disorders: Experiences of and attitudes toward oral health and oral health behavior. *Eur J Oral Sci* 126:500-506, 2018.)

One hundred eighty-two of the 260 participants responded to a question about what would make persons with an ED see their dentist regularly even when they felt embarrassed or afraid of

Clinical Significance

The results of this survey indicate that persons with EDs could benefit from having a professional assessment of their oral health and dental hygiene practices from a dentist. Regular dental visits should be encouraged for these patients. However, dentists need to ensure that they have sufficient knowledge about EDs and have had training in how to approach these patients in the dental clinic. This may involve including dental advice and care as an integrated part of treatment for EDs, along with psychological and medical care.

the health of their teeth. Many responses expressed the opinion that dentists should behave toward persons with EDs in a supportive and caring manner, making the individual with ED feel secure and as comfortable as possible.

DISCUSSION

Based on the results of this questionnaire-based investigation, persons with ED are generally concerned about their teeth. They can even be overly occupied with oral hygiene procedures. Some have good experiences communicating with their dentist and want him or her to continue to address EDs during dental care. Others have less positive experiences and only want dentists with specialized knowledge of EDs to take part in this intervention. The dentist's use of an empathic, caring manner toward ED patients is highly favored.

Dynesen AW, Gehrt CA, Klinker SE, et al: Eating disorders: Experiences of and attitudes toward oral health and oral health behavior. *Eur J Oral Sci* 126:500-506, 2018

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HYGIENE

Decontaminating toothbrushes—or not

BACKGROUND

Contamination of the toothbrush is an unavoidable reality given that these brushes are used to cleanse a mouth contaminated with bacteria found in food and drink and lives in an environment shared with toilets. Of the 25 household objects evaluated in one investigation, the toothbrush holder ranks second only to the dish sponge. Many methods have been proposed to address toothbrush contamination, but most are not the simple, accessible, or time-effective methods explored in this study.

METHODS

An in vitro study performed under conditions simulating daily life was done to test 3 methods of disinfecting toothbrushes. Twenty toothbrushes were contaminated using saliva and trypticase soy broth containing *Escherichia coli* and *Enterococcus faecalis*. They were then left untouched at ambient temperature for 24 hours. The disinfection groups consisted of 5 toothbrushes each, with 5 brushes submerged for 60 seconds in 20 mL of 43% vol whisky, 5 brushes cooked in a commercially available microwave oven on an auto-rotating glass dish for 60 seconds at 1400 W, and the final 5 brushes dried with a commercially available hairdryer from a distance of 6 cm for 60 seconds at 2300 W. All 20 toothbrush heads were then immersed in 20 mL of sterile saline solution and sonicated for 60 seconds. Samples taken from each were seeded onto 2 plates to differentiate *E coli* and *E faecalis*. After 24 hours of incubation at 37° C, the samples were evaluated, with the number of colony-forming units counted to document

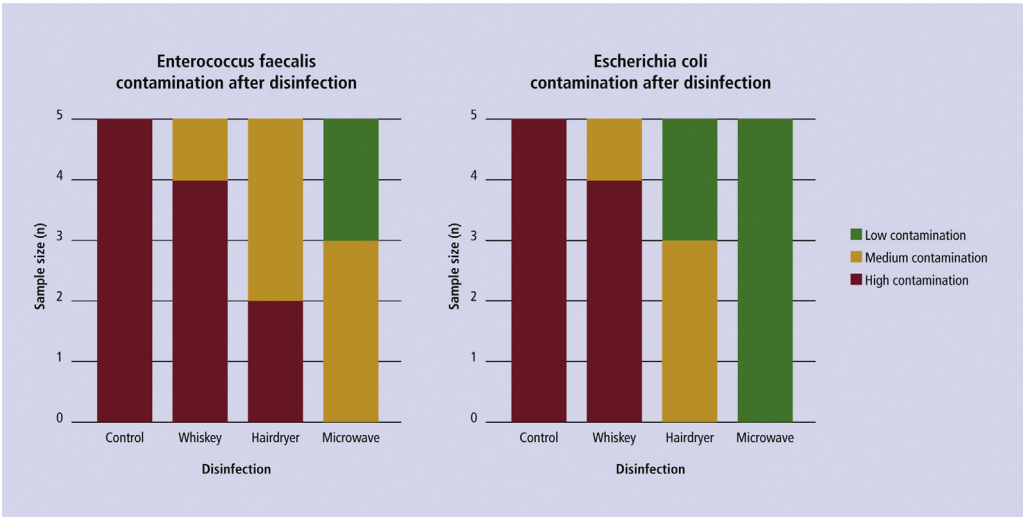

Figure 2. The effect of different disinfection methods on the degree of contamination: *E faecalis (left)* and *E coli (right)*. (Courtesy of Patcas R, Zbinden R, Schätzle M, et al: Whisky, microwave or hairdryer? Exploring the most efficient way to reduce bacterial colonisation on contaminated toothbrushes. *Br Dent J* 225:1007-1010.)