

# HOW MENTAL HEALTH AFFECTS ORAL HEALTH

By Joanna Hudson

It is estimated that 792 million people in the world live with a mental illness.<sup>1</sup> Unfortunately it is likely, due to the coronavirus pandemic, that not only may this figure have increased, but that those who were previously included in this statistic may now be facing extra challenges. Dentists are in a unique position, as we are continuing to see patients regularly and so it is vital that as healthcare professionals we 'check in' at the beginning of appointments, especially when in lockdowns some individuals may have limited access to any other form of social interaction. It is also important that we are aware of some of the common oral and dental-related manifestations that may arise in those who are struggling and how these can be managed.

## Periodontal disease

Following the implication of the new periodontal classification in 2017, it has been a requirement to undertake a risk factor assessment and any identified factors are then consequently included in the periodontal diagnosis statement.<sup>2</sup> The British Society of Periodontology (BSP)<sup>3</sup> has suggested that, as it affects both the general and periodontal health of patients, stress is one of these risk

factors. It is well known that stress can have behavioural effects as well as physiological. Individuals who are going through a stressful period of their life may be more likely to smoke, neglect their normal oral hygiene routine and miss routine dental

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appointments, all of which increase their risk of periodontitis. Moreover, there is current evidence to suggest that there is a relationship between stress and periodontitis related to the immune response of the body. Mechanisms such as cortisol, widely known as the body's stress hormone, increasing the growth of *Porphyromonas gingivalis* as well as chronic stress resulting in higher levels of cytokines and other inflammatory mediators<sup>4</sup> have been

suggested. Therefore, it is important that dentists provide an environment where the patient is able to comfortably discuss their stress levels and that any findings are recorded in the notes. Educating the patient regarding the effect that stress can have on their oral

health could also be helpful, along with having a multidisciplinary approach and making referrals if necessary.

## Tooth surface loss

Tooth Surface Loss (TSL) is defined as the irreversible loss of hard tooth structure caused by factors other than

those responsible for dental caries.<sup>5</sup> TSL can be classified into abrasion, erosion and attrition and the prevalence of these subtypes are more common with certain mental illnesses.

It is estimated that 35-38% of eating disorder patients have clinical signs of erosion,<sup>6</sup> which is the progressive loss of dental hard tissue by a chemical process not involving bacteria.<sup>7</sup> Self-induced vomiting, characteristic of bulimia but also observed in other eating

disorders such as anorexia, typically presents with a higher mean TSL score palatally in comparison to those who consume large quantities of extrinsic acids which leads to increased labial erosion.<sup>8</sup> Therefore, it is vital that dentists are able to identify and differentiate between these as well as feel confident in making appropriate referrals to other healthcare professionals. Higher usage of alcohol and tobacco, often seen in those living with depression, can also cause erosion as a result of gastro-oesophageal reflux.

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In addition, it has been reported that not only are those who live with anxiety and stress more likely to be bruxists, but that those who grind their teeth are also more likely have anxiety or depression.<sup>9</sup> Whether there is an association between bruxism and attrition, dental wear caused by tooth to tooth contact, seems to be a topic of controversy in research literature, with some studies finding a significant association and others not.<sup>10</sup> Even though it is apparent that more research is required, it is important that dentists are not only able to identify bruxism and attrition clinically, but are able to manage these patients. The treatment of bruxism is indicated when there are manifestations such as TSL resulting in loss of occlusal morphology and flattening of occlusal surfaces, tooth fractures, temporomandibular pain and hypertrophy of masticatory muscles. If any of these are present then the first line treatment is normally a soft occlusal splint, although there have been reports that these actually increase clenching in some patients and so it is important that these patients are continually reviewed and once again highlights the need for further research.<sup>11</sup>

Lastly abrasion, TSL caused by friction

against the tooth with an extrinsic agent, is often associated with Obsessive-Compulsive Disorder (OCD). Patients living with OCD may feel driven to undertake actions such as toothbrushing repetitively.<sup>12</sup> However, it has also been reported that some patients who have a fear of infection may be too preoccupied with washing their hands repetitively to wash their hair or clean their teeth.<sup>13</sup> Therefore, these patients would actually fall in the high-risk categories for caries and periodontal disease rather than

TSL. Ensuring a thorough dental history is taken and that tailored oral hygiene instruction is given can help in the clinical management of these patients.

### Xerostomia

Antidepressants, along with antipsychotics, are among a number of drugs that are associated with dry mouth. It has been reported that salivary flow rates can fall by 58% in individuals who take tricyclic antidepressants such as amitriptyline

compared to 32% in those who take selective serotonin reuptake inhibitors like sertraline.<sup>14</sup> Having xerostomia can result in a number of oral issues such as impaired denture retention, increased risk of candida infections and dysgeusia. More obviously it also puts the patient in the high caries risk category and so it is important that they are provided with thorough oral hygiene and diet advice, as well as being prescribed high fluoride toothpaste and having regular reviews and bitewing radiographs.

### Dental caries

In addition to their caries risk being increased directly by medication, those living with mental health conditions can often present with more tooth decay secondary to their lifestyle that may involve little self-care, including toothbrushing, and a poor diet. Smoking is also two to three times more likely among this population<sup>15</sup> and it has been suggested that this in turn enhances the growth of cariogenic microorganisms like *Streptococcus mutans* as well as decreasing the buffering capacity of saliva.<sup>16</sup> Additionally, it has been suggested that bulimia affects the parotid gland and that this results in a decreased saliva rate in these

patients.<sup>17</sup> Once again it is vital that the focus is on prevention in the treatment plans of these patients and that the same steps are taken as above for xerostomia.

### Chronic orofacial pain

Chronic facial pain can manifest in a number of different ways such as atypical facial pain, Temporomandibular Disorder (TMD), atypical odontalgia and burning mouth syndrome and these may coexist. Pain becomes chronic when it persists for over 12 weeks.

A link between atypical facial pain and poor mental health, most notably depression, has been suggested for over half a century.<sup>18</sup> It has been previously proposed that those who live with this pain have underlying depression or that depression occurs as a result of the chronic pain, but it is now believed that they share a common pathophysiological basis, including the disruption of the hypothalamic-pituitary-adrenal axis and of neurotransmitters like serotonin and adrenaline.<sup>19</sup>

Burning mouth, another example, is most common in middle-aged women. It is explained as being an oral dysesthesia that causes chronic orofacial pain in the absence of a detectable organic cause<sup>20</sup> and has a high prevalence in those who live with stress, anxiety and depression. It is important that, if suspected to be present, these patients are referred to a local oral medicine department to ensure that any other conditions, such as vitamin deficiencies or diabetes, are ruled out prior to diagnosis as these can often present in a similar form.

On the other hand, atypical odontalgia is a condition characterised by tooth pain with no apparent cause. It has been reported that around half (46.2%) of patients with this condition also have psychiatric comorbidities. Anxiety and depression were the most common, with bipolar and schizophrenia less so,<sup>21</sup> but this may be reflective of the prevalence of these conditions in the general population. Although it is rare, it is important that dental practitioners are aware of this condition in order to prevent any unnecessary and irreversible root canal therapy and extractions.

Lastly, TMD, mentioned previously in this article as a consequence of bruxism, is an umbrella term that refers to chronic pain of the temporomandibular joint, muscles and innervation. TMD has a prevalence of between 5-12% and is more common in younger and female patients.<sup>22</sup> Studies have

shown that individuals with a higher Hospital Anxiety and Depression Scale (HADS) scores have more self-reported TMD symptoms.<sup>23</sup>

It is vital that individuals living with the conditions mentioned above are reassured that, although not pathological, their pain is real. Dentists are not expected to diagnose mental health conditions but should feel comfortable in discussing and recognising signs and symptoms as this could aid in the diagnosis and management of chronic pain in the head and neck region.

### Soft tissue lesions

As previously mentioned, those living with mental health conditions have a higher tendency to smoke and have a poor diet, including the consumption of excess alcohol. Alcohol and tobacco are not only both risk factors for oral cancer but their synergistic consumptions significantly increase the

post-traumatic stress disorder (PTSD), bipolar and schizophrenia increase the risk of someone having to contend with dental anxiety. Patients may experience signs and symptoms like sweating as well as tachycardia, hypotension and possible syncope. It is likely that some of these patients will miss dental appointments, worsening not only their dental disease but also feeding their dental anxiety.<sup>26</sup> It could also mean that potentially cancerous lesions, as mentioned previously, may not be identified in a timely manner possibly resulting in a poorer prognosis. Therefore, it is imperative that these individuals are treated sensitively. It can be helpful to discuss with the patient what makes them feel particularly anxious as well as booking morning appointments. A number of behavioural management techniques can also be used such as distraction and sedation.

### Summary

Although not an exhaustive list this article certainly shows the affect that mental illnesses can have on oral health. With the recent increase in awareness, it is vital that dental care professionals feel comfortable discussing mental health with patients and are able to help manage their oral signs and

symptoms, as well as work collaboratively with other healthcare professionals as and when required. It is also important that dental practises and hospitals are supportive environments not only for their patients but for the dental team as everyone's mental health is important.

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chances of an individual being diagnosed with oral squamous cell carcinoma.<sup>24</sup> Therefore, it is crucial that comprehensive social histories are recorded and that smoking cessation and diet advice is given as and when required. It also emphasises the importance of these patients having regular intra-oral exams so that any concerning lesions can be appropriately referred.

Nutritional deficiencies can also arise due to poor diet or self-induced vomiting and this can present as angular cheilitis, candidiasis, glossitis and oral mucosal ulceration in the oral cavity.<sup>25</sup> If these do not resolve in response to local measures then it is advised that these patients are referred to a local oral medicine clinic for further investigations such as routine blood tests to identify any possible deficiencies for example vitamin B12.

### Dental anxiety

Many people feel nervous about attending the dentist but some mental illnesses such as generalised anxiety disorder, depression,

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