Tension Headaches: Psychological Factors

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Tension headaches are routinely seen in biofeedback practices either as a primary concern or as part of a constellation of symptoms. As common as they are, there are several different types of psychological issues the practitioner should consider. This paper focuses on psychological issues commonly seen that may affect or prevent successful treatment. This paper is not intended to be exhaustive, as the number of possible psychological issues is large and could require a special issue of its own.

Introduction

Although headache is almost always considered a biochemical and neurologically mediated disorder, psychological factors play a contributory role in headache onset and/or a reactive role in headache maintenance (Kaiser, Gomez, & Borsuk, 2011). Starting with the ancient Greeks and Romans, awareness developed that emotional factors play a role in tension headaches. In the late 1800s, Breuer and Freud postulated that headache complaints disappear with emotional release (Breuer, 1955). Packard (1994) suggested a similar idea that people with tension type headaches have emotional stress. He went on to suggest a paradox where the fundamental psychic factors are unconscious, although patients are typically aware of their anxiety. The question to be asked is “Does the emotional stress cause the headache or does the headache cause the emotional distress?”

Diagnostically, the varying levels of emotion involved in tension headaches presents a challenge. When the emotional component is high, one may utilize the language of the 2000 version of the Diagnostic and Statistical Manual of Mental Disorders (the DSM-IV-TR) and categorize many tension headaches as somatoform disorders (American Psychiatric Association [APA], 2000). The DSM-IV-TR indicated that somatoform disorders are characterized by physical symptoms, suggesting a physical disorder for which no known organic findings or physiologic mechanisms can be identified and for which there is a strong presumption that the symptoms are linked to psychological factors. Headaches that are exacerbated or aggravated by psychological factors may be most appropriately diagnosed as “psychological factors affecting medical condition” (APA, 2000, p. 189).

Then in 2013, the International Headache Society released the third edition of the International Classification of Headache Disorders (ICHD-3), with further modifications in language and characterization of many disorders (International Headache Society, 2013). The ICHD-3 concluded that the particular diagnosis of headache attributed to psychiatric disorder becomes definite only when headache resolves or improves after effective treatment of or resolution of the psychiatric disorder (Kaiser, Gomez, & Borsuk, 2011). Kaiser et al. paraphrased the ICHD-3 diagnostic criteria criterion for this coded diagnosis as follows:

12.1 Headache attributed to somatisation disorder
A. Headache, no typical characteristics known, fulfilling criterion C.
B. Presence of somatisation disorder fulfilling DSM-IV criteria:
1. History of many physical complaints beginning before age 30 that occur over a period of several years and result in treatment being sought and in significant impairment in social, occupational, or other important areas of functioning.
2. At least four pain symptoms, two nonpain gastrointestinal symptoms, one sexual or reproductive symptom, and one pseudoneurologic symptom.
3. After appropriate investigation, each of these symptoms cannot be fully explained by a known general medical condition or the direct effects of a substance or medication; or, if there is a related medical condition, the complaints or impairment are in excess of what would be expected from the history, examination, or laboratory findings.
C. Headache is not attributed to another cause.
Specific Issues
In the following, we will draw on a number of perspectives and lines of research to briefly examine the contributions of psychological factors to headache and to illness generally.

Stress
Hans Selye coined the concept of stress in 1936, and later defined stress as “the nonspecific response of the body to any demand for change,” whether it is mental or physical (American Institute of Stress, n.d.). Since then, the definition has shifted with psychology focusing upon the effects of stress upon the autonomic nervous system involving the sympathetic and parasympathetic nervous systems and its relationship to disease. The medical definition of stress is that of a physical demand with the colloquial definition of stress as a psychological demand. A stressor is inherently neutral, meaning that the same stressor can cause either distress or eustress. It is individual differences and responses that induce either distress or eustress (Hargrove, Nelson, & Cooper, 2013).

There is likely a connection between stress and illness. Theories of the stress–illness link suggest that both acute and chronic stress can cause illness (Schneiderman, Ironson, & Siegel, 2005) with stress leading to changes in behavior and in physiology. Behavioral changes can be things such as smoking and eating habits and physical activity, while physiological changes can be changes in sympathetic activation or hypothalamic pituitary adrenocorticotoid activation, and immunological function (Herbert & Cohen, 1993).

There is a body of research showing that persons with tension headaches perceive life situations differently than others, which may contribute to the impact of stressful situations on their health. A study by Ficek and Wittrock (1995) found that individuals with tension-type headaches did not respond differently than control subjects to stressors (based on measures of electromyography, heart rate, or subjective stress ratings) presented in the laboratory. However, diary questionnaires revealed that headache subjects experienced stressful events more frequently and rated these events as causing more stress than headache-free controls (Ficek & Wittrock, 1995). According to Andrasik, Flor, and Turk (2005), accumulating evidence suggests that tension-type headache sufferers experience more everyday mild stressors, judge these stressors to have high impact, and use less successful strategies for coping with daily stressors. These individuals may also have greater pain sensitivity, reduced pain thresholds, and increased muscle tenderness.

However, there is much variability in the link between stress and illness (Ogden, 2007, pp. 281–282), making it difficult to identify mechanisms of action of stressors or to plan courses of treatment. A careful investigation of factors needs to be conducted before the type of treatment can be recommended.

Anxiety
Anxiety, like stress, is a term most practitioners are aware of, but defining it is problematic as anxiety is a complex multifaceted concept. Anxiety involves feelings of fear, worry, and uneasiness. It is an unpleasant state of inner turmoil, often accompanied by nervous behavior and by muscular tension, restlessness, fatigue, and problems in concentration (APA, 2013). In addition, it is viewed as usually generalized and unfocused as an overreaction to a situation that is only subjectively seen as menacing (Bouras & Holt, 2007). Desai and Pandya (2014) reported that 18 out of 101 patients with headaches (17.90%) suffered from anxiety disorders (generalized anxiety disorder, agoraphobia, social phobia, or panic).

The obvious connection between anxiety and tension headaches is that of muscle tension, in which the muscles tighten up or become hyperactive creating the vise-like symptoms noted in the definition. A period of sustained contraction overloads the muscle, perpetuating any trigger points that are present (Travell & Simons, 1983). In this model, psychological factors play a role in exacerbating physical factors leading to the resultant discomfort.

Depression
Depression, for use in this paper, is defined as a disorder of the brain in those areas that involve mood, thinking, sleep, appetite, and behavior (National Institute of Mental Health, 2014). Brain-imaging technologies, such as magnetic resonance imaging, have shown that the brains of people who have depression look different than those of people without depression.

Yücel et al. (2002) noted that, compared with healthy controls, patients with tension-type headaches were more likely to experience depressive thoughts. Desai and Pandya (2014) reported that in their sample 49 out of 101 (48.5%) patients with headaches suffered from depressive disorders. Depression emerged in another study as the most prevalent psychiatric disorder in both the tension headache and migraine groups (Bera, Khandelwal, Sood, & Goyal, 2014). The authors noted that there was significant impairment in quality of life in all domains, along with functional disability in subjects with headache. One of the theories linking headache to depression is that the pain may be
caused by a malfunctioning pain filter, which is located in the brain stem. The view is that the brain misinterprets information—for example, from the facial muscles—and interprets this signal as pain. One of the main molecules that is probably involved is serotonin. Evidence for this theory comes from the fact that tension headaches may be successfully treated with certain antidepressants leading to speculation that depression and neurotransmitters are involved in these headaches (Annunziata, 2014). Furthermore, Smitherman and Baskin (2008) suggested that there is a complex relationship between psychiatric disorders and headache. He went on to indicate high rates of comorbidity exist linking depression, anxiety, and tension headaches, implicating psychiatric disorders as risk factors for headache progression and chronicity. In contrast, Merikangas, Merikangas, and Angst (1993) reported that in a study of young adults in Switzerland, subjects with tension-type headaches did not differ from controls with respect to any of the affective or anxiety disorders in either the cross-sectional or longitudinal data.

Social Isolation
Blomkvist, Hannerz, Orth-Gomér, and Theorell (1997) observed that various types of headache patients coped differently, depending on the nature of the headache, with tension-type headache patients less likely to have social contacts/supports than migraine patients. Passchier, de Boo, Quaak, and Brienan (1996) suggested that a headache patient group had a lower health-related quality of life than a healthy reference group due to several factors including social isolation. There were no differences found in the health-related quality of life between the headache groups (migraine and tension). The authors found that the greater the patient’s emotional pain, the more problems he or she had with physical mobility and social isolation.

Abuse
Occasionally patients who present in our clinic demonstrate what we call “walking on eggs syndrome.” In this state they appear constantly on alert, hypervigilant, and tense. This state in some cases served to help them survive in abusive relationships. Kucukgoncu, Yildirim Ornek, Cabalar, Bestepe, and Yayla (2014) studied a sample of migraine and tension headache sufferers and compared them to controls. They found the average score for childhood emotional abuse was significantly higher in the tension headache and migraine patients than in healthy controls; mean scores for emotional neglect and physical abuse were higher in tension headache patients than healthy controls; and the total childhood traumatic questionnaire score was higher in tension headache patients than in either migraine patients or healthy controls. The average dissociative experiences questionnaire scores were significantly higher in tension-type headache patients versus migraine patients and controls. The authors concluded that childhood trauma may have a role in tension headaches with differences in the test scores explained by the differences in childhood trauma experiences.

Conclusion
This brief overview of psychological factors points out the need for the biofeedback therapist to be aware of factors that may influence the outcome of the course of treatment. These factors present a “catch 22” for the therapist, for the question remains “does the emotional stress cause the headache or does the headache cause the emotional distress?” Successful outcomes in the treatment of this disorder require examination and correction of those factors that are deemed to be involved in the maintenance of tension headaches or any chronic pain condition. For some patients, psychological issues need to be directly addressed (e.g., psychiatric comorbidity, difficulties coping with headache, significant problems with sleep and/or stress, medication overuse, and history of abuse). In other situations, with patients with greater resources (such as patients’ beliefs about their readiness and ability to actively manage their headaches, adhere to medication, and manage triggers), direct intervention may not be necessary. Regardless, all of these examples involve behavioral/psychological principles that the biofeedback therapist needs to be aware of (Nicholson, 2010).

References


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