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Chronic Headache: The Role of the Psychologist

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Abstract

The role of the psychologist in chronic headache needs to be tailored to the patient's presentation. For some patients, psychological issues need to be directly addressed (e.g., psychiatric co-morbidity, difficulties coping with headache, significant problems with sleep and/or stress, medication overuse, and where there is a history of abuse). In other situations, such as considering the patient's beliefs about their readiness and ability to actively manage their headaches, medication adherence, and managing triggers does not require direct contact with a psychologist but all these involve behavioral/psychological principles. This manuscript reviews the literature on the importance of psychological issues in headache management and provides suggestions for how behavioral and cognitive changes can improve headache management.

Introduction

It is commonly recognized that in certain situations a psychologist is a useful part of the health care team treating the chronic headache patient. However, questions exist over what exactly are those situations. Are they limited to treating the psychiatric co-morbidities only after it is clear that the co-morbidities are impeding any chance for headache medication to be efficacious? Should all patients who seek headache treatment see a psychologist? Best headache medicine does not use psychologists "only in case of an emergency" or "everyone sees a psychologist, no matter what". The best headache medicine understands that the role of the psychologist varies based on the patient's presentation. However, because the patient is experiencing headaches more days of the month than not and has been doing so for a while, the patient is experiencing chronic daily headache (CDH)[1]. As such, the patient is more like a chronic pain patient (low back pain, fibromyalgia) than a headache sufferer with only occasional episodes of pain lasting a few hours. Because of this, there is a need to recognize the importance of psychological principles in all patients with CDH regardless of whether there is a formal consultation or referral to a psychologist. For some patients, psychological issues will need to be directly addressed (e.g., psychiatric co-morbidity, significant difficulties coping with headache and its impact, significant problems with sleep and/or stress management, dealing with medication overuse, and where there is a history of abuse). In other situations, such as the cognitive beliefs an individual has about managing their headaches, medication adherence, and managing triggers does not in most cases require direct contact with a psychologist but all these involve behavioral/psychological principles.

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Chronic Headache as a Neurologic Condition…Treat the Disease or Treat the Patient?

CDH is a neurological condition. An examination of a recent scientific meeting focused on headache would reveal that the overwhelming majority of presentations focused on the neurophysiological/neuroanatomical correlates of headache (especially migraine) and/or pharmacologic entities that alleviate, impede, or eradicate headache pain. As a result, it is tempting for a clinician to see/hear/read these findings and focus exclusively on accurately diagnosing the problem and treating just the neurologic symptoms.

However, one has to wonder what reception this would receive from a group of patients with CDH. Undoubtedly they would be pleased and excited to hear or read about the work being done to help find ways to minimize or eliminate headache pain. And yet, the savvy patient would realize that the majority of what is discussed often focuses more on the headache than the patient. The patient might wonder whether their clinician looks at them more as a disease to treat than as a patient with a disease that needs treated.

This is the difficulty that any clinician treating a patient with CDH must face; remembering that the best treatment involves identifying the best pharmacologic agents while also recognizing and addressing the human component of headache. Pain has been defined as by the International Association for the Study of Pain “An unpleasant sensory and emotional experience associated with actual or potential tissue damage…pain is always subjective… unquestionably a sensation [in the body]…but it is also always unpleasant and therefore also an emotional experience…”. [2] Pain is always subjective and it is the patient’s perceptions, expectations, and beliefs about pain that are the driving force behind the patient’s pain experience.

That is both a challenge and an opportunity for the clinician. It is a challenge in that the clinician assessing and treating headache and its impact must recognize that the patient’s own thoughts, emotions, and beliefs influence how pain is reported. It is therefore vital that there be solid communication between the clinician and the patient with headaches.[3[This is especially true in headache and other pain conditions where no external measure (e.g., MRI, blood test) exists to establish the presence or severity of pain that occurs independent of the patient’s report.[4] Treating headache is also an opportunity for the clinician to employ clinical acumen to find the most relevant portion of the patient’s report to design an optimal treatment plan. This is best done through a collaboration between the patient and clinician where the clinician and the patient both take an active role in making decisions about how to best manage headache.[5] The sage clinician recognizes that this requires accounting for the patient’s thoughts, feelings, and behaviors ideas about their headache pain, how they manage their life to minimize the impact of headache pain, and the disability that comes from the headache pain when making decisions about pharmacologic and non-pharmacologic treatment.

Given that thoughts, feelings, and behaviors are an integral part in understanding and managing the patient with CDH, it is logical that a psychologist, or at a minimum psychological principles, be a part of the health care team when treating CDH. Historically, however, headache care has actively involved psychological/behavioral intervention as the exception rather than the rule. When the US Headache Consortium published its evidence-based guidelines for nonpharmacologic treatment for headache, it provided suggestions for when behavioral treatments could be useful.[7] The unintended implication was that addressing behavioral/ psychological issues was only pertinent at times. However, there have been a number of recent articles pointing out the need to consider behavioral/psychological factors in headache even when a psychologist is not directly involved. [8–12]

Traditionally, headache management used the medical model, which emphasized an accurate diagnosis and focused on alleviating acute symptoms. There was little emphasis on patient education, lifestyle management, or ongoing follow-up with the patient. [13] However, the recent past has seen a shift in how chronic disease is managed. The current leading model suggests that chronic diseases are better managed via collaboration between the clinician and the patient. [14] This model recognizes that chronic diseases are managed almost exclusively outside the clinician's office and thus it is vital that treatment recommendations match the patient's situation. This model also emphasizes that patients be ready to take an active role and believe that their actions will make a positive impact on management of the disease.

When considering how this works in the clinical setting, it is in many ways similar to how a coach and a player interact. The clinician is the coach in that they use their experience and expertise to teach the patient (or player) the skills and tools (medication, education, lifestyle management skills) to best manage their CDH given their situation. The patient's role is to take the principles and tools the clinician gives them, practice them and put them in play on a day-to-day basis in the "game" of headache management. The coach is most effective when they communicate what is important to the player and help them over time enhance their skills by noting areas where there is a need for further improvement. The player is most effective when they absorb what the coach tells them, practices it in order to build their skills, goes out on the field and plays, and gets more instruction from the coach as needed.

In order for any patient to successfully manage their headaches, certain psychological/behavioral issues must be considered. These include cognitive influences and beliefs (e.g., readiness to change, self-efficacy, locus of control) about headache pain and management, medication adherence, and managing triggers. Other psychological issues will only be relevant for certain patients, but when they are, a psychologist will likely be beneficial. These include the presence of a psychiatric co-morbidity, significant problems with sleep or stress, medication overuse, and history of abuse.

Psychological Issues Relevant to All Patients

Cognitive factors (readiness to change/self-efficacy/locus of control)

One of the most influential, yet often overlooked psychological issues is how cognitive beliefs influence headache management. Nicholson and colleagues [15] recently summarized this by reviewing the impact of cognitions on central level pain processing, how the patient copes with headache, and headache-related disability. In addition, cognitive factors influence the patient's interest, effort, persistence, and perspective for actively participating in headache management, monitoring and managing triggers, and adhering to medication. [15]

When assessing the patient's thoughts about managing their headache, the first issue to address is whether the individual is "ready" to actively manage their headaches. The idea that an individual's readiness to change is highly relevant comes from the transtheoretical model. [16] This model holds that an individual's readiness to change is classified as either: (1) precontemplation…the patient is unaware of the need to change or is against changing at this time; (2) contemplation…the patient recognizes the need to make changes but has not yet taken any action; (3) preparation…the patient wants to make changes and is preparing a plan to make those changes; (4) action…patient is actively making changes; and (5) maintenance…the patient continues to make changes that are now part of their ongoing routine. Another way of looking at this is to consider how motivated the individual is to actively manage their headaches. A person in precontemplation would have little to no motivation to change (because they either don't see the need or disagree that they need to change). A person in contemplation or preparation would have at least some motivation, but they are not motivated enough to have made changes (either as a result of lacking the skills needed to make the changes or they are

still unsure it is worth the time and effort). A person in action or maintenance is motivated as evidenced by the fact they are engaging in activity.

It is important for the clinician to understand where the patient is in terms of their readiness to change and tailor the communication based on their readiness. A patient in precontemplation needs to be made aware of the need for them to be an active manager of their headaches. This could be done by pointing out the costs (e.g., keeping a diary, being aware of potential triggers) and benefits (e.g., fewer headaches, feeling more in control, reduced disability) of actively managing their headaches. Patient education may also be beneficial when the issue is about not recognizing the need to change. However, a “plan of action” to manage the headaches more effectively will not work with a person in precontemplation since they aren’t yet motivated to actively manage their headaches. An individual in contemplation or preparation needs tools to manage their headache (e.g., knowing the importance of taking the right dose of the right medication at the right time, showing them how to use a diary to help understand headaches and recognize triggers, and talking about ways to cope with headache). Individuals in action or maintenance would be most likely to benefit from focused problem-solving (e.g., how to choose when to use a migraine specific medication, how to remember to take their preventative medication on a daily basis, making sure they eat regularly, finding ways to manage stressful situations, determining whether a medication to control their hormones would be beneficial). In essence, the patient’s current state of readiness determines the best approach.

Self-efficacy and locus of control are two other cognitive factors that are highly relevant for all patients with CDH. Nicholson and colleagues provide a thorough explanation and provide evidence of how self-efficacy and locus of control are relevant in headache.[17] Self-efficacy refers to an individual's belief that they are able to engage in an activity and that the action will produce the desired outcome.[18–19] Self-efficacy varies across situations and can be modified over time as a result of successful or unsuccessful experiences. Self-efficacy may serve as a potential mediator or moderator of headache treatment. [17] Locus of control refers to the extent to which an individual perceives that he/she has control over an event (i.e., how relevant the individual is in the outcome of an event).[20] As it pertains to headache, three loci are relevant: (1) internal…"I am the key factor in controlling my headaches"; (2) external-chance…"nothing predicts my headaches"; and (3) external-health care professionals…"only my doctor and prescription medication can control my headaches". Each is present to a certain extent for all patients. Higher levels of internal locus of control are associated with better headache management (e.g., fewer headaches, better headache management decisions, less disability). The converse is true for external-chance locus of control.[17]

The clinician needs to assess the extent to which the patient believes whether or not it matters if they make a change (locus of control) and the extent to which they believe that have the requisite skills to make a change (self-efficacy). There are four ways in which self-efficacy for a behavior can be increased; mastery experience, modeling, persuasion, and generalization. Locus of control can be affected in a similar manner. Table 1 gives examples of how each of these approaches can be used to help patients better manage their headaches. When it comes to increasing self-efficacy and having an increased internal locus of control, collaborating with the patient to determine their unique situation and then tailoring the tools provided to meet their needs is a better method than using the same tools regardless of the patient’s presentation.

Medication adherence

Medication adherence is a concern in headache given the potential for a lack of efficacy in situations where medication is underused and medication overuse headaches being induced from overuse. Only about half the time do patients adhere to medication recommendations (and non-pharmacologic treatment recommendations).[21] Many clinicians either don’t assess (or the patient’s don’t feel comfortable discussing) medication adherence. This can result in

switching treatment regimens in situations where there has not been adequate dosing to fully evaluate efficacy. There are a number of factors that the clinician will want to be cognizant of when considering what might make adherence less likely.[21–22] These include: (1) demographic characteristics: younger, male, less education; (2) medication characteristics: medication regimens that are frequent, complex, prone to persistent side effects, and higher out of pockets costs; (3) psychological factors: psychiatric co-morbidity, low self-efficacy, low internal locus of control; and (4) interpersonal factors: lack of collaboration between the clinician and patient, patient not comprehending or agreeing with treatment recommendations, and infrequent contact between the patient and the clinician's office.

There are ways to improve adherence. Rains and colleagues have written an outstanding article on ways to facilitate medication adherence.[21–22] The methods include administrative changes (e.g., having the clinician's office make regular contact with patients to troubleshoot any problems, making sure the patient understands the verbal and written treatment instructions, providing methods to measure adherence such as a diary or pill counts, involving significant others) and psychoeducational/behavioral initiatives (e.g., providing written materials or links to educational materials discussing the costs and benefits of adherence, ensuring that the patient has adequate efficacy to adhere to the recommendations, verbally reinforcing successful adherence).

Managing triggers

Every headache patient can benefit from making behavioral changes to their lifestyle in order to manage their headaches more effectively.[23–24] Some patients present for treatment having already begun to actively manage their triggers. However, others are unaware of their triggers or think managing their triggers does not have any bearing on their headaches. A diary is the best way to determine what triggers are most relevant and helps the patient recognize patterns in their headaches. This helps the patient recognize potential triggers and make them feel the headaches are less random and out of control. There are in essence three types of triggers. The first type of trigger is (mostly) avoidable. This includes triggers such as alcohol, certain foods, bright lights, loud noise. When these triggers are present, education and suggestions for avoiding the trigger (e.g., avoiding foods that are a trigger, having sunglasses to avoid bright light/glare) will be of most benefit. The second type of trigger is unavoidable and unmanageable. This includes hormones, weather changes, and certain types of travel (e.g., airplanes). When these triggers are present, it is vital that the patient recognize how important it is to manage other triggers, adhere to medication, and use their best coping skills to reduce headache impact. The third type of trigger is unavoidable but manageable. This includes triggers such as sleep, stress, and skipping meals. When these are present, education and skills training are most useful. When problems with these triggers, especially sleep and stress, are more than mild, the patient would likely benefit from consulting with a psychologist.

Issues that need to be referred for consultation/treatment by a psychologist

There are situations where a psychologist is likely needed for consultation/referral. This includes the presence of a psychiatric co-morbidity, significant problems with sleep or stress, problems coping with headache, medication overuse, and history of abuse.

Presence of a psychiatric co-morbidity

Psychiatric co-morbidity is the most common reason why a clinician would involve a psychologist. Depression and anxiety are more common among patients with headache relative to the general population and is even more common among patients with CDH. In fact, 50% or more persons with CDH may be experiencing depression and 25–30% may be experiencing panic disorder.[25–26] Addressing psychiatric co-morbidities is thus a common occurrence.

It is important to address the co-morbidity because having depression or anxiety is associated with more severe headaches, increased disability, reduced adherence, and less efficacy for actively managing headache. Nicholson and colleagues [17] have discussed how negative affects (e.g., depression, anxiety, anger) influence headache pain perception, processing, and management. For more information on how the specific techniques used to treat psychiatric co-morbidities in headache, excellent overviews have been published.[27–28] Any time there is significant depression and/or anxiety present, the patient needs at a minimum to be referred for a psychological consult to establish the benefit of psychotherapy.

Difficulties coping with headache

Experiencing chronic headaches requires that the patient actively cope with the headaches in a manner that minimizes their headache-related disability. However, there are times where the coping strategies used by the patient is a barrier to improvement. Lake[29] provided an extensive discussion of how a patient's approach to coping with chronic headache or any chronic pain condition has a significant influence on how well they function. He noted that some patients utilize a "sensitizing" style, where there is an overabundant amount of focus on the headache/potential for a headache and the consequences of a headache (catastrophizing). Others use a "minimizing" style, where the patient is unable to identify or report negative affect related to their lives as it relates to pain or actively suppresses negative affect about their lives or their pain. Although any patient with chronic headache may do this on occasion, this needs to be addressed when it becomes a persistent response pattern to pain or to life. A psychologist works with the patient to replace these approaches with more adaptive coping strategies. The patient considers how their thoughts about a situation drive their behavior. For some patients, this is easily recognized and replaced while others initially do not see that their coping style is making the situation worse. However, once a patient starts using adaptive coping strategies, they have less headache-related disability.

Sleep Problems

There is emerging evidence that among persons with CDH, sleep problems (e.g., sleep apnea and insomnia) is be a significant problem whose treatment can improve headache. Sleep disorders are more common among person with CDH relative to those with episodic headache and no headache, especially among individuals who wake up with headaches.[30–32]. Rains has produced two outstanding reviews of how treating sleep disorders has a positive impact on headache.[33–34] A recent randomized controlled trial of the impact of a 6-week behavioral sleep hygiene intervention was better than a sham treatment at reducing headache frequency (28% vs 3%) and severity (39% vs 12%).[35] Rains has suggested that in order to establish the presence of problems related to sleep, the mnemonic REST (Restorative sleep, Excessive daytime tiredness, Snoring, and Total sleep time) be assessed. Rains has also provided step by step guides to improving snoring and optimizing sleep hygiene.

Managing stress and reducing arousal

The greatest amount of research into the effects of behavioral intervention for headache has involved looking at behavioral interventions designed to reduce arousal and/or manage stress.[36–39] These most commonly involve relaxation, biofeedback (thermal or EMG), and cognitive-behavioral therapy (CBT), alone or in combination. The US Headache Consortium guidelines for effective preventive treatment has established that these interventions have Grade A evidence for the prevention of headaches.[7] Evidence also appears that the combination of these behavioral interventions along with pharmacologic intervention produces better headache-related outcomes than either approach alone.[40–41] Although some of the requisite skills (relaxation, biofeedback) can be taught using self-administered CDs or instructional manuals[42–43], there are times where a psychologist is needed at least initially

to properly train the individual. Moreover, when CBT is employed, the psychologist provides the patient with the framework for the patient to change the way they think and behave in terms of how they manage stress. Lipchik and colleagues have written a helpful overview of the techniques most commonly used in behavioral management of headache. [27]

Medication overuse

Although medication overuse commonly involves only a pharmacologic approach, there is preliminary evidence that incorporating a behavioral component to its treatment is beneficial. Lake has reviewed the literature and noted that using biofeedback and/or relaxation at an individual level appears to provide added benefit to withdrawing the offending medication [44] and another study suggested that a group treatment of relaxation and CBT significantly reduced medication overuse.[45] However, more systematic evaluation of including behavioral treatment in medication overuse needs to be conducted and thus the clinician needs to use their clinical judgment to determine whether this would benefit the patient.

History of abuse

A history of childhood abuse (physical, sexual, or emotional) or neglect has recently begun to receive attention in regards to its influence in headache.[46–49] A recently published large scale review of 1348 persons with migraine among 11 headache centers in the US found that abuse as a child ranged from 21–38%.[46] This was associated with increased depression and anxiety, higher headache frequency, and more headache-related disability.[47] This is consistent with other recently published findings about abuse and post-traumatic stress disorder (PTSD) in headache.[48–49] These findings suggest that for a significant portion of patients with CDH, a history of abuse is a contributing factor to their psychological functioning. Although some of these individuals may be coping well and some have likely been treated previously, there are others whose functioning is impaired and their chances of responding to headache treatment is reduced until they are treated for PTSD. In these situations, a psychologist with expertise treating abuse-related PTSD needs to be involved.

Conclusion

Although a psychologist is not needed for every patient with CDH who presents for treatment, this article has attempted to show that providers would benefit from considering psychological principles when making treatment decisions. It is especially important to ensure that the patient's cognitive beliefs about their readiness and ability to actively manage their headaches is such that they will be able to successfully implement the agreed upon treatment plan. Also, issues such as medication adherence and trigger management, which are applicable to all patients, are ultimately behavioral issues that can be improved. In addition, this article noted that there is significant evidence emerging that addressing psychological issues (or psychological principles) can have a significant impact on the outcome of CDH management. Finally, it is important to keep in mind that when certain psychological issues are present, such as psychiatric co-morbidities, difficulty coping with CDH, significant problems with sleep and/or stress, medication overuse, and a history of abuse, involvement of a psychologist will maximize the likelihood that pharmacologic and lifestyle modifications will be efficacious in reducing headache frequency and headache-related disability and result in optimal CDH management.

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Table 1

Principles for Improving Self-Efficacy and Locus of Control

	Principle for Improvement	**Examples to achieve this principle**
Self-Efficacy		
	Mastery Experience	Have the patient keep a diary so that they can recognize headache patterns and track potential triggers
	Modeling of Behavior	Teach the patient how to take medication use. Show the patient how to complete a diary.
	Verbal/social persuasion	Educate them about an issue related to headache management (e.g., medication adherence, managing triggers, the importance of daily headache management)
	Generalization	Talk with them about other behaviors they do to prevent something negative from happening. For example, do they use sunscreen or wear a seatbelt?
Locus of Control		
	Help them see that they have more control over their headaches than they recognize	Have them keep a headache diary so that they can become more aware of their medication adherence, triggers, and headache-related disability in order to help them see that there are patterns to each of these and that they can do something to actively manage their headaches.
	Accept what they can't control but don't allow it to keep them from actively manage their headaches	Acknowledge there is nothing they can do to modify their genetics, hormones, the weather. Emphasize that genetics are important in other diseases (diabetes, asthma) but that doesn't mean lifestyle can't influence them
	Emphasize their already active role in managing headaches	Find something they already do to manage their headaches. For example, remind them that taking medication is taking an active role in managing their headaches ("medications don't take themselves")