SCREENING TOOLS AND NON-PHARMACOLOGIC TREATMENT OPTIONS

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Importance of Screening for Psychiatric Comorbidity in Migraine

Migraine is associated with high levels of disability, and can interfere with individual's functioning across domains. The presence of a comorbid psychiatric condition can disproportionately increase the disability associated with migraine. People with comorbid migraine and a psychiatric condition may have fewer coping resources to manage the lifestyle components related to migraine. Psychiatric comorbidities may complicate differential diagnosis, increase medical costs, affect adherence to treatment regimens, impact quality of life, contribute to increased headache related disability, and impact the course of migraine, in some cases leading to headache chronification (1-3). Further, as both migraine and psychiatric disorders are stigmatized, the combination of migraine and psychiatric disorders may lead to increased stigma (4).

Clinical cut-offs are available for all screeners discussed. Screeners are available online or through contacting their publishers.

Mood Disorder Screeners

People with migraine are two to four times more likely to have depression than people without migraine (2), and the relationship between migraine and depression is bi-directional (5). Major depressive disorder is characterized by depressed mood and/or diminished enjoyment of pleasurable activities, and symptoms of difficulty sleeping and fatigue, changes in appetite and weight, difficulty concentrating, feelings of guilt or worthlessness, psychomotor retardation or agitation, and suicidality (6). Common screening measures include the Beck Depression Inventory – II (BDI-II), Patient Health Questionnaire – 9 and 2 item versions (PHQ-9 and PHQ-2), the National Institutes of Health (NIH) Patient Reported Outcomes Measurement Information System (PROMIS) Depression measure, and the Mood Disorder Questionnaire (MDQ).

The BDI is a widely-used 21-item measure of depression (7). Items ask questions about domains of depressive mood symptoms, (e.g., "Sadness") and gives response options ranging from 0, which indicates no depressive symptoms (e.g., "I do not feel sad") to 3, which indicates high levels of depressive symptoms ("I am so sad or unhappy that I cannot stand it."). Across general, medical and psychiatric populations, reliability coefficients range from 0.73 to 0.95, and test-retest reliability coefficients from 0.80-0.90; the BDI is associated with clinical depression and sensitive to change (8). The BDI-Fast Screen is a 7-item version designed specifically for use in medical patients (9). This version omits items commonly endorsed by medical patients (e.g., fatigue), focusing instead on cognitive symptoms.

The PHQ-9 is a nine-item measure of depression, which asks respondents to rate the extent to which they have been bothered by each of the symptoms described in the DSM criteria for depression, ranging from 0 ("Not at all") to 3 ("Nearly every day") (10). The PHQ-9 demonstrated excellent internal (αs = 0.86-0.89) and test-retest reliability (r =0.84). Sensitivity and specificity in primary and specialty care populations are both 88%. The shorter, 2-item version (PHQ-2) has also demonstrated favorable psychometric properties in medical populations and is used as a brief screen in many hospital settings (11).

The NIH PROMIS depression Short Form is an 8-item self-report measure developed by the National Institutes of Health that assesses emotional distress "in the past 7 days," focusing on negative mood and negative self-views. Ratings are made on a 6-point scale, from 1 (Never) to 5 (Always). Scores are calibrated to a T score metric normed to U.S. population demographic means.(12) Higher scores represent more severe depressive symptomology. Test–retest reliability has ranged from .66 to .78.(13)

Screening for bipolar disorder is particularly important in people with migraine given the high rates of migraine among people with bipolar disorder (over half of people with bipolar disorder II have migraine) (14). Most people with bipolar disorder are misdiagnosed for over 10 years; further, the misdiagnosis can have significant

negative consequences for people with bipolar disorder who are treated with antidepressants only, as this can enhance the negative impact of manic episodes. The MDQ is a 17-item questionnaire designed to assess manic and hypomanic symptoms, as well as the history of those symptoms and any negative consequences which occurred due to the manic or hypomanic episode (15). The MDQ is sensitive (0.73) and specific (0.90) in outpatient psychiatric populations.

Anxiety Disorder Screeners

Anxiety disorders have demonstrated even higher rates of comorbidity with migraine (Panic Disorder OR = 3.7, GAD ORs = 3.5-5.3) compared to depression (2, 16). Because anxiety disorders share some clinical features with migraine, a thorough examination may be required to disentangle this comorbidity.

The NIH PROMIS Anxiety Short Form is an 8-item self-report measure developed by the National Institutes of Health that assesses emotional distress "in the past 7 days," focusing on fear, worry and hyper-arousal. Ratings are made on a 6-point scale, from 1 (Never) to 5 (Always). Scores are calibrated to a T score metric normed to U.S. population demographic means(12). Higher scores represent more sever anxiety symptoms. Test–retest reliability has ranged from .64 to .70.(13)

The BAI is a 21-item self-report measure assessing symptoms of panic (17). Response options are rated on a 4-point Likert scale ranging from "not at all" to "severely - it bothered me a lot." Items include "unable to relax," "fear of losing control" and "numbness or tingling." The BAI has demonstrated high internal consistency in both psychiatric and medical populations (α = .92).

The Generalized Anxiety Disorder 7-item (GAD-7) (18) is a self-report measure of Generalized Anxiety Disorder derived from the PHQ. Each of the seven items is rated from 0 to 3, with total scores ranging from 0 to 21. Higher scores are indicative of more severe impairment. The GAD-7 demonstrated good internal consistency (α = 0.92) and test-retest reliability (*r* = 0.83). The measure also had good criterion, construct, factorial, and procedural validity (18).

The Post-Traumatic Stress Disorder Checklist – 5 (PCL-5) is a 20-item self-report measure of DSM-V criteria for PTSD (19). Respondents rate the extent to which they experience the symptom described in each item on a 0 ("Not at all") to 4 ("Extremely") scale. The current scale is an update from previous, well-validated measures of DSM-IV PTSD symptoms. Early psychometric information is promising, but more psychometric work is required for strong clinical cut-offs. Notably, in a change from the PCL for the previous version of the DSM, there are now no different measures for military and civilian use.

Sleep Disorder Screeners

Sleep plays an important role in migraine. Two consecutive nights of sleep disturbance have been associated with onset of migraine and tension-type headache, and sleep disturbance can build upon daily stress to precipitate headache onset (21). Insomnia is the most prevalent sleep disorder overall, and in chronic migraine.

The Insomnia Severity Index [ISI(20)] is a 7 item self-report questionnaire that assesses the nature, severity, and impact of insomnia. The ISI uses a 5-point Likert scale to rate each item, ranging from 0 ("no problem") to 4 ("very severe problem"). The ISI is a well-validated measure with excellent internal consistency (α = .90) and good sensitivity (0.86) and specificity (0.87) for identifying insomnia.

The Berlin Sleep Anpea Questionnaire [Berlin (21)] is a 10 item self-report survey that aims to identify risk for obstructive sleep apnea across three categories: snoring behavior, daytime sleepiness, and patient history of hypertension and obesity. Participants are deemed at "high risk" for sleep apnea if they meet a minimum threshold in two or more categories and "low risk" if one or zero categories are endorsed. The Berlin is well validated for use in medical settings, and has demonstrated excellent internal consistency (α = .86 to .92) and good sensitivity (0.86) and specificity (0.77).

Non-Pharmacologic Treatment Options

People with migraine and comorbid depression and/or anxiety can experience large improvements in migraine over the course of preventive migraine treatments, including both medication and non-pharmacologic approaches (22). However, psychiatric comorbidities contribute to significant distress and may lead to long-term poorer migraine prognosis if they are not directly managed (23). Patients who meet criteria for a psychiatric disorder should be referred to a licensed provider for targeted, evidence-based treatment.

Cognitive Behavioral Therapy (CBT) is a treatment modality that incorporates identification and modification of both thinking patterns and behaviors to improve psychiatric symptoms. The CBT framework suggests that maladaptive emotional responses occur because core beliefs inform maladaptive cognitive patterns ("cognitive distortions") that emerge "automatically" in response to various situations. Treatment for depression involves both behavioral activation (engaging in pleasurable activities to unpair activity engagement from punishment) and cognitive restructuring (identifying an individual's patterns of cognitive distortions and modifying these distortions).

CBT can be used to a variety of conditions other than depression. For insomnia, CBT adds sleep restriction (reducing the amount of time in bed) and stimulus control (unpairing the bed from wakefulness) to cognitive restructuring. For panic disorder, CBT includes systematic desensitization, a procedure by which individuals are presented with a hierarchy of panic-inducing situations, during which they use relaxation techniques to retrain their automatic maladaptive responses. For PTSD, Cognitive Processing Therapy involves remembering the traumatic event and learning skills to make meaning of traumatic events.

Interpersonal relationships are often impaired in people with psychiatric disorders. Interpersonal Therapy (IPT) identifies an acute interpersonal crisis which, along with inadequate or unhelpful social support structures, precipitated or exacerbated the psychiatric distress. IPT uses relational techniques to address the interpersonal crisis and social support, which then improves the psychiatric symptoms. For people with bipolar disorder, IPT is combined with social rhythm therapy (a structured protocol designed to regulate biological/circadian and interpersonal rhythms) as an efficacious adjunctive therapy to mood stabilizers.

"Third-wave" psychotherapies are the newest non-pharmacologic treatments for psychiatric disorders. These treatments, which include Mindfulness-Based Stress Reduction, Mindfulness-Based Cognitive Therapy and Acceptance and Commitment Therapy, are characterized by the inclusion of mindfulness-based techniques to more traditional relaxation, behavioral, and cognitive treatment strategies. These treatments have demonstrated efficacy particularly to prevent relapse.

Development of a strong referral network of behavioral treatment providers is critical to successful management of psychiatric comorbidity in migraine. Practitioners who are well-versed in the evidence-based treatments described here are listed in several professional directories, including the American Psychological Association, Association of Behavioral and Cognitive Therapies, American Headache Society, National Register of Health Service Psychologists and the Association for Applied Psychophysiology and Biofeedback.

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