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Brief Cognitive-Behavioral Interventions for Migraine in the Emergency Room: A Case Study

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ABSTRACT

Brief cognitive-behavioral intervention (CBI) was conducted in the emergency room (ER). The current literature on biomedical and psychological risk factors of migraine is reviewed briefly including studies demonstrating the effectiveness of CBI with such patients. The case study portrays CBI that assists a patient suffering from severe migraine attack. We cautiously proposed that CBI can provide patients with a sense of control and may offer empowerment for the personnel in the ER. An integrative approach to health care is suggested when assessing patients with migraine.

INTRODUCTION

Patients suffering from chronic-illness, such as migraines, arrive at the emergency-room (ER) with repeated and unexpected acute episodes and pose a challenge for ER personnel.^{1,2} Yet, the conventional biomedical approach does not usually prepare physicians and nurses in the ER for the complexities of managing chronic illness or provide them with psychological interventions such as cognitive behavioral interventions (CBI) as part of their training.^{3,4} However, in the last few years, some changes in medical education for MD students can be observed. For example, the paradigm of bio-psycho-social medicine is provided as part of the curriculum of medical and nursing students.⁵⁻⁸

Although the implementation of bio-psycho-social concepts in medicine has been emphasized, the practice of bio-psycho-social in hospitals has not yet been embedded.⁹ Numerous explanations for the lack of psychological intervention in the ER can be suggested. First, most problems in the ER are diagnosed and treated according to the medical conceptualization which seeks to identify the severity of the problem and provide necessary first aid. Thus, the ER is perceived as a place in which the personnel need to make a decision that will enable the best solution to the problem presented by the patient. These actions need to be made rapidly. Pharmacological and medical procedures are then employed.

A second possible explanation for the lack of blending psychosocial understanding and interventions in the biomedical area is the medical agenda that tends to consider separate caring for body related disease and mind related issues.¹⁰ Thus, patients suffering from chronic illnesses when coming to the ER usually do not receive enough attention to their emotional response, which is considered secondarily to biomedical problems.

A third explanation why psychological interventions such as cognitive behavioral (CB) interventions are not considered in the first line of treatment in the ER is that CB models view most problems as "maladaptive behaviors" rather than as signs of illness or

disorder. Many problems are considered as reactions to difficult and stressful circumstances rather than pathologies. Another CB conceptual tool is analyzing problems in terms of specific challenging situations. Patients can be helped to identify situations that cause distress and plan for and prepare to cope with such situations more effectively.

It is also possible that psychological intervention is considered as a long procedure, using words to cure ailments, both of which may not seem appropriate to blend into the usual routine in the ER constellation. The techniques taken from mind-body medicine are very short, though this fact might not be known to most of the personnel in the ER. It is important to note that in the area of disaster medicine, CBI is a common interventional method.^{11,12}

Previous studies have shown patients with chronic diseases like migraine benefited from short term psychological interventions such as cognitive-behavioral interventions (CBI).¹³ CBI target behaviors, emotions, and cognitions that might trigger or aggravate symptoms of chronic diseases. The goal of the interventions is to help the patient modify overt behavior by altering thoughts, interpretations of events, assumptions, and behavior responses to stressors.

CBI can be applied individually, in groups, or in limited contact formats. Applied to migraine, CBI can alert patients to the role of thought processes in stress responses and the relationships between stress, coping, and appearance of symptoms. CBI incorporates relaxation training during which patients are taught better awareness and control of their physical and mental response patterns to a variety of triggers.^{5,14,15}

Here we describe a case study where the practicing physician on duty (RB) chose to apply CBI techniques to a patient she had previously dealt with in the ambulatory unit at a major medical center in the southern region of Israel. The physician chose this practice, assuming that the stress response of the patients exacerbated their condition. As will be described below, the patient benefited from the short term CBI. To the best of our knowledge in Israel, CBI is rarely conducted in the ER with patients suffering from migraine, and our study is the first to report such use of CBI in the ER setting for this condition. We hope this case study will enhance an understanding that the CBI framework can aid providers in the emergency room.

CASE

A 30-year old man arrived at 5:00 a.m. at the ER, reporting unbearable pulsatile headache pain accompanied by nausea. He reported that his headache had lasted for several hours, said he could no longer stand the pain, and asked for help. After calming down, the man stated that he has suffered from severe migraine headaches (without aura) for several years. He had tried all available pain medications to no avail, and no explanations were provided from the sophisticated medical examinations he went through. In his current visit, he described his headache as the main reason for sleep deprivation for the past few weeks, and to a degree, he felt helpless in his effort to ameliorate his symptoms. The attending physician (RB) in the ER suggested a few options: an over the counter pain killer, Triptan, and a cognitive behavior intervention. Regarding the CBI, the physician stated she could not cure his headache, but she could teach him a method to control his pain and provide himself with physical and mental relaxation.

The physician explained that the patient would learn an exercise which would include a "stock-list" of his body organs. The patient selected the CBI, declined the suggestion for prescribed medication, and was told that medication would be available at any time. The physician guided him to breathe deeply for several minutes and taught him the Jacobsonian progressive muscle relaxation practice.¹⁶ The patient followed the instructions, contracted and released skeletal muscles groups, and then fell asleep. After one hour the patient woke up, his migraine headache was alleviated. He asked for a written text of the Jacobsonian relaxation and wrote down the physician instructions. The attending physician suggested practicing PR a couple of times every day, as a way to enhance his relaxation and acquire new skills of coping. The physician discussed the importance of practicing PR regularly as a part of a learning process which may assist him to reduce pain and enhance quality of life.

Discussion of Case

Migraine is a common, disabling, multi-factorial, episodic neurovascular disorder of largely unknown etiology. The disease is typically characterized by recurrent attacks of headaches, associated with autonomic and neurological symptoms which cause considerable pain and disability.¹⁷ Three types of migraine are defined by the International Headache Society: migraine without aura, migraine with aura, and probable migraine.¹⁸ Migraine is identified if a person reported at least one severe headache in the previous 12 months with symptoms such as unilateral or pulsatile pain, nausea, vomiting, and visual and/or sensory aura before the headache. The prevalence of migraine headaches in the USA and Western Europe varied between 6% in men to 18% in women. In the past decade, the frequency of individuals diagnosed with migraines has increased. However, approximately half of the migraineurs remain undiagnosed. Nevertheless, migraine continues to cause a significant disability whether or not there has been a medical diagnosis.^{19, 20}

Among the known biomedical risk factors of migraine are serotonin-depletion, which has been associated with migraine occurrence, trigeminovascular activation, and endogenous mediators, such as reproductive hormones, which have an effect on the prevalence and severity of migraines among women during their reproductive years.²¹⁻²³ However, several studies have demonstrated that psychological factors, such as depression and anxiety, predict the onset of migraines.²⁴ Major depression increases the risk of migraine and vice versa. This bidirectional path seems to be distinct, whereas other psychiatric conditions were merely correlated with migraine.²⁴ Increased co-morbidity has also been found with anxiety disorders. However, the recurrent stress, pain, and suffering, which accompany the migraine attacks, are assumed to explain anxiety and other mood disorders rather than provide an explanatory model for migraine persistence.²⁵

Several clinical studies have indicated that CBI, including relaxation and cognitive restructuring, are beneficial as an adjunct or stand alone therapy for recurrent migraine.²⁶⁻²⁸ Furthermore, previous studies have shown these interventions have results similar to prophylactic medication as related to symptom control and the well being of the patients.²⁶⁻²⁸

CBI for migraine is comprised of relaxation, biofeedback, and cognitive components with guided imagery.¹⁵ These treatments aim to reduce pain associated with headaches and emphasize patient involvement and personal responsibility for coping with pain. Previous studies noted that active involvement of patients can increase their confidence in their abilities to prevent and manage headaches, which in turn, can lead to less headache-related disability.²⁶

CONCLUSIONS

Within the context of recurrent episodes of migraine, which are often characterized by helplessness and hopelessness, we see from this case study that CBI can offer an outlet which can enhance the patient's coping with symptoms and increase one's perceived control over one's illness. By setting achievable short term goals, patients can begin taking control of their situation and experience relief. Self practice of behavioral skills can enable patients to rely more on their continuous self caring and thus empower them.

Furthermore, CBI can empower the personnel treating patients who repeatedly attend the ER. Integrating comforting statements provided by ER personnel can further assist patients as a self-administered format to maintain symptoms control at home.^{29,30} Comforting messages can educate and motivate the patient to employ behavioral skills and strategies for prevention and management of their symptoms.

Additional studies are needed to elucidate which patient characteristics will enhance or hinder treatment efficacy. For example, personality disposition such as anxious or other psychological features may increase or decrease the likelihood of specific treatment success.

Our case study suggests that medical care in the ER can become more effective by providing an integrative and personal care. This conclusion must be confirmed by large controlled clinical trials. Academic courses and clinical training can be considered in health profession educational programs in general and among ER personnel in particular. Training of physicians and nurses can be conducted in a format of workshops or short term courses. Future controlled clinical studies in the ER are called for to identify specific factors predicting enhanced response to CBI among asthma and migraine patients.

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