International Journal of Health Sciences and Research
www.ijhsr.org ISSN: 2249-9571

Review Article

Impact of Cognitive Behaviour Therapy (CBT) on Anxiety and Depressive Symptoms among Orthopaedic Patients: A Systematic Review

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Received: 04/06/2016 *Revised: 22/06/2016* *Accepted: 27/06/2016*

ABSTRACT

Background: It is obvious that patient with orthopedic illness has the highest prevalence of anxiety and depression. They are very important for cognitive behavior therapy for anxiety and depression, but they have never been systemically examined in Indian population.
Material and Methods: A Pub Med, SCOPUS and Google scholar (2002-2016) literature review was undertaken to define sources of anxiety, depression and CBT (cognitive behavior therapy) among orthopedic patients.
Results: We identified 35 relevant articles. The most frequently noted form of cognitive behavior therapy is effective in PTSD (Post Traumatic Stress Disorder), medical illness, psychiatric disorder, anxiety and depression among any medical illness, behavior problems. Use of effective cognitive behavior therapy is benefitted for orthopedic patients for reducing the anxiety and depression symptoms.
Conclusion: CBT had significant impact on anxiety and depression level of orthopedic patients. Orthopedic patients, who were exposed to CBT (experimental group),had statistically significant higher mean anxiety and depression score than orthopedic patients who did not exposed to CBT (comparison group).

Key words: Anxiety, Cognitive Behavior Therapy, Depressive Symptoms, Orthopaedic Patients.

INTRODUCTION

Musculoskeletal conditions are prevalent and their impact is pervasive. They are the most common cause of severe long term pain and physical disability, and they affect hundreds of millions of people around the world. They significantly affect the psychosocial status of affected people as well as their families and careers. [1]

Worldwide accounting for around 1.2 million deaths and over 50 million injuries yearly. It is conventional that by the year 2020 road traffic damage will rank third in the global load of illness. Injury is the prime cause of death and impairment worldwide in people under 60 years of age. Numbers of motorized vehicles in China expand from 60,000 to higher than 50 million over the past 50 years. In Thailand the number has enlarged from 4.9 million in 1987 to 17.7 million in 1997. [2]

Most patients with chronic musculoskeletal pain has most prevalence of anxiety and depression , After the traumatic events 40 percent of people out of 100 percent with posttraumatic stress disorder also suffered from the depression in one-month and four-month intervals after the traumatic event. [3]

Since depression is common and one might expect a high rate of depression associated with musculoskeletal issues and

physical injury presenting at orthopedic clinics and females were more likely to become depressed than males. [4]

Anxiety and depression affects a patient's result of disease, general health and impacted on necessary functioning responsible for after orthopedic trauma. Contextual factors play very significant role in determining the position of disability related with a health illness ·Other than access to therapy, client and careers attitude could impact the respective level of abnormality adjoin with various health conditions in the orthopaedic clients. There are many confirmation that fish oil supplements (omega/3) accommodating high levels of eicosapentaenoic acid (EPA) to docosahexaenoic acid (DHA) may be useful in major depression. The high ratios of depression have been documented in client with severe lower-extremity injury. [5]

Cognitive behavioural therapy is a well evidence-based treatable approach which shown to helpful for the children, adolescents, and their care provider overcomes trauma-related difficulties. It is designed to decreases negative emotional and behavioral feedback such as children sexual abuse, domestic violence, traumatic loss, and other traumatic events. [6] Cognitive-behavioral therapy drives from two distinct areas, cognitive theory and behavioral theory. Behaviorisms concentrate on external behaviors and disregards internal mental processes. The cognitive approach, by contrast, focus the necessary of internal thought processes. [7]

It is generally required for the patients with any orthopaedic illness are more long lasting treatment than any other patients. Patients with psychological symptoms such as anxiety and depression among orthopaedic injured patients may be an essential aim for intervention. Cognitive-behavioral therapy can be an appropriate intervention for patients with anxiety and depression which is related with an orthopaedic injury. [8]

MATERIALS AND METHODS

Relevant articles on the topic of CBT on anxiety, depression among orthopedic patients were identified by searching with related SCOPUS, GOOGLE SCHOLAR and PubMed (2002-2015). Titles and abstracts of these articles obtained from the database searches were reviewed to ensure that they were related to CBT on anxiety and depression.

RESULTS

Anxiety and Depressive Symptoms among orthopedic patients

Many instruments exist to assess mental disorders and anxiety, such as the hospital anxiety and depression scale (HADS). Nothing has been evaluated on the HADS factor structure for use with orthopedic trauma patients. A study found that the Gibbons two-factor model of the HADS is the most appropriate model for the orthopedic trauma population By assessing the HADS for orthopedic or different patient populations, both researchers and physicians have the opportunity to learn more about anxiety and depression, which may assist in effective treatment and further studies. [9]

Depression and anxiety symptoms are of major concern to admitted surgical patients especially in females and those with a history of mood disorders or lower educational level. A study found that the Patients with longer hospital stay are also at increased risk notably with underlying diseases, postoperative complications, lack of familial support, and need for reoperation. [10]

Depression and anxiety symptoms increased from the admission towards longer hospital stay. Scores obtained in the second and third weeks of admission were associated with the need for surgery while HADS in the third week was associated with the lack of familial supports being under the poverty line ($p < 0.050$). Regression model analysis showed that early depression was associated with female gender, and early anxiety was inversely affected by female gender and protected by

higher education level. A history of mood disorder was a risk factor. Later anxiety was also associated with longer hospital stay. [11]

Mental and behavioral disorders are rather common in patients with chronic orthopedic diseases. A study found that a total of 100 patients (55 males, 45 females; mean age: 46.8 years; range: 18 to 83 years) that either underwent surgical procedures due to orthopedic diseases lasting for a minimum of one year and not responsive to conservative treatment methods, or were hospitalized due to the complications arising after orthopedic surgical procedures. Psychological evaluation was made using the State-Trait Anxiety Inventory (STAI) forms TX 1 and 2. Data were analyzed using the SPSS 11.0 and evaluated with the ANOVA, Tukey, Student's t and post hoc tests. A value of $p \leq 0.05$ was considered significant. Mean state anxiety and trait anxiety scores were 43.08 and 42.61, respectively. Depression was diagnosed in 24 of patients and anxiety disorder in 29. Changes in the treatment modality were necessary in 4 patients. Mental and behavioral disorders are rather common in patients with chronic orthopedic diseases. Treatment modalities used for such patients should be established in a bio-psycho-social manner with regards to the psychological and social aspects of the disease. [12]

Extent of psychological symptoms such as anxiety and depression that patients experience following orthopedic trauma and whether these are associated with quality of life. A study found that all patients attending 10 orthopedic fracture clinics at 3 university-affiliated hospitals between January and October 2003 were screened for study eligibility. Eligible patients were aged 16 years or older, were English-speaking, were being followed actively for a fracture(s), were cognitively able to complete the questionnaires and provided informed consent. All consenting patients completed a baseline assessment form, the Symptom Checklist-90-Revised and a health-related quality of life questionnaire (the Medical Outcomes Study 36-item Short Form [SF-36]). We conducted regression analyses to determine predictors of quality of life among study patients. This study suggested that necessary to determine whether orthopedic trauma patients would benefit from early screening and intervention to address co morbid psychopathology. [13]

Anxiety and depression affect their quality of life and increase pain severity, and have adverse effects on functional recovery. A study found that Counseling did have a positive impact on quality of life on all patients, but in a more relevant way if patients were low functioning upon admittance to the ward. Anxiety and depression decreased in patients undergoing counseling, and their pain levels were lower than among patients not receiving it. [14]

Psychosocial factors increase pain severity, and emotional distress (particularly anxiety, depression, and beliefs about pain) has emerged as being predictive of pain levels. As a consequence, it is important to not only assess the intensity and frequency of physical pain, but to also examine the presence and intensity of other sufferings. hip fracture must be studied as a biopsychosocial phenomenon, and not as a physiological event alone, since older hip fracture patients are at high risk for psychological problems related to the traumatic nature of the injury. [15]

Symptoms of depression, which occur significantly more frequently in the wartime injured in comparison to the peacetime injured. The phenomenological symptoms of derangement and depression proved to be reliable parameters of physical trauma. It is also significant that the three characteristics showed correlation to psychopathological responses: severity of surgery, paralysis, and acute injury. [16]

CBT on Anxiety and Depressive Symptoms

CBT program had a favorable influence on symptoms of PTSD, depression, and anxiety, and on autobiographical memory among patients suffering from PTSD. A study found that

the total of 40 patients suffering from PTSD (mean age: 31.64 years; 78.6% female patients) and under psychopharmacological treatment were randomly assigned to an intervention or control condition. The intervention consisted of ten group sessions (one 60-90 minute session per week) of CBT. At baseline and 10 weeks later, a series of self-rating and experts'-rating questionnaires were completed. Over time, symptoms of PTSD, depression, and anxiety decreased; however, greater improvement was observed in the experimental than the control condition. Likewise, as a general pattern of results, memory performance improved over time, though again this improvement was greater in the experimental condition. [17]

Clinicians, researchers and policymakers are increasingly interested in early interventions to prevent the development of chronic mental health problems such as post-traumatic stress disorder (PTSD). [18] A study found that the trauma-focused cognitive-behavioral therapy (TFCBT) had limited effectiveness in preventing chronic PTSD in a clinically heterogeneous population. [19] However, the evidence for the effectiveness of TFCBT in individuals with ASD seems clinically meaningful enough to have implications for practice. The evidence about the effectiveness of TFCBT in traumatized populations without an ASD diagnosis is insufficient. [20]

Cognitive behavioral therapy (CBT) is a form of psychotherapy that has been documented to be effective in treating anxiety, insomnia, depression, addictions, and other mental disorders. [21] A study found that the Cognitive behavioral therapy has little used in future research because it covers such a wide range of therapies. CBT should always be defined by the problem it is intended to solve. The format and method of delivery should be defined because they have implications for outcomes. They are readily available even at the primary care level. The effectiveness of CBT is unquestioned regarding its effectiveness in treating each of the variables that affect CLBP. It is unclear why it is not more widely implemented. [22]

Compared to a control condition, additional CBT improves the treatment of PTSD, with respect to both symptoms and autobiographical memory. [23] A study found that the an additional and highly standardized CBT program had a favorable influence on symptoms of PTSD, depression, and anxiety, and on autobiographical memory among patients suffering from PTSD, as compared to a control group treated pharmacologically only. [24]

CBT holds promise as an effective approach for persons with SCI (spinal cord injury) experiencing depression, anxiety, adjustment and coping symptoms. As CBT may involve many different components, it is important in future to determine which of these elements alone or in combination is most effective in treating the emotional consequences of SCI (spinal cord injury). [25] A study found that the CBT was found to have large effect size improvements in depressive symptoms in persons clinically diagnosed with depression compared to those presenting only mild symptoms of depression. [26]

Cognitive Behavioral Therapy (CBT) is especially applicable in medical settings given its brief, skill-based approach and strong evidence for a number of presenting problems. This is best to assess effectiveness and allow reliability; future studies should provide adequate information about training curricula and assess multiple levels of learning outcomes. [27]

Trauma-focused cognitive behavioral therapy is used to treat children who have experienced traumatic events and suffer from trauma-related disorders. Thirty-five traumatized children (mean age = 10.9 years; range = 3-17 years; 74.3% girls) who received trauma-focused cognitive behavioral therapy were included. The effectiveness of the program was evaluated in each case using the University of California at Los Angeles Post-Traumatic

Stress Disorder Reaction Index for DSM-IV for trauma-related symptoms and the Children's Global Assessment Scale for social functioning. Pre- and post-treatment outcome measures were analyzed using two-tailed paired t tests. The study found that the findings indicate that trauma-focused cognitive behavioral therapy is feasible for treating traumatized children of an Asian population. [28]

CBT program had a favorable influence on symptoms of PTSD, depression, and anxiety, and on autobiographical memory among patients suffering from PTSD, as compared to a control group treated pharmacologically only. [29] A study found that the total of 40 patients suffering from PTSD (mean age: 31.64 years; 78.6% female patients) and under psychopharmacological treatment were randomly assigned to an intervention or control condition. The intervention consisted of ten group sessions (one 60-90 minute session per week) of CBT. At baseline and 10 weeks later, a series of self-rating and experts'-rating questionnaires were completed. As a general pattern of results, memory performance improved over time, though again this improvement was greater in the experimental condition. [30]

Group CBT for depression, delivered in routine care settings, has good results in terms of both improvement at the group level and clinical significance at the individual level. [31] A study found that the Group CBT for depression can be delivered in routine care settings with good results. However, there are still many patients who drop out or do not benefit from treatment. [32]

CBT treatments for anxiety disorders are as efficacious as face-to-face treatments delivered individually or in a group context. Internet-administered self-help plus minimal therapist contact via email can be equally effective as traditional individual CBT for both panic disorder and social phobia, whilst involving considerably less clinician time. [33] Treatment outcomes were found to be similar regardless of the modality of treatment delivery, but there were other differences between treatment groups completing face-to-face and Internet-delivered CBT that should be noted. [34]

CONCLUSION

Depression and anxiety symptoms are a major concern in orthopedic patients especially in females and those with a history of mood disorders or lower educational level. Patients with a longer hospital stay, in particular, those with underlying diseases, postoperative complications, lack of familial support, and the need for reoperation were also at increased risk. Counseling affects the evolution of mental and physical status in these patients, and the major benefit is reported in patients whose quality of life perception is worse after the trauma. CBT is a frequently used treatment for psychosocial issues. CBT incorporates a variety of techniques to facilitate emotional and behavioral change on the part of the person. Several common techniques used in CBT include cognitive restructuring, increasing the person's access and willingness to engage in rewarding activities, various forms of relaxation training, problem solving strategies, as well as assertiveness and coping skills training. Cognitive restructuring attempts to lessen distress by encouraging a re-evaluation of distorted cognitions that underlie feelings of depression and anxiety.

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How to cite this article: Kumari A, Kumar ATK, Deaver U. Impact of cognitive behaviour therapy (CBT) on anxiety and depressive symptoms among orthopaedic patients: a systematic review. Int J Health Sci Res. 2016; 6(7):377-383.

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