Prevalence of depression and its associating factors in IPD orthopaedic patients

Dr. Ravikant Jain, Dr. Rahul Rishi, Dr. Balkishan Sharma[1] Dr. Vivek Kiyawat,
M. S. (Orthopedics) *Professor,* Department of Orthopedics, Sri Aurobindo Medical College and P. G. Institute, Indore (M. P.), India;
III year PG *Junior resident,* Department of Orthopedics, Sri Aurobindo Medical College and P. G. Institute, Indore (M. P.), India;
Ph. D. (Corresponding author) [1]*Associate Professor (Biostatistics),* Department of Community Medicine, Sri Aurobindo Medical College and P. G. Institute, Indore (M. P.), India;
II year PG *Junior resident,* Department of Orthopedics, Sri Aurobindo Medical College and P. G. Institute, Indore (M. P.), India;

Abstract-
Background and objectives: Depression has acknowledged and well documented, is common among orthopaedic inpatients may be associated with functional outcomes. Authors aimed to investigate the prevalence and associating factors of depression disorder in orthopaedic inpatients.

Materials and Methods: A cross-sectional study is designed among patients that admitted at SAIMS, Indore. Four hundred twenty six orthopedic patients were recruited for study. The demographic and clinical measurements were recorded. Levels of depression were assessed by using Zung's depression scale.

Results: Depressive disorder was identified in 87.6% indoor patients significantly ($p<0.001$) influenced female more than male. The mean depression score in female (67.37±11.75) was significantly higher than male (62.29±12.20). The prevalence of extreme/major depression in female (46.6%) was higher as compared to male (25.7%). Type of trauma was found significantly ($p<0.05$) associated with depressive disorder. 38.1% male with traumatic condition and 20.0% with non-traumatic condition had moderate depression in comparison to 31.4% and 13.6% female. Depressive disorder was found significantly associated with sex ($p<0.001$), socio-economic status ($p<0.001$), length of ortho-illness ($p<0.001$), length of stay in hospital ($p<0.001$), exercise/yoga ($p<0.05$) and type of injury ($p<0.05$).

Conclusions: Higher incidence of depressive disorder recorded in female. Prevention and treatment require more clinical and research attention to reduce the public health burden of depression. The study suggested that higher depressive disorder does occur in indoor orthopaedic patients that associated with various functional outcomes. This study supports the view of depressive disorder was disabling factor in better functional recovery and frequent in female after orthopedic trauma.

Keywords: Depression, Orthopaedic trauma, Injury, Psychosocial, Major depressive disorder.

Introduction: Depression is a state of low mood and aversion to activity that can affect a person's thoughts, behavior, feelings and sense of well-being.[1] Depression has received a lot of attention in the media and is far more widely accepted today than it has ever been in the past. Anxiety is usually a precursor to depression, can reduce the efficiency of healthy individuals.[2] The combination of a physical illness and depressive disorder is a particularly potent cause of disability.[3] Depressive disorder is projected to be the leading cause of disability in the developing world by 2020 and leads to greatly increased healthcare costs even after excluding direct mental healthcare expenses.[4] An estimated 340 million people across the world have major depressive disorder at any given time.[5] Major depressive disorder (MDD) is also known as clinical depression or major depression is a mental disorder characterized by a pervasive and persistent low mood that is accompanied by low self-esteem and by a loss of interest or pleasure in normally enjoyable activities. Increased rates of depression in high-income countries have been reported in general trauma patients [6-8] and in one US orthopaedic population the rate of depression was 45%.[9] Depressed people can feel sad, anxious, empty, hopeless, worried, helpless, worthless, guilty, irritable, hurt, or restless. Prevalence of psychological disorder following physical trauma in a variety of settings was 23% to 41%.[10-11]

Major depression significantly affects a patient's outcome of disease, general health and impacted on important functioning responsible for recovery after orthopedic trauma. Different sub-divisions of depression have different treatment approaches. Depression may also coexist with attention-deficit hyperactivity disorder (ADHD), complicating the diagnosis and treatment of both.[12] Posttraumatic stress disorder (PTSD) is also common after

surgery, particularly after traumatic injuries and other issues in surgical patients.[13-14] More than 40 percent of people with PTSD also had depression at one-month and four-month intervals after the traumatic event.[15] Since depression is common and [16] one might expect a high rate of depression associated with physical injury and musculoskeletal issues presenting at orthopaedic clinics and [17] females were more likely to become depressed than males.

Contextual factors play an important role in determining the level of disability associated with a health condition.[18] Other than access to treatment, patient and carers attitude may affect the relative level of disability associated with different health conditions in the orthopaedic patients. There is some evidence that fish oil supplements containing high levels of eicosapentaenoic acid (EPA) to docosahexaenoic acid (DHA) may be effective in major depression.[19] High rates of depression have been documented in patients with severe lower-extremity injury.[20] However, patients with less severe injuries have not been associated with regard to their rates of depression to our knowledge. The relationship between traumas in indoor orthopaedics and depression is not clear. In addition, little is known about the association between depression and demographics during hospitalization. A weak association of anxiety/depression with an increase in heart rate was confirmed the effect of anxiety and depression on decrease in blood pressure. [21]

The understanding of the nature and causes of depression has evolved over the centuries has left many aspects of depression as the subject of discussion and research. The authors hypothesized that depression is associated with various demographical and clinical settings during hospitalization among indoor orthopaedic patients. Henceforth, the authors aimed to utilize the depressive disorder in clinical condition to identify the prevalence with demographic and other associating factors.

Materials and Methods: A cross-sectional study is designed among indoor orthopaedic traumatic and non-traumatic patients after obtaining ethical approval that admitted at Sri Aurobindo Institute of Medical Sciences, Indore during November 2013 to May 2014. Four hundred twenty six orthopedic patients were recruited during specified period selected as subjects according to inclusion criteria. Prior consent of patients for the publication of the clinical details and others has taken into account. The anthropometric and demographic measurements were recorded. Those patients were also eliminated from the study that had previously been diagnosed with depression and were already receiving treatment for this condition. After explaining the purpose of the study a questionnaire was provided and was asked to answer (fill up) the questions in prescribed format so as to assess their depression level.

Zung's scale[22] was selected for assessment and scoring of depression level. The Likert Scale Format is being used in questionnaire that consisted of twenty questions. Each question has answer score from 1 to 4. The option for each question is (a) None or a little of the time (b) Some of the time (c) Good part of the time and (d) Most or all of the time. The raw score is converted to 100 point scale (SDS Raw Index). SDS Raw Index=(Raw Score/80 total points)×100 and SDS Index=SDS Raw Index×1.25. Subject who received SDS Index point <50 was treated as Normal, 51-59.9 was Mild Depression, 60-69.9 was Moderate or Marked Major Depression and >70 was considered as Severe or Extreme Major Depression**.** The demographic and clinical measurements were recorded and associations between various study parameters with depression level were evaluated.