"THE RATE OF DEPRESSION IN KNEE ARTHRITIS PATIENTS: AN OBSERVATIONAL STUDY"

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ABSTRACT

INTRODUCTION: Pain is always a great dilemma in the world of medicine and chronic pain is becoming a major challenge globally at all level of care. Depression impact on physical behavior and may result in reduced movement, a deconditioning of the body, loss of natural endorphins and increasing levels of pain. **METHODOLOGY:** The study sample consists of 22 subjects having a chronic arthritis of knee patients with depression at the age between 45 to 65 years. The subjects who met the inclusion criteria were included in this study. Inform and written consent was taken from the subjects. Scale for depression also taken as a outcome measure. **RESULT:** Outcome measurement was measured using ces-d scale and seen that 41% subjects suffered from severe depressive symptomatology. **CONCLUSION:** The study concludes that depression is significant in knee arthritis patients. This questionnaire can be used as screening tools in knee arthritis patients. These will affect the burden on the cost of quality of life.

KEY WORDS: chronic arthritis patients, knee pain, depression.

I. INTRODUCTION:

Osteoarthritis is characterized by structural changes in the subchondral bone and degradation of the joint cartilage and this pathology is not always accompanied by pain and functional limitations [1]. Knee osteoarthritis (OA) is a leading cause of disability among older adults and the incidence of this pathology is expected to dramatically increase over the next 2 decades. Patients with knee OA demonstrate reduced functional capacity that can be attributed to joint pain, stiffness, and loss of muscular strength of the lower extremity muscles [2]. Patients with knee OA typically present with reduced force generating ability in the quadriceps and also quadriceps weakness may contribute to the substantial functional deficits that occur with disease progression [3].

Pain is always a great dilemma in the world of medicine and chronic pain is becoming a major challenge globally at all level of care. Chronic pain is defined as "pain which has lasted for three months or longer and currently troubles the patient either all of the time or on and off" [4]. Chronic immune-mediated pain affects more than 1.3 million Americans and more than 15 million

people worldwide, With regards to ethnicity in Malaysia, a study has shown that Indians has the highest prevalence of knee pain complaints at health care centre [5].

Depressive symptoms may affect structural disease progression in arthritis patients through biological, psychological, and behavioral mechanisms or by some combination of these processes [6]. Depressive symptoms are also associated with decreased physical performance, and prolonged periods of sedentary behavior that result in a deconditioning of the body and greater body mass index may lead to greater structural OA disease progression [6]. It also impact on physical behavior and may result in reduced movement, a deconditioning of the body, loss of natural endorphins and increasing levels of pain [7]. Depression affect up to 66% of individuals with arthritis and almost 17% of persons with arthritis have a current major depressive disorder [8]. Depressive symptoms are also associated with increased odds of inadequate pain relief during analgesic treatment and significantly higher pain ratings after total knee replacement [9].

Symptoms of depression are associated with increased disease activity, a reduced response to arthritis symptoms treatment, and a decreased likelihood of achieving arthritis symptom remission [10]. Depressive symptoms are dynamic and prior depressive illness modifies the experience of current depressed mood. Depressive illness onset occurring earlier in life predicts future depressive symptoms that manifest with greater intensity and frequency [11]. Depression in arthritis may also reduce adherence to medication and inflate the reported severity of subjective symptoms such as pain, joint tenderness and physical dysfunction [12].

Depression was assessed with the Center for Epidemiologic Studies Depression Scale (CES-D). The CES-D is a short self-administered scale designed to measure depressive symptomatology in the population. The CES-D consists of 20 items and has a range of 0–60, with higher scores indicating more depressive symptomatology. Scores of 16 or greater suggest presence of depression [13].

II. METHODOLOGY:

A.   SOURCE OF DATA:

- OPD based patients at Parul Sevashram Hospital.

B.   INCLUSION CRITERIA:

- Pain which has lasted for three months or longer with on and off.
- Subjects either male or female age 45-65 years.
- Subjects also had to have a sufficient level of English to complete the questionnaires.
- Subjects who will sign consent form willingly.
- No visual deficits.
- No sensory deficits.

C.   EXCLUSION CRITERIA:

- Pain present not less than 3 months.
- Neuropathy.
- Fibromyalgia.
- Acute pain.
- Cardiovascular disease like acute myocardial infarction, asthma.
- Disability in language and cognition.
- Did not agree to participate.
- Inability to write or read.
- Patients who are on medication of anxiety and depression.

D.   METHOD OF COLLECTION OF DATA:

    I.Study design – Observational study

    II.Sampling method – Convenient sampling

    III.Study duration – 6 Months

    IV.Sample size – 22 OPD Patients

E.   OUTCOME MEASURES:

- Numerical Pain Rating Scale / Visual Analog Scale (NPRS/VAS)
- Hamilton Anxiety Rating Scale (HAM-A)
- Center for Epidemiologic Studies Depression Scale (CES-D)

F.   ETHICAL CLEARANCE:

- In the act of research consists of human subjects, ethical clearance was obtained from ethical committee of Parul University Institutional Ethics Committee for Human Research (PU-IECHR). Also written consent was taken from every subject who associates in study.

G.   PROCEDURE:

- The subjects were taken from Parul Sevashram Hospital who was eligible according to the inclusion and exclusion criteria. An Inform and written consent was taken from the subjects. Initial assessment was done. Survey of pain experienced by the subjects participating in the study was assessed only once with outcome measures. NPRS/VAS is a well-known tool for the thorough evaluation the intensity of pain. Although preliminary results suggest that the NPRS/VAS is easily understood by older adults and that it shows good concurrent validity with other pain intensity scales. The NPRS a shorter version of the VAS is a multidimensional measure of perceived pain in adults with chronic pain. The VAS includes 1 item for present pain intensity and 1 item for a 10-cm for average pain. The HAM-A which stands for anxiety is one of the questionnaires that can be useful in anxiety measure. It is a clinician-administered questionnaire consisting of 14 items. CES-D is useful for measure a depression in chronic pain patients.

III.DATA ANALYSIS

In present study 22 people with the age group of 45 to 65 Years were taken. 22 subjects were analyzed.

STATISTICAL ANALYSIS

- All patients were observed by the CES-D questioner and total score of the patients was calculated and take mean rate of depression in particular age by using Microsoft excel sheet and chart.

IV.**RESULT**

In the total study population, total of 22 subjects were assessed for depression in knee arthritis patients, among them 68% were women and 32% were men. The mean age of the subjects was 50 years. Among the assessed subjects, 27% subjects suffered from no to mild depressive symptomatology, 32% subjects suffered from moderate depressive symptomatology, 41% subjects suffered from severe depressive symptomatology.

Table 1:- Rate of depression in subjects

RATE	NUMBER OF SUBJECTS
0-16	6
17-23	7
24-60	9
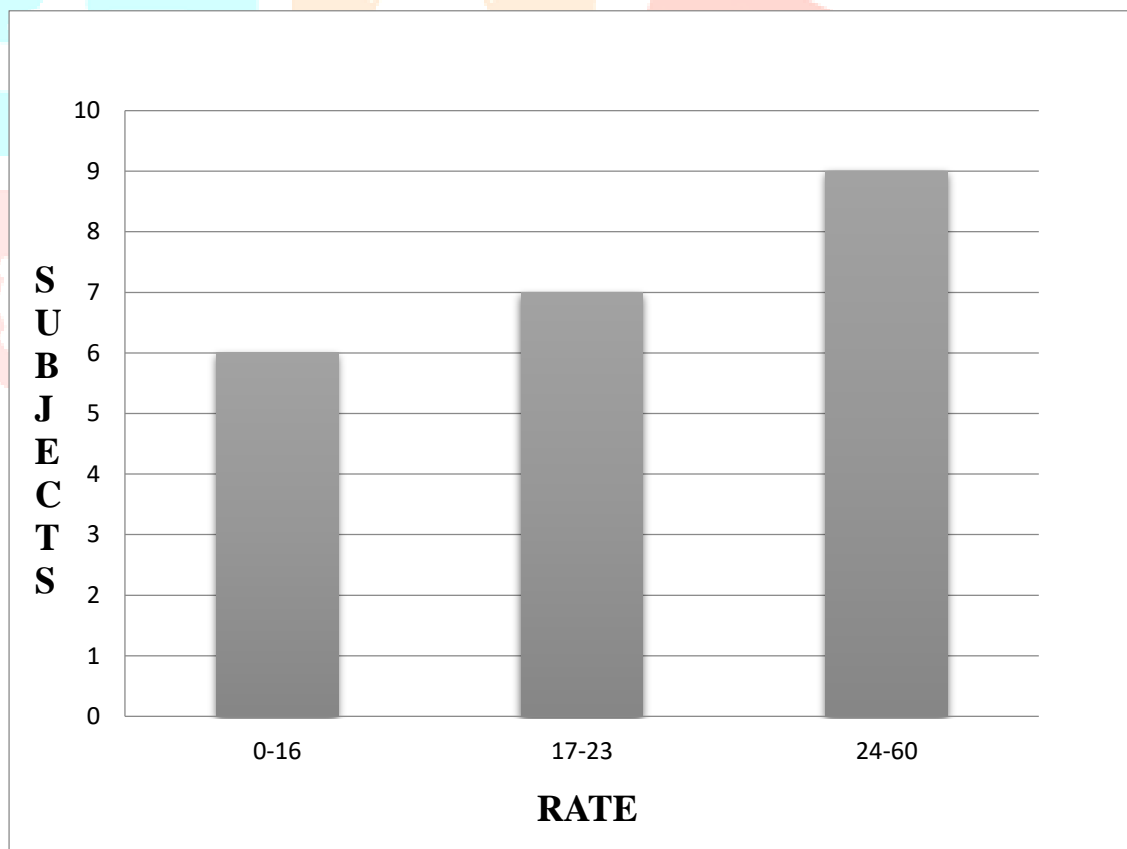
Inference: The above bar graph shows difference of rate in 22 subjects.

V.**DISCUSSION**

The present study analyzes small population to find the rate of depression in knee arthritis patients [14]. In this study, 41% of knee arthritis patients have severe depressive symptomatology, which is relatively higher. Depression is more dominant when there is a presence of psychiatric history [15].

This study has illustrated that knee arthritis patient is at a high risk of developing depression when they experiences higher persistence days of pain as reflected by the significant measured by CES-D [16]. Physical domain, Psychological domain and Environment domain status are significantly correlated with general quality of life for knee arthritis patient. This also applies for general health status (Psychological and Physical domains). In summary, patient's physical and psychological conditions are the main factors affecting quality of life and health status in patient with knee arthritis [17].

Pain can be deleterious and may just be a subjective perception or a complex psychological experience involving sensory, emotional, cognitive and behavioral components. Studies have revealed that social, cultural and ethnicity were among the main factors which may significantly influence an individual's predisposition of suffering from knee arthritis pain [18].

Depressive symptoms have been associated with poor pain outcomes and prognosis. If left undetected and untreated, these problems will result in deleterious effect and negative implications in the patient's recovery with long lasting symptoms [19]. Despite the finding obtained in this study, previous study revealed that depression is precursor for pain and it sensitizes individuals to experience pain. It could not determine whether pain may predispose to psychiatric symptoms or vice versa [20].

VI.CONCLUSION

This study concluded that depression is significant in knee arthritis patients. This questionnaire can be used as screening tools in knee arthritis patients. It is important to further evaluate the relatively increased risk of knee arthritis patients in future study in larger scale including the anxiety and pain in clinical practice as these will affect the burden on the cost of quality of life.

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