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## Importance of Awareness on Joint Disorders in Aged Women: A Step toward Better Healthcare

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### ABSTRACT:

Arthritis and osteoporosis are the most commonly affected joint disorders and most of the general population is being not aware about the basic difference in rheumatoid arthritis and osteoporosis. Rheumatoid arthritis is an autoimmune disorder affecting extra-articular cartilage on symmetrical joints. Most of the aged women at post menopausal stage affected by osteoporosis but are unaware about the condition and importance of preventive medications. Current study aims to aware women's of age above 40 years about autoimmune disease rheumatoid arthritis and importance of calcium as preventive medication in late ages. 95% women's have knee pain where 50% have more than frequency of painful episodes more than four times a day. 30 % stated that pain is due to rheumatoid arthritis and only 10% stated that the pain is due to osteoporosis. Only 37% have visited physician for the pain. 45% were believed that less knee movement might be the better option and 51% were believed that level of calcium is responsible for the pain. 87% were in favour of preventive calcium supplement in women's above 40 years of age. 90% participants were willing to know the difference between rheumatoid and osteoporosis.

**KEYWORDS:** Rheumatoid arthritis, osteoporosis, autoimmune disorder, calcium supplements

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### INTRODUCTION:

Rheumatoid arthritis is one of the most common systemic inflammatory disease which is characterized by symmetrical joint involvement. Extra-articular involvement like rheumatoid nodules, eye inflammation, vasculitis, neurologic dysfunction, lymphadenopathy, cardiopulmonary disease and splenomegaly are manifestations of the disease.<sup>1</sup>

**Causes:** The major histocompatibility complex class-II molecules located on T-lymphocytes appear to have an important role in most patients with rheumatoid arthritis. These major histocompatibility complex class-II molecules can be characterized using human lymphocyte antigen typing. Mostly majority of patients with rheumatoid arthritis have Human leukocyte antigen-DR4, Human Leukocyte Antigen-DR1 or both antigens found in the major histocompatibility complex region. No doubt the major histocompatibility complex region is important but it is not the sole determinant because patients can have the disease without this Human Leukocyte Antigen types.<sup>1</sup>

**Pathophysiology:** - The immune system is a complex network of checks and balances designed to distinguish self from non-self tissues. It also helps to get rid the body of infectious agents, tumor cells, and products associated with the breakdown of cells.

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breakdown of cells. Generally in rheumatoid arthritis immune system no longer can differentiate self from non-self tissues and attacks the synovial tissue and other connective tissues. Usually most of the patients with rheumatoid arthritis form antibodies called rheumatoid factors. The processed antigen is recognized by major histocompatibility complex proteins on the lymphocyte which activates it to stimulate the production of T and B cells. The pro-inflammatory cytokines tumor necrosis factor, interleukin-1 & interleukin-6 are key substances in the initiation and continuance of rheumatoid inflammation. Lymphocytes may be either B cells or T cells. T cells may be either T-helper which promote inflammation or T-suppressor cells which attenuate the inflammatory response. Activated T-cells produce cytotoxins which are directly toxic to tissues and cytokines which stimulate further activation of inflammatory processes and attract cells to areas of inflammation. Other cells like macrophages are stimulated to release prostaglandins and cytotoxins. Activated B cells produce plasma cells which form antibodies in the body. These antibodies in combination with complement result in the accumulation of polymorphonuclear leukocytes.<sup>1-4</sup> These polymorphonuclear leukocytes release cytotoxins, free radicals and hydroxyl radicals that promote cellular damage to synovium and bone. Patients with rheumatoid arthritis appear to have an excessive amount of T-helper cell activity in synovial tissues. Vaso-active substances also play a role in the inflammatory process. Inflammatory mediators like histamine, prostaglandins and kinins are released at the site of inflammation. These mediators increase both blood flow to the site of inflammation and also increase the permeability of blood vessels. These mediators cause the edema, erythema, warmth and pain associated with joint inflammation and makes it easier for granulocytes to pass from blood vessels to the site of inflammation.<sup>1-4</sup> The end results of the chronic inflammatory changes are variable depend on conditions. Loss of cartilage may result in a loss of the joint space. The formation of chronic granulation can lead to loss of joint motion or bony fusion also called as ankylosis. Laxity of tendon structures can result in a loss of support to the affected joint leading to instability or subluxation. While tendon contractures also may occur leading to chronic deformity.<sup>1-4</sup>

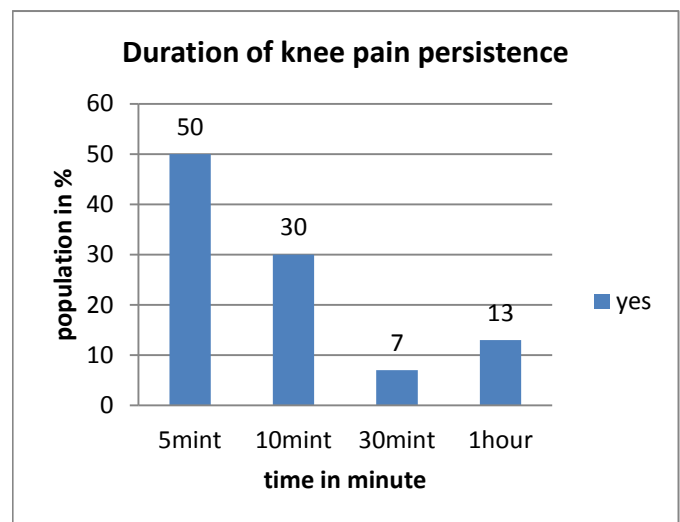
**Clinical features:** Joint pain and stiffness of more than 6 weeks' duration. Patients may experience fatigue, fever, loss of appetite and weakness. Muscle pain and afternoon fatigue may also be present. Joint deformity is generally seen late in the disease. Tenderness with warmth and swelling over affected joints usually involving hands and feet. In rheumatoid arthritis distribution of joint involvement is frequently

symmetrical. Rheumatoid nodules may also be present in observation part.<sup>5-6</sup>

**Osteoporosis:** Osteoporosis is low bone mass and micro-architectural deterioration of bone tissue leading to increase bone fragility and a resultant increase in fracture risk.<sup>7</sup> Bone loss results when resorption exceeds formation. Normal bone mass is defined as a T-score greater than (-1) and osteopenia as a T-score of (-1) to (-2.5) and osteoporosis as a T-score of less than (-2.5).<sup>7,8</sup> High bone turnover and poor bone strength and impaired bone architecture result in the bone's increased susceptibility to fracture. Osteoporosis is categorized as postmenopausal and age-related or secondary type of condition.

**Methodology:** A well designed questionnaire and leaflet was prepared with the help of clinical pharmacist and formatted according to the survey requirement. At the end of the survey received fully filled 100 forms and dispatch leaflets on rheumatoid arthritis by door to door spreading community awareness with an initiative to person to person communication. To carry out analysis of data percentage analysis for each question was carried out.

**Result:** From the study following result is obtained. All the women's participants were selected for the current study from which 60% were in the age group of 40-50 years while 30% were in age group of 50-60 years. In the study 95 % participants reported that they have knee pain.



**Figure1: Result of duration of knee pain in women participants.**

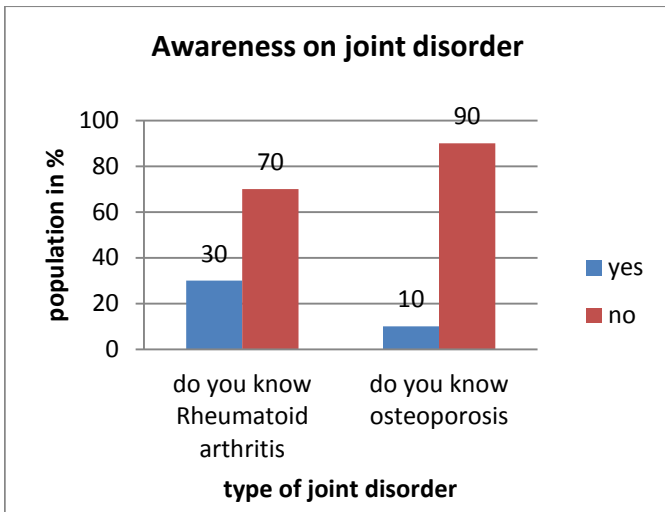


Figure2: Result of awareness on joint disorder.

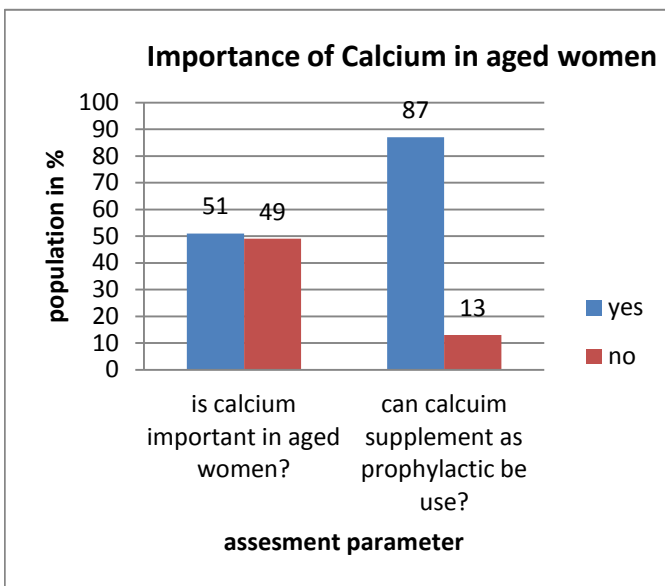


Figure3. Result on assessment on calcium supplement importance in aged women.

45% were believed that less movement of knee joint might be the best precautionary step to be taken.31% used ointment as pain reliever and 37% have consulted physician for the knee pain.

**Conclusion:** 87% participants were believed that calcium supplement must be used as a preventive measure since early forties to avoid joint related complications and better health. 30% about rheumatoid and 10% about osteoporosis indicates that there is a dire need of creating awareness in aged women about their joint condition and what to do and what not to control the joint complications. The constant awareness on this joint disorder can surely reduce the chances of development of osteoporosis and also become helpful to rheumatoid arthritis patients for improvement in quality of

life. The importance of calcium in aged women and complications because of it must be consider by the government and steps like use of implementing preventive calcium supplementation in daily life style for improving quality of life though media and other technology must be emphasize for the women empowerment in late age.

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