Prevalence of Rheumatoid Symptoms in Females of More Than 40 Years-A Survey

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ABSTRACT

Introduction: Rheumatoid arthritis is an autoimmune disorder where the immune system attacks the own healthy cells thereby causing inflammation in the affected parts of the body. It initially affects smaller joints of the body. Severe forms of rheumatoid arthritis can even cause physical disabilities. Signs and symptoms of rheumatoid arthritis include pain in joints, swollen joints, and joint stiffness. Fever and fatigue may be present. Other symptoms start to appear in a week or month. It usually occurs in middle age and duration is lifelong and sometimes the causes are unknown. It is treated most often with steroids, Nonsteroidal anti-inflammatory drugs.

Aim: To determine the prevalence of rheumatoid symptoms in females of more than 40 years.

Materials and Methods: Well-structured questionnaire containing 14 self-structured questions was framed and circulated among 50 women above 40 years of age through an online survey link. Descriptive statistics was carried out using SPSS software. .

Results: The majority of women aged 40 to 50 years suffer from fatigue. Pearson's Chi-square value: 4.303, p value- 0.36 (p>0.05), hence statistically not significant. The results conclude that the prevalence of rheumatoid symptoms is less among the women and very few early symptoms are seen among them.

Conclusion: In this study, the prevalence of rheumatoid symptoms was seen less among women above 40years of age. Further studies can be done to check the progression of symptoms. Key words:

Rheumatoid, Arthritis, Women, Joint swelling, Innovative technique

INTRODUCTION

Rheumatoid arthritis is an autoimmune disorder and an inflammatory disease in which the immune system by mistake attacks the healthy cells thereby causing inflammation in the affected parts of the body [1]. It is a chronic inflammatory disease that initially affects smaller joints of the body where the initial symptoms start to appear. In mild conditions, it affects the lining of joints and causes painful swelling which leads to bone erosion and deformities in the joint [2]. Severe forms of rheumatoid arthritis can even cause physical disabilities. Signs and symptoms of rheumatoid arthritis include pain in joints, swollen joints, and joint stiffness. Wrists and hands are the most commonly involved parts and it may also affect other parts resulting in low red blood cell count, inflammation around the lungs and heart [3]. Fever and fatigue may be present [4]. Other symptoms start to appear in a week or month. It usually occurs in middle age and duration is lifelong and sometimes the causes are unknown. It is

treated most often with steroids, non-steroidal anti-inflammatory drugs [5].

The cause is unknown but it may also occur due to genetic and environmental factors. As it is an autoimmune disease, the immune system of the body attacks the joints that result in inflammation, thickening of the joint capsule, and affects underlying bone and cartilage [6]. Diagnosis is done by X-rays and lab tests. Treatment involves reducing the pain and inflammation and helps in improving a person's overall functions. Drugs like methotrexate and hydroxychloroquine slow the progression of the disease. Surgeries are done in certain cases. Cardiovascular disease, osteoporosis, cancer, infection and mental difficulties are associated problems [7]. Many women are not aware of the symptoms and thus it leads rheumatoid to severe form. This study reveals the prevalence of rheumatoid among women and also provides knowledge on its symptoms, treatment and prevention.

Inflammation of the synovial membrane is characteristic of joint arthritis. Joint swells and stiffens and limits the movements. Small joints such as hands, feet, cervical spine and larger joints such as shoulder and knee are involved. Inflammation of the joints and pain are commonly seen early in the morning on waking and prolonged inactivity

[8]. Stiffness increases early in the morning and lasts for an hour. Gentle movements can relieve the symptoms in the early stage of the disease [9]. These signs help distinguish rheumatoid from osteoporosis which is a non-inflammatory problem of the joint [10]. Progression of the disease leads to erosion and destruction of the joint and thus leads to deformities. In severe cases it is known as arthritis mutilans, mutilating nature of the deformities [11]. Lung fibrosis is a complication of rheumatoid arthritis. Atherosclerosis, Myocardial infarction and stroke is also a complication of rheumatoid arthritis. Other complications include endocarditis, pericarditis, left ventricular failure, valvulitis and fibrosis [12]. Cardiovascular risk can be controlled by exercises, medications and reducing the inflammation caused by rheumatoid arthritis. The chronic inflammation caused by rheumatoid arthritis leads to anaemia of chronic disease. Iron is poorly absorbed and when inflammation is uncontrollable platelet count increases. Renal amyloidosis occurs in untreated chronic inflammation. Osteoporosis occurs in rheumatoid arthritis around the inflamed joints. In the oral cavity, tooth loss and periodontitis are seen in people with rheumatoid arthritis [13].

Family history of rheumatoid arthritis increases the risk as the major histocompatibility complex (MHC) antigen is strongly associated with rheumatoid arthritis. Smoking is a risk factor for rheumatoid arthritis. Rheumatoid primarily starts with cellular activation leading to autoimmunity in joints and other organs. Progression of rheumatoid is associated with three phases: initiation phase, amplification phase and chronic inflammatory phase and tissue injury [14].

Hand and feet X Rays are done when many joints are affected. MRIs are also used. In clinical suspicion of rheumatoid, a test for rheumatoid factor is done. This cannot be prevented but only the risk factors can be reduced. Regular exercise helps in maintaining muscle strength and overall physical function [15]. This study has been conducted in the form of a survey to know about symptoms and prevalence of rheumatoid among women which has not been done previously in any research [16]. Our team has extensive knowledge and research experience that has translated into high quality publications [17–35]. The study aims to determine the prevalence of rheumatoid symptoms in females of more than 40 years.

MATERIALS AND METHODS

Study setting

The present study was a prospective online questionnaire based observation survey conducted among the women from a metropolitan city of India. The participants were recruited using the convenience sampling due to the presence of lock down placed by the government. Structured questionnaire was developed after deliberation among the authors and taking into account the research question. Structured questionnaire consisted of 14 self-explanatory questions. Final structured questionnaire was converted into an online survey form using Microsoft Google form. The Google form was sent to prospective participants and was asked to provide a response for each of the questions. The participants were contacted through phone after sending the online form as well as in case of delay in response. The study was approved by the Institutional review board.

Patient selection and recruitment

The study was conducted according to the helsinki declaration and privacy of participants was maintained. The study consisted of 50 women of age above 40 years. Individuals who were not willing were excluded from our study. The sample size was calculated using G-power analysis.

Development of questionnaire

The survey consists of 14 self-administered questionnaires. Questions were prepared by referring to other literature that represented the symptoms of rheumatoid among women. All the questions are of multiple choices.

Survey (data collection)

This was conducted through an online survey in one month in February 2021. The responses were collected in the goggle sheet and tabulated. The results were obtained and analysed using statistical analysis. The survey was to create and gather data among heterogeneous populations. A simple random sampling link was done to eliminate response bias. Measures taken for minimising errors are internal and external validity.

Statistical analysis

The descriptive statistics were done using IBM SPSS V22 software. Gender and age were dependent variables and knowledge, perception were independent variables. Chi-square analysis was performed for gender association and $p < 0.05$ was considered as statistically significant. The statistical test used was the chi square test.

RESULTS

The response rate for questionnaire study was 100%. All the respondents answered all the questions. 64.71%, 17.65% and 17.65% of participants were from 40-50 years, 50-60, and above 60 years of age respectively. 56.86% of participants reported reduction in morning stiffness after mild exercise whereas in case of 43.14% of the participants morning stiffness did not reduce after mild exercise. 19.61%, 17.65% and 62.75% of the participants have joint swelling <1 month, >6 months and >1 year respectively. 41.18% of the participants have fatigue and 58.82% do not have fatigue. 13.73% of the participants had weight loss and 86.27% did not have weight loss. 49.02% of the participants had a fever and 50.98% did not have a fever. 3.92%, 50.98% and 45.10% of the participants lost <20 kgs, did not lose weight and

<10 kgs respectively. 60.78% of the participants have irritation in their eyes and 39.22% do not have irritation in their eyes. 41.18% of the participants have dry mouth and 58.82% do not have dry mouth.

Impairment in vision and irritation in the eyes were the most frequent symptoms reported among the women of this present study. Other symptoms of fatigue, fever, joint swelling were very less reported among the participants (Figures 1-7).
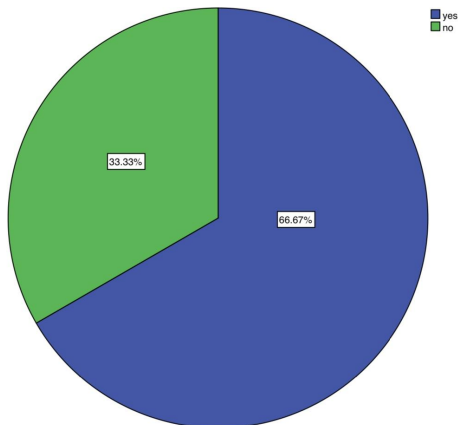

Figure 1: Response of participants when asked about morning stiffness. 66.67 %(blue colour) of participants reported morning stiffness whereas 33.33% (green colour) of participants do not.
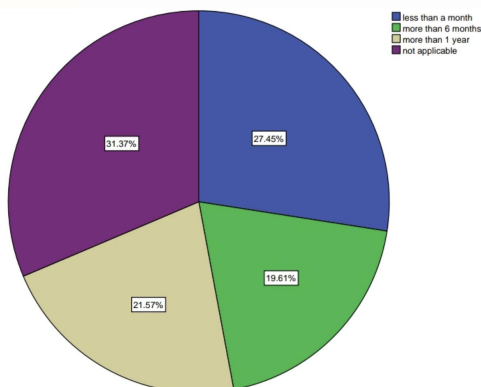

Figure 2: Duration of morning stiffness among the participants. 27.45% (blue colour), 19.61% (green colour), and 21.5% (beige colour), participants had morning stiffness for <1 month, 6 month to 1 year, and >1 year, respectively. 31.37% (purple colour) participants did not have any morning stiffness.
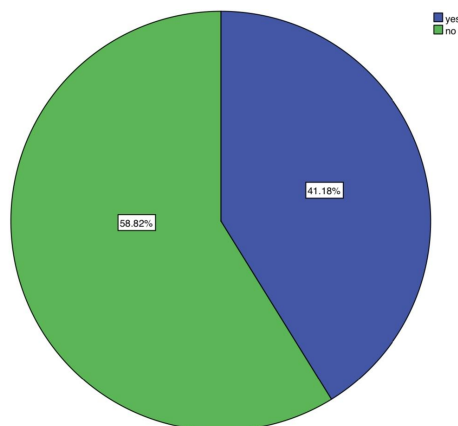

Figure 3: Shows no participants having joint swelling, 41.18 % (blue colour) of the participants have joint swelling and 58.82% (green colour) do not have joint swelling.
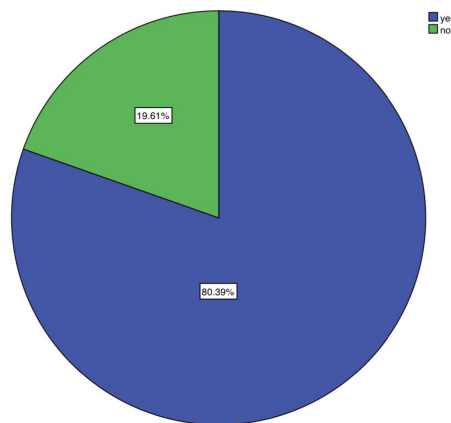

Figure 4: Shows the participants with impairment in their vision, 80.39% (blue colour) of the participants reported that their vision has been reduced and 19.61% (green colour) reported that their vision has not been reduced.
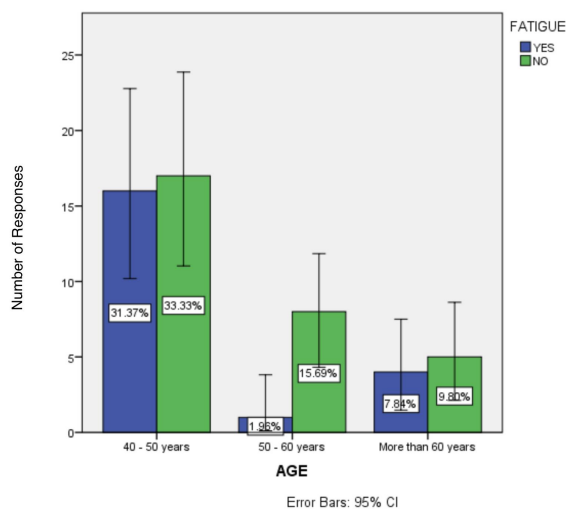

Figure 5: Bar graph representing the association between the age of the women and fatigue. X axis

represents the age of the participants and Y axis represents no of responses. The green colour represents the women suffering from fatigue and the blue colour represents women who do not suffer from fatigue. The majority of women (31.37%) aged 40 to 50 years suffer from fatigue. Pearson's Chi-square value: 4.303, p value-0.36 (p>0.05), hence statistically not significant.
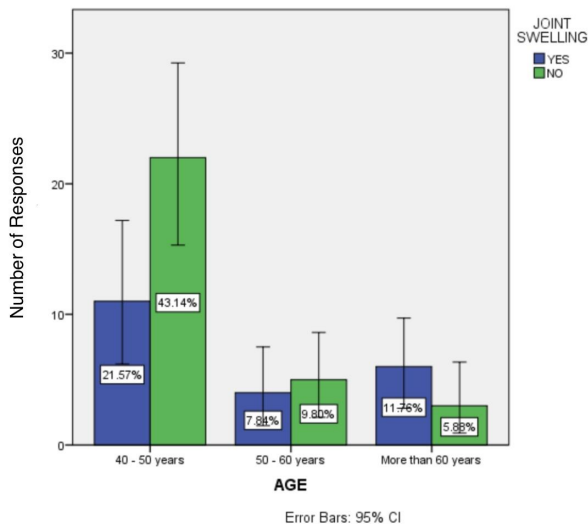

Figure 6: Bar graph representing the association between age of the women and joint swelling. X axis represents the age of the participants and Y axis represents no of responses. Blue colour represents the women who are suffering from joint swelling and green colour represents women who are not suffering from joint swelling. Majority of women (43.14%) of 40-50 years of age do not suffer from joint swelling. Pearson's Chi square value: 3.871, p value- 0.42 (p>0.0.05), hence statistically not significant.
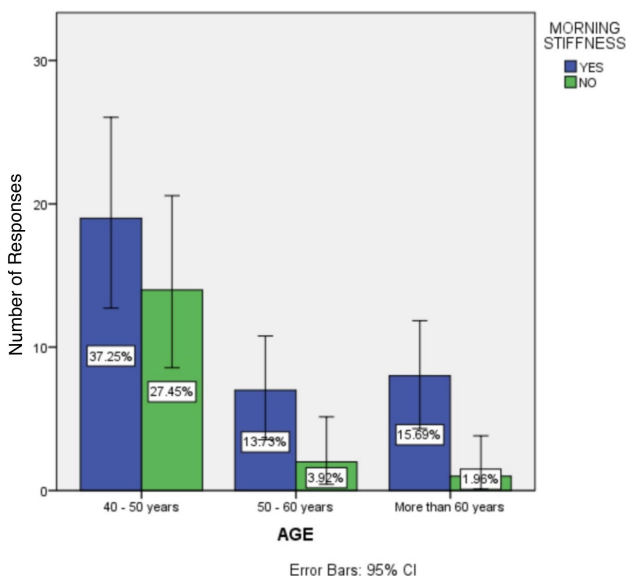

Figure 7: Bar graph representing the association between age of the women and morning stiffness. X

axis represents the age of the participants and Y axis represents no of responses. Green colour represents the women who are suffering from morning stiffness and green colour represents women who are not suffering from morning stiffness. Majority of women (37.25%) of 40-50 years of age suffer from morning stiffness. Pearson's Chi square value: 4.725, p value-0.31 (p>0.0.05), hence statistically not significant.

DISCUSSION

In this present study impairment and eye irritation was most reported by the participants. In a study conducted by Nicklin et.al 7 out of 15 participants had fatigue, whereas in this present study 41% of the participants have fatigue. Participants were unable to continue their daily tasks and lack of enthusiasm was present among them. Duration of the fatigue varied from short to permanent fatigue. Due to fatigue, participants felt a lack of energy, their social life became limited and they were unable to accomplish what they wanted to do [36]. In a study conducted by England et.al it was found that weight loss is one of the predictors of cause specific mortality in rheumatoid. In this present study 13.73% of the participants had weight loss and 86.27% of the participants did not have weight loss [37]. In a study conducted by Punjabi et.al 27% of the participants had dry eyes as a risk factor of rheumatoid. In this present study 60.78% of the participants have irritation in their eyes and 39.22% of the participants do not have irritation in their eyes. Rheumatoid in Indian population have a significantly high rate of dry eyes and irritation in the eyes [38]. In South India there is a high prevalence of dry eye disease and irritation in the eye among rheumatoid arthritis patients [39]. In a study conducted by Wolfe et.al, ocular and oral dryness is increased in rheumatoid arthritis [40]. In this present study 41.18% of the participants have dry mouth and 58.82% of the participants do not have dry mouth.

In a study conducted by Kaur et.al and Singh et.al, diminished acuity of vision was the most frequent symptom encountered. In a study conducted by Shah Et.al, reported that muscle and joint pain was as high as 37.4%. In a study conducted by Chopra et.al, back pain and painful neck was seen in 17.3% of men and 9.5% of women, respectively. In a study conducted by Dai et.al, reported knee to be the most common site seen in 7.0% of women followed by lower back (5.6%), shoulder (4.7%) and neck (2.4%). Haq et.al, reported that the most commonly affected sites are knees, hips and shoulders.

This study has certain limitations. The study sample size was small which could have some impact on the result of the study. In addition some of the symptoms were not included on the questionnaire. Since it was an online questionnaire survey, it is possible that some of the participants may not have reported properly. Future studies with a large cohort are wanted to know the prevalence of signs and symptoms on rheumatoid arthritis in women.

CONCLUSION

Rheumatoid symptoms are less prevalent among women of above 40 years of age. Only the risk factors can be reduced in rheumatoid and there is no prevention for this condition. Regular exercises are recommended as higher levels of physical activity is associated with reduced risk of rheumatoid and educational approaches and camps on rheumatoid help in knowledge about rheumatoid symptoms and its complications. With proper diet and exercise, risk factors and early symptoms of rheumatoid can be reduced.

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