



## AWARENESS OF RHEUMATOID ARTHRITIS AMONG POPULATION IN TAIF, SAUDI ARABIA.

<b>Nagwan Elhussein*</b>	Radiology Department, Faculty of Applied Medical Science, Taif University, Taif, Saudi Arabia. *Corresponding Author
<b>Rania Mohammed Ahmed</b>	Radiology Department, Faculty of Applied Medical Science, Taif University, Taif, Saudi Arabia.
<b>Rawan Alosaimi</b>	Radiology Department, Faculty of Applied Medical Science, Taif University, Taif, Saudi Arabia.
<b>Haifa Alshehri</b>	Radiology Department, Faculty of Applied Medical Science, Taif University, Taif, Saudi Arabia.
<b>Shahad Altwerqi</b>	Radiology Department, Faculty of Applied Medical Science, Taif University, Taif, Saudi Arabia.
<b>Bashaer Alotaibi</b>	Radiology Department, Faculty of Applied Medical Science, Taif University, Taif, Saudi Arabia.
<b>Afaf Mohamed Taha Alamin</b>	Sattam bin Abdul-Aziz University, College of Applied Medical Sciences, Radiology and Medical Imaging Department, Al-Kharj-Saudi Arabia.

**ABSTRACT** **Background:** Rheumatic diseases have become a great burden of modern society causing disability, pain, social, emotional, and economic problems.

**Aims:** To assess awareness level of rheumatoid arthritis (RA) among population in Taif city, Saudi Arabia.

**Settings and Design:** Cross section study done by distributed a well-structured questionnaire designed specifically to this study and distributed to a random sample of population living in Taif City, Saudi Arabia.

**Methods and Material:** A structured questionnaire was designed for data collection to this study by researchers based upon review of literature. It includes two parts ; Socio-demographic data and knowledge questions toward rheumatoid arthritis; which include (causes, symptoms, diagnosis and complications of rheumatoid arthritis and protection from rheumatoid arthritis). Questionnaire was randomly distributed through emails to a sample of people living in Taif, their ages ranged from 18 years old and above , responded people were 252.

**Results:** Out of 252 respondents there were 239 (94.8%) male and 13 (5.2%) female with common age group (18-24) years with percentage of (65.5%), most of participant were Saudi 233 (92.5%) , Higher education level represented (81.7%), (52.4%) of participants heard about (RA) and most of them have had an information about symptoms and prevention methods of rheumatoid arthritis by percentage of (86.9%),(33.3) respectively, most of participants answered that X-ray and laboratory are the diagnosis tools of (RA) by percentage of (49.6%) . Statistical significant difference between difference between awareness of rheumatoid arthritis and level of education for participant  $P \leq 0.05$ .

**KEYWORDS :** Rheumatoid arthritis, Awareness, Taif, Saudi Arabia.

### Introduction:

Rheumatoid arthritis (RA) is a chronic, usually progressive, systemic inflammation condition of unknown cause. It is characterized by synovial proliferation and symmetric, erosive arthritis of peripheral joints, but it may also cause systemic manifestations.<sup>[1]</sup> Symptoms is morning stiffness and symmetrical joint pain are the most recognizable symptoms of rheumatoid arthritis. But most often, the first symptoms are fatigue, weakness, low-grade fever, or loss of appetite and weight. These conditions can arise even before joint problems develop.<sup>[2]</sup> The exact cause of rheumatoid arthritis is still unknown. However, researchers have identified some factor that may increase a person's risk of developing the disease. Such as: genetic, infection, environmental factors.<sup>[2]</sup> Onset of RA peaks between the ages of 30 and 50 years but can also occur in childhood or old age. In all races, women are affected nearly three times as often as men. The prevalence of this disorder increases with age, and gender differences are less pronounced in older patients. The greater prevalence of RA among women.<sup>[3]</sup> Many rheumatic conditions can be diagnosed or suspected based on taking history and physical examination. Clinical findings are also the mainstay in selecting appropriate diagnostic laboratory tests requested for confirmation of RA or ruling out other rheumatic diseases.<sup>[4]</sup> Abnormal values of the laboratory tests are the most typical features of RA. Erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) provide the best information about the acute phase response. The level of CRP was shown to be significantly correlated with the severity of disease as well as radiographic changes.<sup>[5]</sup> The radiologic features of RA may be divided into (early) and (late) changes. The detection of early changes is important because new disease modifying therapies are more effective when used before

severe disability has occurred .since early changes are no osseous in nature , Sonography and Magnetic Resonance Imaging (MRI) can detect disease earlier than conventional radiography and CT .<sup>[6]</sup> RA is treated aggressively with disease modifying drugs, hence osseous changes are delayed.<sup>[6]</sup> The goals of rheumatoid arthritis (RA) treatment are to Stop inflammation, Relieve symptoms, Prevent joint and organ damage, Improve physical function and overall well-being and Reduce long-term complications.<sup>[7]</sup> Jamal Albishri, et al (2015)<sup>[8]</sup> reported that: RA predominantly affected females, with female : male ratio was (11:1). Rheumatoid factor was positive in (75%) of the patients.

Elly M Van Der Wardt, et al(2016)<sup>[9]</sup> Reported that ; the public in general do not know very much about rheumatic diseases, but they do have a moderate desire for more information about them. Furthermore, they do not feel frightened of being confronted with a rheumatic disorder. More information about rheumatic diseases in the media might lead to better knowledge and perception of rheumatic diseases among the general public.

### Material and Method :

#### Research design :

Cross section study conducted in the period from January to April 2017, in Taif city , Saudi Arabia.

#### Subjects of the study :

A sample of 252 were selected randomly by distribution of questionnaire through emails . i) Inclusion criteria: people above 18 years old, live in Taif, Saudi Arabia. ii) Exclusion criteria: people who

are not willing to participate in the study. **Tool of data collection:** A structured questionnaire was designed for data collection by researchers based upon review of literature. It includes two parts. **First part:** Socio-demographic data; (Age, Gender, Occupation, Nationality and Level of education).

**Second parts:** Knowledge of participants about rheumatoid arthritis ; (causes, symptoms, diagnosis and complications of rheumatoid arthritis and protection from rheumatoid arthritis).

**Statistical analysis :**

Data coded and entered into computer for analysis using SPSS version 0.20. Descriptive statistical analysis was used to determine frequency distribution and demographic variables. M(mean), SD ( standard deviation) of rheumatoid arthritis awareness total score. Cross tabulation test used to assess Knowledge of rheumatoid arthritis and level of education for participants.

The level of significance for this study was set at (p = 0.05) to detect any indication of differences found in the data available.

**Ethical considerations:** All participants were informed about the nature of the study and their participation in the study was voluntary.

**Results :**

**Table 1:** Socio-demographic characteristics of study sample (N=252)

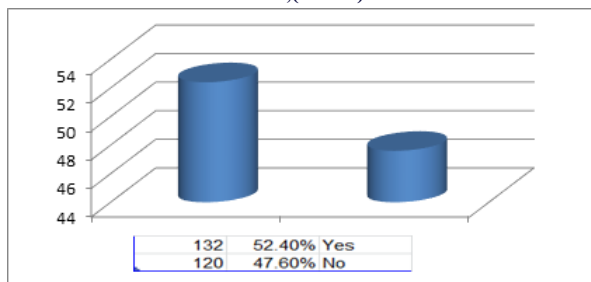
Variables	N0	%
<b>Gender</b>	239	94.8%
Male	13	5.2 %
<b>Total</b>	252	100.0%
<b>Age groups</b>	165	65.5%
18-24 years	47	18.7%
25-34 years	27	10.7%
35-44 years	13	5.2%
<b>Total</b>	252	100%
<b>Nationality</b>	233%	92.5%
Saudi	19%	7.5%
<b>Total</b>	252	100%
<b>Education level</b>	7%	2.8%
Intermediate education	37%	14.7%
Secondary education	206%	81.7%
University education	2%	0.8%
<b>Total</b>	252%	100%

\*Table (1): This table represented that most of participant were male , age group ranged from (18-24yrs) , Saudi and university education, (94.8%), (65.5%), (92.5%), (60.2%) and (81.7%),respectively.

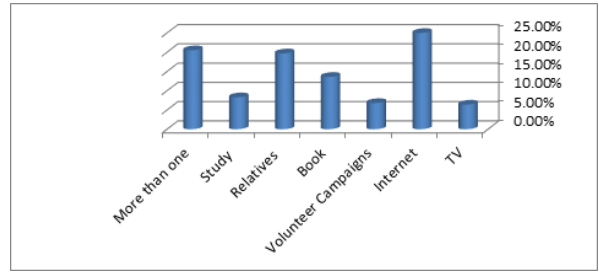
**Table (2):** General knowledge of participant regard rheumatoid arthritis. (N=252)

knowledge about RA	Frequency	Valid Percent
Yes	132	52.4%
No	120	47.6%
<b>Total</b>	252	100%

\*Table (2): This table show that (52.4%) of participant know about rheumatoid arthritis and,(47.6%) don't know.



**Graph (1):** This graph Showed that (52.4%) of participants had heard about rheumatoid arthritis.

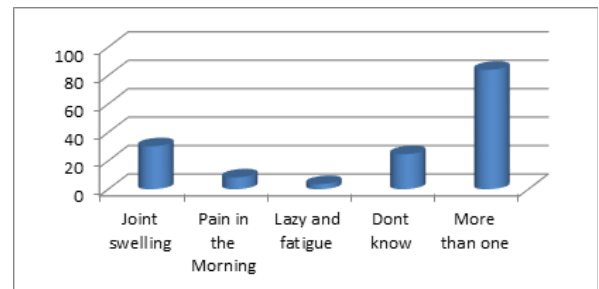


**Graph (2):** This graph showed that (25%) of participant had heard about rheumatoid arthritis from internet.

**Table (3):** Knowledge of participant about causes of rheumatoid arthritis. (N=252)

Causes of RA	Frequency	Valid Percent
Obesity Dysfunction of immune System	53	21.0%
Genetic	67	26.6%
Don't know	21	8.3%
Total	111	44.0 %
	252	100%

\*Table (3):This table showed that ,most of participants have no information about the causes of rheumatoid arthritis (44%), and only (8.3%) have had knowledge about genetic causes of the disease.

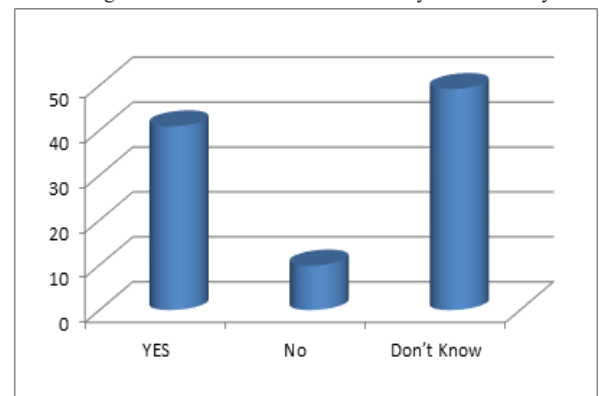


**Graph (3):** This graph show that most of participants have had good knowledge about the symptoms of rheumatoid arthritis with high percentage for more than one symptom, and lowest percentage for lazy and fatigue only (33.3% and 3.6% respectively).

**Table(4):** Knowledge of participant about diagnosis of rheumatoid arthritis. (N=252)

Diagnosis of RA	Frequency	Valid Percent
X-ray	42	16.7%
Lab	9	3.6%
Both of them	125	49.6%
Clinical	16	6.3%
Don't know	60	23.8%
<b>Total</b>	252	100%

\*Table (4): showed that most of participants (49.6%) answer the suitable diagnosis of rheumatoid arthritis are x-ray and laboratory.



**Graph(4):** this graph shows the participant have poor knowledge about the complications of rheumatoid arthritis by percentage (46.2%).

**Table (5):** Knowledge of participant about protection from rheumatoid arthritis. (N=252)

Protection from RA	Freq	%
Yes	219	86.9
No	5	2.0
Don't Know	28	11.1
Total	252	100.0

\***Table (5):** This table illustrate that most of participant known how to protect themselves from rheumatoid arthritis with high percentage (86.9%).

**Table(6):** Knowledge of participant about early discover of RA. (N=252)

Early discover of RA	Frequency	Valid Percent
Yes	225	89.3
No	4	1.6
Don't know	23	9.1
Total	252	100.0

\***Table (6):** Showed that most of participants have known the early discover of the rheumatoid arthritis can help in the treatment by percentage(89.3%).

**Table(7):** Association between knowledge of RA and education level of participants. (N=252)

Knowl dge of RA	Level of Education				Total	P
	Intermediate Education	Secondary Education	University Education	Non- Educated		
Yes	2 (1.5%)	12 (9.1%)	117 (88.6%)	1 (0.8%)	132 (100%)	0.05 ns
No	5 (4.2%)	25 (20.8%)	89 (74.2%)	1 (0.8%)	120 (100%)	
Total	7 (2.8%)	37 (14.7%)	206 (81.7%)	2 (0.8%)	252 (100%)	

\*Table (7):This table represent no statistical significant difference between awareness of rheumatoid arthritis and level of education for participant, with significant different = (P:>0.05) .

**Discussion:**

Rheumatoid arthritis is common disease and the exact cause of rheumatoid arthritis is still unknown. However, researchers have identified some factor that may increase a person's risk of developing the disease. Such as: genetic, infection, environmental factors,<sup>[2]</sup> so this study aim to assess the knowledge level of population in Taif city, Saudi Arabia toward rheumatoid arthritis by distributed a questionnaire through mail to a random sample; the respondents were 252 in the period from January to April 2017.

In this study and out of 252 respondents there were 239 (94.8%) male and 13 (5.2%) female with common age group (18-24) years with percentage of (65.5%), most of participant were Saudi 233 (92.5%) , Higher education level (81.7%), as in **table (1)**.

(52.4%) of participant have heard about rheumatoid arthritis as in **fig (1)**, while 120 persons don't knew the disease by percentage (47.6%) as in **table(2)**, most of them were known from internet by percentage (25%) as a highest percentages, the volunteer campaigns represented lowest percentage (3.2%), also the knowledge from more than one way, known from relative and books formed considered percentage (20.5%); (19.7%), (13.6%) respectively, as in **fig(2)**, this result was not coincided with **Elly M., et al,( 2017)**<sup>[9]</sup> reported that: This study showed that in general, the public do not know much about rheumatic diseases: This study showed that in general, the public do not know much about rheumatic diseases. In the Netherlands the mass media pay little attention to rheumatic diseases.

About the causes of RA **Versini M., et al,( 2014)**<sup>[10]</sup> reported that: . Obesity appears to be a major environmental factor contributing to the onset and progression of autoimmune diseases. While 67 persons in this study believed that dis-function of immune system is the main causative of rheumatoid arthritis by percentage (26.6%) as a highest percentage, genetic reasons in this study represented lowest percentage (8.3%), in the research, done by **Alan. J. et al,(2002)**<sup>[11]</sup> reported that: RA present an epidemiological challenge and further elucidation of both genetic and environmental factors, together with

interactions between them, are likely to be revealed. While (44%) of participants do not know the causes of rheumatoid arthritis as in **table(3)**.

According to rheumatoid arthritis symptoms the joint swelling represented higher percentage (30.2%) followed by pain in the morning (8.3%) and lazy and fatigue were formed lowest percentage (3.6%) , also 62 persons don't know the symptoms of rheumatoid arthritis by percentage (24.6%) as in **fig (3)**, this result was not agree with **Elly M., et al,( 2017)**<sup>[9]</sup> reported that: "Pain" was judged as the most serious consequence of rheumatic diseases, followed by "deformities of the joints".

About more category were affected of rheumatoid arthritis, the participants answer: the age group (55 – 64y) was more susceptible to the disease followed by (45 – 54y) with percentage (30.6%), (27%) respectively. This result was not coincided with **Kimmo Aho, et al, (2004)**<sup>[12]</sup> reported that: The incidence increase up to the age group 65 – 74 years.

While this result was agree with **Suliman Zaid, et al,( 2017)**<sup>[13]</sup> reported that: Even though the onset of RA can affect any age, patients in fourth and fifth decades were highly affected.

The awareness of population about the suitable diagnosis of rheumatoid arthritis was good whereas the x-ray and laboratory together represented (49.6%) as a highest percentage and the clinical diagnosis represented (6.3) as in **table(4)** this result was not coincided with **Kin-Wei A. et al(1994)**<sup>[14]</sup> suggested that: The influence of the 6 attributes that were evaluated for medical encounter lag time and the 2 clinical features observed at the first medical encounter , 60 participants don't know the suitable diagnosis of rheumatoid arthritis.by percentage (23.8%). Concern in **fig (4)**: 103 participants knew there was complications for rheumatoid arthritis by percentage (40.9%), 25 participants said there was no complications for rheumatoid arthritis by percentage (9.9%) and 124 participants do not know whether there are complications of the disease or not. The study done by **Å. Reckner Olsson et al(2001)**<sup>[15]</sup> reported that: extra-articular features and non-articular complications of RA are common and are generally related to worse disease. Knowledge of participant about protection from rheumatoid arthritis as in **table (5)**. 156 participants they answered (yes) by percentage (61.9%), 28 participants answered (no) by percentage (11.1%) and 68 participants don't know.

About the question ; the discovered of disease in early stage can help in the treatment, the majority of participants agree by percentage (89.3%) while (1.6%) didn't agree and (9.1%) didn't know if the discovered of disease in early stage can help in the treatment. **Kin – Wei et al,(1994)**<sup>[14]</sup> reported that: While some evidence suggests that early treatment of RA may prevent irreversible joint damage, our data suggest that the median length of time between symptom onset and diagnosis was >6 months, and even among patients who presented with "typical" disease, the majority had >2 months of clinical observation before diagnosis.

According to association between knowledge of participant about rheumatoid arthritis and education level of participant a, there was significant correlation between them. The researcher found that: university level represented highest percentage (88.6%) and non-educated participants represented lowest percentage (0.8%), as in **table(7)** this result was coincided the **C. Bingtsson, et al, (2005)**<sup>[16]</sup> they reported that ; Subjects without a university degree had an increased risk of rheumatoid arthritis compared with those with a university degree.

Also this result was coincided with **Elly M., et al,( 2017)**<sup>[9]</sup> reported that: Education level correlated positively with knowledge about rheumatic diseases: higher educated respondents knew more about rheumatic diseases than less educated respondents.

**Conclusion :**

Participated sample in Taif city have had good knowledge about rheumatoid arthritis, have had good knowledge about symptoms, diagnosis and prevention of rheumatoid arthritis , while there was lack of knowledge regard causes and complications of (RA) disease.

**Recommendations:**

More education programs about causes and complications of

Rheumatoid Arthritis must be implemented in Taif community.

#### References :

1. E. William ST. Clair, David S. Pisetsky, Barton F. Haynes , rheumatoid Arthritis, 2004, Philadelphia. .
2. Timothy Johnson, John A. Flynn, M.D., Johns Hopkins Health, 2007, united states of America, page 81.
3. John J. Cush, Michael E. Weinblatt, Arthur Kavanaugh .Rheumatoid Arthritis: Early Diagnosis and Treatment. 2010. united states of America, page 29.
4. Waits JB. Rational use of laboratory testing in the initial evaluation of soft tissue and joint complaints. Prim Care. 2010;37:673–89.
5. Grassi W, De Angelis R, Lamanna G, Cervini C. The clinical features of rheumatoid arthritis. Eur J Radiol. 1998;27:S18–24.
6. Khandelwal Niranjana, Chowdhury Veena, Gupta Arun Kumar. Diagnostic Radiology: Musculoskeletal and Breast Imaging, 2012, new delhi. 559.
7. <http://www.arthritis.org/about-arthritis/types/rheumatoid-arthritis/treatment.php>, Rheumatoid Arthritis Treatment, seen on 30 Nov, 2016.
8. Jamal Albishri, Muhammad Bukhari , Awad Alsabban , Fahad A. Almalki and Abdulrahman S Altwairqi, Prevalence of RA and SLE in Saudi Arabia, Scholars Journal of Applied Medical Sciences, (2015), 3(5D):2096-2099.
9. Elly M Van Der Wardt, Erik Taal, Johannes J Raskert, The general public's knowledge and perceptions about rheumatic diseases, Published by group.bmj.com, Netherlands Ann Rheum. Dis 2000;59:32–38.
10. Versini M , Jeandel PY, Rosenthal E , Shoenfeld Y, Obesity in autoimmune diseases: not a passive bystander, (2014), 13(9), 981 – 1000.
11. Alan J Silman and Jacqueline E Pearson, Epidemiology and genetics of rheumatoid arthritis, Manchester, UK, Bio Med J, 2002, 4(3): 265-272.
12. Kimmo Aho & Markku Heliövaara, Risk factors for rheumatoid arthritis, France, 2004, Annals of Medicine, published on 2009, 4(36), 242 - 251.
13. Sulaiman Zaid S Alamri, Ayman Mukhtar A Alzaid, Mohammed Abdullah Alhadi, Khalid Fahad Alanazi, Khalid Sulaiman Alanazi , Ahmed Abdulhamid Alanazi, Ahmad Jawad Alsmeeel, Abdulaziz H Alazmi, Rheumatoid Arthritis in Hail Region, Saudi Arabia, International Journal of Innovative Research in Medical Science , 2017, 2(20), 545-551.
14. Kin-Wei A. Chan, David T. Felson, Robert A. Yood, and Alexander M. Walker The Lag Time Between Onset Of Symptoms And Diagnosis Of Rheumatoid Arthritis, American college of rheumatology, 1994, V(37), 814-820.
15. Å Reckner Olsson, T Skogh, G Wingren, Comorbidity and lifestyle, reproductive factors, and environmental exposures associated with rheumatoid arthritis, Linköping, Sweden, 2001, 60:934–939
16. C Bengtsson, B Nordmark, L Klareskog, I Lundberg, L Alfredson Socioeconomic status and the risk of developing rheumatoid arthritis: results from the Swedish EIRA study, Sweden, 2005, ;64:1588–1594.