

# ARTHRITIS AND THE HEALTH OF ADULTS ABOVE 50 YEARS IN ANANTIGA, CALABAR SOUTH LOCAL GOVERNMENT AREA OF CROSS RIVER STATE, NIGERIA

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Arthritis is the inflammation of the joint of numerous types, with symptoms such as joint stiffness, swelling, pains, weight loss, and restriction of movement fever and muscle ache. This study examined Arthritis and the health of the adults above 50 years in Anantigha, Calabar South Local Government Area of Cross River State with special interest on rheumatoid, Gout and Osteo-arthritis. Three research objectives were formulated to guild the study as well as three research questions. Research design adopted for the study was survey research design while the population of study were all adults above 50 years in Anantigha, Calabar South Local Government Area. Simple random sampling technique was employed. Sample size for the study was 76 adult above 50 ears. Instrument while Test-Retest reliability method was used. Data obtained were presented in tables and descriptively analyzed using simple percentage. Finding reached reveals that rheumatoid Arthritis affect patient's immune system, damages the tissues that supports the joints and leads to formation of lumps under the skin near joints. It also revealed that rheumatoid arthritis affect patient's immune system; damage the tissues that supports the joints and leads to weakens the tendons and affects the ankles. The study also shows arthritis is a disease that results to joint pain, stiffness, and restricts movement, and the common among women than men above 50 years, exposing them to arthritis. It was recommended that health workers should health educate community members especially male and female adults above 50 years on healthy lifestyles such as good nutrition, regular exercise, safety precautions, environmental sanitation, personal hygiene and regular medical check-up.

**Keywords:** Arthritis, Rheumatoid, and Gout Arthritis, Health of Adult Inflammation.

## INTRODUCTION

Arthritis literally means joint inflammation. Although joint inflammation is a symptom or sign rather than a specific diagnosis, the term arthritis is often used to refer to any disorder that affects the joints (Arden, 2015). These disorders fall within the broader category of rheumatic diseases. These are diseases characterized by inflammation (signs include redness or heat, swelling, and systems such as pain) and loss of function of one or more connecting or supporting structures of the body. They especially affect joints, tendons, ligaments, bones, and muscles. Common signs and symptoms are pain, swelling, and stiffness. Some rheumatic diseases also can involve internal organs ( Bandolier, 2017).

Arthritis is a chronic degenerative condition of the joint. The disease causes extreme joint pains, inflammation of the joint, thus, limiting movement. Although arthritis is more common in old age, it can affect all human irrespective of age (Medilexican, 2004). Pfizer (2014) arthritis derived from the Greek words: "arthrons" meaning a joint and "itis" meaning inflammation. Arthritis is not a single disease with a single cause there are several types of arthritis. A further explanation on arthritis by Peter (2009) asserts that, there are more than one hundred types of arthritis. It's a condition that affects more than 46 million Nigeria adults, this number statically is expected to increase to 67 million adults by the year 2030: arthritis is caused by a combination of several factors namely; genetic make-up, previous joint injury, a physically demanding job especially one with repetitive movement, obesity that places extra weight on the joint and severe blow or strain. Bijlsma JW, Berenbaum F, &Lafeber FP (2011) stated that arthritis is the most important cause of disability, resulting from autoimmune diseases. Micro-organism such as bacterial or viral infection invasion at the knee

and ankle often times triggers the inflammation.

Various types of arthritis include; rheumatoid arthritis, osteoarthritis and juvenile arthritis. This study discusses these commonest types. Diagnostic technique includes history taking, physical examination and observation of the joint to establish swelling, stiffness and limitation of movement. There are no known treatments for most types of arthritis. Thus management includes physical and occupational therapy. Exercise and consumption of nourishing foods helps in the prevention and relief of joint pains. Other forms of care include the use of heat in the form of wax bath, whilst therapeutic management is mainly for the relief of pains. Following the United States report in 2014 by Pfizer recording high number of adult with arthritis and a future generation doubling the figure,

Arthritis and musculoskeletal conditions are contributors to illness, pain disability highly prevalent, in the community. It accounts for high death toll among adults especially the aged and those with sedentary lifestyle.

Despite effort made by relevant professional rheumatologists, nutritionists, occupational therapists and physicians to curb the occurrence of arthritis, higher incidence of arthritis are continuously observed. It becomes pertinent to ask if arthritis is obviously not avoidable or controllable. The high incidence of arthritis can be related to poor knowledge of the value of exercise or inadequate nutrition?

Arthritis deforms adults and impedes movement due to severe pains and swollen joints. Based on the high incidence and effect of arthritis, the researcher intends to examine arthritis and the health of adults above 50 years in Anantigha, Calabar South Local Government Area of Cross River State in order to advance solutions to prevent further occurrence.

## REVIEW OF LITERATURE

Arthritis is different from osteoarthritis in that it is an autoimmune disease whereby the arthritis occurs from the immune system attacking its own body tissues.

Rheumatoid arthritis (RA) is a systemic inflammatory disease characterized but an autoimmune response that causes pain and disfigurement in peripheral joints. Bosomworth, N.J (2009) maintained that rheumatoid arthritis (RA) is a common chronic inflammatory disorder of the joint resulting in severe pains deformation and loss of function.

The prominent feature in rheumatoid arthritis is joint inflammation. Affected joints are usually swollen, warm, and painful and stiffen. The severity of symptoms typically worsens in the morning hours. At the onset of the disease process, symptoms are severe and movement is impaired. Rheumatoid arthritis symptoms present in a symmetrical way. Example when the right hand joints are affected, there is a corresponding same

occurrence in the left hand. Other sites of joint inflammation include feet, ankles, knees, hips, elbows, lips, shoulders e.t.c Briant, P., & Andriacchi T. (2008)

Brosseau L, Wells GA, &Tugwell P, (2011) discussed general symptoms and severity of rheumatoid arthritis following one of three patterns. Firstly, the spontaneous remission; the rheumatoid arthritis symptoms ultimately disappear, and this occurs in less than 10% of patients. This observation is seen in patient whose blood tests are negative for a protein called rheumatoid factor (RF), and autoimmune mediator. The second presentation is relapse or disease. In this instance, the patient experiences period of very severe symptoms called “flare” which are contrasted with episode of mild or low symptoms. Thirdly, the progressive disease where the disease becomes worse.

In Rheumatoid arthritis, the immune system mistakenly attacks healthy cell and tissue, predominately the synovium, the soft tissue between the articular capsule (joint capsule) and the joint cavity of synovial joint. This immune mediated assaults leads to the development of pannus, a rheumatoid arthritis result in chronic inflammation of the kidney from amyloidosis.

Rheumatoid arthritis damage is engendered by multiple components of the immune system, including antibodies and killer T-cell. Antibodies are proteins secreted by B-cells that normally recognize and binds to invading microbes such as bacterial, virus, and other germs. These antibodies activate other component of the immune system to launch an inflammatory response which destroys the cells.

In rheumatoid arthritis, antibodies mistakenly recognize “self” cell as invaders. Once antibodies are attached to synovial cells in the joint they attract a variety of immune cells that launch a devastating inflammatory attack. The complex inflammatory processes within joints are mediated and enlarge by the cytokines tumor necrosis factor- alpha (TNF- $\alpha$ ) and interleukin-6(il-6). The inflammatory damage is not limited to the synovium, but spills over to the chondrocytes (cartilage cells that the cushion joint). This process raises the level of dangerous inflammatory compound throughout the body, including C-reactive proteins (CRP), a maker of inflammation.

In rheumatoid arthritis, Once the immune system is activated against self-tissue, it sends inflammatory chemicals through the body resulting in widespread damage. For many patients, the result and effect of the inflammatory chemicals is fatigue, malaise and unexplained weight loss. Other areas targeted by the immune system in rheumatoid arthritis can include the skin, lungs, eyes, liver, blood, nervous system, heart and bones. Burns CM, & Wortmann RL, (2012).

Mikuls (2007), nodules and ulcers appear on the skin in 50% of people with rheumatoid arthritis. Kahlenberg, (2011) asserts that rheumatoid arthritis may cause interstitial lung disease, resulting in a dry cough and shorten of breath that

worsen with physical activity; Kippel(2010) further stated that 20-30% of the people with rheumatoid arthritis present with some form of lung disease whilst about 25% presents with inflamed eyes. The areas affected include the cornea, conjunctiva and sclera. Anemia, low iron levels in rheumatoid arthritis condition results in fatigue, fast heartbeat, dizziness and pale skin. Effect of rheumatoid arthritis on the nervous system includes degeneration of the cervical vertebrae, and the compression of the spinal cord. Discussing the effect rheumatoid arthritis on the heart, Deweber K, Olszewski M, &Ortolano, R (2011) posited that such patients are at a two-fold, greater risk of developing heart failure, increasing the mortality rate from the disease. He further emphasized that at the onset of the disease process, rheumatoid arthritis patients are prone to the development of endothelial dysfunction as a result of increased in calculating inflammatory molecules. Thus this endothelial dysfunction culminates into the occurrence of rheumatoid arthritis which equally poses a significant increase risk of bone fracture. Both the disease and its treatment with the treatment with the use of corticosteroids result in depreciation or bone loss, which increases the risk of the bone fractures.

Civjan, N (2012) explained that rheumatoid arthritis affects the cholesterol level of patients resulting in dyslipidemia-elevation of cholesterol and triglycerides in blood. Renal effect of rheumatoid arthritis result in chronic inflammation of the kidney from amyloidosis.

Rheumatoid arthritis results from an interaction between genetic susceptibility and environmental factors including high birth rate, smoking, silica exposure, obesity, diabetes mellitus, rheumatoid fever, and anti-citrullinated protein antibody. There is no single test to clearly identify rheumatoid arthritis, rather doctors diagnose rheumatoid arthritis based on factors that are strongly associated with the disease. The America College of Rheumatology uses this list of criteria to diagnose rheumatoid arthritis namely; morning stiffness of joint, swelling or fluid collection around three or more joints simultaneously, a swollen area around the wrist,hand or finger joint, skin nodules, abnormal amount of rheumatoid factor in the blood and X-ray changes in hands and wrist, typically of rheumatoid arthritis, with destruction of bone around involved joints (online wed medical dictionary).

Treatment of rheumatoid arthritis is with a variety of drugs, including anti-inflammatory analgesics, steroids, immune suppressants, and goal salts. Surgical replacement is by excision of the synovium in the early case or by fusion or joint replacement once bony changes have occurred. Disease-modifying anti-rheumatic drug (DMARDs) decreases joint inflammation and slow the progression of joint damage.

Natural therapy for rheumatoid arthritis include adequate consumption of non-fatty-acid (especially those primarily derived from marine source, vitamin B complex and D, folic acid supplementation, 2-5mg daily consumption of ginger root extract. However, exercise is a critical component of maintaining muscle mass, supporting a healthy heart and preventing joint damage.

The complications of rheumatoid arthritis are numerous namely, depression, vascularitic ulcers, pleurisy, lymphadenopathy, dry eye syndrome, neuropathy, felty's syndrome, Amyloidosis, osteoporosis, carpal tunnel syndrome, tendon rupture, anaemia as well as effect on work and social life.

Furthermore, Cea, (2013) explained that other factors identified as risk factor to the occurrence of gout arthritis include chemotherapeutic drugs, psoriasis and heart failure 2.2 Gout arthritis and the health of adults above 50 years.

Gout is one of the oldest known and most common form of arthritis; it is the crystal deposition disease. In which crystals of monosodium urate forms on joints of the extremities, or nodules in the soft tissues called tophi. Gout according to Devaraj, T.L (2011) is defined as arthritis due to deposition of monosodium urate (MSU). Monohydrate crystals within joints causes acute inflammation and eventual tissue damage. The condition is aptly described as one of the most painful ailments humanity has ever experienced. There are four types of gout; which includes asymptomatic – acute gout, hyperuricemia (concentration of uric acid), inter-critical gout and chronic tophaceous gout.

The asymptomatic gout occurs briefly and usually subsides spontaneously. Although it occurs suddenly or temporally, it predisposes the patient to most debilitating symptoms. Gout is classified as the affluent. The once known “disease of kings” has rapidly become disease of everyman. Schumacher (2006) explained that the gout prevalence is common among black Africans and black Americans. The condition result from increasing use of aspirin, consumption of alcohol and other purine loaded foods, common in both continents.

Gout in Nigeria has both similarity as compared to those seen in other black Africans countries. The primarily risk factors for gout are elevated levels of metabolic byproduct called uric acid in the blood (hyper uricemia). Hyperuricemia increase the risk of not only gout, but other systemic disease such as hypertension, kidney disease etc. hyper- uricemia with metabolic syndrome is estimated to affect over 21%of the African population and to double in frequency between ages 20 and 80 years (Schumacher, 2006).

The condition can be classified primarily into the following; in men age 39-60 years, secondly incidence of gout arthritis equally occurs in both male and female of older age with an associated condition of osteo arthritis. The pathogenesis of gout arthritis as explain by Schumacher, (2008) shows that an elevated serum urate level, together with local factors can result in deposition of urate crystals into a join, space hence initiate an inflammatory cascade causing acute gout arthritis. These acute flares resolve, but the crystals remain in the joint.

Hence, it becomes necessary to research into few types of arthritis commonly found in Anantigha community, Calabar South Local Government Area with a view of offering solution to this occurrence.

## METHODOLOGY

This research study made use of survey research design. The study was conducted in Anantigha community in Calabar South Local Government Area of Cross River State.

The population for this study were adults above 50 years selected from the five units that makes-up Anantigha community in Calabar Municipal Area of Cross River State. The total number of adults above 50 years from the five units was one hundred and ninety (190). The five units where the adults above 50 years were drawn are Abitu, redemption avenue, umoh orok, jeks and Ekpo Edem streets.

The study made use of simple random sampling techniques in selecting both units and respondents.

The sample size for this study is 76 adults above 50 years obtained from the four sampling units in Anantigha community.

Data for the study was collected through library materials such as textbooks, journals, past research works other academic materials, internet materials and the use of structured questionnaires were closed –ended (structured) with “Yes” and No options for the respondents. Face validity was ascertained for the instrument.

Test-retest reliability method was used in ascertaining the reliability of instrument in this research study. The reliability estimate was 0.50 to 0.75.

The researcher used a simple percentage and chi-square statistical test was used to analyze data obtained from adults above 50 years from Anantaigha community Calabar South Local Government Area in Cross River State.

## RESULTS AND DISCUSSION

The researcher used simple percentage and Chi-square to analyze data obtained from 76 adults above 50 years from Anantigha community to whom copies of the questionnaire were administered as they were the sample size for the study.

### HYPOTHESIS I

HO: That rheumatoid arthritis does not significantly affect the health of adults above 50 years in Anantigha.

#### Question 1

To what extent does rheumatoid arthritis affect the health of adults above 50 years in Anantigha? This question was used for this analysis and the result shown in the table below:

**Table 1:** Observed (O) and Expected (E) frequency in respect of question 1

Research item	Yes (O)	(E)	NO (O)	(E)	Total
Female Adult	28	(20)	14	(22)	42
Male Adult	9	(17)	25	(17)	34
Total	37	(37)	39	(39)	76

Source: Questionnaire

To get expected frequency =  $\frac{CT \times RT}{GT}$

Therefore, to test the 1<sup>st</sup> hypothesis at 5%

$$\begin{aligned} \text{Level of significance} &= (c - 1) (r - 1) \\ &= (2 - 1) (2 - 1) \\ &= (1) (1) \end{aligned}$$

Idf at 0.05 = 3.84

$$X^2 = \sum_{ei} \frac{(oi - ei)^2}{ei}$$

$$X^2 = \frac{(28 - 20)^2}{20} + \frac{(14 - 22)^2}{22} + \frac{(9 - 17)^2}{17} + \frac{(25 - 17)^2}{17}$$

$$X^2 = 3.2 + 2.9 + 3.8 + 3.8$$

$$X^2 \text{ Calculated Value} = 13.7$$

#### Decision Rule

If  $X^2$  calculated is greater than  $X^2$  tabulated reject the Ho: but if  $X^2$  calculated value is less than  $X^2$  tab accept the Ho: therefore since  $X^2$  calculated value 13.7 is greater than  $X^2$  tabulated value 3.84 reject the null hypothesis Ho: thereby

accepting the alternative Hypothesis. That rheumatoid arthritis does not significantly affect the health of adults above 50 years in Anantigha.

## Hypothesis 2

**HO:** that gout arthritis does not significantly affect the health of adults above 50 years in Anantigha.

**Question 2:** which state: does gout arthritis affect the health of adult above 50 years in Anantigha? Was used for the analysis and the result shown in the table below:

**Table 2:** Observed (O) and Expected (E) Frequency in respect to Question 2

Research item	Yes (O)	(E)	NO (O)	(E)	Total
Female Adult	36	(25)	12	(23)	48
Male Adult	4	(15)	24	(13)	28
Total	40	(40)	36	(36)	76

Source: Questionnaire

$$\begin{aligned}\text{To get the expected frequency} &= \frac{CT \times RT}{GT} \\ &= \frac{40 \times 48}{76} \\ &= 25\end{aligned}$$

Therefore, to test the hypothesis at 5%

$$\begin{aligned}\text{Level of significance} &= (C - 1) (r - 1) \\ &= (2 - 1) (2 - 1) \\ &= (1) (1) \\ &= 1 \text{ df at } 0.05 \\ &= 3.84\end{aligned}$$

$$\begin{aligned}X^2 &= \sum \frac{(oi - ei)^2}{ei} \\ X^2 &= \frac{(36-25)^2}{25} + \frac{(12-23)^2}{23} + \frac{(4-15)^2}{15} + \frac{(24-13)^2}{13} \\ X^2 &= 4.8 + 5.3 + 8.0 + 9.3 = 27.4 \\ X^2 &= 27.4\end{aligned}$$

**Decision Rule:** if  $X^2$  calculated is greater than  $X^2$  tabulated, reject  $H_0$ ; but if  $X^2$  cal. Less than  $X^2$  tabulated accepts  $H_0$ : Therefore, since  $X^2$  Calculated 27.4 is greater than  $X^2$  tabulated 3.84; reject the  $H_0$ : thereby accepting the  $H_1$ : meaning that gout arthritis significantly affect the health of adult above 50 years in Anantigha.

## DISCUSSION

Findings from hypothesis One which states that rheumatoid arthritis significantly affects the health of adults above 50 years in Anantigha. It was analyzed using chi-square. The total number of respondents that answered "Yes" to the question item in the questionnaire was 40 being more than the number of 36 respondents who answered "NO". Based on this, it was agreed and concluded that rheumatoid arthritis affects the health of adults above 50 years by their gender.

The finding agrees with Ghan, (2010) and Peter, (2009) opined that rheumatoid arthritis is a systematic inflammatory disease characterized by an autoimmune response that cause pain and disfiguration in peripheral joints.

Also, rheumatoid arthritis significantly increases risk of cardiovascular disease. By findings from research question 2 revealed that gout arthritis significantly affect the health of adults above 50 years. These findings are in line with the study of Anne (2014) maintained that Gout arthritis is an extremely painful inflammation of the joint caused by buildup of sharp Uric-acid crystals. Similar studied by Kahlenberg, (2011) asserts that rheumatoid arthritis may cause interstitial lung disease, resulting in a dry cough and shorten of breath that worsen with physical activity; Kippel(2010) further stated that 20-30% of the people with rheumatoid arthritis present with some form of the lung disease whilst about 25% presents with inflamed eyes. Findings from hypothesis two reveal that gout arthritis significantly affects the health of adults above 50 years in Anantigha. This findings is in line with the study of. Schumacher (2006) explained that the gout prevalence is common among black Africans and black Americans. The condition result from increased use of aspirin, consumption of alcohol and other purine loaded foods, common in both continents.

Zhu (2011) classified as the affluent. The once known "disease of kings" has rapidly become disease of everyman Gout in Nigeria has both similarity as compared to those seen in other black Africans countries (Adewale, 2014). The primary risk factors for gout are elevated levels of metabolic by product called uric acid in the blood (hyper uremia).

Hyperuricemia increase the risk of not only gout, but other systemic disease such as hypertension, kidney disease etc. hyper- uremia with metabolic syndrome is estimated to affect over 21% of the African population and to double in frequency between ages 20 and 80 years.

## CONCLUSION

Arthritis is the inflammation of the joint or bone. It is a disease accompanied by pain, stiffness and in most cases loss of function of the joints. The targeted groups are adults above 50 years; that are commonly affected by arthritis through other but individuals are prone to the disease irrespective of age that the disease has prevalence amongst black African problem and black Americans.

Also, the researcher discovered that the incidence of arthritis is high in the tropical humid areas, worsening during rainy or cold season and that both sex (i.e. male and female) complained of the disease depending on the types that affect them. Sedentary occupational workers should make out time for regular exercise and avoid long sitting. Wax warm bath, warm compress or massage using muscle ache releasing creams (like essential band, etc.) coupled with good nutrition and regular medical check-up should be employed by individual especially adults above 50 years who are more susceptible.

In view of the avoidable dangers associated with arthritis, intensive health education on the dangers of arthritis is required by health workers especially at the primary health care delivery level as well as the secondary and tertiary level of health care delivery.

## RECOMMENDATIONS

The researcher made the following recommendations:

1. Health workers should educate community member's especially both male and female adults above 50 years on healthy lifestyles such as good nutrition, regular exercise, safety precautions, environmental sanitation, personal hygiene and regular medical check-up.
2. Humanitarians in Anantigha community should provide reliefs to combat the excruciating pains encountered by adults above 50 years with arthritis as well as the provisions of aids to assist mobility in these patients.
3. Adults in all occupation especially those above 50 years should asses available health services and ensure regular medical check-up to stay healthy and live longer.

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