

A study of dietary habits, life style and management of osteoarthritis in men and women

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Present study was conducted to know the dietary pattern, physical activity and management of osteoarthritis in males and females of 60-80 age groups. Osteoarthritis complications were majorly age related.

Key Words : Dietary habits, Management strategies, Osteoarthritis, Life style

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INTRODUCTION

Arthritis is the general term used when the joints are the major seat of rheumatic disease. Rheumatic diseases are those conditions in which pain and stiffness of some portion of musculo-skeletal systems are prominent. Two most common forms are osteoarthritis and rheumatoid arthritis. WHO estimates that 10 per cent of the world's people over the age of 60 yrs suffer from osteoarthritis and that 80 per cent of people with osteoarthritis limitation of movement and 25 per cent cannot perform the major daily activity (WHO, 2001) (World Health Archives, 1995-2000, 2001).

According to arthritis foundation, the disease is most prevalent among individuals 45 years of age and older. It affects people of all ethnic groups in all geographic locations, develops in both men and women, although occurs more commonly in women (Buckwalter and Lapin, 2000). It is considered as the most cause of long term disability in most population of people over 65 (Felson *et al.*, 1995; Praemer *et al.*, 1999).

There is a little information on the prevalence and incidence of rheumatic diseases in India. The only information

is the incomplete data of 1975-1976 from Central Bureau of Health Intelligence, Directorate General of Health Services, Ministry of Health and Government of India. According to study conducted in 1994, (70-80 million approx) of adult population suffers from some or other form of rheumatic diseases. Among these, osteoarthritis is the commonest (Malaviya *et al.*, 1994).

Osteoarthritis is currently, defined by the America College of Rheumatology as a "heterogeneous group of conditions that leads to joint symptoms and signs which are associated with defective integrity of particular cartilage, in addition to related changes in the underlying bone at Joint margins" (Semin Arthritis Rheum, 2005). During its development the gliding surfaces deteriorate, leading to loss of joint integrity, pain and disability. Osteoarthritis is classified into two groups. Primary osteoarthritis can be localized or generalized with the development of Herberden's nodes. Secondary osteoarthritis has an underlying cause, such as trauma, Paget's disease or inflammatory arthritis.

Present study was to observe the improvement in patient's conditions after dietary modification and lifestyle changes. For the reduction of weight, low calorie, low fat diet may have additional benefits.

The basic reason for selection of this topic was that osteoarthritis is a common chronic condition among the aged and I have tried to experiment that managerial strategies, education, spreading awareness and psychological support play

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a major role in managing the disease and decreasing stress level in subjects.

Objectives:

- To study the dietary habits of males and females suffering from osteoarthritis.
- To study the lifestyle of these patients.
- To study the management strategies of respondents.
- To study the factors contributing osteoarthritis.

Limitations:

- The study has the usual limitation of a single investigator study.
- The study was limited to the residents of Chandigarh.
- The authenticity of the responses obtained has to be considered precise and true and used for analysis and interpretation as such.
- Some of the questions were answered by the closed relative of the patient who was accompanying them to the hospital because of the less availability of time the hospital.
- The study conducted tried to study the lifestyle and dietary factors of the management of osteoarthritis. However, substantial results were not obtained regarding dietary factors.

Review of literature:

Review of literature is done in order to record the historical genesis of the present research topic with developments and modifications that occur time and also the conditions prevailing at present.

History of osteoarthritis:

Osteoarthritis (osteoarthritis, synonyms osteoarthrosis, arthrosis) is the most frequent cause of musculoskeletal disability. It is regarded as a final common pathway of a disease with multi factorial and unknown etiology affecting various joints (Dieppe, 1984, 1991). It was estimated that more than 20 million Americans have osteoarthritis (Lawrence, 1998). The hands, spine, knees and hips are commonly affected. However, increasing age and higher demand increases the impact of osteoarthritis (Ingvascon, 2000).

Jones *et al.* (2000) conducted a cross sectional study of the association between sex, smoking and other life style factors and osteoarthritis of hand. 522 subjects were taken from 101 Tasmanian families (348 women, 174 men). Hand osteoarthritis was assessed using OARSI atals of joint space narrowing and osteophytes at distal interphalangeal (DIP) joints. Structured questionnaire collected information regarding physical activity, sport participation and occupation. It was found that women had a higher prevalence of hand osteoarthritis and the increase with age was significantly higher for women.

Felson *et al.* (1998) conducted study on risk factors for

incident radiographic knee osteoarthritis in the elderly. Longitudinal study involved members of Framingham study weight bearing knee radiographs were obtained in 1983-1985 and again in 1992-1993. Of 598 patients without knee osteoarthritis, 93 developed osteoarthritis. After adjustment for multiple risk factors, women had a higher risk then did men.

White O'Connor *et al.* (1989) in their study of 'dietary habit, weight history and vitamin supplement used in osteoarthritis patients showed that dietary intakes were suboptimal in the dairy and grain groups, which are important sources of calcium, vitamin D, thiamine, iron and riboflavin. Dietary intake was assessed on the basis of four food group guidance with the help of food-frequency questionnaire.

Osteoarthritis is common in those performing heavy physical work, especially if this involves knee bending, squatting, or kneeling. Dockers and miners have been found to have a higher prevalence of knee osteoarthritis than those in sedentary jobs (Hunter *et al.*, 2002). There is a significant relationship between occupational kneeling (Maetzel *et al.*, 1997) or repetitive use of joints during work and osteoarthritis.

METHODOLOGY

The present study was conducted for imparting a completely new trends to traditional life style and eating habits to find out the amazing effect of dietary modification with exercise. The sample was selected on random basis and the study was carried out with the help of approved and pretested questionnaire.

For this work a representative group of hundred (male and female) respondents from PGI, OPD in the age group of 60-80 yrs were taken. Data scheduled during the months of April to May'2011. Framed questionnaire contained well defined questions which comprised of multiple choices. Informations regarding general information, weight, height, BMI, medical history, physical activity, management, dietary habits, actual dietary intake, calculation of nutritive value were taken from respondents.

After this a three day menu obtained from each respondent was converted to raw ingredients (The nutritive value of Indian food by Rao *et al.*, 1993). Thus, the nutrient intake per day, per subject was obtained. Then the main consumption was computed. The actual average was then compared with the recommended daily allowances for Indian by Pasrichs (2000). References were taken from ICMR recommendation, PGIMER.

Finally the collected data from all the respondents were compiled and transcribed on sheets. The purpose of evaluation was to explain the complex scattered, haphazard data in the concise, logical and intelligent form coding and tabulation of data was done.

Coding of data:

The purpose of coding was to save time, space and to make collected data easier to sort out and tabulate the appropriate information.

Tabulation:

Tabulation is summarization of result in the form of statistical tables. Data from the coding sheets were transferred in the form of table to facilitate in drawing inferences.

Statistical analysis:

The information was presented percentage method for clear interpretation of results. Bar diagrams were made for clarification and easy communication of presented data.

OBSERVATIONS AND ASSESSMENT

The results were analyzed to draw the conclusion and tables were framed for easy understanding. Thus, the analysis of this chapter some tables are given below:

Table 1, depicts that 42 per cent female subjects and 40 per cent male subjects were in the age group of 70-75 years, followed by 32 per cent males and 34 per cent females in the age group of 65-70 years. 24 per cent males and 18 per cent females were in the age group of 60-65 years. Occurrence of OA increased with increase in age. However, it levels off after 60 years (Oliveria, 1995). The percentages of subjects were less in age groups 75-80 years *i.e.* 4 per cent males and 6 per cent females. Reason might be the inconvenience faced in reaching hospital for checkups in this age group.

Table 1: Distribution of the respondents according to age

Sr. No.	Age groups	Males (n=50)		Females (n=50)	
		No. of respondents	Percentage	No. of respondents	Percentage
1.	60-65	12	24	9	18
2.	65-70	16	32	17	34
3.	70-75	20	40	21	42
4.	75-80	2	4	3	6

Table 2: Distribution of respondents according to symptoms

Sr. No.	Problems	No. of respondents (Male=50)			No. of respondents (Female=50)		
		Often	Sometimes	Rarely	Often	Sometimes	Rarely
1.	Fatigue	19(38)	20(40)	11(22)	23(46)	17(34)	10(20)
2.	Morning stiffness	11(22)	23(46)	16(32)	14(28)	25(50)	11(22)
3.	Stiffness related to weather change	14(28)	16(32)	20(40)	18(36)	15(30)	17(34)
4.	Swelling of the joints	18(36)	17(34)	15(30)	18(36)	19(38)	13(26)
5.	Spasm of muscles around the joints	17(34)	18(36)	15(30)	13(26)	11(22)	26(52)
6.	Deep aching poorly localized pain	24(48)	16(32)	10(20)	18(36)	17(34)	15(30)
7.	Crepitus/cracking of joints	15(30)	17(34)	18(36)	16(32)	22(44)	12(24)
8.	Limitation of joint motion	17(34)	20(40)	13(26)	19(38)	17(34)	14(28)

Table 3: Distribution of respondents according to advice regarding diet

Sr. No.	Follow dietary advice	No. of respondents males (n=50)		No. of respondents females (n=50)	
		B.D.	A.D.	B.D.	A.D.
1.	Yes	33	66	37	74
2.	No	17	34	13	26
Source of advice		n*=57*		n*=62*	
1.	Doctor	25	44	32	52
2.	Dietician	15	26	10	16
3.	Books	03	5	2	3
4.	Magazine	08	14	11	18
5.	Any other	6	11	7	11

N*- Due to overlapping response

Table 2, shows that problem of fatigue was felt by 78 per cent male respondent compared to 80 per cent females. 38 per cent male often developed fatigue compared to 46 per cent females. 68 per cent males compared to 78 per cent females experienced morning stiffness. 22 per cent males often experienced morning stiffness compared to 28 per cent females. Stiffness due to weather change was felt by 60 per cent males compared to 66 per cent females. 28 per cent males felt stiffness often compared to 36 per cent females. Swelling of joints was seen in 70 per cent males and 74 per cent females. It was observed that 34 per cent males and 38 per cent females sometimes had problem of joint swelling. Spasm of muscles around the joints was experienced by 70 per cent males compared to only 48 per cent females. 52 per cent females rarely experienced the spasm of muscles. Pain was felt by 80 per cent males compared to 70 per cent females. 48 per cent males often had problem of pain compared to 36 per cent females. Crepitus of joints was often seen in 30 per cent males compared to 32 per cent females. Limitation of joint motion was seen in 74 per cent male subjects compared to 72 per cent females. Above observation showed that the impact of disease on females was more than males.

Table 3 reveals that majority of subjects (44% males and 52% females) follow doctor's advice. It was also observed that 26 per cent males and 16 per cent females followed dieticians advice, therefore, authenticity of the advice followed by above subjects could be vouched for. The advice aimed majority at weight reduction by the subjects (Felsom *et al.*, 1998).

Exercise plus dietary weight loss intervention produced greater improvements in mobility and pain (Fotch *et al.*, 2005). Tak *et al.* (2005) showed that exercise programme had positive effect on pain and hip function.

17 per cent male subjects practiced yoga which increased to 28 per cent after diagnosis. 12 per cent female subjects practiced yoga which increased to 33 per cent after diagnosis. Stretching was performed by 21 per cent males and 12 per cent females after diagnosis, respectively. Stretching was not preferred by the subjects probably due to the amount of strength required. Pain was also the reason for low percentage of subjects in the category

Conclusion:

It was seen that the incidence of osteoarthritis increased with age. Number of females above 65 years was compared to male subjects. Obesity as a predisposing factor was more prevalent in females (68%) compared to males (62%). It was seen that the occurrence was more in nuclear family (78% males and 68% females). Heredity was found to be an important predisposing factor in females (46%) compared to males (32%).

Increased percentage of females (70%) led sedentary life style after diagnosis compared to 52 per cent male subjects.

Degree of dependence was higher in females. It was seen that 52 per cent of females were driven by family or friend compared to 38 per cent male subjects.

Pain, fatigue and limitation of joint motion were the major symptoms reported in both the groups. Fatigue development after day's activities was seen more in females. Management of pain included taking pain killers and other methods like massages and hot fomentations.

Percentage of subjects indulging in exercise increased after diagnosis. Percentage of males (72%) indulging in exercise was more compared to females (58%). Walk was preferred by most of the respondents (32% males and 54% females).

Consumption of calories (1635.95Kcals), fat (40.2g), carbohydrate (310.8 g) and protein (57.9) was less in males compared to RDA. In case of females consumption of calories was less compared to RDA. However, protein consumption was adequate. Calcium consumption in males (1.5g) and females (1.3g) was higher than RDA. It was found that percentage of respondents on vegetarian diet increased after diagnosis. Percentage increase in males was 20 per cent compared to 26 per cent in females.

It was seen that the consumption of milk increased after diagnosis (38% to 50% in males and 30% to 50% in females). Whole milk was replaced by skimmed milk by the respondents especially after diagnosis (*i.e.* 18% to 54% in males and 14% to 46% in females). Consumption of salad increased from 44 per cent to 70 per cent in males and from 36 per cent to 64 per cent in females. Consumption of fruit also increased from 32 per cent to 72 per cent in males and 54 per cent to 70 per cent in females.

34 per cent subjects suffered from food sensitivity, therefore, increase in pain was felt after the consumption of few food items. Food items included were kabuli channa, rajmah, potato, rice and curd. From the results obtained following evolution were drawn. Balanced diet and regular exercise can go a long way in managing osteoarthritis.

Osteoarthritis complications were majorly age related. It was seen that the impact of disease on female was more compared to males. There was improvement in patient's conditions after dietary modification and life style changes. For the reduction of weight, low calorie, low fat diet may have additional benefits. The best way to manage osteoarthritis is combination of life style changes, medication and dietary modifications. Remaining active also helps to manage the disease.

Education, spreading awareness and psychological support play a major role in managing the disease and decreasing stress level in subjects.

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