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Is Sense of Coherence a determinant of well being in arthritis: A pilot study in an urban slum of Siliguri subdivision, West Bengal

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ABSTRACT

For a long time, arthritis has been an issue for the elderly, costing them money and degrading their quality of life. However, the disease's reach has transcended age barriers and even younger people are being impacted. As evidenced by numerous studies, the sense of coherence (SOC), which is the subjective sensation of wellness, has recently been discovered to influence all types of diseases, including arthritis. To determine the physical and psychological impact of arthritis on study subjects and to measure distribution of SOC among study subjects and find out its correlation with various indicators of arthritis. Methods: This study was a community based descriptive epidemiological study with cross sectional design conducted in urban field practice area of North Bengal Medical College (UHTC), Matangini colony ward no-28 consisting of 919 households and total population of 3694. Study was conducted from April 2018-February 2019. A suitable predesigned pretested Proforma for data collection was used. Template was generated in MS excel sheet and analysis was done on SPSS software. In the present study male were 80 (80%) and female were 20 (20%). About 83 (83%) study subjects were involved in sedentary work and 17 (17%) were involved in moderate work. In the study 6 (6%) subjects were hypertensive followed by diabetic 4 (4%). Subjects of the mean age 46.19 years were suffering from arthritis for 29.60 months and subjects of mean age 45 year were suffering from arthritis for 27 months. In the present study 21 (21%) of the participants were on medication for arthritis and 79 (79%) were not on any medication for arthritis. Conclusion: Minimal value of overall rate of sense of coherence was 80 and maximal value was 158. Minimal value of overall rate of sense of comprehensibility was 34 and maximal value was 112. These findings imply that giving early care priority will ensure that susceptible arthritis patients receive high-quality care.

OPEN ACCESS

Key Words
Arthritis, determinant of wellbeing, pain, sense of coherence, urban slum

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INTRODUCTION

The association between sense of coherence (SOC-29) and health is made clear. Rheumatoid arthritis patients with high SOC have trust in life's purpose. Makes you desire health and functional ability.

Aarthritis is a chronic, progressive condition that impairs quality of life by causing excruciating joint pain and permanent deformity. Significant morbidities and fatalities attributable to RA's extra-articular symptoms might result from uncontrolled RA as well[1]. Rheumatoid arthritis affects around 1.3 million adults in the US and is associated with an annual health care cost of $19.3 billion[2,3].

Although, it is believed that women are more likely to contract the disease, both sexes are shown to be practically equally susceptible. arthritis prevalence as determined by a patient's medical history and laboratory tests such the RA factor and HLA B27. However, additional contributing factors are also known to exist, such as the level of serum uric acid, lifestyle and family history. Intriguingly, a renowned social scientist proposed a hypothesis in the 1970s that claimed human health was not only influenced by factors that cause disease but also by those that promote health and the capacity of people, families and communities to cope with stressors. These salutogenetic elements have a significant role in determining the coping mechanisms. Numerous researchers have shown a substantial connection between salutogenesis and health[4]. This sense of coherence (SOC), the perceived sensation of wellbeing, was initially primarily applied to mental health but has recently been discovered to affect all diseases, as evidenced by several research. While the other baseline indicators were equal, a few studies conducted abroad discovered that individuals with high SOC experienced sooner illness remission than those with low SOC[5]. Understanding, manageability and significance interact to determine the SOC and its impacts.

Siliguri is located in the foothills of Himalayas and the region has its unique problems because of the difficult geographical settings and hilly terrain. Cultural amalgamation due to border areas is also high. Prevalence of arthritis though high, research articles on salutogenetic factors affecting the disease is absent in the area. Thus the present study was envisaged with the objective to understanding role of SOC as a determinant of health and wellbeing with special reference to arthritis, along with formulating recommendation accordance of study results ensuring good health for one and all.

MATERIALS AND METHODS

Study design: Community based descriptive epidemiological study with cross sectional design.

Study setting: Study was conducted in urban field practice area of North Bengal Medical College (UHTC), Matangini colony ward no-28 consisting of 919 households and total population of 3694.

Period of study: April 2018- February 2019

Study population: People with pain attending in Matrisadan OPD UHTC, health post-5, Siliguri sub-division and who reside in the study area since last 12 months.

Inclusion criteria: Willing to participate voluntarily, patients with age range of 40-70 years, ambulatory patients and permanent resident of that locality were included in the study.

Exclusion criteria: People adversely affected by arthritis, absent on 2 consecutive visits, people those who are mentally challenged people and Illiterate/no comprehensibility on the issue were excluded from the study.

Sampling sample size and sampling technique:

Sample size: Sample size was estimated using single proportion formula for cross sectional studies considering the factors of desired level of confidence, acceptable margin of error, absolute precision. Anticipated prevalence of prevalence of arthritis in a study in West Bengal is found to be 32.8%. Considering 95% level of confidence and 10% absolute precision the sample size was calculated using the following formula6: Using the formula sample size calculation for cross sectional study 90 subjects needed to be studied using 10% allowable error. Taking non response rate as 10%, sample size was finally calculated as 99. Hence rounding of 100 study subjects pertaining to study criteria was enrolled for study purpose.

$$n = Z2\ (1-\alpha/2)\ P\ (1-P)/d2$$

Where:

$Z(1-\alpha/2)$ = 1.96 (at 95% confidence interval)
P = Anticipated prevalence of arthritis
d = Absolute precision (10%)

Sampling technique: A sampling frame was prepared beforehand consisting of eligible subjects enrolled in UHTC of North Bengal Medical College Hospital, Darjeeling. Simple random sampling technique was applied to select the required 100 study subjects from

this sampling frame. Sampling interval was calculated and patients was enrolled for study purpose maintaining the study criteria.

Study tools:

- Pre-designed, pre-tested, semi-structured questionnaire consisting of socio demographic characteristics and disease related variables
- **Arthritis:** Arthritis Impact Measurement Scale 2-Revised and Expanded version of AIMS 2 scale was used to measure the health status of people living with arthritis.
- **Sense of coherence:** The short form of SOC scale 13 item version (SOC 13) used in this study. The scale consists of five comprehensible items, four manageability item and four meaningful items. Each item is presented on a seven point Likert scale

Relevant records and clinical examination to evaluate joint line tenderness was also done.

Study technique:

- Exit interview
- Record review
- Clinical examinations techniques

Methods of data collection: After acceptance of the research proposal by IEC the study was intimated. The study population was informed about the nature and purpose and benefit of the study. A detailed plan of visit was made prior to data collection in consultation with working staff without hampering the regular routine of the hospital as well as the patients. The study was explained through a plain language statement which contained details of the research. They were also assured about the confidentiality and anonymity of the information.

After reaching the facility on the specific day, the data was collected by interviewing study populations with the help of the pre-designed and pre-tested semi-structured questionnaires maintaining the study criteria and operational definition of the cases. Study tools and technique applied appropriately. Each participant required to complete all the administered questionnaires. Data was collected accordingly. Study subjects who could not be interviewed even after two consecutive visits was considered as non-responder

Plan for data analysis: Collected data was cleaned, checked for consistency and completeness and entered in Microsoft Excel data sheet. Data was organized and presented using the principles of descriptive and inferential statistics as and where required. $p<0.05$ at 95% CI were considered significant.

Ethical issues: Protocol was submitted to the Institutional Ethics Committee (IEC) of North Bengal Medical College. The study was initiated after obtaining IEC clearance. The study participant were explained about the nature and purpose of the study and also about the voluntary nature of their participation. Their co-operation and support were sought for. The questionnaires briefly explained about the study participant. Informed consent was obtained from study participant prior to data collection. The anonymity and confidentiality of the information was maintained throughout the study. Data was used for research purpose only

RESULTS

The present community based descriptive epidemiological study with cross sectional design was planned to determine the physical and psychological impact of arthritis on study subjects and to measure distribution of SOC among study subjects and find out its correlation with various indicators of arthritis. Total 100 study subjects were enrolled for study purpose maintaining the study criteria. The time period for the study was April 2018-February 2019. In all the cases, thorough history taking and clinical examination was done after taking proper consent. Data thus obtained was noted in the Proforma. Results thus obtained were analysed and expressed in tables.

In the present study male were 80 (80%) and female were 20 (20%). Married were 92 (92%) and widow were 8 (8%). Respondents living in joint family were 74 (74%) and rest 26 (26%) were living in nuclear family. Maximum 85 (85%) respondents were having education upto primary level and 6 (6%) were illiterate. Respondents in service were 12 (12%), in business were 6 (6%), in daily work were 14 (14%), housemaker were 67 (67%) and only 1 (1%) was retired (Table 1).

From the above figure we it reveals that 83 (83%) study subjects were involved in sedentary work and 17 (17%) were involved in moderate work (Fig. 1).

In the study 6 (6%) subjects were hypertensive followed by diabetic 4 (4%). About 3 (3%) of the participants were having previous history of jaundice, 2 (2%) were having history of cholecystectomy and tuberculosis (Table 2).

In the present study subjects of the mean age 46.19 years were suffering from arthritis for 29.60 months and subjects of mean age 45 year were suffering from arthritis for 27 months (Table 3).

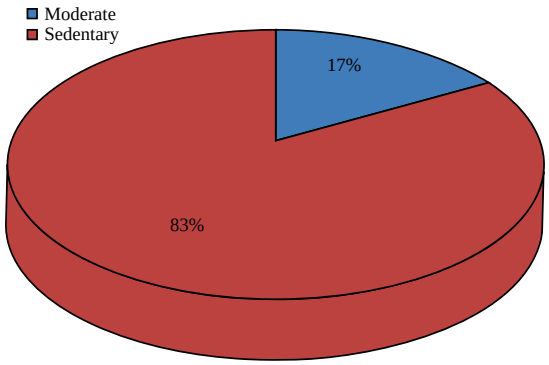

Fig. 1: Distribution of the study subjects according to physical activity (n = 100)

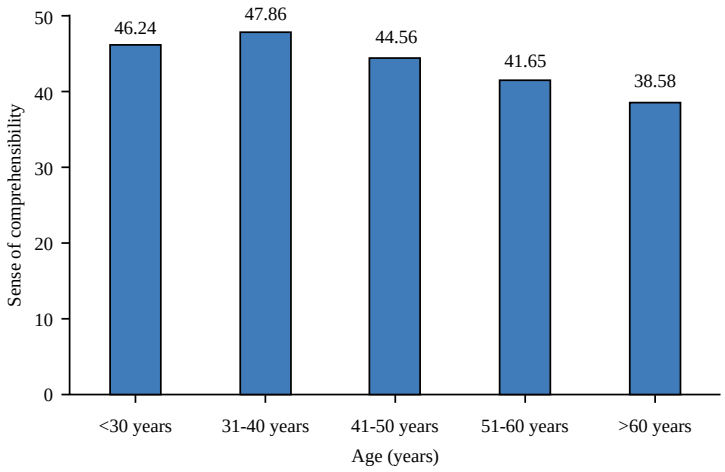

Fig. 2: Index of the sense of comprehensibility in different age groups in the investigated group of patients with arthritis (n = 100)

Table 1: Distribution of the study subjects according to socio demographic profile (n = 100)

Gender	Frequency	Percentage
Male	80	880.0
Female	20	20.0
Total	100	100.0
Marital status		
Married	92	92.0
widow	8	8.0
Type of family		
Joint family	74	74.0
Nuclear family	26	26.0
Educational qualification		
Primary	85	85.0
Secondary	6	6.0
Illiterate	7	7.0
Above secondary	1	1.0
Graduation	1	1.0
Occupational status		
Service	12	12.0
Business	6	6.0
Daily worker	14	14.0
Housemaker	67	67.0
Retired	1	1.0

In the present study 21 (21%) of the participants were on medication for arthritis and 79 (79%) were not on any medication for arthritis (Table 4).

Table 2: Distribution of the study subjects according to previous medical history (n = 100)

Previous medical history	Frequency	Percentage
Hypertension	6	6
Diabetic	4	4
Jaundice	3	3
Cholecystectomy	2	2
Tuberculosis	2	2
Lt side kidney resection	1	1
Ligation	1	1
Nil	81	81
Total	100	100

Minimal value of overall rate of sense of coherence was 80 and maximal value was 158. Minimal value of overall rate of sense of comprehensibility was 34 and maximal value was 112 (Table 5).

The average rate of sense of comprehensibility was highest in the group between 31 and 40 years old i.e., 47.86 points. On the other hand, patients under 30 years age obtained 46.24 points. Respondents between 41-50 years old gained 44.56 points, subjects between 51-60 years old obtained 41.65 points and respondents over 60 years old gained 38.58 points (Fig. 2).

Table 3: Distribution of the study subjects according to age and duration of arthritis (n = 100)

	Age in years	Duration of arthritis (months)
Mean	46.1900	29.6000
Median	45.0000	24.0000
Standard deviation	9.6564	26.0977
Minimum	29.0000	1.0000
Maximum	75.0000	156.0000
25th percentile	40.0000	12.0000
50th percentile	45.0000	24.0000
75th percentile	50.0000	36.0000

Table 4: Distribution of the study subjects taking medication for arthritis (n = 100)

Taking medication for arthritis	Frequency	Percentage
No	21	21.0
Yes	79	79.0
Total	100	100.0

Table 5: Sense of coherence and its components in the studied group of patients with arthritis (n=100)

Sense of coherence	Size of sample	Minimal value	Maximal value
Overall rate	100	86	158
Sense of comprehensibility	100	34	112
Sense of manageability	100	42	108
Sense of meaningfulness	100	35	124

DISCUSSIONS

In the present study male were 80 (80%) and female were 20 (20%). Married were 90 (92%) and widow were 8 (8%). Respondents living in joint family were 74 (74%) and rest 26 (26%) were living in nuclear family. Maximum 85 (85%) respondents were having education upto primary level and 6 (6%) were illiterate. Respondents in service were 12 (12%), in business were 6 (6%), in daily work were 14 (14%), housemaker were 67 (67%) and only 1 (1%) was retired.

Arthritis is one of the major diseases, which often starts during ageing and affects significant proportion around the globe. It is one of the emerging health issues especially in Asian countries in coming two to three decades. As per the study conducted by different authors prevalence of arthritis was found 47.3%, 54.1% and 56.6% which shows it is matter of concern[6-8].

Present study reveals that 83 (83%) study subjects were involved in sedentary work and 17 (17%) were involved in moderate work. In the study 6 (6%) subjects were hypertensive followed by diabetic 4 (4%). About 3 (3%) of the participants were having previous history of jaundice, 2 (2%) were having history of cholecystectomy and tuberculosis.

In the present study subjects of the mean age 46.19 years were suffering from arthritis for 29.60 months and subjects of mean age 45 year were suffering from arthritis for 27 months. About 21 (21%) of the participants were on medication for arthritis and 79 (79%) were not on any medication for arthritis.

In the current study minimal value of overall rate of sense of coherence was 80 and maximal value was 158. Minimal value of overall rate of sense of comprehensibility was 34 and maximal value was 112. The average rate of sense of comprehensibility was highest in the group between 31 and 40 years old i.e., 47.86 points. On the other hand, patients under 30 years age obtained 46.24 points. Respondents between 41-50 years old gained 44.56 points, subjects between 51-60 years old obtained 41.65 points and respondents over 60 years old gained 38.58 points.

According to Antonovsky level of meaningfulness, plays the most important role, justified by the fact, that a man with a high sense of comprehensibility and high sense of manageability, acquainted with the functioning of their disease which is rheumatoid arthritis, quickly cease to understand what was happening around him and quickly loses control over resources if you will not have the motivation (sense of meaningfulness)[9].

In a study of SOC confirmed these results, probably due to the fact that RA is a chronic disease, the patients began to adapt to the changes that have occurred in their lives and regained the ability to make events predictable and also found in themselves new resources, allowing them to actively influence the situation[10].

In has been proven that the mere recognition of the ability to control stressors that declare a person with a high sense of coherence correlates negatively with negative changes in the level of physiological response[11].

CONCLUSION

In the current study minimal value of overall rate of sense of coherence was 80 and maximal value was 158. Minimal value of overall rate of sense of comprehensibility was 34 and maximal value was 112. Chronic disease diagnosis causes a great deal of upheaval in the lives of the ill, upsetting his family life and requiring adjustments to existing connections. The disease's appearance in the family results in financial and emotional repercussions. The illness may make it difficult to find employment, pursue further education, or keep up with past work. A driving force for maintaining effectiveness and regular therapy is professional work.

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