



ISSN (E): 2320-3862
ISSN (P): 2394-0530
NAAS Rating 2017: 3.53
JMPS 2017; 5(2): 172-174
© 2017 JMPS
Received: 21-01-2017
Accepted: 22-02-2017

Anirban Goswami
Investigator (Statistics),
Regional Research Institute of
Unani Medicine, Patna, under
CCRUM, Ministry of Ayush,
India

Dr. Mohd Wasim Ahmed
Research Officer (U), Scientist L-
1, Regional Research Institute of
Unani Medicine, Patna, under
CCRUM, Ministry of Ayush,
India

Dr. Najmus Sehar
Research Officer (U), Scientist L-
3, Regional Research Institute of
Unani Medicine, Patna, under
CCRUM, Ministry of Ayush,
India

Dr. Mohd Ishtiyaque Alam
Research Officer Incharge,
Scientist L-4, Regional Research
Institute of Unani Medicine,
Patna, under CCRUM, Ministry
of Ayush, India

Dr. Mahboob-us-Salam
Research Officer (U), Scientist L-
1, Regional Research Institute of
Unani Medicine, Patna, under
CCRUM, Ministry of Ayush,
India

Dr. Mumtaz Ahmad
Research Officer (U), Scientist L-
3, Regional Research Institute of
Unani Medicine, Patna, under
CCRUM, Ministry of Ayush,
India

Correspondence
Anirban Goswami
Investigator (Statistics),
Regional Research Institute of
Unani Medicine, Patna, under
CCRUM, Ministry of Ayush,
India

Demographic and socio-economic study in cases of joint pain

Anirban Goswami, Dr. Mohd Wasim Ahmed, Dr. Najmus Sehar, Dr. Mohd Ishtiyaque Alam, Dr. Mahboob-us-Salam and Dr. Mumtaz Ahmad

Abstract

The aim of this study was to describe the distribution of demographic factors and socioeconomic characteristics of Joint Pain patients attended in OPD at Regional Research Institute of Unani Medicine, Patna, India. This study included all individuals diagnosed by the unani physicians who has joint pain in joints (single/multiple) with or without tenderness, swelling & restriction of movement during year 2015-16.

The overall mean \pm sem age of study patients was 48.19 \pm 0.29 years (51.77 \pm 0.48 years in men and 45.96 \pm 0.35 years in women). Median-unbiased estimation was used to assess the odds ratio of sex-differences regarding demographic factors and socioeconomic characteristics among patients diagnosed with Joint Pain. In this study male gender was positively associated with the older age-group, occupation levels and community of the patients diagnosed with Joint Pain.

This Study analysis reveals that Occupation, Community and Age-Group were significant risk factor for Joint Pain. Education, Cast, Income-Group and Residence were not showed significant association with Joint Pain

Keywords: Joint pain, demographic, socioeconomic, odds ratio

Introduction

Joints form the connection between bones, which provide support and help to move. Any damage to the joints from disease or injury can interfere with the movement and cause a lot of pain. Many different conditions can lead to painful joints; including osteoarthritis, rheumatoid arthritis, bursitis, gout, strains, sprains, and other injuries. Knee joint pain is the most common complaint, followed by shoulder and hip joint pain, but joints pain can affect any part of your body, from your ankles to your shoulders [1]. Joints pain is one of the most leading public health problems globally [2]. According to WHO statistic, it is estimated to be the 31 leading causes of non fatal burden in 0.8% of the world population and women are at two to three times greater risk for developing the disease [3]. In India, as per reports Arthritis affects 15% of total population people. This prevalence is higher than many well known diseases such as diabetes, AIDS and cancer. And in case of Bihar 1821 females per lakh than 1250 males per lakh are suffering from Arthritis as per the Annual Health Survey (2010-2011).

According to Unani scholars, it is painful condition of joints irrespective of their size [4] and commonly caused by accumulation of viscid phlegm (balgham-e-lazij) in joints due to weakness of joints (zoaf-e-mafasil) [5] Ibn Sina described the main causative factors of joints pain as a weakness of joints and impairment of temperament of whole body or affected joints [6]. According to Unani theory, beside Su-e-mizaj (intemperament), there are several other concepts defining the disease, like pain occur at joints where there is Qillat-e-Hararat-e-Ghariziya, which causes slow absorption of the morbid humours leading to accumulation of wastage in the joints. Vigorous exercise or hard physical work associated with improper or poor nutrition is also a reason of such joints pains. Accordingly it is stated that Hamiz-e-Labni is one of the root causes which is produced by the derangement of digestive process and accumulates in the blood and joints producing joints pain [7]. The causes of the pain can all be grouped together under sudden change of temperament and breach of continuity. The perception of such a contrary temperament is pain, thus pain by its nature is the appreciation of a contrary or deviated temperament [8]. Depending upon the materials affecting the joints, Balgham (phlegm) predominates, Dum (Blood) and Safra (bile) are next to it and quite rarely Sawda (black bile) is involved. In some cases more than one khilt (Humour) are involved [9] i.e. sue mizaj barid balghami and har balghami is the main cause [10].

In this framework, the aim of our study was to describe the distribution of demographic factors and socioeconomic characteristics with Joint Pain.

2. Methods

This study was done at Regional Research Institute of Unani Medicine, Patna, India during the period 2015-16. The study population were subjects with Joint Pain who attended in OPD for treatment at the institute. Information of patients medical records including demographic and socioeconomic data (such as age, sex, occupation..etc) were collected from OPD Management software through data mining technique using ‘R’ software(version 3.3.2). Overall, 3355 individuals were diagnosed with Joint Pain (1288 men and 2067 women) during this time period. The overall mean±sem age of study patients was 48.19 ±0.29 years (51.77 ±0.48 years in men and 45.96 ±0.35 years in women). Joint pain of selected patients diagnosed by the unani physicians who has joint pain in joints (single/multiple) with or without tenderness, swelling & restriction of movement.

Chi-Square test was used to compare the distribution of

demographic factors and socioeconomic characteristics among male and female participants diagnosed with Joint Pain. On the other hand, median-unbiased estimation [11] was used to calculate the odds ratio (ORs) and their respective 95% confidence intervals (CIs) to assess the sex-differences regarding demographic factors and socioeconomic characteristics with Joint Pain. All the statistical analyses were done by using the ‘R’ software(version 3.3.2), p-value <0.05 is considered as statistically significant.

3. Results & Discussion

Table-1 presents the distribution of demographic factors & socioeconomic characteristics and Sex-differences regarding demographic factors & socioeconomic characteristics in Joint Pain patients during the period 2015-2016. Out of 3355 patients, 1288 (38.39%) were men and 2067(61.61%) were women. The majority were in the age groups, 25-45 and 46-60 years, percentage 31.86%, and 32.79%, respectively. Higher percentage of men (35.95%) belonged to above 60 years and women (37.16%) to 26-45 years age group.

Table 1: Distribution of demographic factors & socioeconomic characteristics and Sex-differences regarding demographic factors & socioeconomic characteristics in Joint Pain Patients

Demographic Parameter		Gender		Total (%)	Chi-Square Value (p-value)	Odds ratio by median-unbiased estimation		
		Men (%)	Women (%)			Odds Ratio (OR)	95% Confidence Interval of OR	p-value
Age-Group	15-25	130 (10.09)	251 (12.14)	381 (11.36)	177.83 (<0.001) ^S	1.00 (reference)	-	-
	26-45	301 (23.37)	768 (37.16)	1069 (31.86)		0.75	0.58-0.97	0.03 ^S
	46-60	394 (30.59)	706 (34.16)	1100 (32.79)		1.07	0.84-1.37	0.55 ^{NS}
	>60	463 (35.95)	342 (16.55)	805 (23.99)		2.61	2.02-3.37	<0.001 ^S
Cast	GEN	734 (56.99)	1174 (56.80)	1908 (56.87)	0.68 (0.95) ^{NS}	1.00 (reference)	-	-
	OBC	509 (39.52)	813 (39.34)	1322 (39.40)		1.00	0.86-1.15	0.98 ^{NS}
	SC	38 (2.95)	65 (3.14)	103 (3.07)		0.97	0.18-4.16	0.97 ^{NS}
	ST	4 (0.31)	10(0.48)	14 (0.42)		0.93	0.61-1.40	0.75 ^{NS}
	OTHER	3 (0.23)	5 (0.24)	8 (0.24)		0.65	0.17-1.99	0.47 ^{NS}
Occupation	FARMER	29 (2.25)	2 (0.10)	31 (0.92)	614.18 (<0.001) ^S	21.15	6.19-143.59	<0.001 ^S
	GOVERNMENT EMPLOYEE	17 (1.32)	8 (0.39)	25 (0.75)		3.29	1.40-8.40	<0.01 ^S
	HOUSE WIFE	-	1916 (57.11)	1916 (57.11)		-	-	-
	LABOUR	428 (33.23)	13 (0.63)	441 (13.14)		50.88	28.98-97.17	<0.001 ^S
	PRIVATE EMPLOYEE	326 (25.31)	5 (0.24)	331 (9.87)		98.79	43.81-286.77	<0.01 ^S
	SELF EMPLOYEE	101 (7.84)	3 (0.15)	104 (3.10)		50.06	18.25-212.90	<0.001 ^S
	STUDENT	117 (9.08)	184 (8.90)	301 (8.97)		1.00 (reference)	-	-
	UN-EMPLOYED	196 (15.22)	10 (0.48)	206 (6.14)		30.19	16.07-63.47	<0.001 ^S
Income-Group	High	960 (74.53)	1582 (76.54)	2542 (75.77)	1.62 (0.20) ^{NS}	1.00 (reference)	-	-
	Lower	328 (25.47)	485 (23.46)	813 (24.23)		1.14	0.94-1.30	0.18 ^{NS}
Community	BUDHISHT	6	13	19	13.50	0.74	0.25-1.90	0.54 ^{NS}

		(0.47)	(0.63)	(0.57)	(0.019) ^S			
	CHRISTIAN	61 (4.74)	62 (3.00)	123 (3.67)		1.55	1.07-2.24	0.01 ^S
	HINDU	767 (59.55)	1214 (58.73)	1981 (59.05)		1.00 (reference)	-	-
	JAIN	15 (1.16)	31 (1.50)	46 (1.37)		0.77	0.40-1.41	0.40 ^{NS}
	MUSLIM	433 (33.62)	745 (36.04)	1178 (35.11)		0.92	0.79-1.06	0.27 ^{NS}
	SIKH	6 (0.47)	2 (0.10)	8 (0.24)		4.52	1.00-34.23	0.04 ^S
Residence	Urban Area	962 (74.69)	1557 (75.33)	2519 (75.08)	0.14 (0.70) ^{NS}	1.00	-	-
	Rural Area	326 (25.31)	510 (24.67)	836 (24.92)		0.99	0.82-1.14	0.67 ^{NS}

S=Statistically significant / NS= Statistically non-significant

There was evidence of a statistically significant difference in the age-distribution between men and women: the proportion of older men (60 years and above) was higher than in women (35.95% vs. 16.55%, respectively), indicating that Joint Pain occurs at an earlier age in women compared to men (p -value<0.001). There was no statistically significant difference in the proportion of men and women distinguished by their cast (p -value=0.95). Regarding the occupation, higher percentage of housewife (57.11%) was involved in joint pain, beside that the proportion of men who labour, private employee, un-employed were higher in men than in women (33.23% vs. 0.63%, 25.31% vs. 0.24%, 15.22% vs. 0.48% respectively), a difference which was statistically significant (p -value<0.001). On the other hand, there was no statistically significant difference in the proportion of men and women distinguished by their income-group (p -value=0.20). Furthermore, the proportion of a christian community among the other communities was significantly higher in men compared to women (4.74% vs. 3.00%, respectively; p -value=0.019). Similarly, there was no statistically significant difference in the proportion of men and women distinguished by their Residence (p -value=0.70).

In the inference of sex-differences with regard to the demographic factors and socioeconomic characteristics between men and women with joint pain, there was evidence of a positive association between male gender and the age-group 60 years and above (OR=2.61, 95%CI=2.02-3.37), but not with in the age-group 46-60 (OR=1.07, 95%CI=0.84-1.37). There was no significant association with cast. On the other hand, there were strong positive association between male gender and occupation levels (overall P <0.001): the odds of labour, private employee, un-employed were considerably higher among men with Joint Pain to women (OR=50.88, 95%CI=28.98-97.17; OR=98.79, 95%CI=43.81-286.77; OR=30.19, 95%CI=16.07-63.47 respectively) when ignoring the association of housewife. But, there was no significant association with income-group (p -value=0.18). Furthermore, there was a strong positive association between male gender and community level (overall P =0.01): the odds of christian community was considerably higher among men with Joint Pain to women (OR=1.55, 95%CI=1.07-2.24). On the other hand, there was no significant association with residence area (p -value=0.67).

The main finding of our study– include a positive association of male gender with the older age-group in joint pain but may start at earlier stage of life specially when there is predominance of Balgham [12]. On the other hand, there was evidence of a positive association of male gender with occupation when ignoring the association of housewife and community of study participants controlling for a wide array

of other demographic and socioeconomic factors.

4. Conclusion

From this Study we can say that Occupation, Community and Age-Group were significant risk factor for Joint Pain patients at 5% level of significance. Cast, Income-Group and Residence were not shows significant association with Joint Pain patients at 5% level of Significance.

5. References

1. Richard. Age-Related Changes in the Musculoskeletal System and the Development of osteoarthritis. Clin Geriatr Med. 2010; 26(3):371-386.
2. Halverson PB, Cheung HS, Mc Carty DJ. Milwaukee Shoulder Syndrome (MSS): Description of Predisposing Factors, Arthritis Rheum. 1987; 30:SI-3I.
3. Barbour KE, Helmick CG, Theis KA, Murphy LB, Hootman JM, Brady TJ *et al.* Prevalence of doctor-diagnosed arthritis and arthritis-attributable activity limitation-United States, 2010-2012. Morb Mortal Wkly Rep. 2013; 62(44):869-873.
4. Razi Z, Kitabul Hāwi Fil Tibb. Urdu translation by CCRUM (Government of India). 2002; 2:75-100.
5. Majoosi AIA. Kamilussanah. Urdu Translation by Gulam Husnain Kantoori. Munshi naval kishore press. 1889; 2:507-13.
6. Ibn Sina. Al Qānūn, fil-Tibb. English Translation by Jamia Hamdard, New Delhi. 1995; 2:321-23.
7. Kabeeruddin M, Moalijat Sharhe Asbab. Hikmat Book Depot, Hyderabad. 1916; 3:213-30.
8. Alam MT, Ansari AH, Ahmad W, Aisha P. Pain: Concept and Description in Unani System of Medicine. International Journal of Traditional and Herbal Medicine. 2013; 1(5):147-152.
9. Kabeeruddin M, Alakseer Aijaz. Publishing House, Delhi. 2003; 5:1431-47.
10. Tanwir, Dalk. (Therapeutic Massage) & Their Indication for Musculoskeletal Disorder in Unani Medicine. International Journal of Advanced Ayurveda, Yoga, Unani, Siddha and Homeopathy. 2013; 2(1):59-70.
11. Nicolas PJ. Statistics for Epidemiology, 1st Edition 2004. Chapman & Hall. 2004, 73-81.
12. Kabeeruddin M, Moalijat Sharhe Asbab, Aijaz. Publication House, New Delhi. 2007; 3:164-165.