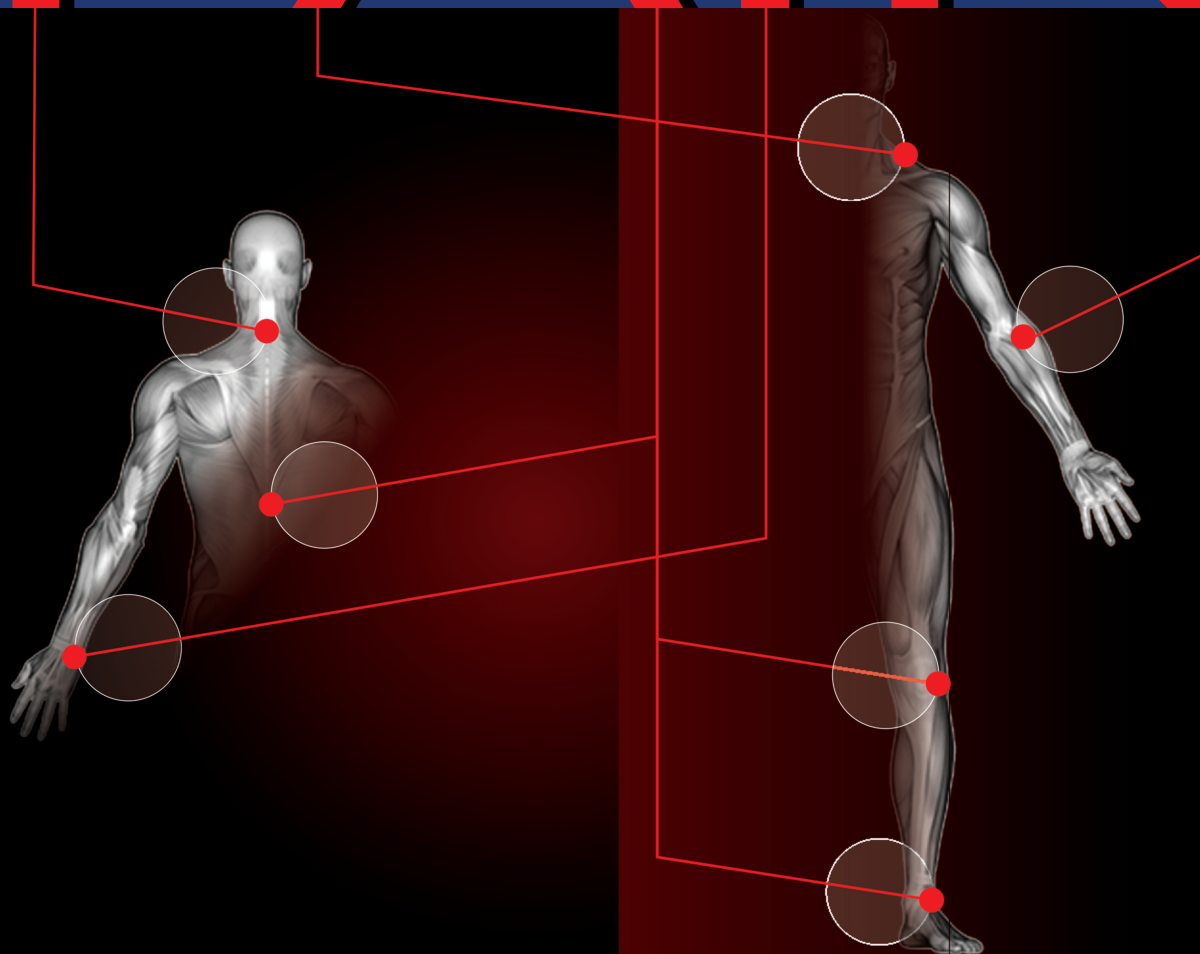


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Prevalence of Chronic Pain Based on Primary Health Center Data from a City in Central India

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Abstract

Aims: To determine the prevalence of chronic pain based on primary health centre data from a city in central India. **Materials and Methods:** A cross sectional study was carried out in 1674 patients who attended a Primary Health Centre (PHC) over a period of two months. Information regarding name, age, gender, occupation, chief complaints and its duration was obtained. Prevalence of chronic pain (pain more than 3 months) was analyzed with respect to age, gender and site of pain. **Results:** Out of 1674 patients, there were 496 patients with pain resulting into a prevalence of 29.63%. The prevalence of chronic pain amongst these patients was 19.23%. It was predominant in females and age group of 21-60 years. Prevalence of chronic back pain was highest (24.84%), followed by body pain (22.98%), Knee (16.77%), Chest (13.97%), Upper limb (10.87%). Other pains had prevalence of less than 10%. **Conclusion:** Almost one third of the patients visiting PHC have pain as the chief complaint. Majority of them had chronic pains. Females report pain much more commonly than males. Surprisingly young and middle aged report chronic pain more than elderly. Further studies about the type of pain and its treatment are required to gain more insight into this health problem.

Keywords: Prevalence, chronic pain, site, primary health centre

INTRODUCTION

One of the most common complaints of any patient visiting a health center is pain.^[1] It is comparatively easy to treat acute pain as the course is short and the cause is known. Chronic pain is more complex, involving psychosocial aspect along with the root cause, hence challenging to treat.^[2] Overall, chronic pain is a disease in itself and a specialized care is indeed the need of the hour. A lot of research has been carried out on a number of patients with chronic pain, visiting primary health centers (PHCs) all over the world.^[2] In India, a large number of patients visit PHC for their pain. Not many studies are conducted in reference to chronic pain in PHCs in India. Studying the pattern of pain and the patients with pain would provide an insight to improve the outcome of treatment. So we decided to carry out this study to find the prevalence of different sites of chronic pain in a primary care setting of a city from central India.

MATERIALS AND METHODS

A cross-sectional study was carried out for a period of 2 months, in which 1674 patients visiting an urban PHC

of a city were observed. Patient-related information such as name, age, sex, address, occupation, chief complaints, and its duration was obtained. The patients having pain were separated, and the chronicity of pain was noted through interaction with the patients and from their previous records. Prevalence of each type of pain was obtained with respect to site, age, and gender. All analyses were performed using the Statistical Package for the Social Sciences (SPSS) software version 20.0 IBM Corporation Armonk USA.

RESULTS

A total of 1674 patients were screened during the study period from January to February 2018, and among these 496 patients were found to have at least one type of pain, resulting into a prevalence of 29.63%. The pain was

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either acute (<3 months) or chronic (≥3 months). Table 1 provides the distribution of patients as per age and the corresponding number of patients with pain. Of 496 patients with pain, majority, that is, 188 (37.9%) belonged to the age category of 41–60 years, followed by 168 (33.87%) in the age range of 21–40 years, and 96 (19.36%) in the age range of 61–80 years. There were 44 (8.87%) cases with age ≤20 years. Table 2 provides genderwise distribution of patients with pain. Of 496 patients, majority, that is, 330 (66.53%) were female patients, whereas 166 (33.47%) were male patients. Figure 1 shows the distribution of patients according to the number of

pain sites and the duration of pain. Of 496 patients, 454 (91.53%) patients had pain at a single site, whereas 42 (8.47%) had at multiple sites. Among those with pain at single site, 294 (64.76%) had chronic pain, whereas among those with pain at multiple sites, 28 (66.67%) had chronic pain. These 28 patients had a total of 62 pain sites, thus resulting into 356 pain sites with chronic pain in 322 patients. Table 3 shows the distribution of patients with chronic pain according to sites. Among 322 patients with chronic pain, a maximum of 80 (24.84%) patients had back pain, followed by 74 (22.98%) with body pain, 54 (16.77%) with knee pain, 45 (13.97%) with chest pain, and 35 (10.87%) with upper limb pain. Other pain sites had less than 10% of representation. Table 4 shows the distribution of patients according to chronic pain sites and age categories. Back pain was mostly observed in patients with age range of 21–40 and 41–60 years, and the same observation was made for body pain, knee pain, and chest pain. In addition, those with headaches and upper limb pain were in the same age range. The pain sites were also classified according to gender as shown in Table 5. Back pain was predominantly observed in female patients (53), which was followed by body pain (49), knee pain (36), and chest pain (23). A total of 85 patients complained of chest pain with or without breathlessness. All of them were screened for cardiac status (electrocardiography, blood sugar, X-ray chest) and referred to a tertiary care, whenever indicated. The remaining patients had noncardiac chronic chest pain (45). Almost equal number of male and female patients reported such type of pain. Abdominal pain was mostly acute and was complained by 50 patients. All

Table 1: Distribution of patients according to age and pain status

Age (years)	Total		Pain (yes)	
	No.	%	No.	%
≤20	190	11.39	44	8.87
21–40	626	37.53	168	33.87
41–60	558	33.09	188	37.90
61–80	294	17.63	96	19.36
≥81	6	0.36	0	0
Total	1674	100	496	100

Table 2: Distribution of patients as per gender and pain status

Gender	Total		Pain (yes)	
	No.	%	No.	%
Male	718	42.89	166	33.47
Female	956	57.11	330	66.53
Total	1674	100	496	100

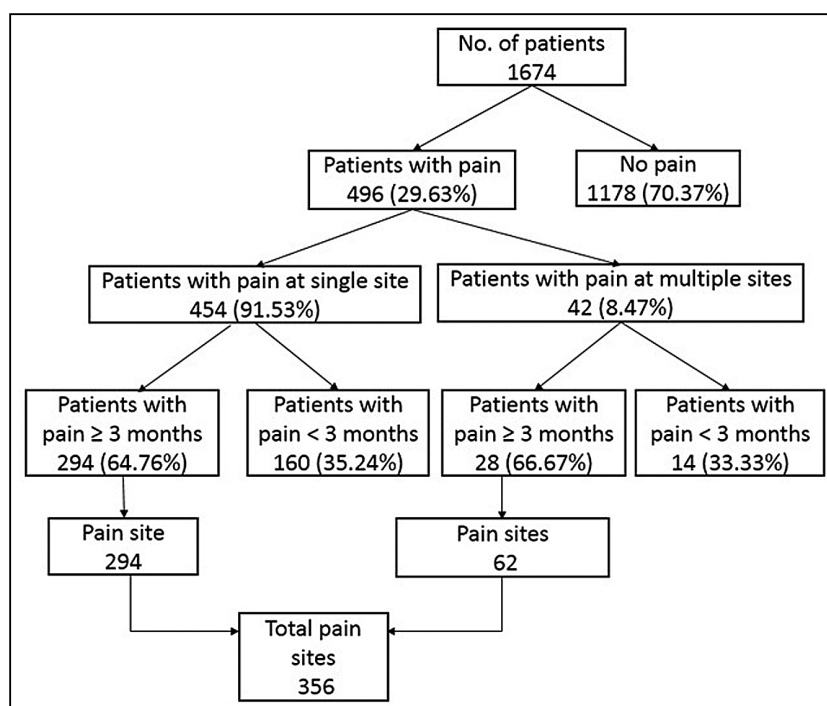


Figure 1: Classification of patients with pain

Table 3: Number of patients with chronic pain according to sites (n = 322)

Site of pain	Number (%)
Back pain	80 (24.84)
Body pain	74 (22.98)
Knee pain	54 (16.77)
Chest pain	45 (13.97)
Upper limb pain	35 (10.87)
Headache	31 (9.76)
Joint pain	21 (6.52)
Neck pain	10 (3.11)
Toothache	4 (1.24)
Ear pain	2 (0.62)

Table 4: Number of patients as per pain site and age categories (n = 322)

Site of pain	Age (years)				Total
	≤20	21–40	41–60	≥61	
Back pain	7	27	30	16	80
Body pain	7	25	28	14	74
Knee pain	5	18	21	10	54
Chest pain	4	15	17	9	45
Upper limb pain	3	12	13	7	35
Headache	2	11	12	6	31
Joint pain	2	7	8	4	21
Neck pain	1	4	3	2	10
Toothache	0	1	2	1	4
Ear pain	0	1	1	0	2

Table 5: Number of patients as per pain site and gender (n = 322)

Site of pain	Gender		Total
	Male	Female	
Back pain	27	53	80
Body pain	25	49	74
Knee pain	18	36	54
Chest pain	22	23	45
Upper limb pain	8	27	35
Headache	10	21	31
Joint pain	4	17	21
Neck pain	3	7	10
Toothache	1	3	4
Ear pain	1	1	2

of them showed symptoms of gastrointestinal infection such as cramps, nausea, vomiting, loose motion, and constipation. There were 35 patients with chronic upper limb pain, which included patients with pain in shoulder, elbow, arm, hand, wrist, and so on. The female patients (27) were nearly three times that of male patients (8). There were 31 patients with a complaint of headache, of which 21 were female and 10 were male patients. Chronic joint pain other than knee pain was reported by 21 patients and was mainly observed in female patients (17).

DISCUSSION

Our study shows that approximately one-third of the patients (29.63%) who visit PHC have some or the other type of pain. Muthunayanan *et al.*,^[3] in their study, revealed nearly 51% of the patients reporting some form of pain and seeking help in the medical camps in Tamil Nadu, although chronicity of pain was not discussed in this study. In a meta-analysis carried out by Fayaz *et al.*,^[2] the prevalence of chronic pain in the UK varied between 37% and 51.8%. Tsang *et al.*,^[4] in his mega study, found 41.1% and 37.3% of patients with pain in developing and developed countries, respectively, when viewed over 12 months. Azevedo *et al.*^[5] showed a prevalence of 36.7% in his research. A very high prevalence of 55.7% was reported by Nahin^[6] in his study conducted in USA. In their telephonic cross-sectional survey conducted in the seven cities of India, Dureja *et al.*^[7] reported similar prevalence (22%). Ng *et al.*,^[8] in their study, reported severe chronic pain in 31.9% of the patients.

As the age progresses, incidence of chronic pain also increases. A meta-analysis carried out by Fayaz *et al.*^[2] reported that the prevalence increased from 14.3% to as high as 62% from the age group of 18–25 years to more than 75 years with an exception of age group 50–64 years, where the prevalence was higher. It was interesting to note that in our study, the age groups 21–40 and 41–60 years had more number of patients than that in the age group 61–80 years. This may be due to underreporting by old ones because of difficulties to travel to health center or it can be due to overreporting by young ones to avoid absenteeism from work as they are the breadwinners for the family and work on daily wages. Andersson *et al.*^[9] revealed increased prevalence of pain from the age 50 to 59 years in both the genders.

It is now more than an established fact that the prevalence of chronic pain is more in female patients than in male, irrespective of age or socioeconomic condition.^[1] In our study, 66.53% of the patients reporting pain were female. Several population-based studies consistently found greater prevalence of pain among women relative to men.^[10] An interaction of biological, psychological, and sociocultural factors is likely to contribute to these differences.^[10] An epidemiological data from 7 developing and 10 developed countries also indicated that women were more commonly affected with chronic pain.^[4] Fillingim *et al.*,^[11] after studying several epidemiological surveys to address the sex-linked influence on pain, concluded that women are at a greater risk of many clinical pain conditions.

Majority of the patients visiting PHCs are from low socioeconomic background, less educated class, and who work on daily wages. Rustøen *et al.*,^[12] in his study on Norwegian population, revealed that the persons with less education and ill health or chronic illness in the past are

more vulnerable to chronic pain. The highest prevalence was noted in elderly, retired, unemployed, and less educated by Azevedo *et al.*^[5] in their study.

If we observe pain pattern in our patients, the highest prevalence is observed for generalized body pain. We found 160 (32.25%) such patients of 496 patients. Among these, 86 had some infective etiology and pain for less than 3 months, whereas 74 were patients of chronic generalized body pain. It was also noted during our survey that some patients had a tendency to report to PHC every month with generalized body pain or leg and body pain; however, this was a coincidental finding and we do not have any record for it. Many studies from India have reported high prevalence of musculoskeletal pain, 37% in men and 51% in women. The cause for this high prevalence could be the inclusion of other pains such as back pain, knee pain along with generalized body pain.^[3] Prevalence of chronic widespread pain (similar to generalized body pain) ranged from 11.2% to 16.5% as per the systematic review and meta-analysis conducted by Fayaz *et al.*^[2] The proportion was high for women (66%) as compared to men in our study. A similar observation was made by Fayaz *et al.*^[2]

Back pain was found to be the most common chronic pain condition, the prevalence being 24.84% among the patients with chronic pain (322). It included unilateral and bilateral pain, pain in the center of back/buttock pain/pain radiating to leg, or nonspecific back pain involving the whole of back. Carmona *et al.*^[13] and Muthunarayanan *et al.*^[3] reported a bit lower prevalence (14.8%) in the general population of Spain and in the rural population of India (10%), respectively, whereas a higher prevalence was reported by Mathew *et al.*^[14] (28.4%) and Sharma *et al.*^[15] (23%) in their studies, respectively. Here again, female patients were in maximum proportion as compared to male, and it was the highest in the age group of 41–60 years in our survey.

Chronic knee pain was reported by 54 patients giving a prevalence of 16.77% among the patients with chronic pain (322). Chopra *et al.*^[16] in a study of more than 4000 patients from a rural population, reported a prevalence of 13.2%. LeResche,^[17] in her chapter on epidemiology of pain, had reported that knee pain prevalence increases with age. This probably suggests the progressive degenerative conditions observed with increasing age.^[17] Muthunarayanan *et al.*^[3] in their study conducted in the rural population of India, reported a total prevalence of 18.6% with 19.7% in women and 15% in men. Chopra *et al.*^[16] observed a bit lower prevalence, that is, 13.2% in the rural India, whereas Fernandez *et al.*^[18] documented 10.2% in Spain. Knee was reported as the most common site of pain by the National Health and Nutrition Examination Survey conducted in USA.^[19]

Only 45 patients with chronic chest pain were included, giving a prevalence of 13.97% among the patients with

chronic pain (322). There were 26 patients with some cardiac problem such as history of breathlessness, heaviness, and sweating. Contrary to other pain sites, male-to-female ratio was almost equal for chest pain. The age group of 21–60 years showed this type of pain. Eslick *et al.*^[20] found the prevalence of non cardiac chest pain to be 33%. The prevalence was found to be similar in both men and women, though older female patients showed higher prevalence.^[16]

The patients with shoulder, arm, wrist, and hand pain were grouped under upper limb pain as the area of pain was found to be overlapping. The prevalence of chronic upper limb pain was 10.87% in our study among the patients with chronic pain (322). The number was two times in female patients as compared to male. Feleus *et al.*,^[21] in his work in Netherlands, found a prevalence of 31%, 30%, 11%, and 17% for neck, shoulder, elbow, and wrist pain, respectively.

The prevalence for chronic headache was found to be 9.76% in our survey carried out among the patients with chronic pain (322). According to a mega survey conducted in Europe by Stovner and Andree,^[22] a 1-year prevalence was found to be 4% in adults, but it was minimal (0.5%) in teenagers, although the prevalence for other types of headaches was much more (14.7% for migraine). The prevalence for abdominal pain was 10% with 50 patients, but they were excluded from chronic pain as the duration was much shorter than 3 months. They had probably infective etiology and symptoms such as fever, nausea, vomiting, and loose motion along with pain. LeResche,^[17] in her chapter on epidemiology, mentioned about three large surveys showing a prevalence of 25%–35% at any age but always higher in female patients than in male. In our study as well, female patients were more in number than male.

LIMITATIONS

Our study was carried out in a small urban PHC in a city of central India. More studies of longer duration are required to obtain adequate information on chronic pain in this part of India. We could not comment on the type of pain, that is, neuropathic or nociceptive, and on the treatment received. Further studies are required to comment on these aspects as well.

CONCLUSION

A significant number of patients visiting PHCs have chronic pain. Most common complaint is generalized body ache. Female patients are significantly more in number as compared to male patients. The patients from the age of 21 to 60 years seek medical help for pain more than the young and the elderly. Further studies are needed to know the details of all patients with chronic pain, treatments, and its effects, so as to manage this important clinical condition properly in a primary care setting.

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Conflicts of interest

There are no conflicts of interest.

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