

Healthcare Seeking Behavior for Back and Joint Pain in Rural Gadchiroli, India: A Population-Based Cross-Sectional Study

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ABSTRACT

Background: Musculoskeletal back and joint pain is common in rural agrarian communities in India. **Objectives:** To understand the healthcare seeking behavior for back and joint pain among adults in rural Gadchiroli, India. **Materials and Methods:** A cross-sectional survey of 315 randomly selected respondents from 84 villages between 30 and 60 years of age was conducted by community health workers (CHWs) between October 2010 and January 2011. **Results:** Among 280 respondents on whom good quality data were available, 215 (76.8%) respondents had back and/or joint pain in 6 months preceding the survey. A majority of the respondents with pain had sought care (170; 79.1%), mainly from private practitioners (116; 68.2%). Severe pain and inability to work were the reasons to seek care. Complete pain relief was considered the major indicator of an effective treatment. Injectable medications (127; 59.1%) and intravenous fluids (92; 42.8%) were considered highly effective; while about 50% were unaware of the role of physiotherapy and surgery for this problem. When asked about the preferred provider who should provide village level treatment of this problem, more than half (135; 62.8%) of the respondents chose a trained village health worker. **Conclusions:** A majority of the individuals with back and/or joint pain in rural Gadchiroli seek care, mainly from private practitioners. However, for the village-level treatment of this problem, respondents preferred a trained village level worker. High expectation of complete pain relief, preference for injectable medications, and low awareness about nonpharmacological modalities will be the major challenges while providing community level care for this problem.

Keywords: Back pain, healthcare seeking, joint pain, musculoskeletal pain, rural India

Introduction

Musculoskeletal pain (MSP) is the most common cause of long-term pain and disability all over the world affecting all sections of the society.⁽¹⁾ Musculoskeletal complaints are also the second most common reason for consulting a doctor and constitute, in most countries, up to 15-20% of primary care consultations.⁽²⁾ Given the pervasive nature of the musculoskeletal disorders and its

significant impact on health and healthcare, the World Health Organization had declared years 2000-2010 as the bone and joint decade.⁽¹⁾

Heavy physical work is a risk factor for musculoskeletal pain.⁽³⁾ About 70% of India's population lives in rural area and earn livelihood mainly through manual labor putting this population at high risk for musculoskeletal pain.⁽⁴⁾ Two community-based studies conducted among adults in rural India have reported prevalence of rheumatic musculoskeletal disorders and musculoskeletal pain at 18.2 and 26%, respectively.^(5,6) Furthermore, in a nationally representative study in India, disorder of joints/pain were the second and fourth most common causes of outpatient clinic visits and out of pocket expenses among all noncommunicable diseases, respectively.⁽⁷⁾ Despite the significant magnitude of the

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problem and the economic burden, back and joint pain are not a priority of the National Rural Health Mission, the government agency responsible for improving the availability and access to quality healthcare to the rural population in India.⁽⁸⁾

The prevalence of this problem is high in rural Gadchiroli and is associated with high healthcare costs (Bang *et al.*, manuscript under preparation). Thus, there is a need for affordable, accessible, and acceptable healthcare services for this problem in the rural areas. The first step in designing such healthcare intervention would be to understand the current healthcare seeking behavior of the population. This study is a part of a program to study musculoskeletal disorders in rural Gadchiroli, India and aimed to understand:

- The current healthcare seeking behavior,
- Expectations from and perceived effectiveness of the available treatments,
- Preferred healthcare providers if the treatment is made available at the village level.

Materials and Methods

Research setting

This study was conducted in Gadchiroli district which is one of the most backward districts of Maharashtra state of India.⁽⁹⁾ Society for Education, Action, and Research in Community Health (SEARCH) is a nongovernmental organization working in Gadchiroli district since 1986 and has a field practice area of 86 villages where trained community health workers (CHWs) and supervisors of SEARCH regularly collect population-based information and provide healthcare for selected ailments to the villagers.

Study design and sample selection

The study was a cross-sectional survey. Out of 86 villages under the field area of SEARCH, two villages were part of another study where clinicians evaluated patients with back and joint pain and provided treatment; and therefore, were excluded from the study [Figure 1]. The remaining 84 villages constituted the sampling frame. Any male or female resident of the villages between 30 and 60 years of age, irrespective of presence or absence of back and/or joint pain, was eligible for inclusion in the study.

We calculated sample size for this study based on the estimated prevalence of adults who will seek healthcare for back and/or joint pain using the formula $n = Z^2 P(1-P)/d^2$, where n is the sample size, Z is the statistic for a level of confidence, P is the expected prevalence, and d is precision. We assumed that 50% of adults will seek care for back and/or joint pain (based on the

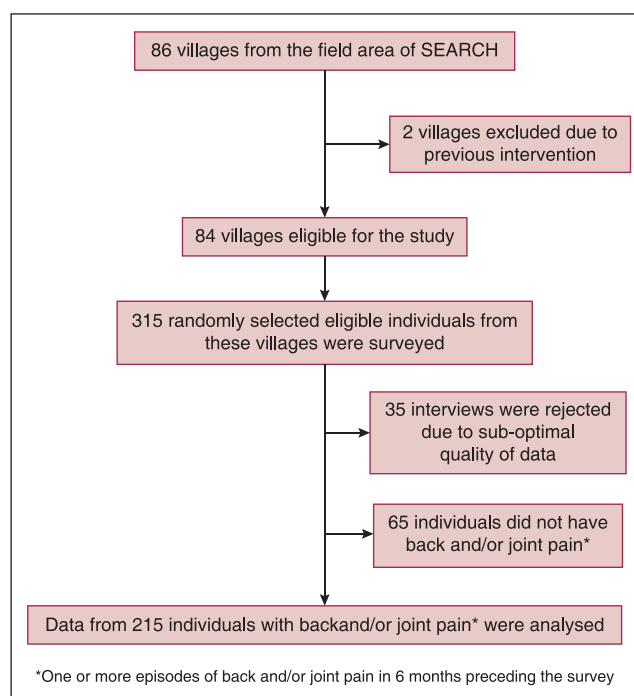


Figure 1: The study scheme

results of a community-based study conducted by us, Bang *et al.*, manuscript under preparation). Considering the prevalence of 50%, confidence level of 95% and precision of 0.08, the required sample size was 150 individuals. The sample size was increased to account for the design effect of 1.75 and was further increased by 25% to account for nonresponse and data loss due to inconsistent responses which gave final sample size of 315 individuals. Using the population register of SEARCH, 315 respondents aged 30-60 years were randomly selected from the 84 villages in the field practice area of SEARCH.

Data collection

The data were collected by the field supervisors of SEARCH in face-to-face interviews between October 2010 and January 2011 using two questionnaires for those with back pain, and joint pain. Back pain was defined as self-reported midline pain involving upper or lower back. While joint pain was defined as self-reported pain in any joint in upper or lower limbs. The purpose of the study was explained and verbal informed consent was obtained from each respondent before the interview. If the selected individual was not available after three home visits, another individual was selected from the list.

Ethical approval

The study was approved by the institutional ethical committee of SEARCH. The procedures followed were in accordance with the Helsinki Declaration of 1975, as revised in 2000.

Statistical analysis

Categorical data are presented as frequencies and continuous data are presented as mean \pm standard deviation (SD). Multivariate logistic regression was performed to evaluate association between healthcare seeking for back and/or joint pain and other factors which are likely to influence it. Data were analyzed using Statistical Package for Social Sciences (SPSS) version 16 (Chicago, USA) software.

Results

Out of 315 respondents interviewed, good quality data were available on 280 (88.9%) participants and was used for analyses. Out of these 280 respondents, 215 (76.8%) respondents had one of more episodes of back and/or joint pain in 6 months preceding the survey and data from these individuals were used for further analyses. The demographic features of the respondents with pain are as shown in Table 1.

Healthcare sources sought for treatment and reasons for seeking care

Among 215 respondents with pain, 170 (79.06%) sought treatment from a healthcare provider for pain-116 (68.2%) from private practitioners and 52 (30.6%) at various government health centers [Figure 2]. In those who sought treatment, severe pain was the commonest reason for seeking treatment (139; 81.8%) followed by inability to perform household work (91; 53.5%) and inability to perform occupational work (78; 45.9%). In a multivariate analysis using logistic regression, inability to perform household work (adjusted odds ratio (OR), 38.5, 95% confidence interval (CI), 5-293.7, $P < 0.0001$) and inability to perform occupational work (adjusted OR, 24.7, 95% CI, 3.1-195.3, $P = 0.002$) were the only

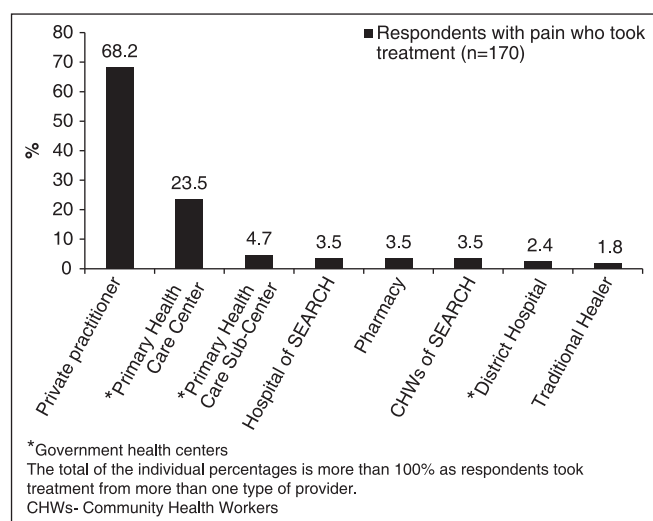


Figure 2: Health care sources used for the treatment of back and/or joint pain

factors associated with healthcare seeking for back and/or joint pain after adjusting for age, sex, education, and occupation.

Satisfaction from the treatment and effective modalities of treatment

Out of 170 individuals who sought treatment, about half (86; 50.6%) of the respondents were satisfied with the treatment due to either complete relief from the pain/discomfort or reduction in the intensity of pain/discomfort. The remaining half (84; 49.4%) were not satisfied with the treatment either due to temporary relief from pain/discomfort (59; 70.2%) or no relief from pain/discomfort (14; 16.7%). When the respondents were asked to rate the effectiveness of the treatment received at various providers, most of the respondents rated care received at various sources as somewhat effective [Table 2].

Among 11 treatment options which are used by the current providers for back and joint pain in the study area as well as those that have been shown to be beneficial in research studies,⁽¹⁰⁾ injectable medications (127; 59.1%) and intravenous fluids (92; 42.8%) were considered highly effective. More than half of the respondents were

Table 1: Sociodemographic profile of the respondents with pain

Sociodemographic characteristic	Respondents with pain (n = 215)
Age in years, mean (SD)	47.05 (8.9)
Females, n (%)	117 (54.4)
Education	
Literate, n (%)	91 (42.6)
Years of education, mean (SD)	6.6 (18.4)
Marital status, n (%)	
Married	177 (81.9)
Occupation, n (%)	
Farming	159 (74)
Labor	50 (23.2)
Business	6 (2.8)

SD: Standard deviation

Table 2: Rating of the effectiveness of the treatment provided by various healthcare providers for back and/or joint pain (n = 170)

Healthcare provider	Very effective n (%)	Somewhat effective n (%)	Not effective n (%)
Private practitioner (n = 116)	21 (18.1)	84 (72.4)	11 (9.5)
Government health centers			
Subcenter (n = 8)*	1 (12.5)	6 (75)	1 (12.5)
Primary health center* (n = 40)	2 (5)	35 (87.5)	3 (7.5)
District hospital (n = 4)	1 (25)	3 (75)	0
Others (n = 21)	8 (38)	13 (62)	0

*A government subcenter in Gadchiroli district covers a population of 3,000, while a primary health center covers a population of 20,000

Table 3: Rating of the effectiveness of various treatment modalities used by the healthcare providers for the treatment of back and/or joint pain

*Respondents with pain (n = 215)	Highly effective (score-2)	Moderately effective (score-1)	Not effective (score-0)	Don't know (score-0)	Total score
	n (%)	n (%)	n (%)	n (%)	
Injectable medications	127 (59.1)	78 (36.3)	10 (4.7)	0	332
Analgesic tablet/capsule	74 (34.4)	123 (57.2)	15 (7)	3 (1.4)	271
Pain relief ointment	60 (27.9)	142 (66)	13 (6)	0	262
Intravenous fluids	92 (42.8)	69 (32.1)	42 (19.5)	12 (5.6)	253
Oil massage	49 (22.8)	152 (70.7)	5 (2.3)	9 (4.2)	250
Hot fomentation	30 (14)	125 (58.1)	22 (10.2)	38 (17.2)	185
Surgery	65 (30.2)	14 (6.5)	19 (8.8)	117 (54.4)	144
Exercises	43 (20)	33 (15.3)	19 (8.8)	120 (55.8)	119
Knee cap/lumbar belt	33 (15.3)	41 (19.1)	14 (6.5)	127 (57.5)	107
Infrared therapy	31 (14.4)	38 (17.7)	23 (10.7)	123 (55.7)	100
Yoga	26 (12.1)	24 (11.2)	8 (3.7)	157 (73)	76

*Respondents with back and/or joint pain in 6 months preceding the survey

unaware about the effectiveness of exercise (120; 55.8%), yoga (157; 73%), and surgery (117; 54.4%) for pain relief [Table 3].

We numerically rated the effectiveness of therapy. A score of 2 was given if the therapy was considered highly effective, a score of 1 was given if it was considered moderately effective, and score of 0 was given if the therapy was considered not effective or if the respondent was unaware of the benefit of the treatment. The score given by individual respondent for a given therapy was summed up to obtain the total score for that therapy. When various therapies were ranked by the total score given for effective therapy, with higher scores indicating more effective therapy, injectable medicines, analgesics, pain relief ointments, intravenous fluids, and oil massage received higher scores. Surgery, exercise, knee cap/lumbar belt, infrared therapy, and yoga were considered less effective and received lower scores [Table 3].

Perceptions regarding community-based healthcare services for back and joint pain

When the participants were asked about the preferred providers if healthcare is made available at the village level for back and joint pain, the CHWs of SEARCH were preferred by 135 (62.8%), government healthcare centers by 60 (27.9%), private practitioners by 15 (7%), and other providers by five (2.3%) respondents with pain.

Discussion

Our study provides several important insights into the healthcare seeking behavior for musculoskeletal back and joint pain in rural India. We found that a majority of the respondents (about 80%) with back and/or joint pain sought treatment from providers for this problem indicating the need to have qualified providers to provide healthcare for this problem. The care was mainly provided by private practitioners. This is in concordance

with the general pattern of medical care in India where care is predominantly sought from the private sector.⁽¹¹⁾ Although heavily subsidized care is available from government healthcare facilities, only about one-fourth of the respondents either took treatment [Figure 2] or were ready to take treatment in the future from these sources indicating a lower preference for these facilities.

Patient's expectations from the treatment were high and half of the respondents who took treatment were not satisfied with the treatment. The dissatisfaction appears to be due to a mismatch between the expectations of complete relief from pain from the treatment and the outcome. As patient's expectations are known to influence the outcome of the treatment in musculoskeletal pain,⁽¹²⁾ our findings highlight the need to educate people about the recurrent nature of back and joint pain in order to set realistic expectations from the treatment.

Injectable medicines and intravenous fluids were perceived as highly effective modes of treatment of back and joint pain. Other than one study from rural India where 57% respondents reported taking injections for musculoskeletal disorders,⁽⁵⁾ not much is known about use of these therapies in rural areas in developing countries. Injectable medicines and intravenous fluids increase the cost of care and can potentially increase risk of complications such as injection abscesses and thrombophlebitis.

More than half of respondents in our study were completely unaware of nonpharmacological interventions like physiotherapy, yoga, and surgery. Given a relatively low awareness about these therapies it will be challenging to introduce these interventions for pain relief in rural communities as the acceptance might be low. Increasing awareness about these treatments and making them available will help rural communities to take advantage of these treatments.

Although more than half of the respondents took treatment from private practitioners, a majority of them preferred CHWs of SEARCH to provide care for back and joint pain at the village level. This may indicate that people prefer locally available therapies if they are effective, are provided by trained manpower under proper supervision and at affordable costs as in case of SEARCH CHWs.

⁽¹³⁾ However, the fact that very few of the respondents with pain are currently using the available analgesic tablets with the CHWs of SEARCH indicates the need for education and enhancing the effectiveness of this care. This is important as availability of effective care in the community leads to significant cost saving.⁽¹³⁻¹⁵⁾ Given the pervasive nature of this problem in rural areas, on a larger scale, pain relief to patients with nonspecific back pain and joint pain due to osteoarthritis can be potentially provided by village-based workers such as Accredited Social Health Activists (ASHAs). ASHAs can be trained to a) dispense analgesic tablets under appropriate supervision using treatment algorithms developed for this purpose and b) increase awareness about this problem among people.

While our study has several strengths such as random selection of participants from a well-defined population and data collection by well-trained workers, there are also some limitations. The responses were inconsistent in 35 individuals out of 315 individuals leading to some data loss. As we inquired about back and or joint pain in 6 months preceding the survey, we cannot completely rule out some recall bias. However, the study was conducted during harvest season when the back and/or joint pains are very common which is likely to minimize this bias to some extent. Furthermore, facilitators and barriers to seeking care from individual health source were not explored in the study. When the respondents were asked about the provider who should provide village-level treatment for this problem, a majority of the respondents chose CHWs of SEARCH. These findings need to be interpreted with caution. We cannot exclude the possibility that the respondents might have chosen this response as the socially acceptable one, as the questionnaires were administered by the supervisors of SEARCH. However, it is our experience that villagers prefer locally available therapies. Such care is more convenient and there is less expenditure associated with travel.

Conclusions

Our study suggests that in order to be acceptable, an intervention for musculoskeletal back and joint pain should be locally available given that the problem is very common. The likelihood of acceptance of such an intervention will be more if the intervention includes education about:

1. The natural history of musculoskeletal back and joint pain to help people set realistic goals in terms of outcomes of medical care,

2. Avoiding unnecessary care such as intravenous fluids, and
3. Nonpharmacological therapies such as exercises and yoga as well as need for surgery in selected cases.

The intervention should make nonpharmacological therapies available, accessible, and affordable. Also, in addition to providing pain relief, such a healthcare intervention needs to bring behavioral change by addressing the knowledge gaps and perceptions.

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