

# Pain as a reason for primary care visits: cross-sectional survey in a rural and periurban health clinic in the Eastern Cape, South Africa

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## Abstract

**Background:** The burden of pain in primary care has not been described for South Africa. This study aimed to determine the prevalence of pain in primary care and to characterise pain among adult patients attending a rural and a periurban clinic in the Eastern Cape (EC) Province.

**Method:** A cross-sectional descriptive survey was conducted among adult patients attending a rural and periurban clinic over four days. Consecutive patients were asked whether they were in the clinic because of pain and whether the pain was the major reason for their visit. Pain was characterised using an adaptation of the Brief Pain Inventory and the Pain Disability Index. The prevalence percentage and the 95% confidence interval (CI) of pain were estimated, and the relationship with demographic variables was determined at a significance level of  $P \leq 0.05$ .

**Results:** Seven hundred and ninety-six adult patients were interviewed, representing a response rate of 97.4%. Almost three-quarters (74.6%; 95% CI: 63.2-81.4%) reported visiting the clinic because of pain. Pain was the primary reason for 393 (49.4%; 95% CI: 32.1-61.0%) visits and was secondary in 201 (25.3%; 95% CI: 12.8-33.7%) visits. The common sites of pain were the head, back and chest. The median pain score was eight on a scale of 0-10 (interquartile range: 6-8). Respondents experienced limitations in a number of activities of daily living as a result of pain.

**Conclusion:** Pain is a central problem in public primary care settings in the EC Province and must therefore be a priority area for primary care research. Strategies are needed to develop to improve pain management at primary care level in the province.

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## Introduction

Pain is ubiquitous in human existence. Indeed, the ability to perceive pain may be viewed as a physical characteristic of humankind and thus a proof of being alive. Prevalence studies conducted in the general population have shown that pain is common among male and female adults,<sup>1,2</sup> adolescents and children<sup>3-6</sup> and among people who live in urban<sup>7-15</sup> and rural<sup>16-17</sup> settings. The precise prevalence rate of persistent or chronic pain in the community varies across studies, with one systematic review suggesting that the point prevalence of pain ranges from 10% to 50%.<sup>2</sup> The high prevalence rate of pain in the community reflects the substantial social and economic impact pain has on human populations, including its direct toll on the health economy.

Studies provide evidence that pain is an important cause of the use of health services. In Denmark, a study<sup>18</sup> analysed

2 886 patient-doctor contacts and identified pain as the primary reason in 22% of patient visits to the doctor. Potter<sup>19</sup> reported that just over 40% of 1 000 consecutive consultations in a primary care setting in the United Kingdom (UK) involved a complaint of pain. Still in the UK, as many as 50% of patients attending a sample of general practices in the Grampian region suffered from chronic pain,<sup>20</sup> while the incidence of chronic pelvic pain has been reported to be as high as 4%.<sup>21</sup> Hartz and Kirchdoerfer have reported that 5% of adult patients in primary care settings in the United States of America experienced unexplained chronic diffuse muscular pain.<sup>22</sup> In Finland, a study reported that pain accounted for 40% of all visits to the primary care doctor.<sup>23</sup> The study further differentiated pain prevalence and reported that pain was the primary reason for visit in 29% and the secondary reason in 11% of all doctor visits. In Sweden, Hasselstrom et al. performed a retrospective

analysis of computerised records of a general practice group over one year and noted a prevalence rate of 28% for pain.<sup>24</sup>

However, there are limited studies on the prevalence of pain complaints in primary care in South Africa in general, and in the Eastern Cape (EC) Province in particular.<sup>25</sup> We previously investigated pain prevalence in primary care within the EC Province by analysing health records.<sup>26</sup> This revealed that pain accounted for at least 19% of the patient case load serviced in public health clinics in the province. Given the reliance on health facility records, it was not possible to undertake a detailed characterisation of pain, such as determining whether pain was a primary or secondary reason for the visit. We hypothesised that the actual prevalence rates of pain were higher than could be gleaned from routine health records. To test this hypothesis and as a follow-up to our initial investigation in primary care, the objectives of this study were as follows:

- To estimate the prevalence of pain among adult patients attending a rural and a periurban primary health care clinic in the EC Province
- To describe the localisation, duration, frequency and severity of pain in this population
- To describe the reported activity limitations due to pain and the treatment received

## Method

### Study design

This was a quantitative cross-sectional descriptive study. Comparative analyses were also carried out to identify some of the indicators that were associated with pain prevalence, duration and frequency, severity and activity limitation in the sample.

### Study setting

This study was conducted in the two public primary health clinics located in communities where population-based surveys on pain were conducted in the EC Province.<sup>27,28</sup> These were Baziya Clinic, which is located in a sparsely populated rural community (Baziya), and Ngangelizwe Clinic, which serves a periurban community (between suburban and rural) around Mthatha.

Both clinics are state owned and managed, and patients generally do not pay fees for the health care services received. A once-off nominal fee is applicable during registration with accompanying identification documents. In the case of Baziya, this facility is the only formal primary health care centre available to the immediate community (within a 40 km radius). For Ngangelizwe, the proximity to Mthatha offers a number of other primary care clinics,

including private clinics. However, the public clinic is very highly utilised, given the low socioeconomic status of most of the community residents and the easier access to this clinic compared to private clinics in Mthatha or other public health care clinics.

### Sampling

To be representative of the average adult patient population who attend the health clinics as well as to account for seasonal variations in patient case mix and health facility use, repeat cross-sectional surveys were performed on the same day of the week in the four quarters of the year (i.e. a total of four survey days per facility).

In both health facilities, the practice is that certain days of the week are designated for special clinics, such as “diabetes clinic day”, “neurology clinic day” etc. No special clinics are run on a Tuesday for Baziya Clinic or on a Thursday for Ngangelizwe Clinic. These days were therefore chosen for the respective clinics for the survey.

Considering public holidays and dates for payment of government social grants, survey days (Tuesdays for Baziya Clinic and Thursdays for Ngangelizwe Clinic) were chosen in such a way that one day fell in each of the periods January to March, April to June, July to September and October to December.

For the selected days, all adult patients (18 years and older) who presented for a definitive clinical service in the clinic were approached for inclusion in the study. Clinical services were limited to consultations with a professional nurse or doctor. Returning patients who came only to pick up their medications or tuberculosis patients who came for their directly observed therapy sessions were excluded. Also excluded in Ngangelizwe Clinic were patients attending a parallel HIV/AIDS clinic, as this ran autonomous of the general clinic.

### Data collection

#### Instrumentation

Data were collected using a predesigned interviewer-administered questionnaire. The questionnaire elicited information on demographic variables (age and gender), pain prevalence and pain characteristics. An initial question, “Are you in the clinic today because of any kind of pain?”, screened for pain as a reason for the visit. Among those who answered in the affirmative, a second question, “Is this pain the major reason why you are here today?”, differentiated pain as a primary or secondary reason for the visit. To characterise pain further, questions adapted from the Brief Pain Inventory (BPI) were then asked.<sup>29</sup> The BPI is a widely used and validated tool that measures both the intensity of

pain (sensory dimension) and the interference of pain in the patient's life (reactive dimension). It also queries the patient about pain relief, pain quality and patient perception of the cause of pain.

Adaptations were made to the BPI with respect to measuring the interference of pain on different domains of an individual's life. For this study, the brief seven-item Pain Disability Index (PDI) was chosen.<sup>30</sup> The PDI was selected for its brevity in contrast to other longer measures, such as the Sickness Impact Profile, which would have placed an undue time demand on study participants. The PDI measures the extent of pain interference in seven domains, *inter alia*, family, recreation, social activities, occupation, sexual behaviour, self-care and life support activities. Each domain is rated on an 11-point scale (0 = no disability to 10 = total disability). There is evidence of good reliability for the PDI, and factor-analytic studies have reported one- and two-factor solutions.<sup>31,32</sup> In all, the questionnaire had 15 questions and took four to six minutes to administer.

#### Data collection procedure

Four trained data collectors approached consecutive patients as they entered the health clinics. After establishing whether the patients were in the clinic to see the nurse or doctor, they informed the patient about the survey and requested a verbal consent to participate in the survey. If the patient refused to participate, the data collectors filled in a nonrespondent tally list, which provided counts of nonrespondents. In such cases, no further questions were asked.

All consenting adult patients who presented to the clinics on the days of the survey were interviewed. The data collectors administered the questionnaires in the preferred language of communication of the respondent.

#### Data handling and cleaning

Data were entered twice in Microsoft Excel<sup>®</sup> spreadsheets by two data capturers. The two entries were then compared and discrepancies were corrected. Following this, the data were imported to SPSS<sup>®</sup> version 16.0 for Windows<sup>®</sup>. In SPSS<sup>®</sup>, impossible and implausible values were checked using codebook and frequency tabulation. When impossible or implausible values were obtained, the respective questionnaire was re-examined and data were corrected. Data that could not be corrected by referring to the questionnaires were recoded as missing.

#### Data analysis

Data were analysed using SPSS<sup>®</sup> version 16.0 for Windows<sup>®</sup>. Descriptive statistics were used including the calculation of frequency, central tendency and dispersion measurements.

The 95% confidence intervals (CIs) were also calculated. To assess the pain severity, we used the single-factor scoring method on the BPI and PDI that is the sum of all domains. The median and interquartile ranges (IQRs) were then estimated. Subsequently, bivariate analysis was carried out in order to compare the association of different independent variables (age, gender, urban vs. rural clinic) with pain. Student's t-test for independent samples was applied, while the  $\chi^2$  test and the Kolmogorov-Smirnov test were used for categorical variables. Multiple logistic regression analysis was used to investigate the association between pain and the demographic variables of sex and age. Model interpretation was done using adjusted odds ratios (AORs), and the goodness-of-fit of the model was assessed by the Hosmer-Lemeshow test. The test indicated that the models fitted the data adequately. In all cases, significance was taken as  $P \leq 0.05$ .

#### Ethical considerations

Ethical approval for the study was obtained from the Ethics Committee of the University of the Western Cape as part of a doctoral research project titled "Epidemiology and burden of chronic pain within the Eastern Cape Province." Permission to undertake the study within the health clinics was obtained from the clinic managers.

The purpose and nature of the study was explained to prospective study participants who were assured of their right to refuse to participate in the study entirely or withdraw at any point. Participants were also assured of anonymity of information collected, and their verbal consents were solicited before commencement of the interviews.

## Results

#### Description of study respondents

A total of 796 adult patients attending the rural ( $n = 287$ , 36.1%) and periurban ( $n = 509$ , 63.9%) clinics were interviewed on four separate survey days. The overall response rate was 97.4% (98.3% in the rural clinic and 97.0% in the periurban clinic). Table I shows the number of respondents and nonrespondents in both clinics over the four survey days.

The periurban clinic consistently had more attendees than the rural clinic. However, there was no statistically significant difference in the number of respondents ( $P > 0.05$ ) in the clinics across the different survey days.

The age range of respondents was between 19 and 73 years (mean age 44.3 years, standard deviation [SD] = 5.7). The mean age in the rural clinic (46.8 years, SD = 3.7) did not differ significantly from the mean age in the periurban clinic (43.1 years, SD = 5.9 years).

**Table I:** Number of respondents and nonrespondents in the rural and periurban clinics according to survey day

|                                 | Survey day 1 | Survey day 2 | Survey day 3 | Survey day 4 | Total | Response rate |
|---------------------------------|--------------|--------------|--------------|--------------|-------|---------------|
| Rural clinic respondents        | 73           | 67           | 71           | 76           | 287   | 98.3%         |
| Rural clinic nonrespondents     | 3            | 0            | 1            | 1            | 5     |               |
| Periurban clinic respondents    | 108          | 133          | 131          | 137          | 509   | 97.0%         |
| Periurban clinic nonrespondents | 4            | 5            | 3            | 4            | 16    |               |
| Total respondents               | 181          | 200          | 202          | 213          | 796   | 97.4%         |
| Total nonrespondents            | 7            | 5            | 3            | 6            | 21    |               |
| Total adult clinic attendees    | 188          | 205          | 205          | 219          | 817   |               |

**Table II:** Number and percentage of all adult visits and visits due to pain expressed as a function of gender and age in the study sample

|                          | Rural clinic |       |                    |      | Urban clinic |       |                    |      | Both clinics |       |                    |      | **AOR (95% CI)   | Chi-square P value |
|--------------------------|--------------|-------|--------------------|------|--------------|-------|--------------------|------|--------------|-------|--------------------|------|------------------|--------------------|
|                          | All visits*  |       | Visits due to pain |      | All visits*  |       | Visits due to pain |      | All visits*  |       | Visits due to pain |      |                  |                    |
|                          | n            | %     | n                  | %    | n            | %     | n                  | %    | n            | %     | n                  | %    |                  |                    |
| <b>Gender</b>            |              |       |                    |      |              |       |                    |      |              |       |                    |      |                  |                    |
| Male                     | 121          | 42.2  | 87                 | 71.9 | 176          | 34.6  | 111                | 63.1 | 297          | 37.3  | 198                | 33.3 | 2.86 (1.40–5.60) | < 0.001            |
| Female                   | 166          | 57.8  | 132                | 79.5 | 333          | 65.4  | 264                | 79.3 | 499          | 62.7  | 396                | 66.7 |                  |                    |
| <b>Age group (years)</b> |              |       |                    |      |              |       |                    |      |              |       |                    |      |                  |                    |
| ≤ 24                     | 7            | 2.4   | 4                  | 57.1 | 40           | 7.9   | 33                 | 82.5 | 47           | 5.9   | 37                 | 78.7 | 1.97 (1.11–3.50) | 0.006              |
| 25–34                    | 34           | 11.8  | 22                 | 64.7 | 158          | 31.0  | 104                | 65.8 | 192          | 24.1  | 126                | 65.6 |                  |                    |
| 35–44                    | 46           | 16.0  | 31                 | 67.4 | 188          | 36.9  | 140                | 74.5 | 234          | 29.4  | 171                | 73.1 |                  |                    |
| 45–54                    | 67           | 23.3  | 49                 | 73.1 | 66           | 13.0  | 52                 | 78.8 | 133          | 16.7  | 101                | 75.9 |                  |                    |
| 55–64                    | 89           | 31.0  | 74                 | 83.1 | 23           | 4.5   | 17                 | 73.9 | 112          | 14.1  | 91                 | 81.3 |                  |                    |
| 65+                      | 44           | 15.3  | 39                 | 88.6 | 34           | 6.7   | 29                 | 85.3 | 78           | 9.8   | 68                 | 87.2 |                  |                    |
| Mean (SD)                | 46.8 (3.7)   |       |                    |      | 43.1 (5.9)   |       |                    |      | 43.1 (5.9)   |       |                    |      |                  |                    |
| Total                    | 287          | 100.0 | 219                | 76.3 | 509          | 100.0 | 375                | 73.7 | 796          | 100.0 | 594                | 74.6 |                  |                    |

\*Refers to all adult (18 years and older) visits.

\*\*Adjusted odds ratio and 95% confidence interval. It measures the risk of having pain among women relative to men and for age group among those 50 years or older relative to those younger than 50 years. Values refer to the combined rural and periurban clinic data.

The majority of the respondents were women overall ( $n = 534$ , 67.1%) and in both the rural ( $n = 168$ , 58.5%) and the periurban ( $n = 369$ , 72.5%) clinics. Seventy-two per cent of the respondents were married, while only 3% ( $n = 24$ ) were widows/widowers. The median income per month of the study respondents was R750 (range R120–R6 000). The majority of the study respondents ( $n = 677$ , 85.1%) earned below R1 000 per month. About a quarter ( $n = 199$ , 25%) of the respondents were retired/pensioners. Those who reported being unemployed were 94 out of 331 (41.6%). Almost all the respondents fell into two religious groups: 97% ( $n = 772$ ) Christian and 1.8% ( $n = 14$ ) traditional.

### Pain as a reason for clinic visits

Of all the patients who participated in the survey, 594 (74.6%, 95% CI: 63.2–81.4%) indicated that they were visiting the clinic as a result of pain. There was no significant difference in those who visited the clinic as a result of pain in the rural clinic ( $n = 219$ , 76.3%) compared to the periurban clinic ( $n = 375$ , 73.7%;  $P = 0.21$ ).

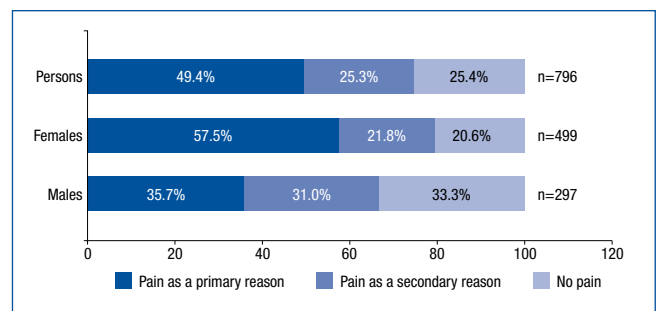
**Figure 1:** Percentage of pain-related visits according to gender ( $n = 796$ )

Table II shows the number and percentage of all visits and pain-related visits expressed as a function of gender and age. There were more female patients who visited the clinics because of pain ( $n = 396$ , 66.7%) than male patients ( $n = 198$ , 33.3%;  $P = 0.01$ ). This was the same in both the rural and the urban clinics. The calculated AOR and 95% CI estimates show that both being female and being older than 50 years were significantly associated with presenting with pain to the clinic.

Pain was the primary reason for the visit in 393 (49.4%, 95% CI: 32.1-61.0%) patient visits and the secondary reason in 201 (25.3%, 95% CI: 12.8-33.7%) patient visits. The percentage of pain-related visits according to gender is shown in Figure 1. There were more reports of pain as a primary reason for visit among female compared to male patients and conversely more reports of pain as a secondary reason for visit among male compared to female patients.

**Pain localisation**

Respondents who reported having pain were requested to indicate on a manikin the part of their body where they experienced pain. As shown in Table III, the most common anatomical pain sites (in order of frequency) were the head (27.6%), back (18.5%) and chest (8.9%). The ranking of the observed relative frequencies (percentages) of the different pain sites between men and women was fairly similar. Men, however, reported more frequent chest pains while women reported more frequent neck, hip and thigh, and arm and hand pain.

There was a very high number of reports of more than one pain site by both male and female study respondents. Table III shows the number of anatomical sites of pain in male and female respondents.

**Table III:** Number and percentage of patients reporting pain at different anatomical sites and the number of anatomical sites with pain among patients by gender

| Anatomical site                   | Men |      |      | Women |      |      | Persons |      |      |
|-----------------------------------|-----|------|------|-------|------|------|---------|------|------|
|                                   | n   | %    | Rank | n     | %    | Rank | n       | %    | Rank |
| General body*                     | 19  | 4.3  | 8    | 35    | 4.9  | 8    | 54      | 4.7  | 8    |
| Head**                            | 119 | 26.7 | 1    | 201   | 28.2 | 1    | 320     | 27.6 | 1    |
| Neck                              | 9   | 2.0  | 11   | 29    | 4.1  | 10   | 38      | 3.3  | 11   |
| Shoulders/elbows                  | 16  | 3.6  | 9    | 23    | 3.2  | 11   | 39      | 3.4  | 10   |
| Arms/hands                        | 31  | 6.9  | 6    | 58    | 8.1  | 4    | 89      | 7.7  | 5    |
| Chest                             | 56  | 12.5 | 3    | 47    | 6.6  | 6    | 103     | 8.9  | 3    |
| Back                              | 79  | 17.7 | 2    | 136   | 19.1 | 2    | 215     | 18.5 | 2    |
| Abdomen                           | 34  | 7.6  | 5    | 51    | 7.2  | 5    | 85      | 7.3  | 6    |
| Hips/thighs                       | 14  | 3.1  | 10   | 41    | 5.8  | 7    | 55      | 4.7  | 8    |
| Knees/ankles                      | 43  | 9.6  | 4    | 59    | 8.3  | 3    | 102     | 8.8  | 4    |
| Legs/feet                         | 27  | 6    | 7    | 33    | 4.6  | 9    | 60      | 5.2  | 7    |
| <b>Number of anatomical sites</b> |     |      |      |       |      |      |         |      |      |
| One                               | 77  | 38.9 |      | 126   | 31.8 |      | 203     | 34.2 |      |
| Two                               | 59  | 29.8 |      | 161   | 40.7 |      | 220     | 29.6 |      |
| Three                             | 43  | 21.7 |      | 83    | 21.0 |      | 126     | 21.4 |      |
| Four or more                      | 19  | 9.6  |      | 26    | 6.6  |      | 45      | 9.7  |      |

\*Not shaded on the manikin, but was noted as verbalised by the patient. Such patients often would not pinpoint a specific anatomical site of pain.

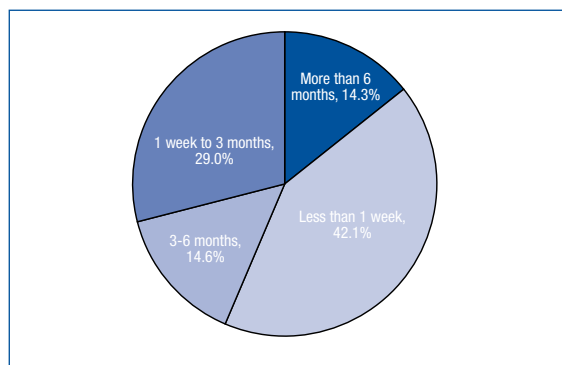
\*\*"Head" included head, face, teeth, jaw and ear, as poorly differentiated on the manikin.

There was more report of multiple sites in the rural compared to the periurban clinic (data not shown in table) (P = 0.02). The median number of sites reported in the rural clinic was three (IQR = 2-3) but was one (IQR = 1-2) in the urban clinic and two (IQR = 1-3) in the combined sample.

Because pain was typically reported at multiple sites, the remaining analyses concern pain without differentiation by anatomical sites.

**Duration and frequency of pain**

Among respondents with pain, the reported duration of the pain is presented graphically in Figure 2. We can deduce from the graph that 71.1% of those with pain had a pain duration of three months or less while 28.9% had their pain for more than three months.



**Figure 2:** Duration of pain reported by patients (n = 594)

This translates to a prevalence of chronic pain (if defined as pain lasting greater than three months) in the sample of 21.6%.

Table IV shows the duration and frequency of pain in men and women in two broad age groups (below 50 years and 50 years and older). Few patients under 50 years reported pain of long duration. In contrast, about one-third of male (32.3%) and female (35.1%) patients over 50 years of age were visiting the clinics because of pain that had lasted up to three months.

**Severity of pain and activity limitations**

The median pain score was eight on a scale of 0-10 (IQR = 6-8). Respondents reported that they experienced limitations in a number of activities of daily living as a result of pain. Pain hindered family activities (n = 196, 33.0%), recreational activities (n = 201, 33.8%), social activities (n = 113, 19.0%), occupation (n = 67, 11.3%), sexual behaviour (n = 32, 5.4%), self-care (n = 74, 12.5%) and life-support activities (n = 98, 16.5%). There was no statistical difference between men and women in terms of reported activity limitations (P = 0.16).

**Table IV:** Duration and frequency of pain as a function of age in men and women

|                                    | Men        |      |           |      | Women      |      |           |      |
|------------------------------------|------------|------|-----------|------|------------|------|-----------|------|
|                                    | < 50 years |      | 50+ years |      | < 50 years |      | 50+ years |      |
|                                    | n          | %    | n         | %    | n          | %    | n         | %    |
| <b>Duration of pain</b>            |            |      |           |      |            |      |           |      |
| Less than one week                 | 54         | 52.9 | 37        | 38.5 | 118        | 41.8 | 41        | 36.0 |
| One week to three months           | 28         | 27.5 | 28        | 29.2 | 83         | 29.4 | 33        | 28.9 |
| Three to six months                | 11         | 10.8 | 12        | 12.5 | 59         | 20.9 | 5         | 4.4  |
| More than six months               | 9          | 8.8  | 19        | 19.8 | 22         | 7.8  | 35        | 30.7 |
| <b>Frequency of pain</b>           |            |      |           |      |            |      |           |      |
| Continuous pain                    | 37         | 36.3 | 31        | 32.3 | 67         | 23.8 | 29        | 25.4 |
| One or more times a day            | 59         | 57.8 | 33        | 34.4 | 133        | 47.2 | 26        | 22.8 |
| One or several times a week        | 5          | 4.9  | 27        | 28.1 | 71         | 25.2 | 50        | 43.9 |
| Less often than four times a month | 1          | 1.0  | 5         | 5.2  | 11         | 3.9  | 9         | 7.9  |

## Discussion

This study aimed to investigate the prevalence of pain in a rural and a periurban clinic within the EC Province. A prior investigation of pain in primary care in the EC Province that was based on the retrospective review of health facility data highlighted that almost one in five primary care diagnoses was of a pain-related condition.<sup>26</sup> Although a nearly 20% prevalence rate demonstrates the pervasiveness of pain, this estimate was much lower than the prevalence rates reported in the literature for other regions of the world. For example, Mantyselka et al. estimated that about 40% of primary care visits in Finland were due to pain,<sup>23</sup> while Hasselstrom et al. reported 28% for Sweden.<sup>24</sup> The reasons for the differences in observed prevalence estimates are probably manifold, including actual background prevalence in the study population, differences in coping strategies leading to different health-seeking behaviours<sup>33-36</sup> or receiving treatment in other health care facilities. One important explanation for the difference in prevalence is the difference in research designs. We therefore wondered whether applying similar study designs would yield much closer estimates with international figures. Since our initial estimates of pain in primary care were based on problematic health records that did not allow the detailed characterisation of pain, this cross-sectional study was designed to provide more robust estimates of pain in primary care in the EC Province.

The approach chosen was to take a census of patients within a survey time period and establish pain prevalence in that period. This is similar to what was done in previous studies.<sup>18,19,23,37</sup> Stringent efforts were made to ensure that the survey covered a reasonably representative time period with consideration to the changing case mix at health

care facilities that occur daily and seasonally. Surveys were conducted at four time points purposively chosen to include every quarter of the year. The operation of special clinic days in both health facilities were also considered as these were likely to potentially bias the case loads towards particular diagnoses of patients. At the same time, however, by excluding special clinic days, there remains the chance of skewing the results, as patients who attended special clinics were systematically excluded from the study sample. Furthermore, by our not randomly sampling days of the week, other patterns may have been missed; e.g., more patients may present on Monday with pain that may have worsened over the weekend, or more patients may present on Friday rather than endure worsening pain over the weekend. These possible biases should be kept in mind in interpreting the results of the study findings. It highlights a practical challenge of finding an “average” (representative) clinic day, given the operating pattern of the health facilities. An *ex post facto* comparison of the clinic records for the selected survey days showed that both clinics did not have different head counts from the usual Tuesday/Thursday numbers, nor was there any strikingly unusual case mix on the survey days. The results of this survey are therefore best reflective of the normal ambulatory (walk-in), non-appointment patients to the clinic rather than the overall clinic attendees. Nonetheless, reporting on pain occurrence in this subsample of clinic attendees will help ensure that the specific needs in this domain of care are highlighted.

This study has revealed that pain is an overwhelmingly common reason why patients present to the primary health clinics. Almost three-quarters of visits for primary care had pain as either a primary or a secondary reason. This is expectedly higher than the previous prevalence estimate obtained from a sample of health records in the EC Province.<sup>26</sup> It is true that both studies are not directly comparable. For example, whereas the earlier study covered over 40 clinics in all health districts of the province and a period of two years (2004-2005), this study focused on only two health clinics and reported on data covering four days in 2006 in each of the facilities.

However, it is interesting to note that the prevalence of pain as the primary reason for visit reported in this study (32.1-61.0%) is closer in range to that from health records (16.9-22.4%). It will therefore appear that the tendency was to record pain (or pain-related diagnoses) in situations where pain was the primary problem. There is a need to study the reporting patterns in health records further.

Given the similarity in study designs with the study by Mantyselka et al,<sup>23</sup> both studies are more directly comparable. Estimates of pain prevalence in this study are

double those reported by Mantyselka et al.<sup>23</sup> This suggests that there is a double prevalence of pain in the clinics surveyed compared to primary care clinics in Finland. The reasons for the discrepancy are probably manifold, as highlighted earlier, but notably health-seeking behaviours and the use of the health clinics are plausible explanations for this difference.

Societies may interpret the ability to sense and express pain differently, and within the same society, interpretations of the experience of pain can change over time.<sup>38</sup> For example, Cohen<sup>38</sup> notes that “during the later Middle Ages, attitudes toward pain shifted from rejection and a demand for impassivity as a mark of status to a conscious attempt to sense, express, and inflict as much pain as possible.” The sociobehavioural milieu of patients is important, and there is a need for ethnographic studies on health-seeking behaviours related to pain in our setting.

There are also notable variations in the patient case mix between South Africa and Finland. The South African population is reported to be experiencing a quadruple burden of disease, manifested as the combination of pretransitional diseases and conditions related to poverty (communicable, maternal, peri-natal and nutritional causes), noncommunicable diseases, injuries and HIV/AIDS.<sup>39</sup> The Finnish population, however, is reported to have better health indices, but experiences a high burden of chronic noncommunicable diseases and injuries.<sup>39</sup> The extent to which this pain prevalence may be a marker of varying disease burden is an area for future research.

Consistent with the literature, female patients visited health clinics more than male patients and also consulted more frequently because of pain.<sup>18,19,23,37,41</sup> Even though there are an increasing number of explanations for this occurrence, none is conclusive. In fact, Keefe et al<sup>42</sup> have argued that the gender differences obtained in retrospective and cross-sectional studies on pain may not be evident, if one measures pain closer to its real-time occurrence. Applying prospective within-day (daily) assessments, they showed that there may be no real differences in seeking support as a coping strategy between men and women; the authors argue that women may be better able to limit the emotional consequences of their pain.<sup>42</sup> This observation of Keefe et al<sup>42</sup> is supported by Porter et al,<sup>43</sup> but there are no known studies that have been conducted among African population groups.

The localisation of pain reported in this study corroborates reports of higher pain occurrence in the head and back among adults in primary care.<sup>23</sup> A high level of chest pain was also reported in this study among men, while women reported more frequent neck, hip and thigh, and arm and hand pain. Beyond the gender roles and differences in

established risk factors for particular conditions in women over men, the differences in ranking of pain sites in men and women is an area for further research. Chest pains may be indicative of cardiovascular and respiratory conditions and, notably in our setting, pulmonary tuberculosis. The high number of reports in men may also implicate certain types of work-related manual tasks that involve lifting heavy objects. This study did not investigate whether respondents considered their pain to be a result of their work activities.

The frequent reporting of more than one pain site is noteworthy. This must be underscored in this study as our sample was relatively younger than those of previous studies in which multiple sites of pain have been reported.<sup>18,19,23,37,41</sup> The reasons for this are not obvious, but there is a need for holistic management of patients' problems with pain in primary care.

The duration and frequency of pain reported in this study are also striking. We estimated that as many as 21.6% of patients with pain experienced chronic pain (using the definition of three months or more). This is in agreement with the significant levels of activity limitations reported and highlights the need for attention to be directed at pain management in primary care. This must be emphasised as both large cross-sectional correlational studies and in-depth diary studies have reported that patients' acceptance of chronic pain is associated with the lack of attention to pain and engagement in meaningful life activity.<sup>44</sup> Early management of pain is needed before it translates to a chronic and disabling experience.

## Conclusion

Despite the limitation of the generalisability of the results of this study, it has provided valuable basic epidemiological information on pain occurrence in two primary care facilities in the EC Province. It highlights that the management of pain is an important area of primary care and that, therefore, the development of programmes of diagnosis, treatment and quality control should be part of a broader public health strategy to reduce the pain burden in the population.

The observations made in this study can be used to inform interventions to improve the management of pain among primary care attendees. Tracking the prevalence of pain in primary care facilities over time will help to monitor the response to preventive interventions.

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