

# Is the symptom of pain adequately addressed in hospitalization at Internal Medicine? Cross-sectional study

*O sintoma dor é abordado adequadamente em internação hospitalar de Clínica Médica? Estudo transversal*

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## ABSTRACT

**BACKGROUND AND OBJECTIVES:** Pain is one of the main reasons for seeking medical care. Thus, the objective of the present study was to evaluate the treatment of pain complaints in a medical clinic ward.

**METHODS:** Cross-sectional and descriptive study at the Santa Lucinda Hospital (*Hospital Santa Lucinda* - HSL) and Sorocaba Hospital Complex (*Conjunto Hospitalar de Sorocaba* - CHS). Data was collected by: (1) interviewing the participants using a structured questionnaire drawn up by the researchers, and (2) accessing information such as pain records and drug prescriptions in the medical records.

**RESULTS:** The sample consisted of 85 patients, 11.8% in the HSL and 88.2% in the CHS. More than 80% of patients had already experienced pain at some point in their lives, whether chronic or acute. Forty-one percent of patients had pain during hospitalization, regardless of the reason for admission. A minority of pain events had the complaint recorded in their medical records. Drugs were prescribed for 73.0% of the patients, mostly on demand. There was a mismatch between the type of drug prescribed and the intensity of the pain in 80% of prescriptions.

**CONCLUSION:** The complaint of pain is prevalent in Internal Medicine hospitalizations. In this study, 41.2% of the pain was musculoskeletal, followed by abdominal pain, regardless of the reason for hospitalization. The complaint of pain was medicated in most of the patients' pain reports, but around 23% of the pa-

tients complaining of pain did not receive drugs. Most patients (80%) with pain received drugs that were inconsistent with the intensity of the pain; however, the recording of the complaint of pain in the medical records remains insufficient.

**Keywords:** Clinical medicine, Hospitalization, Medical clinic hospital unit, Pain, Quality of life.

## RESUMO

**JUSTIFICATIVA E OBJETIVOS:** Dor é um dos principais motivos por assistência ao serviço médico-hospitalar. Desta forma, o objetivo deste estudo foi avaliar o atendimento de queixas dolorosas em enfermaria de clínica médica.

**MÉTODOS:** Estudo transversal e descritivo nos hospitais Santa Lucinda (HSL) e Conjunto Hospitalar de Sorocaba (CHS). A coleta de dados foi realizada por: (1) entrevista com os participantes direcionada por um questionário estruturado elaborado pelos pesquisadores, e (2) acesso a informações como registro de dor e prescrição de fármacos no prontuário.

**RESULTADOS:** A amostra foi composta por 85 pacientes, sendo 11,8% no HSL e 88,2% no CHS. Mais de 80% dos participantes relataram experiência prévia de dor aguda ou crônica em algum momento da vida. Quarenta e um por cento dos participantes relatou dor durante a internação independente da sua causa. A minoria dos eventos de dor constava nos registros da queixa em seu prontuário. Houve fármaco prescrito para 73% dos pacientes, sendo em sua maioria, por demanda. Houve uma inadequação entre o tipo de fármaco prescrito e a intensidade da dor em 80% das prescrições.

**CONCLUSÃO:** A queixa de dor é um sintoma prevalente entre pacientes internados de Clínica Médica. Neste estudo, 41,2%; das dores foram musculoesqueléticas, seguida de dores abdominais, independente do motivo da internação. A queixa de dor foi medicada na maior parte dos relatos de dor dos pacientes, porém cerca de 23% dos pacientes com queixa de dor não receberam fármacos. A maior parte dos pacientes (80%) com dor recebeu fármacos incoerentes à intensidade da dor; porém o registro da queixa de dor nas evoluções dos prontuários permaneceu insuficiente.

**Descritores:** Clínica médica, Dor, Qualidade de vida, Unidade hospitalar de clínica médica.

## INTRODUCTION

Pain is considered to be “an unpleasant sensory and emotional experience associated with, or similar to, actual or potential tissue injury.” This definition emphasizes the biopsychosocial aspect of

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## HIGHLIGHTS

- The study emphasizes that the pain symptom is an essential part of the care of any clinical disease in hospitalized patients;
- The recording of pain complaints is often incomplete or flawed;
- There is often a mismatch between the prescribed drug and the reported intensity of pain.

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the symptom and reinforces that it should be approached in an individualized manner<sup>1</sup>. Depending on how long the pain lasts, it can be classified as acute, subacute, or chronic, and its pathophysiology can be nociceptive, neuropathic or nociplastic. The complexity of assessing, classifying, and treating pain is compounded by the personal and subjective nature of the phenomenon. In clinical practice, doctors and other health professionals find it difficult to assess patients' pain. The lack of objective markers limits access to quantitative aspects such as intensity and qualitative aspects such as pain descriptors<sup>2</sup>. In an attempt to overcome this difficulty, various instruments have been proposed and developed in the scientific literature to monitor patients<sup>3</sup>.

These instruments are questionnaires and indexes that quantify the intensity of pain, its impact on day-to-day activities and quality of life, as well as describing its other clinical characteristics<sup>4,5</sup>. They can be classified as: uni or multidimensional. Unidimensional tests analyze only one variable, usually intensity, and are advantageous because they are faster to apply. The multidimensional ones assess more than one dimension and therefore better capture the complexity of the symptom<sup>3,5-7</sup>.

The World Health Organization (WHO) recommends the use of the "Analgesic Ladder" for the treatment plan and pain management and uses pain intensity as a criterion for choosing the therapeutic approach<sup>8</sup>. On the first step, the WHO includes minor pain and recommends simple analgesics and non-steroidal anti-inflammatory drugs (NSAIDs). The second step includes moderate pain and weak opioids can be used alone or in combination with simple analgesics or anti-inflammatory drugs. The third step is severe pain and strong opioids can be used, either alone or in combination. If the analgesia achieved is not sufficient, the patient should be reassessed and the drugs adjusted<sup>9,10</sup>. The intensity of pain, whether acute or chronic, is often underdiagnosed, poorly assessed, and often neglected at all levels of health care. A person's account of a pain experience must be respected, according to the Montreal Declaration, a document developed during the First International Pain Meeting on September 3, 2010, which states that "access to pain treatment is a fundamental human right"<sup>11</sup>. Pain is a frequent complaint in the hospital environment and is usually the main symptom that led to the patient seeking a consultation and/or being referred for hospitalization. One of the challenges for hospital staff in the medical clinic is to systematically assess and record pain in the patient's medical records, and to identify whether the pain treatment is consistent with the patient's demand between the pain intensity and the type of drugs prescribed. The aim of this research is to study this topic and investigate the recording of pain intensity in the medical records of patients admitted to the medical clinic ward, to analyze whether there is a correspondence between the communication of pain and the treatment carried out, and to assess the adequacy between pain intensity and the drugs prescribed.

## METHODS

This descriptive, cross-sectional study used a structured interview applied to patients admitted to medical beds at the Santa Lucinda Hospital (HSL) and the Sorocaba Hospital Complex

(CHS), both of which are internship sites of the Pontifical Catholic University of São Paulo - Sorocaba Campus (PUCSP). HSL is part of Sorocaba's municipal health network and CHS is a tertiary hospital complex that serves 48 municipalities in the region with its headquarters in Sorocaba. The data was collected between January and July 2022.

The sample consisted of adult patients (over 18 years of age) admitted to the medical wards of HSL and CHS. Patients with a state of consciousness that prevented them from answering the questionnaires fully or under 18 years of age were excluded. The sample was determined by convenience and included all patients admitted to the Medical Clinic between January and July 2022 who agreed to take part in the study and signed an informed consent form. The project was approved by the Ethics and Research Committee of the Faculty of Medical and Health Sciences of the PUCSP under Opinion no 4.763.697 and registered at CONEP under CAAE number 45539121.2.0000.5373.

## Data collection

Data was collected in both hospitals between the 5<sup>th</sup> and 7<sup>th</sup> day of hospitalization.

## Data collection variables and instruments

A questionnaire was developed by the researchers to access specific information to describe the data. The variables accessed by the questionnaire were gender, profession, reason for hospitalization, previous experience with acute or chronic pain, and the presence of pain during hospitalization. Other information was collected by searching for data in the participants' medical records, such as: record of the complaint of pain in the medical record, prescription of drugs on demand or continuously and type of analgesic prescribed, as well as intensity of the pain that motivated the request for the drug. Data was collected by filling in an electronic form developed by the researchers on the "Google Forms" platform.

As for the type of pain, nociceptive pain was considered to be pain that was characterized by the patient as corresponding to the site of the lesion described and whose intensity was proportional to that expected by the type of injury. Nociceptive pain is generalized and accompanied by fatigue and sleep disturbances, as well as being associated with anxiety and depression. Neuropathic pain is related to damage to nervous system structures and presents itself as paresthesia.

Pain intensity refers to the average pain and maximum pain perceived by the patient during the last week of hospitalization, before the day of data collection. A numerical scale from zero to 10 was used, where zero means no pain and 10 means severe pain.

## Data processing

Demographic and clinical data were analyzed descriptively. The descriptive variables were presented as numbers (n) and percentages.

This evaluation was carried out for each hospital separately and for all patients together. The adequacy of analgesia in relation to the intensity of the complaint was assessed using the Index Pain Management (IPM)<sup>11</sup>. The analgesics were classified according to their potency as: zero = no drug; 1 = non-hormonal anti-inflammatory analgesic (NSAID); 2 = weak opioid (codei-

ne, tramadol); and 3 = strong opioid (morphine, meperidine). Regarding analgesic adequacy, pain intensity was classified using a numerical scale as follows: 1 = mild pain (1-4); 2 = moderate pain (5-7); 3 = severe pain (8-10). The IPM was obtained by subtracting the pain intensity (PI) from the potency of the analgesic (PA), i.e.,  $IPM = PA - PI$ . The IPM score ranges from -3 to +3 and negative scores indicate analgesic inadequacy, while positive scores and zero indicate adequacy<sup>10</sup>.

## RESULTS

The sample consisted of 85 patients admitted to a medical ward between January and July 2022, in the city of Sorocaba, SP. Eleven patients refused to take part in the study. Among the participants interviewed, 10 (11.8%) were admitted to the HSL, most of whom were admitted to the coronary unit due to cardiovascular diseases. Seventy-five of the participants (88.2%) were in the CHS with a heterogeneous profile in terms of the causes of hospitalization.

Most of the participants were women (52.9%), aged between 21 and 93 years old, 80% said they were inactive (retired). The duration of hospitalization ranged from 4 to 13 days.

Regarding previous experience of pain, 55.3% reported having had some previous experience of acute pain (lasting less than 12 weeks), 32.9% chronic pain and 11.8% no previous pain.

At the HSL, 100% were admitted for cardiovascular disease (a hospital specialized in this specialty of Internal Medicine), while at the CHS the indications for admission were for hematological (22.6%), renal (17.4%), pulmonary (16%), neurological (10.6%), cardiovascular (9.4%), gastrointestinal (8.0%), genital (6.7%), skin (5.3%) and osteoarticular (4%) diseases.

Thirty-five participants (41.2%) complained of pain during hospitalization, 4 at HSL and the rest at CHS. Pain complaints were predominantly musculoskeletal (37.1%) followed by abdominal pain (28.51%), headache (14.29), chest pain (11.41) and genitourinary pain (8.58). Among the participants with musculoskeletal pain, half (n=5) reported chronic generalized pain that had worsened during hospitalization and reported pain with nociceptive pain characteristics. The rest had nociceptive pain. There were no reports of neuropathic pain.

Among the participants with pain complaints (41.2%), 73% requested drugs from the nursing staff and reported that it was administered between 10 minutes and 4 hours after the request. The drugs used included common analgesics (dipyrone and paracetamol), nonsteroidal anti-inflammatory drugs (NSAIDs) (ketoprofen) and opioids (tramadol, codeine, and morphine).

There was a significant difference between the two hospitals when it came to prescribing, i.e., on a schedule and on demand. At HSL, prescriptions on a schedule predominated (80%), while at CHS they were on demand (81.8%).

In terms of perceived pain intensity, using a numerical scale from zero to 10, the average intensity of the most intense pain in the last week was  $7.9 \pm 2.4$ . The mean intensity of the so-called average pain in the last week was  $4.7 \pm 1.8$ . Fifty-one percent of the participants rated their pain in the 7 to 10 range.

It was observed that participants treated with common analgesics or anti-inflammatory drugs reached an average intensity of the greatest pain of the week of  $7.0 \pm 1.8$  in the group that used common analgesics and those treated with opioids of  $10.0 \pm 0.78$ . When analyzing the participants' reports on the average pain over the last week, there was a complaint of pain of  $4.0 \pm 2.09$  for the participants medicated with common analgesics and  $5.0 \pm 2.33$  for those medicated with opioids.

The review of the medical records showed a loss of records, as 41.2% of the participants reported complaining of pain during hospitalization, but pain was recorded in only 37.15% of the patient evolution notes. There was a description of the administration of the prescribed drugs in 49.4% of the medical records, which shows an inconsistency between the notes on pain in the evolution and the record of drug administration. As for the prescription regime, overall, 37 patients were prescribed on a schedule and 48 on demand.

Considering the IMD score and the 35 patients who said they felt pain during hospitalization, its indication on the numerical pain scale and the patients' prescriptions, it was found that 80% (n=28) of the respondents had inadequate analgesia during hospitalization<sup>10</sup>. Tables 1 and 2 show the data on pain patients from the two hospitals separately. It was not possible to make statistical comparisons as the profile and number of patients in the Medical Clinic are different.

**Table 1.** Demographic data of Santa Lucinda Hospital patients (n = 10)

Gender	Female - 50%, male - 50%
Profession	Retired 60%, working 20% household/unemployed 20%
Hospitalization diagnoses	100% Cardiovascular diseases
Previous experiences with pain	100% reported experience of pain before 50% acute pain 50% chronic pain
Pain during hospitalization	4 (40%) 25% Women 75% Men
Location of pain	25% Abdominal 75% Thoracic
Recording the complaint in the medical record	1 complaint recorded among four patients with pain
Drug prescribed for pain:	100% were prescribed drugs for pain:
Prescribed form	80% schedule/20% demand
Drug	Simple analgesics in 75% of medical records

**Table 2.** Demographic data of patients at the Sorocaba Hospital Complex

Gender	Female - 53,3%, male - 46,6%
Profession	Retired 36%, working 53%, household/unemployed 11%
Hospitalization diagnosis (diseases)	22.6% Hematological 09.4% Cardiovascular 17.4% Renal 16.0% Pulmonary 10.6% Neurological 08.0% Gastrointestinal 06.7% Genitourinary 05.3% Cutaneous 04.0% Osteoarticular
Previous experiences with pain	86.6% had previously experienced pain 56.0% acute pain 30.6% chronic pain
Pain during hospitalization	31 (41.3%) - 64.5% women, 35,5% men
Recording the complaint in the medical record	13 patients (38.7%) with a complaint recorded in the evolution
Drug prescribed for pain:	97.7% of medical records had a prescription for pain:
Prescribed form	15.9% schedule / 81.8% demand
Drug	Simple analgesics or NSAIDs in 83.9% of records, opioids in 32.5%

NSAIDs = nonsteroidal anti-inflammatory drugs.

## DISCUSSION

The scope of this research was to study this topic and investigate the recording of pain intensity in the medical records of patients admitted to the medical clinic ward, to analyze whether there is a correspondence between the communication of pain and the treatment carried out, and to assess the adequacy of pain intensity and the drugs prescribed. It was found that the intensity of pain and its recording in medical records is still neglected in the hospitalization environment of the Medical Clinic ward.

Regarding demographic data, the number of inactive patients is noteworthy, which may reflect the older age group of patients admitted to a general hospital. The distribution of causes of admission reflects the specialization of the two hospitals in the area of Internal Medicine. HSL treats almost exclusively cardiac patients, while CHS is a highly complex hospital with a high prevalence of hematological, nephrological and oncological cases in Internal Medicine.

Most of the patients had experienced pain before. Previous experiences can modulate their current perception, which is why this data should be considered relevant.

Recent data in the literature has shown that more than 50% of hospitalized patients complained of moderate to severe pain in the previous 24 hours, regardless of the cause<sup>11</sup>. This study found an overall prevalence of 41.2% of pain at the time of the interview, with an average of 4.7 on a scale of zero to 10, with severe pain (7 to 10) in 51.4% of cases. A study on the prevalence of pain in hospitals in Italy found that 46.6% of the patients assessed had severe pain, with an average intensity of seven points on a scale of zero to 10, data similar to that of the present study<sup>12</sup>.

Pain control is vital in any healthcare setting. This study was carried out in a ward environment, but even in critical care

units, where this aspect should receive greater attention, there are problems in this area. Despite technological advances in the care of critically ill patients in emergency or intensive care units, pain assessment and its proper management have been little addressed<sup>13</sup>.

The most used analgesic was dipyrone in 88.2% of patients. The IPM was used to assess the adequacy of the analgesia, which showed that the prescribed drug was in line with the intensity of the pain reported by the patients. Among the results of the study, the most striking negative finding was the predominance of inadequacy between the intensity of pain and the drug prescribed.

Analgesics should be prescribed according to the intensity of the pain, as assessed by a validated scale. To this end, clinical observation should include a complete and adequate pain assessment<sup>14</sup>. Measuring pain is a major challenge and the scales must be applied carefully to avoid ineffective treatments. In addition to having clear guidance on how to use the assessment scales, it is important to individualize each treatment<sup>15</sup>.

The literature also points to difficulties in recording painful complaints in nursing records<sup>15</sup>. This study identified a similar situation, since there was little agreement between the nursing records of complaints and the patients' reports.

In the studied sample, no pain records were identified using objective pain scales, so the assessments were clinical and did not necessarily follow any protocol. Based on the analysis of the data, it was possible to see that patients had a prescription that was incompatible with the intensity of the pain reported. Ineffective pain control is the result of several factors, including the choice of an inadequate pain measurement method, insufficient professional training, or inadequate pain management without scientific proof. In addition, resistance to

changing the routine of many professionals is also a cause of inadequate pain control in patients<sup>16</sup>.

The obstacles to effective pain relief are a challenge all over the world. Reasons include low availability of drugs, often misguided national legislation, lack of education and training of doctors and nurses, as well as a lack of public awareness that pain can be controlled<sup>17,18</sup>.

The literature points to difficulties in recording painful complaints in nursing records<sup>15</sup>. This study identified a similar situation, since there was little agreement between the nursing record of the complaint and the patients' reports.

Research in the field has shown that the right drug at the right dose at the right time relieves 80% to 90% of pain<sup>13</sup>. Of the patients assessed in this study, 30.6% reported pain during hospitalization. Of these, considerable improvement was observed in only 38.4%, and a minority were prescribed drugs on a schedule.

Analgesics should be administered at regular intervals. The subsequent dose needs to be administered before the effect of the previous dose has worn off. The correct dose of opioids is the one that causes pain relief with the least adverse effects. If analgesia is insufficient, the patient should be re-evaluated, and a step should be taken up the analgesic ladder and no drugs of the same category should be prescribed<sup>17</sup>. Many indications for on-demand analgesics were observed, regardless of pain intensity. If the data is judged from the perspective of the WHO recommendation to prescribe drugs according to the schedule indicated by pharmacokinetics, avoiding on-demand use, it'll be possible to see that analgesia is inadequate<sup>15-17</sup>.

The Joint Commission on Accreditation of Healthcare Organizations (JCAHO), a US entity that evaluates hospitals, included pain relief as an item to be assessed in hospital accreditation, starting in 2001. This decision resulted in recognition of the patient's right to have their pain complaint properly assessed, recorded in their medical records and controlled<sup>17</sup>.

Patients' pain should be understood from a biopsychosocial point of view, considering its psychological, social, spiritual, and physical dimensions<sup>17,18</sup>. In the hospitals assessed, although different health professionals work with patients, when pain is present, it is dealt with almost exclusively by doctors and nurses and with an emphasis on pharmacological treatment. This routine hinders multi-professional action on the broader aspects related to pain<sup>18,19</sup>.

This research was carried out in two hospitals with different characteristics. HSL is a secondary health care hospital, specializing in cardiology treatments in the area of Internal Medicine. The CHS is a general hospital. Because of these characteristics of the two data collection environments, there was less recruitment of participants at the HSL. Both the results and the comments focus on the total number of patients assessed. The choice of settings, as well as the collection time and the number of subjects surveyed, considered the purpose of describing the way in which the topic has been approached in the fields of care at PUCSP.

It should also be noted that the research was carried out in a university setting with the participation of students and tea-

chers. Thus, the calendar of scientific initiation programs was respected. This may limit the research, but it opens up the opportunity for new questions and hypotheses to be generated in order to expand the data in the future. A secondary, but equally important effect is to provoke interest in the subject in this environment. Another limitation of the study is the difficulty in collecting data from medical records, often due to a failure to fill them in.

### Final considerations

The need for attention to this complaint, which is so prevalent in hospitalizations, is clear. The teaching of pain care in the training curriculum for health professionals as well as in continuing education should be emphasized.

Among the consequences of this research, the authors hope that it will motivate the development of new protocols on this subject so that data can be generated to promote improved care for the symptom of pain in the various health care settings.

### CONCLUSION

The recording of pain complaints is not complete in medical and nursing records, the therapeutic approach to pain is often prescribed on demand, when ideally it should be on a schedule, and often carried out with delay, and there is often a mismatch between the intensity of the pain and the drug prescribed.

### AUTHORS' CONTRIBUTIONS

#### José Eduardo Martinez

Conceptualization, Project Management, Methodology

#### Thamires Guedes Leite Moises

Data Collection, Writing - Preparation of the Original

#### Júlia Santos do Cabo

Data Collection, Writing - Preparation of the Original

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