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## How Pharmacists Deal With Pain: Knowledge and Skill

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### ABSTRACT

The pharmaceutical profession involves clinical situations requiring knowledge and skills on how to deal with patient in the community pharmacy. However, there is little specific information on the quality of pharmaceutical attendance for patients with pain. Thus, this study aimed to evaluate the knowledge and skills of pharmacists of a Brazilian Northeastern pharmacy network, on dealing with headache patients and their performance against the problem-situation presented. The rationality of therapeutic recommendations was assessed based on the opinion of the specialists and on a specific pharmaceutical management protocol. Only 16.7 % of the pharmacists selected the appropriate drug, 4.2 % provided non-pharmacological guidelines and 66.7 % of the professionals did not attain patient requirements or were considered incomplete (16.7 %) or inappropriate (16.7 %). The survey revealed that pharmacists did not met the needs of the patient or did not guided for the resolution of their problem or even performed in an incomplete or inadequate way.

**Keywords:** Headache, pharmacist, knowledge, skills, community pharmacy.

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### INTRODUCTION

According to the International Association for the Study of Pain (IASP), pain can be defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage. [1] More than a primary symptom, is an everyday experience that compromises the quality of life and reflects on their physical, psychological and social states. [2,3] Pain is the most common reason for physician consultation in most advanced countries such as the United States.[4,5] It is a major symptom in many medical conditions, and can significantly interfere with a person's quality of life and general functioning.[6]

In this context, the steady growth of health conditions that lead to pain, has led patients to a higher consumption of medicines without a prescription, sometimes referred to as over-the-counter (OTC). [7, 8, 9] Analgesics, like most OTC drugs are generally underestimated by the population in relation to the risks involved in its administration, however, can produce hypersensitivity reactions, dependence,

gastrointestinal bleeding, and can increase the risk for certain cancers or mask the background disease which can be enhanced.[10, 11]

Despite of being a very common practice, self-medication is a controversial subject, mainly due to being perceived and used by common sense as a pejorative or negative sense, as a practice that poses a risk to the patient. However, according to World Health Organization (WHO), responsible self-medication is the selection and use of medicines by people to treat self-diagnose diseases or symptoms and should be understood as an element of self-care, which included attitudes about the lifestyle, nutrition, hygiene and social habits. [12]

In the same document and in a previous publication, the WHO points out the community pharmacist as a strategic health professional to advice on responsible self-medication as well as to indicate drugs for relief of minor symptoms that do not require medical consultation or prescribed medications. [12,13] In developed countries, the strict controls established by regulatory agencies and the growing involvement of pharmacists in

guiding users of OTCs can help to alleviate the problem of irrational self-medication. [14]

Self-medication through the use of analgesic requires not only a careful evaluation, but also an appropriate training of pharmacists for proper guidance. The increasing availability of information on the products for health has questionable quality and, in this scenario, the appropriate pharmaceutical advice has a fundamental role to make patients achieve good results, especially considering that the mission of pharmaceutical practice is to provide medicines and other health products and services and to help the people and society to use them in the best possible way. [15]

The literature suggests that both health professionals and patients overlook some concepts, mechanisms, consequences and behaviors related to pain situations. [16] For example, it was observed that misconceptions and inappropriate attitudes of some pharmacists have contributed to failures in the process of dispensation of prescribed opioids for pain patients.

Thus, according to Deahl [17], there is an extreme need for changing of attitudes and behavior of professionals in the practice of pain management in different health care services. New strategies need to be developed, tested and compared, as well as economic consequences and beneficial of pain control have to be checked.

Based on the above described evidence, it is necessary to know the main aspects in the evaluation of the patient with pain as well as the behavior of pharmacists required to meet or to ease such problem. [18]. Thus, this study aimed to evaluate the knowledge and skills of pharmacists of a Brazilian Northeastern pharmacy network, on dealing with headache, their performance in terms of problem definition patient, quality and rationality of pharmaceutical indication and the information provided to the patient or the addressed solution.

## MATERIALS AND METHODS

**Approach and research design:** The present work consists in an observational, descriptive, transversal, case study approach.

**Site of study:** The research was carried out in a network of pharmacies (drugstore) of the metropolitan region of Aracaju.

**Target population and eligible population:** The target population was composed by responsible

technical pharmacists or substitute's pharmaceutical of community pharmacies network. The eligible population was formed by pharmacists who worked in a network of pharmacies in the metropolitan zone of Aracaju.

**Procedure for the composition of case-unit (sampling):** As a case study, the sampling procedure was intentional, non-probabilistic. Thus, for the sample or case-unit composition, the selection procedure was followed by the criterion of convenience. Pharmacists (pharmaceutical responsible-technical and pharmaceutical substitutes) that integrate the eligible population were invited to participate in the research. The final sample was composed by 24 pharmacists, being guaranteed the participation of at least 1 pharmacist by pharmacy in the study.

**Ethical aspects of the research:** To carry out the research, pharmacy network permission was required. The research subjects were invited to participate in the study, being assured their confidentiality rights. After the establishment of the goals, procedures, possible discomforts and expected benefits of the research, the agreement of participation was obtained through the signing of a free agreement term, according to Brazilian National Health Council (CNS) Resolution number 196/96 (Appendices H). This work was approved by the ethic and research committee of the university (CAAE: 2172.0.000.107-10).

**Research procedure:** After the decision of what pharmacies should participate of the survey, the interviews were scheduled and previously applied by the researchers to at least one pharmacist of each establishment, present at the time of the visit. The narrative interview was conducted by following a script developed to check the strategy of resolution adopted by the pharmacist to solve the clinical case presented by the interviewer. According to the roadmap, the interview was divided into four phases. In the first phase, the interviewer presented the problem and put himself at pharmacist disposal to clarify any doubts. The second phase was the proper interviewee narrative that began with the following standard question: "What is the best resolution, or what would you do to solve this case"? After the signs of narrative finishing, began the third phase of the interview, in which the interviewer placed some key-questions to solve the case.

To complete the survey it was applied a semi-structured questionnaire about aspects related to the pharmacy structure and to pharmacist care process. All the interviews were recorded and later transcribed for analysis.

**Criteria for evaluation of pharmaceutical management:** For the evaluation of pharmacists' performance in the resolution of the case, it was used an assessment sheet adapted from Galato and co-workers. [19] This instrument assesses pharmacists' performance in the definition of the problem, quality and rationality of pharmaceutical indication, information and guidance to the patient and the routing or proposed resolution to the problem.

To evaluate the rationality of the therapeutic recommendations on headache care it was used the best case resolution based on advice from a group of specialists and on the protocol of pharmaceutical care on headache.

## RESULTS AND DISCUSSION

**Pharmacy and pharmacists profiles:** Among the group of 40 pharmacists (eligible population), 24 participated and 2 did not agree to participate in the survey. Sample characteristics were the following: female: 87.5 %; average age: ( $26.40 \pm 2.27$ ) years old (ranging from 23 to 30 years); experience in community pharmacy: ( $2.83 \pm 1.86$ ) years; average time of formation: ( $3.94 \pm 1.84$ ) years; type of school: 70.8 % came from private institutions; pharmacists per pharmacy: ( $2.1 \pm 0.3$ ); attendants per pharmacy: ( $4.5 \pm 2.4$ ).

This study the majority are young pharmacists that found in community pharmacies their first job. The lack of experience may have influenced the low performance found in the survey and the difficulty to establish an effective guidance to patients during the advice process, as suggested by Chua *et al.* [20] Most of the professionals reported their participation in updating courses or training, with an average of ( $2.60 \pm 1.55$ ) courses per year, and 41.66 % have concluded post-graduate courses. The majority of the respondents (66.7%) declared to provide training for their crew. The difficulties reported by pharmacists to better serve their patients/clients were: lack of knowledge and semiologic and pharmacotherapeutic skills, the little number of attendants to supply customers' demand in the pharmacy and the lack of appropriate place to provide pharmaceutical services regulated by National Agency of Sanitary Monitoring (ANVISA).

Most of the courses were promoted in partnership (companies and laboratories) what may have influenced the pharmacists, giving them a commercial vision and reducing the social perception of healthcare. Post-graduate courses chosen by the professionals are turned to other areas such as hospital pharmacy and clinical analysis, and not specifically directed to

dispensing, pointing out the lack of professional training, what can prejudice the quality of service. Most of pharmacists trained their crew as a strategy for improving the quality of dispensing and promoting rational use of drugs. However, experiences have shown that the training is not always sufficient to change the skill of the assistants. [21] The gaps in pharmacists formation is transferred to the assistants.

**Indicators of Structure:** The physical space for the private or semi-private care of the patients was an indicator of structure detected only in 20.33 % of the pharmacies. The availability and access to information search sources in the pharmacy were reported by 85% of pharmacists and it was limited to tertiary sources. The most reported sources were: the pharmaceutical software Kairos™ (58.33%), Guanabara Therapeutical Dictionary (54.16%), Dictionary of Pharmaceutical Specialties - DEF (25.00%), the PR-Vademécum (20.83%) e the "Guia de Remédios" - BPR (12.50%). Despite not being a source of information on medicines, 8.33 % of pharmacists cited the price list by "ABC Farma". On average, each pharmacy had  $1.80 \pm 0.98$  sources.

To check these indicators it is necessary to assess whether the existing structure is sufficient to provide a given service. Physical space to offer private or semi-private service is very relevant to the pharmacist executes his/her job, especially in cases of responsible self-medication, where the principle of confidentiality of anamnesis information must be respected. However, this issue exhibited a frequency of 20.33 %, lower than a similar study conducted in Curitiba (92 %) [22] reported, and much higher than 1% reported in a Spanish study. [1]

Access to sources of information about drugs is another important structural indicator, fundamental to provide qualified services in dispensing or pharmacotherapeutic monitoring. It was observed that these sources when available in the visited pharmacies were not updated.

Similarly to other studies [14,23,24], available information sources were most of low quality. Besides, they generally were not updated. Some authors [23,24,27] has consistently questioned the quality of the available information from these sources, especially concerning to their reliability and completeness.

**Process Monitoring Indexes:** Regarding to the activities performed by the pharmacist in the community pharmacy it is still very common to divide labor between technical activities (e.g.

dispensing, pharmacotherapeutic monitoring and blood pressure checking) and administrative (e.g. request/purchase of medicines). The majority of pharmacists (75 %) said to spend most of their working time to patient care and dispensing of medicines. The time devoted to these tasks corresponded to 67.5 % of pharmacist's workload (mean of  $5.4 \pm 1.06$  h). The dispensing of medicines and the registration of controlled drugs (100 %) accounted for the activity mentioned by all the interviewees. The other issues assessed in the survey were: receipt of pharmaceuticals (83.3 %), inventory control (75 %), request/purchase of pharmaceuticals (66.7 %) and checking blood pressure (25 %).

Other pharmaceutical services like rapid tests for glucose and cholesterol/triglyceride levels and medicines administration by nebulization were not carried out in this research. Aspects related to systematization and documentation of these activities or to the monitoring pharmacotherapeutic method used were not evaluated.

The results of this study validate the data obtained in a similar study conducted in the United States of America with 2250 pharmacists in which it was evaluated the time dedicated to certain activities in the pharmacy. In this study, the activities of dispensing were those that required more time. [26]

#### **Pharmaceutical Handling Process Evaluation:**

By using a tool entitled Pharmacist Performance Evaluation Worksheet, the results of the survey applied to the pharmacists of community pharmacies interviewed are presented in Table 1.

The results of Table 1 show that 18 pharmacists had some difficulties to identify the problem and the patient requirements (2 failed to identify the problem or the need of the patient, 3 made it in an inappropriate way and 13 pharmacists performed partially this step). Regarding to the therapeutic indication, only 4 of them selected the appropriate drug for the treatment. In addition, many of them misinterpreted the question when asked about the problem and the patient requirements.

In the present work, none of the professionals gave information or guidelines to the patient and only one gave non-pharmacological guidelines to solve the proposed case.

The counseling process in responsible self-medication is indicated in cases of health problems that can be treated without prescribed drugs. Chronic daily headache, generically known as "cefaleia", is part of this group of diseases called minor disorders - a set of self-limited symptoms, considered not serious by patients, what very

motivates the search for drugs by oneself. [18] In the sense of having an appropriate counseling, contributing to the safety and patient well-being, it is crucial a structured and systematic approach, in agreement with the principles of rational use of drugs (RUD).

Thus, we can divide the process of management and guidance of the patient with pain in four stages: 1) definition of the problem; 2) pharmaceutical indication; 3) information and guidance to the patient; 4) resolution of the problem [28], as organization of pharmacist performance assessment sheet.

In the first phase of the global guidance process it is essential to identify the problem from the patient's main complaint, discerning on whether or not help him/her in the treatment of his/her health problem on the balcony of pharmacy. This step is very important because, even in the management of minor disorders, there are special conditions, such as in cases of patients who have co-morbidities, pregnancy, newborns, elderly patients, among others, besides symptoms that require to refer the patient to the doctor. This phase requires the knowledge and clinical skills necessary to exploit the symptoms and patient's history [19].

The second stage corresponds to the selection of the most appropriate pharmacological or non-pharmacological treatment to meet the expectations and needs of the patient. The selection criteria must be consistent with the principles of selection for the RUD as follow: indication and needs, effectiveness, safety, convenience and affordable cost to the patient.

The proper identification of the problem and patient's needs reduces greatly the chances of error or negligence in the management of minor disorders, however it does not mean that there will be no rationality in the treatment selection. The explanation of the results shown in Table 1 refers to the fact that the pharmaceutical management it is a technical act that requires skills and theoretical knowledge that characterize the required professionalism for providing health care to the people.

Another important aspect is referred to patients' guidance and education on the health problem, the recommended treatment strategy and what he/she expected from the treatment. This can be helpful to reduce medication errors, especially preventing risks and not adherence to the treatment [19]. The lack of information or guidelines provided to the patient is probably due to the scarceness of knowledge and skills or even unconcern in guiding

the patient. In relation to the drug, dose information, form and frequency of use, expected effects, special care and duration of treatment, they may help the patient to take ownership of a knowledge that will help him/her to monitor the achieved results [19].

The tendency to the excessive medication can be seen by the lack of non-pharmacological guidelines in the resolution of the presented case (only one). This data reflects and strengthens the social perception of mercantilism in the majority of community pharmacies in Brazil. The lack of healthcare service as well as the excessive focus on product sends a clear message for all of society: pharmacies as purely commercial enterprises focused on drug sale, improved by marketing strategies that impairs the social perception about the professional services that could be provided.

**Therapeutic Rationality Assessment:** The results of drug indicated by pharmacists in the proposed case are presented in Table 2. The vast majority of the indication was of acetaminophen analgesic, being six individual indications and one in association with caffeine. In some cases it were indicated the use of products in association with orphenadrine, carisoprodol and diclofenac, and associations of ergotamine salts with caffeine and analgesic (acetaminophen or dipyron) with prokinetic agents (such as metoclopramide).

One can globally conclude that most of the professionals (16 pharmacists) did not met the patient requirements or did not guide for the resolution of the problem and, when solved, it occurred in an incomplete (4 pharmaceutical) or inappropriate (4 pharmacists) way.

The use of a non-prescribable drug as self-medication should be supported in maximum reliable information on its desirable and undesirable effects [29,30]. In addition, the development of protocols and algorithms for counseling is an interesting strategy to give support in the decision-making, thus reducing the incidence of drug-related problems and errors in patient orientation [12,29,30].

Taking in account the case presented here, which besides a medical referral for the evaluation of changing an oral contraceptive as being the most rational recommendation for convenience and immediate relief of patient's pain one can suggest the use of non-pharmacological measures and optionally the oral use of analgesics (acetaminophen), or anti-inflammatory drugs (ibuprofen), as a first choice.

The associations of ergotamine salts with caffeine and analgesic with prokinetic agents, indicated by pharmacists, are not known in Brazil as MIP, being necessary to submit a medical prescription to be dispensed. Therefore, they should not be objects of pharmaceutical indication. Even as legal and ethical deviations, the result reinforces our hypothesis that, on the balcony of pharmacy, the professionals tend to indicate drugs (independent of being of free sale or not), disrespecting medical prescriptions and revealing the lack of control in the marketing of drugs to meet the commercial interests. It was also observed that the associations of substances recommended by some pharmacists reflect a kind of irrational indication from the viewpoint of the situation-problem, once the presented case was a headache due to the use of oral contraceptives, which shows little criterion in the selection of medications and unsuitable indication of therapeutic option.

The results revealed that the contact of pharmacists with patients is part of the routine of dispensing. Most of them said that it is a common case in the day-to-day journey. On the other hand, the performance before the proposed case can be considered low. Thus, the majority of professionals did not met the needs of the patient or did not guided for the resolution of his/her problem or even they done improperly, what is in agreement with the study by Rutter and co-workers [31].

These results raise some assumptions related to the need to adapt the continued training of pharmacists to the work journey in community pharmacies, in a context of strong contradictions and pressures of market.

Predominant academic formation has overwhelming focused on the production and transmission of knowledge in the form of individualized disciplines, often disconnected of the real world. In the case of Pharmacy undergraduate course, this can be often detrimental to the development of the effective skills for healthcare or clinics activities. It must be highlighted the absence of consensus, at least among the Brazilian pharmaceutical, on a model of professional practice for community pharmacy.

The lack of uniformity, or even absence of a standard practice seems to reflect a perception that there is no need for a model, each pharmacist plays its activities by oneself, what reinforces heuristic and intuitive procedures that are undermining the construction and consolidation of a reference quality model that support the actions of pharmaceutical front to a highly competitive market that demands discernment, imposition,

technical and moral actions against the pressures that endanger the health and the interests of people.

**CONCLUSION**

A survey about how pharmacists deal with pain was done. Pharmacies surveyed in this study could improve their structural conditions for an effective pharmaceutical guidance. In addition, the majority of pharmacists have no specific training for the suitable management and guidance for patients with pain. The process of dealing with and guidance about headache requires technical qualifying, knowledge and professional skills to

meet the needs of patients and solve their health problems. The pharmacists did not met the needs of the patient or did not guided for the resolution of their problem or even performed in an incomplete or inadequate way. The study points to the need for reorientation of the academic formation of undergraduate and graduate courses in this area, both by public and private institutions.

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Table 1 - Results for the evaluation of pharmacist's performance

CRITÉRIOS	NR	UNF	INC	DW
<b>1. PROBLEM DEFINITION</b>				
The pharmacist identifies the needs of the patient and clearly defines the problem he/she is trying to solve	2	3	13	6
<b>2. PHARMACEUTICAL ORIENTATION</b>				
Drug (appropriate selection)	16	4		4
Presentation and drug dosage	24			
Treatment duration	24			
Non-drug Treatment	24			
<b>3. INFORMATION AND ORIENTATION</b>				
Positive effects of drugs	24			
Instructions for use	24			
Warnings	24			
Need for monitoring the results	24			
Non-pharmacological guidelines	23		1	
<b>4. PROBLEM SOLVING</b>				
The pharmacist meet the requirements and solved or helped to solve the problems of the patient	16	4	4	

Note: NR – non realized; UNF – unfeasible; INC – incomplete; WD – well done.

Table 2 – Drug indicated by pharmacists

DRUGS	PHARMACISTS
Acetaminophen	6
Acetaminophen + caffeine	1
Mesylate of dihydroergotamine+sodium dipyrone+caffeine (Cefaliv®)	
Mesylate of dihydroergotamine+acetaminophen+Caffeine+Metoclopramide (Cefalium®)	1
Citrate of orphenadrine+sodium dipyrone+caffeine (Dorflex®), Acetaminophen +Carisoprodol+Caffeine (Dorilax®), Acetaminophen+Carisoprodol+sodium diclofenac +caffeine (Torsilax®)	1

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