Standard of dental prescriptions performed by future professionals

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ABSTRACT

This study aimed to analyze the dentistry students' knowledge regarding drug prescription. It is a cross-sectional and quantitative study performed with last-semester dentistry students in a public higher education institution. The students received a blank sheet with the word "Prescription" in the header to prescribe a drug as they deemed pertinent. The researchers developed an instrument to analyze these prescriptions. Then, the data were tabulated for later analysis of the variables. The results were showed in absolute and percentage frequencies. The Binomial Test for two proportions was used for verifying the students' knowledge regarding the document subsections, at the significance level of 5%. It was noted that in 85.56% of the prescriptions filled by the students there was no postscript; in 64.44% no patient identification and in 67.78% the stamp was missing. It is concluded that a portion of the analyzed prescriptions was in non-compliance with some document's necessary formal elements.

Descriptors: Prescriptions. Education, Dental. Students, Dental.

1 INTRODUCTION

Dental surgeons can legally prescribe a wide range of drugs within the dental scope to relieve pain and assist the clinical process in dental practice[1,2]. For that reason, health care professionals must continually updated their knowledge on drug prescription, dosages, risks, and side effects[3]. However, according to the World Health Organization (WHO), more than half of these drugs are prescribed and dispensed inappropriately[4].

Drug prescription is a dynamic and

individualized process of indicating a therapeutic plan, in which doctors and dental surgeons recommend to patients one or more drugs and directions on their use[5,6]. Similar to other dental documents, prescriptions are statements signed by patients and professionals with mandatory elements; they serve as evidence in possible lawsuits and ensure continuity of care[7].

Incomplete and/or illegible prescriptions may imply health risks through inappropriate use of drugs[8]. However, dental surgeons face difficulties in drug prescription associated with a defective academic background and lack of clinical experience[9,10].

The understanding of dentistry scholars regarding the ethical/legal principles that involve the document show some gaps, which require solution during the teaching-learning process[11]. In order to ensure an appropriate dispensing and use of drugs, the mastery of basic and clinical pharmacology is indispensable. The institutions that train these professionals must ensure the educational role and follow up all questions concerning the formal rules, so that future dental surgeons do not become just "package insert duplicators"[10,12].

This study aims to analyze and verify the knowledge of the dentistry students regarding drug prescription, as well as, variables that involves consistent filling of the document.

2 METHODOLOGY

Study and Participant Characterization

This cross-sectional and quantitative study was performed with students of the last semester of dentistry course in a public higher education institution, during the period from 2017 to 2018. Ninety students, 76.67% women and 23.33% men comprised the sample. All participants signed an Informed Consent Form. The institutional Ethics Committee approved the research complying with all ethical standards (CAAE: 79244217.9.0000.5420).

Instrument and variables

Participants received a sheet headed with the word "Prescription" to prescribe a drug as they deemed pertinent.

In compliance with the formal rules[5], the researchers developed an instrument to analyze the prescriptions and tabulated data using the Epi Info 7.0 software (Centers for Disease Control and Prevention, Atlanta, GA, USA) to analyze the variable in the dental prescriptions.

Prescriptions that lacked the following elements were deemed incorrect. Professionals' name, address, identification number, and professional registry at the Brazilian Federal Council of Dentistry (CFO), patient´s identification (name and residential address), drug identification and dosage, route of administration, dosage and postscripts of prescribed drugs, date, and professionals' signature.

Data Preparation and Analysis

Data were statistically analyzed with the support of software Bioestat 5.0.8 (Instituto Mamirauá, Belém, PA, Brazil), using the Binominal test for two proportions with a significance level of 5% for verifying the students' knowledge regarding the document subsections. Then, results were summarized in absolute and percentage frequencies for analyzing the present and missing variables in the drug prescriptions filled by dentistry students.

3 RESULTS

This study analyzed prescriptions filled by 90 from 90 last-year dentistry students. In such analysis, in addition to the variables involving the ethical/legal principles, the technical/ pharmacological aspects of the drug

prescriptions were considered. Thus, it was noted that 84.44% (n = 76) of the prescriptions did not fully comply with the rules, while 15.56% (n = 14) of them were properly prepared.

Table 1 demonstrates 38.39% (n = 35) and 52.22% (n = 47) of the prescriptions did not include the prescribing professional name and professional address, respectively. The documents were mostly dated (88.89%), signed (86.67%), and contained the number of the professional registry (87.79%). Also, 64.44% and 50% of the prescriptions did not include data regarding patient identification and address, respectively. Concerning drug information, 50% of the prescriptions included data regarding dosage, but 85.56% of them did not include postscript.

The students presented greater difficulty in filling the document. The proportion test showed that some of the prescription sections had a higher proportion of imperfections than others ($p < 0.05$) (table 2).

Table 1. Absolute distribution and percentages of constant variables analyzed in dental prescriptions elaborated by last-year students

Variables	Present		Not Present	
	n	%	n	%
Prescription Header				
Professional Identification	55	61.11%	35	38.89%
Professional Address	43	47.78%	47	52.22%
Professional Registration	79	87.79%	11	12.22%
Patient information				
Patient Identification	32	35.56%	58	64.44%
Address	45	50.00%	45	50.00%
Prescription information				
Drug Identification	90	100%	0	-
Pharmaceutical Form	85	94.44%	5	5.56%
Route of Administration	69	76.67%	21	23.33%
Dosage	45	50.00%	45	50.00%
Postscript	13	14.44%	77	85.56%
Footer				
Date	80	88.89%	10	11.11%
Signature	78	86.67%	12	13.33%
Stamp	29	32.22%	61	67.78%

4 DISCUSSION

As an integral part of clinical routine, dental surgeons can prescribe pharmaceutical specialties. For that reason, they must know drug therapies and prescription writing rules to ensure the appropriate use of oral health-related drugs[2,13].

Since prescriptions are dental documents, standardized drug prescriptions must include general information about the professional and the patient. The absence of these variables may be related to the lack of focus by the students, and to the time-saving attempt during the consultations, implying a faulty mastery about the drug prescriptions[11,14,15].

Table 2. Associations between variables constant to verify a greater difficulty in the elaboration of dental prescriptions

Tested Associations	P value
Prescription Identification	
Header	0.0001
Drug information	0.2857
Footer	0.8758
All the above items	0.5386
Prescription Header	
Drug information	0.0001
Footer	0.002
All the above items	0.0001
Prescription information	
Header	0.0001
Footer	0.2213
All the above items	0.6501
Footer Prescription	
All the above	0.4417

In a study conducted with Irish dentistry students, it was noticed that the variables that validate the document, in order to avoid fraud and falsification and that allow the proper professional identification were met, since the students understand their importance in the prescriptions[8] . In the present study, signature, professional registration number and date were verified in less than 90% of the prescriptions.

Participants' prescriptions also lacked pharmaceutical active ingredients, pharmaceutical form, and route of administration in this study. This information helps patients buy cheaper drugs, but equivalent to brand-name drugs[16].

The dosage and postscript were the most frequent mistakes. Other studies corroborate this finding, which may be associated with the lack of skills in the clinical practice and the ignorance of dental students about guidelines on proper drug prescription, such as World Health Organization's good practices[6,17].

Active pharmaceutical ingredient, pharmaceutical form and route of administration were not always present in the prescriptions analyzed in this study. Their presence helps the patient to buy cheaper drugs, but equivalent to the reference brand[16].

In this study, a greater proportion of inaccuracy in the elements comprising the prescriptions subsections were identified, suggesting the students face some difficulties in the formalities that cover this professional responsibility. As the students are not yet integrated in the job market nor are very responsible for their prescribing acts, several failures in the clinical practice was noted in these and other study[18].

Properly written prescriptions not only recommend the use of a drug; they indicate a good-quality health care service. Thus, a basic/clinical education relationship equips dental students with resources to guarantee patient safety and rational drug use. Consequently, these future professionals will not

become only "package insert duplicators"[8,12,15].

5 CONCLUSION

A portion of the analyzed prescriptions was in non-compliance with some formal elements that involve the document. The verification of the dentistry student knowledge was possible, denoting in the presence of some gaps, and a more robust background of both technical and legal principles of the dental prescriptions is required.

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RESUMO

Padrão das prescrições odontológicas realizadas por futuros profissionais.

O objetivo do estudo foi analisar o conhecimento dos estudantes de Odontologia acerca da prescrição medicamentosa. Trata-se de um estudo transversal e quantitativo, realizado com estudantes do último semestre do curso de Odontologia de uma instituição pública de ensino superior. Para a realização do estudo, uma folha em branco com a palavra “Receita” no cabeçalho foi fornecida aos estudantes para que uma prescrição medicamentosa fosse realizada da forma que julgassem pertinente. Os pesquisadores desenvolveram um instrumento para a análise dos documentos em questão. Em seguida, os dados foram tabulados para posterior análise das variáveis. Os resultados foram apresentados em frequências absolutas e percentuais. Para verificação do conhecimento dos estudantes acerca das subdivisões dos documentos empregou-se o Teste Binomial de duas proporções, com nível de significância de 5%. Observou-se que em 85,56% das prescrições a adscrição não estava presente. Em 64,44% das receitas, a identificação do paciente não estava presente, e o carimbo não foi utilizado em 67,78%. Conclui-se que parte das prescrições analisadas estavam em desacordo em alguns elementos formais necessários no documento.

Descritores: Prescrições. Educação em Odontologia. Estudantes de Odontologia.

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