

## Original Research Article

# Self-medication in health students from two Brazilian universities

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## Abstract

**Introduction:** Self medication is a component of self care and it is considered as primary public health resource in health care system. It can be defined as use of non-prescription medicines by people on their own initiative. Dentists, together with doctors and veterinarians, comprise the professional classes that may and must prescribe medications for their patients. On the other hand, the nursing professionals are the ones who more administer drugs to patients in the ambulatory and hospital. **Objective:** This study was aimed to find out the frequency of self medication in selected university students, to find out the difference in the proportions of self medication between dentistry and nursing students, as well to evaluate the students' knowledge of harmful effects of self medication and common problems of students that use the self medication. **Material and methods:** We were applied 209 questionnaires among dentistry students from the 3rd to 8th semesters at the Paulista University/Goiânia and 542 among nursing students from the 3rd to 8th semesters at the Estacio de Sa University of Goiás. **Results and conclusion:** In the present study was observed a high rate of self-medication among undergraduate students in the health area,

particularly among the dentistry and nurse students. The result was alarming because the professional him/herself who should educate patients and dissuade them from this practice is a habitual user; it makes it more difficult to aspire to the future inhibition and reduction of this practice that is so harmful to health.

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## Introduction

Medications are an essential asset to health and an important therapeutic tool in the hands of doctors, dentists and other health professionals. Nevertheless, their irrational use, the consequences of this use and the practice of self-medication are one of the main causes of adverse reactions to medications [2, 7].

In Brazil, as in other countries, self-medication is a widespread practice and the majority of medications consumed by the population are sold without medical prescriptions [23]. This concept of self-medication is valid only for medications exempt from prescriptions, also referred to as “over-the-counter medications” or “anodyne medications”. Thus, one observes that although there is an intrinsic risk when ingesting any medication, the population has easier free access and use for some drugs, which are known as low-toxicity [9, 19].

There is growing concern about the consumption of medications, since the majority of the side effects developed frequently are more serious than the original disease itself [13, 19]. In addition, the momentary relief of symptoms may mask the underlying disease and could aggravate it [2]. Therefore, various medications that should be used only on medical prescription are indiscriminately sold by the drugstore, due to the fact that in Brazil, the pharmacy is not recognized as a health unit, but as a retail outlet of medications and correlated products [4, 6, 18].

There is a trend towards the prevalence of self-medication among persons with a higher educational level, taking into consideration that knowledge may make this practice safer [4, 11, 18]. When this practice was analyzed among undergraduate students in the health area, who were enrolled in a course in pharmacology during the period of their academic education, a high consumption of medications without a doctor's prescription was observed [10, 23]. The reason for association of university health students with this problem is mainly due to the responsibility that they, as academic students and future professionals, should have with regard to adequate conduct in the face of certain situations, in addition to the need to serve as a model for their clients [10, 11].

Starting from the presupposition that no pharmacologically active substance is innocuous to the body, self-medication could be prejudicial to individual and collective health [10, 23]. About 35% of medicines consumed in Brazil do not have a prescription. Therefore, each at least three drugs is sold in a country without indication of a qualified professional [12, 18, 19].

Dentists are responsible for prescribing medications, most of which are for systemic use, such as analgesics, anti-inflammatory and antimicrobial drugs [5, 6, 9, 10, 17]. Prescription drugs involve ethical and legal aspects. Professionals who prescribe medications should be attentive to these laws, since they are subject to the penalties of this specific legislation [15, 16, 17, 22]. Nevertheless, a considerable number of dentists make use of verbal prescriptions instead of the written form [17, 20].

In Brazil, nursing professionals cannot prescribe medication. On the other hand, the nursing professionals are the ones who more administer drugs to patients in the ambulatory and hospital. Therefore, it is believed that these individuals, as a result of their duties, are professionals that must know and study exhaustively the medications [8, 22].

Studies on self-medication show that these practices are influenced by many factors, such as education, family, society, law, availability of drugs and exposure to advertisements [8, 14, 16, 17, 20, 22]. A high level of education and professional status has been mentioned as predictive factors for self-medication [8, 20]. The reasons for self-medication mentioned in the literature are mild illness, previous experience of treating similar illness, economic considerations and a lack of availability of healthcare personnel. The most common medications used for self-medication are analgesics and antimicrobials [1, 3, 14, 16, 21].

In Brazil all undergraduate dentistry and nursing courses regulated and approved by the ministry of education have in their curriculum the discipline of pharmacology as well as several other clinical disciplines associated with administration of drug use and drug prescriptions. Thus, it is understood that all students of these courses receive a satisfactory knowledge of self-medication. On the other hand, there is a paucity of studies on self-medication among health students [1, 8,

16, 17, 20, 22]. These students may differ from the general population because they are exposed to knowledge about diseases and drugs. The present study was undertaken to determine the knowledge and practice of self-medication among students of dentistry at the Paulista University, Goiânia-GO, Brazil, and nursing students at the Estácio de Sá University of the Goiás. This study was aimed to find out the frequency of self medication in selected university students, to find out the difference in the proportions of self medication between dentistry and nursing students, as well to evaluate the students' knowledge on harmful effects of self medication and common problems of the students who use self medication.

## Material and methods

A descriptive-analytical study was conducted, using a questionnaire containing objective questions as a data collection instrument, which was applied to academic students from the 3rd to 8th semesters at the School of Dentistry of the Paulista University and at the School of Nursing of the Estácio de Sá University of Goiás.

The criteria for inclusion in the study were: to be students duly enrolled in the above-mentioned periods and to have signed the Free and Informed Consent Form. The choice of the students was randomly performed and without exclusion criteria that could influence the sampling. All students from all semesters were invited to participate in the study, though some refused to participate by own decision. Students of the 1st and 2nd semester were not invited to participate in the study, since still they had not taken the discipline of pharmacology. The inclusion of these students could alter the expected results of the study. Regardless of the semester in which the students were enrolled, all were interviewed and answered the same questionnaire (table I).

**Table I** - Questions applied to the interviewees

1. Which medications do you use most often?
2. Has this medication been prescribed by a doctor in the last 12 months?
3. Do you use these medications when supervised by whom?
4. Do you always use the same medications when presenting the same symptoms?
5. Are the drugs used always available in your home?
6. Do you think that self-medication can bring any harm to your health?
7. Do you consider yourself dependent on this self-medication?

8. What do you expect your undergraduate degree teach you about self-medication?
9. Does the course provide you a satisfactory knowledge on self-medication?
10. Have you ever bought or used drugs without a prescription?
11. Have you ever taken advice from a pharmacist to buy medicine?
12. Have you ever received unsolicited advice (in pharmacy)?
13. Have you ever used drugs advised by third parties?
14. Which are the medications that you have been self-medicated?
15. How long have you used this medication?
16. When was your last medical visit?
17. Has the advertising of medicines in the media influenced you to perform self-medication?
18. Have you ever developed some type of adverse reaction after self-medication?
19. Do you read the leaflets of the drug used without a prescription?
20. When you take the medicine did you obtain satisfactory results?
21. Do you respect the dosing schedule established by the informant?

The School of Dentistry of the Paulista University had 412 students enrolled from 3<sup>rd</sup> to 8<sup>th</sup> semesters. Of these, 209 chose to participate in the study spontaneously. In relation to School of Nursing of Estácio de Sá University, 896 students enrolled from 3<sup>rd</sup> to 8<sup>th</sup> semesters. Of these, 542 chose to participate in the study spontaneously.

The study was submitted and approved by the Ethics Committee in Research of the University under protocol #87/2010.

## Results

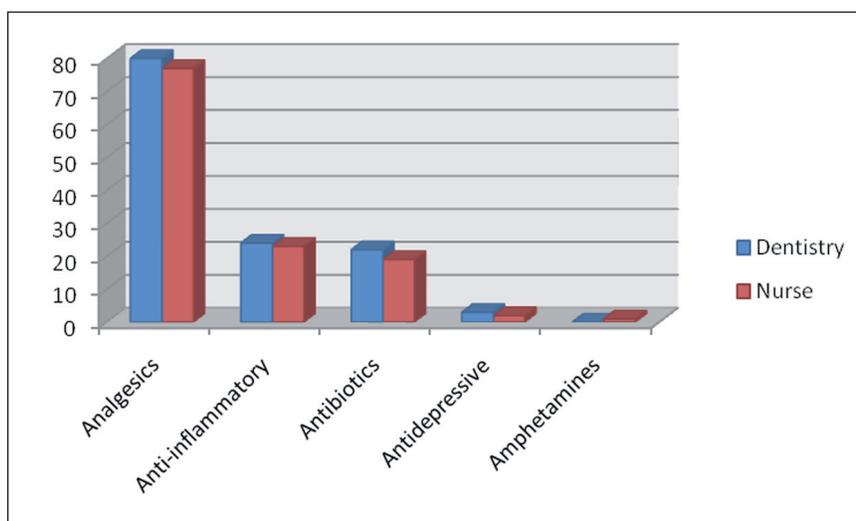
A total of 209 questionnaires were randomly applied among the undergraduate dentistry students from the 3rd to 8th semesters, in order to have a sample without preferences. Of the 209 undergraduates researched 6% were between 30 and 40 years of age, 42% were between 20 and 30 years of age and 52% were under the age of 20 years. Of this total, 131 (62.68%) students were women and 78 (37.32%) were men. Of the 542 nursing students interviewed, most (82%) was female and about 60% (322) were aged between 20 and 30 years.

As regards to the distribution of students per corresponding semester, it was observed that 43.06% of the dentistry students were from the 3rd

semester, 30.14% from the 5th semester, 13.87% of them were from the 6th semester, 8.13% from the 7th and 4.78% from the 8th semester. When analyzed the nursing students, it was observed that of 542 academics, 141 (26%) were enrolled in 4th semester, 111 (20%) in the 6th semester and 86 (16%) in the 3rd semester of nursing.

Regarding the use of non-prescription drugs, 43% of dental students said they used non-prescription drugs while 41.6% of nursing students interviewed reported this habit. When analyzing the medications most used by the studied dentistry population group, analgesics accounted for 79.9% of items mentioned, followed by anti-inflammatory

drugs (23.92%), antibiotics (22.49%), antidepressive agents (3.34%) and amphetamines (0.48%). Similar data were observed in the nursing students, where analgesics accounted for 77% of items mentioned, followed by anti-inflammatory drugs (23%), antibiotics (19%), antidepressive agents (2%) and amphetamines (0,8%) (graph 1). On the other hand, although about 40% of health students who participated in this study reported having used medications without prescriptions, only 11% of those who make use of self-medication considered themselves dependent on this self-medication, while 88.51% did not consider themselves dependent on it.



**Graph 1** - Medications most used by the health students

In the present study, 59.33% of the dentistry students and 50% of the nursing students interviewed reported having the medications in the house while about 34% of the two groups affirmed that they bought them whenever they needed them because they knew that this medication would solve their problem; only 5.26% (dentistry students) and 13% (nursing students) sought a consultation at a health unit to obtain a prescription to the medication.

When asked whether they believed that the self-medication could bring any harm to health, most of the students interviewed answered that self-medication may bring about some harm to health: 79.42% (dentistry students) and 91% (nursing students).

An interesting datum is that the majority of the interviewees (88.51%) expect the dentistry course will provide them with adequate knowledge about medications. When the question was whether the course provided satisfactory knowledge about self-

medication, those who considered the knowledge acquired as satisfactory and evaluated themselves as being capable of administering self-medication without there being any discomfort or harm to their health amounted to 45.45%; those who did not believe they were capable of proceeding with self-medication in an adequate manner, in spite of all the knowledge acquired during the course was to 14.83%; lastly, 39,79% of the undergraduates believed that they did not yet have sufficient knowledge for administering self-medication. On the other hand, we question the nursing students about what they expect of the nursing course in relation to knowledge about self-medication, 46% of the students said they do not have enough knowledge about self-medication, while 27% believe they have enough knowledge about the self-medication.

When asked when buying a medication they received advice or suggestions from the pharmacy staff, it was observed that 70% (dentistry students)

and 67% (nursing students) among those participating in the research had received unsolicited advice in the drugstore, whereas 30% (dentistry students) did not mention having received advice in the drugstore.

Under the influence of media on the purchase of a medication, in the researched sample it was

observed that 62.20% of the dentistry students and 54% of the nursing students affirmed that the means of communication had no influence on their purchase of medications. In table 2 are summarized the results of research comparing the two groups of students surveyed.

**Table II** - The summarized results of the research comparing the two groups of students

<b>Questions</b>	<b>Dentistry: positive answers</b>	<b>Nurse: positive answers</b>
Do you have any medications in your house?	59.3%	50%
Could the self-medication bring any harm to health?	79.4%	91%
Does your course provide satisfactory knowledge on self-medication?	45.5%	46%
Do you have bought any medication you received advice or suggestions from the pharmacy staff?	70%	67%
Does the communication on media influence you on the purchase of a medication?	62.2%	54%

## Discussion

In this present study, 59.33% of the dentistry students and 50% of the nursing students interviewed reported having the medications in the house; only 5.26% (dentistry students) and 13% (nursing students) sought a consultation at a health unit to obtain a prescription for the medication. These results corroborated the affirmation that people always use the medications that they "trust" when they presented the symptoms they had experienced in previous illnesses [11, 13, 16]. This is frequently justified by some medications, such as analgesics and antipyretics, that in most times are not very toxic and do not represent a great risk to health [9, 13]. Therefore, these medications are always kept at home within the reach of the person.

Either the improper use of medication or their use without professional guidance may cause many harmful effects, such as masking the true symptom or cause of the symptom, making it difficult to diagnose and even aggravating the underlying disease. Quite often people take more than one medication, not paying attention to the fact that there could be an interaction of medicaments that may be harmful to health. Generally the use of these medications is an immediate solution [6, 13, 19]. Most of the students interviewed think that self-medication may bring about some harm to health: 79.42% (dentistry students) and 91% (nursing students). As the sampling field in this study comprised health students who have a pharmacology course in their curriculum, this

result was expected. However the lay population does not believe that this practice would lead to any harm to their health [4, 13].

On the other hand, the indiscriminate use of medications without prescription could lead that the individual becoming chemically, physically and/or psychologically dependent on the substance. It could be observed that although the large majority of health students made use of medications without prescriptions, only 11% considered themselves dependent on this self-medication, while 88.51% did not consider themselves dependent on it. It should be ratified that the same students revealed that among the drugs most consumed without a prescription were the antidepressives and amphetamines, drugs that which are known to have potential to cause chemical tolerance and dependence [14].

Another problem that must be remembered is the possible interaction between these non-prescriptions drugs can develop when consumed together with other licit or illicit chemicals. Depending on the amount of medication and the patient's body type, this drug interaction may cause very serious side effects such as cardiac alterations, respiratory alterations and patient death [3, 10, 13].

An interesting datum is that most of the interviewees (88.51%) expected that the dentistry school will provide the adequate pharmacologic knowledge. This result is in agreement with the findings of the studies conducted by Vilarino *et al.* [23] and Kerr-Corrêa *et al.* [10] in which they affirmed that because undergraduates had the

pharmacology course in their curriculum, this greater degree of knowledge leads them to have more confidence to use medication without a prescription [5, 11, 17, 23].

In contradiction to this, a balance was observed when the question was whether the course provided satisfactory knowledge on self-medication. Those who considered with satisfactory knowledge acquired and evaluated themselves as being capable of administering self-medication amounted to 45.45%; those who did not believe they were capable of proceeding with self-medication in an adequate manner, in spite of all the knowledge acquired during the course was about 14.83%; and lastly, 39.79% of the undergraduates believed that they did not have yet sufficient knowledge for administering self-medication. On the other hand, we questioned the nursing students about what they expect of the nursing course in relation to knowledge on self-medication, 46% of the students said they do not have enough knowledge on self-medication, while 27% believe they learned enough knowledge on self-medication. Another serious problem mentioned in the literature was the practice of "suggestions and advice" given by drugstore salespersons during the sale of medications. This practice is not uncommon either by financial reasons or lack of the medication sought. It was observed that 70% (dentistry students) and 67% (nursing students) among those participating in the research had received unsolicited advice in the drugstore, whereas 30% (dentistry students) did not mention having received advice in the drugstore.

The communication means have an immense power of convincing people, and the pharmaceutical industry taking advantage of this invests in advertisements in these media to divulge their products, and consequently encourage their use. The fact that possible consumers could have small knowledge on the products and their adverse effects is frequently exploited by these means of communication [14, 18, 21, 22]. In the researched sample it was observed that 62.20% of the dentistry students and 54% of the nursing students affirmed that the means of communication had no influence on their purchase of medications. It is interesting to note that as future opinion formers, the percentage of interviewees who said they were influenced by the means of communication was significant.

In the present research was observed a high rate of self-medication among undergraduate students in the health area, particularly among the dentistry and nurse students, and this result fully agrees with statements by various authors. These facts occur due to the fact that the students have confidence in the knowledge they acquired in the pharmacology course during graduation. The result was an alert that regardless of the individual's knowledge on

self-medication, this habit is repeated. This is an alarming fact because if the professional him/herself who should educate patients and dissuade them from this practice is a habitual user, it makes it more difficult to aspire to the future inhibition and reduction in this practice that is so harmful to health.

## Conclusion

To sum up, it was identified that within the two groups of students evaluated, the number of individuals who practice self-medication is high. However, when comparing the two groups, there were no differences between their percentages (43% of dental students and 41.6% of nursing students). The majority of students interviewed answered that self-medication may bring about some harm to health: 79.42% (dentistry students) and 91% (nursing students). Few students of both groups reported having developed adverse effects due to the practice of self-medication, however only 11% of those who make use of self-medication considered themselves dependent on this self-medication, while 88.51% did not consider themselves dependent on it.

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