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Busca por informações sobre medicamentos entre alunos do ensino médio de uma escola pública

Sources of information on medicines taken by high school students of a public school

Thales Ramos[1], Selma Rodrigues de Castilho[2]

[1] Master's in Administration and Management of Pharmaceutical Assistance from Fluminense Federal University and Ph.D. Student in Sciences Applied to Health Products from Fluminense Federal University (UFF), Niterói (RJ), Brazil.; [2] Ph.D. in BIomedical Engineering (COPPE/UFRJ); Professor at Faculdade de Farmácia from Fluminense Federal University (UFF), Niterói (RJ), Brazil.

[*] **Corresponding author**: Thales Ramos - E-mail: *thalesbrandi980@gmail.com*

RESUMO

Este estudo buscou identificar fontes de informações sobre medicamentos entre alunos do Ensino Médio e discutir o papel da Internet nesse processo. Trata-se de uma pesquisa transversal de prevalência, descritiva e analítica realizada com 232 estudantes de uma escola pública do Rio de Janeiro. A maior parte (75,86%) respondeu ter acesso a tais informações no ambiente escolar, principalmente pelos professores (32,48%). Os profissionais de saúde foram identificados como a maior fonte (42,67%). Na Internet, a ferramenta mais citada foi o *YouTube* (32,03%). Entre os alunos que recorrem à web como fonte de informação, a maior parte (76,36%) usou medicamentos nos 15 dias anteriores, não foi orientada (60,00%) e se automedica regularmente (44,55%). Os resultados ressaltam o papel da Internet como fonte de informação, apesar da falta de mecanismos de regulação a respeito do que é veiculado, o que pode comprometer o uso racional de medicamentos.

Palavras-chave: Internet. Tecnologias da informação. Uso de medicamentos. *YouTube*.

ABSTRACT

Current paper identifies sources of information on medicines among high school students and discusses the role of the Internet in this process. Cross-sectional, descriptive and analytical survey was conducted with 232 students from a public school in Rio de Janeiro, Brazil. Most students (75.86%) said they had access to information about medicines at school, mainly by teachers (32.48%). Health professionals were identified as the biggest source (42.67%), whereas on the Internet, the most cited tool was *YouTube* (32.03%). Among students who use the Internet as a source of information, most (76.36%) had used medication in the previous 15 days, did not receive any instructions (60.00%) and regularly self-medicated (44.55%). Results highlight the role of the Internet as a source of information, despite the lack of regulatory mechanisms on what is disseminated, which may compromise the rational use of medicines.

Keywords: Internet. Information technology. Drug utilization. *YouTube.*

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INTRODUCTION

The rational use of medicines occurs when patients receive products according to their clinical conditions, when inadequate doses are taken for an adequate period and at lower costs for themselves and the community. Inappropriate use may cause severe poisoning, aggravation, diseases masking, undesirable effects and drug interactions[1].

According to the National Toxic-Pharmacological Information System, 25.18% of intoxications in Brazil are related to the use of medications, with 17.4% of cases in the 10 -19-year- old population[2]. Consequently, according to the National Survey on Access, Use and Promotion of Rational Use of Medicines (PNAUM)[3], 30.6% of the population between 10 and 19 years old used drugs. It is reasonable to assume that high school students, mostly within the mentioned age group, also represent a group more exposed to problems in drug utilization.

The discussion on the use of medicines by this age group is still limited in the literature, with a lack of studies on the user´s profile. The discussion about the sources of information about these products used by students in this age group is also limited. Access to information was upgraded through the Internet. Recent data reveal that just over four billion people have access to the network, reaching around 55% of world population[4]. In Brazil, approximately 70% of households use the Internet in the nearly 48 million homes visited[5].

Information and Communication Technologies (ICTs) are new tools that mix the use of technologies with learning, facilitating communication, improving the reach of information[6], and working efficiently in promoting the health of adolescents, even though there is not much scientific production on the subject[7].

TIC Kids Online Brasil[8] is a national survey carried out annually to map ICTs by producing indicators on access to the network by children and adolescents, between 9 and 17 years old. According to the latest edition, 86% of this population are users of the network, with 74% using it for research on schoolwork.

Current study identifies the main sources of information on medicines among students and discusses the role of the Internet in the process.

METHODOLOGY

Current cross-sectional descriptive and analytical survey of prevalence involved the participation of regular high school students and students under the Youth and Adult Teaching program (EJA), day and night shifts, regularly enrolled in a state-run school in a city in the Metropolitan Region of Rio de Janeiro, Brazil, with a study population of 800 students, between June and August 2019. The percentage described in PNAUM[4] of medication use by the population between 10 and 19 years old was employed, with a 5% sampling error, at a confidence level of 95%. A necessary sample of 232 students was established[9].

Students were previously informed about the aim of the research and schedule and those who wished to participate were invited to sign a free and informed consent form. Minors under 18 years old also had to present the authorization by parents or guardians to participate in the study. Participants answered the semi-structured questionnaire anonymously, available online in the Google Form tool, using the school's computer room to complete it.

The questionnaire was divided into three blocks. The first block addressed sociodemographic issues, with questions about gender, age, and shift; the second comprised questions on drug utilization (regular and in the previous 15 days), guidance on use, and frequency of self-medication; the third block brought up the question of information about medicines at school (as it happened) and also on the Internet (main channels and pages searched). All responses were exported to Microsoft Excel ® 2013 spreadsheets, with simple descriptive analyses.

Current research was approved by the Committee for Ethics in Research (CEP) of the Universidade Federal Fluminense (UFF), registered under CAEE number: 10003519.0.0000.5243, under approval number 3,302,332, on 05/03/2019, and complied

with the ethical-legal aspects of Brazilian legislation for research involving human beings.

RESULTS

The study comprised the participation of 232 high school students, 165 (71.12%) of the morning shift, and 142 (61.21%) were females. Students´ age varied between 14 and 20 years old (Table 1).

Table 1. Profile of students who participated in the research. Queimados (RJ, April 2020. (n=232)

Gender	N	%
Male	90	38.79
Female	142	61.21
Age		
14 and under	2	0.86
15	20	8.62
16	50	21.55
17	48	20.69
18	61	26.29
19	22	9.48
20 and over	29	12.50
Shift		
Morning	165	71.12
Night	67	28.88

Source: prepared by the authors

DRUG UTILIZATION

Regarding the regular use of medications, 74 (31.90%) students' responses were positive. Percentage was even higher when usage was extended to the previous 15 days, with 179 students using medicines (77.16%).

Self-medication was evaluated for four frequencies, with most students (40.09%) stated they practiced it "rarely" and 76 (32.76%) practiced the procedure "often". The most cited reasons for the practice involved pain relief (63.09%), allergy (17.35%) and tension and stress relief (10.41%) (Table 2).

Table 2. Drug utilization by students who participated in the research. Queimados (RJ, April 2020. (n=232)

Regular Use	N	% (confidence interval*)
Yes	74	31.90 (26.90 – 36.90)
No	158	68.10 (63.1 – 73.1)
Use during previous 15 days		
Yes	179	77.16 (72.16 – 82.16)
No	53	22.84 (17.84 – 27.84)
Self-medication		
Never	22	9.48 (4.48 – 14.48)
Rare	93	40.09 (35.09 – 45.09)
Often	76	32.76 (27.76 – 37.76)
Always	41	17.67 (12.67 – 22.67)
Reasons for self-medication		
Pain relief	200	63.09 (58.09 – 68.09)
Allergy	55	17.35 (12.35 – 22.35)
Tension and stress relief	33	10.41 (5.41 – 15.41)
Disease Control	24	7.57 (2.57 – 12.57)
Others	5	1.58 (0.00 – 6.58)

*margin of error: 5%

Source: prepared by the authors

INFORMATION ABOUT MEDICINES

Information on medicines at school was verified by 176 students (75.86%), mainly through lessons with teachers (32.48%), assignments by students (28.21%), and lectures (25.64%). Health professionals (42.67%), some family members (33.62%) and the Internet (23.71%) were the main sources of information about medicines (Table 3).

Table 3. Sources of information about medicines by students who participated in the research. Queimados (RJ, April 2020. (n=232)

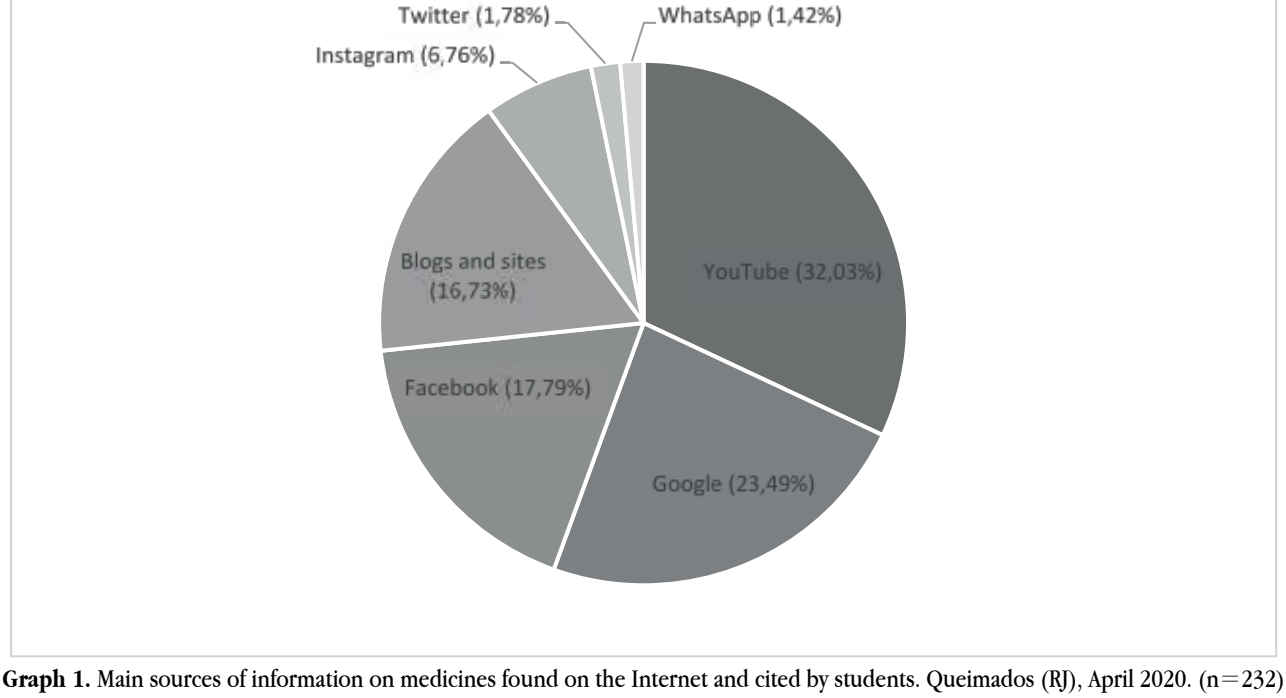
Information about medicines	N	% (confidence interval**)
At school		
Yes	176	75.86 (70.86 – 80.86)
No	56	24.14 (19.14 – 29.14)
How*		
Teachers	38	32.48 (27.48 – 37.48)
Assignments by students	33	28.21 (23.21 – 33.21)
Lectures	30	25.64 (20.64 – 30.64)
Videos	16	13.68 (8.68 – 18.68)
Main Source		
Health professional	99	42.67 (37.67 – 47.67)
Family member	78	33.62 (28.62 – 38.62)
Internet	55	23.71 (18.71 – 28.71)

*students could choose more than one option

**margin of error: 5%

Source: prepared by the authors

Graph 1 provides information that medications were reported on the Internet, mainly, on YouTube channels (32.03%), searches on Google (23.49%) and Facebook (17.79%).



Graph 1. Main sources of information on medicines found on the Internet and cited by students. Queimados (RJ), April 2020. (n=232)

Participants could cite any page or channel that came to their mind in which they used to research or obtain information about medicines. Among the most cited are the TV program Bem-Estar (14.29%), Saúde Brasil (8.57%) and Tua Saúde (8.57%).

Table 4 shows the relationship between the use of medicines and the search for information. Among students who use the Internet as a source of information (n = 55), 89.09% do not regularly use medicines, while 76.36% had used some sort of medication in the 15 days before the survey. Regarding self-medication, the majority (54.55%) claimed using medication on their own "often" (34.55%) or "always" (20.0%).

Table 4. Internet as a source of information on medicines and use of medicines. Queimados (RJ, April 2020. (n=232)

Internet as a source of information on medicines	N	% (confidence interval**)
Regular Drug Use (n=55)		
Yes	6	10.91 (5.91 – 15.91)
No	49	89.09 (84.09 – 94.09)
Orientation for regular use (n=6)		
Yes	4	66.67 (61.67 – 71.67)
No	2	33.33 (28.33 – 38.33)
Drug Utilization in the previous 15 days		
Yes	42	76.36 (71.36 – 81.36)
No	13	23.64 (18.64 – 28.64)
Orientation for use in the previous 15 days (n=40)		
Yes	16	40.00 (35.00 – 45.00)
No	24	60.00 (55.00 – 65.00)
Self-medication (n=55)		
Never	7	12.73 (7.73 – 17.73)
Rare	18	32.73 (27.73 – 37.73)
Often	19	34.55 (29.55 – 39.55)
Always	11	20.00 (15.00 – 25.00)

*margin of error: 5%

Source: prepared by the authors

DISCUSSION

Although health professionals have been identified as the main source of information on medicines, pharmacists have only been slightly mentioned in the literature as one of the guides for the rational use of medicines. A recent survey on health care, involving young Portuguese people, showed that the pharmacist ranked third (18.2%) among the professionals that this population turned to for help[10].

In this scenario, it is important to highlight the pharmacist's attitude in activities that enhance the rational use of medicines within private establishments, providing information based on clinical evidence that contributes towards the rational prescription and safe use of medicines. After analyzing

articles on Health Education and Rational Use of Medicines, some researchers concluded that little is said about the subject at school, only referring to issues on cure practices[11]. However, data from this study revealed that most students obtained some information on medicines at school, mainly from teachers and through assignments.

Outside school, the influence of parents as a source of information has been reported by another study that identified them as the main protagonists in the recommendation, indication, and information on medicines[12]. Some studies show that mothers trigger the use of medications. Further, mothers with high education level consume regularly a reasonable amounts of medicines, and thus influence their children[13,14].

The Internet has been identified as one of the main sources of the search for health information in several studies[15,16]. In an interview with pregnant women, 39% used some medication when they discovered they were pregnant, whilst 79% used the internet as a source of research on the products´ safety[17]. A French study on 103 people reported that 46.6% used the network to have information on medicines, although 60% reported having consulted a health professional first[18].

The YouTube was the source of information on medicines most cited by students. The source may be characterized as a social network for sharing videos, particularly conspicuous as a useful learning tool, especially in the health field[19]. One hypothesis for this result is the fact that most researches with Google tools first present videos and later forward texts on the subject, leading the user to prefer to watch the video that answers their questions instead of reading the text. Recently, a report released by the company itself shows that 79% of respondents prefer to have access to video content rather than to reading the information in text form[20].

Researchers have already reported that YouTube was the most preferred social network among European teenagers, aged 9 to 16, and among the British, aged 12 to 15, which was not the case with young Americans, who preferred the use of Instagram[21]. In Brazil, the platform has more than 95 million connected people, with 95% of the Brazilian population accessing the site at least once a month[20].

Although in the case of health the YouTube does not have a link in the menu of available options, when searching for videos on the topic, there are more than 190 thousand results, most of which are related to official agencies and health professionals[22].

In a systematic review, researchers noted that this platform is increasingly being used to disseminate health information with official videos by government agencies and lay users[23].

The report released by the network itself pointed out that 59% of respondents believed that they were better informed by videos than by news on TV programs and that 31% considered YouTube as a source of learning[20]. Other authors point out that the use of videos with educational content may assist in the process of training students and health professionals through the dissemination of relevant information[24].

The platform has great importance in the dissemination of videos with educational content, acting positively in the teaching-learning process[25], including health promotion by official organs. Analysis of videos posted by the United States Public Health departments showed that these institutions used YouTube to promote or inform the population about the agency's activities, transmissible diseases, and women's and children's health[26]. Another study, involving adolescents in Ecuador, reported that the platform encourages creativity, positively improves relationships, activates empathy and promotes social interaction among this population[27].

However, it is important to remember that not all information on the Internet has full credibility. In a survey on videos on the diagnosis of prostate cancer, low quality information was detected with potentially misleading content[16].

Upon finding several videos with misleading information about the virus that caused Zika, researchers suggested ways so that the platform would avoid these cases. They included recommending in-

formative videos and marking those with questionable content by official agencies and introducing quality filters on the mechanism search, with a change in the algorithm so that reliable videos may be the first results found[15]. In a literature review, researchers compared different methods of analyzing YouTube videos concerning their effectiveness, fidelity and quality of information given to the patient. No concrete quality assessment mechanism was found, but a concern to describe the types of content accessed and their reliability was underscored[28].

The 'Saúde Brasil' website, a website linked to the Ministry of Health that provides tips on health and life quality, was cited by most students as a source of information. The 'Tua Saúde' page is one of the first results in searches for health information and features the HON (Health On Net Foundation) logo that certifies the page quality, featuring seven basic principles: authority, complementarity, confidentiality, attributions, justifications, transparency and honesty of advertising[29]. However, a previous study had already identified that even certified HON pages presented problems related to the quality of information[30].

Although privacy in responses and the time required to fill it were ensured, aiming at minimizing possible fears or constraints in the response to the instrument, some aspects may have been underestimated, constituting one of the limitations of the study. Survey in a single school may also have been a limitation of the study.

PRACTICAL APPLICATIONS

The inclusion of drug utilization in schools becomes even more necessary in a context where intoxications and problems caused by these products have increased in the population. Consequently, current analysis tried to understand and discover where students look for information about medicines so that interventions or improvements in this process could be carried out.

Data revealed that lectures focused the rational use of medicines and the risks of self-medication in the school where the research was conducted and in other teaching environments. Lectures were given by responsible researchers who is a pharmacist and also a teacher of basic education. The basic concepts of drug utilization and research data were presented and, more important, students could ask questions.

Data on the importance of the Internet as a source of information corroborate future studies to assess the quality of information on the Internet, especially in the most cited social networks, such as YouTube, which does not have its own evaluation mechanisms.

CONCLUSION

Results indicate that students tend to seek health professionals and family members for information on medicines. Moreover, some use the Internet as a source of information, reinforcing concern on the quality of what is transmitted on the network.

Therefore, the possibility of using the school environment as a space for discussing the rational use of medicines and the risks of self-medication should be underscored. This relevance is even greater when one considers the school as a space that also reaches families and the community inserted in that particular situation. Since Health is a multidisciplinary theme, drug utilization may be inserted to make young people aware of the risks of self-medication, the role of medicines in poisoning within this age group and the relevant habits in health promotion.

Despite its importance, pharmaceutical professionals still do not have a robust presence in health education on the use of drugs by high school students. They have a great possibility in transmitting their knowledge on the subject, either within the normal class schedule or in special projects (events, seminars, etc.) on health with a focus on drug utilization.

Although there are some mechanisms for evaluating the quality of information on the Internet and other virtual environments, they are not widely used, especially in Brazil, and many still have problems in guaranteeing the necessary quality.

Worldwide net pages themselves may look for alternative ways to certify their content, bringing greater reliability to what is being presented. Furthermore, the users themselves may take individual actions to check the information, such as searching the pages of educational institutions, health professionals or official government sources.

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