



Original Research Article

Knowledge, Attitude and Practices about Medicines: A Cross Sectional Study in Maharashtra.

Kalpesh R. Patil¹, Rakesh E. Mutha², Payal H. Patil², Rupali S. Patil², Harshali B. Patil², Piyush S. Bafna*²

¹R. C. Patel Institute of Pharmaceutical Education and Research, Shirpur- 425405, Dist-Dhule, Maharashtra, India.

²H. R. Patel Institute of Pharmaceutical Education and Research, Shirpur- 425405, Dist-Dhule, Maharashtra, India.

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ABSTRACT

The present cross sectional study was conducted to explore the knowledge, attitude and practices about medicines among adolescents from Maharashtra. A multiple choice questionnaire was used to gather the data from 200 adolescents of age 14-20 years and attending the schools in various cities of Maharashtra. It was observed that 3.58% of adolescents were in the favor of self-medication and 84% of the study population affirmed that they will prefer to receive the medication through physician consultation. Surprisingly, 49.16% of students believed that size of the tablet affects its efficacy. Fifty percent of students accepted that medicine color and shape affect the efficacy of medicines. Furthermore, 86% of respondents believed that it is necessary to share social habits with the physician during the consultation and prior to prescription. It was also agreed by the adolescents that it is necessary to consult the physician before the consumption of any medicine by pregnant women. 77% of students knew that medicine can be harmful and all the medicines are not suitable for children and harmness is reduced by the physician consultation (73%). The study concludes that adolescents selected from several cities of Maharashtra have fundamental knowledge, positive attitude and good practices about medicines. However, the positive attitude of adolescents, awareness with respect to mis-beliefs about medicine and its rational use is desirable.

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*Corresponding author: Piyush S. Bafna, H. R. Patel Institute of Pharmaceutical Education and Research, Shirpur- 425405, Dist-Dhule, Maharashtra, India. Contact: +91-9158180173, e-mail: piyushbafna24@rediffmail.com

INTRODUCTION

Sickness is experienced by the humans during the life span. It is usual for humans to get

interacted with medicines for the cure of sickness. School adolescents have a dynamic role in the utilization of medication and these

adolescents consider themselves more independent as compared to their parents or guardians. Lack of awareness among the youth about the rational use of medicine can lead to severe consequences. The attitude towards medicines framed at an early age influences the utilization of medicines in the later stages of life (Eladalo, 2014). Several sources of information on medicines for adolescents include friends, family members, television, newspapers, physician, registered pharmacist, internet and drug information leaflets (Chamber *et al.*, 1994). Children invest a large amount of time of their developmental age in the schools. Nevertheless, curriculum of most schools does not contain schooling about medicines.

Self-medication is the usual practice of many individuals in the selection and use of various medicines (Gholap and Mohite, 2013). In India, different common health issues like fever, flu, headache, stomachache, diarrhea are generally treated by self-medication itself using various over the counter (OTC) drugs (Eladalo, 2013). This type of trend is found to be growing in adolescents, particularly among the students (James *et al.*, 2006). Additionally, self-medication and inappropriate use of antibiotics, lead to antibiotic resistance with negative outcomes is a significant healthcare issue (Cosgrove, 2006). The rise in health care cost is a pharmaco-economical issue associated with the higher antibiotic use (Ward *et al.*, 2005, Kollef and Micke, 2005). The type of the practices like lack of knowledge about medicine, incorrect self analysis with self-medication, administration errors, use of wrong therapy, abuse and dependence are the major hurdles in the promotion of rational drug use in developing countries including India (Kenna and Wood, 2004). Inadequate knowledge of medicine and repetitive use of previous prescription drugs are factors to add the risk of drug induced adversities (Dabney, 2001).

Early education to adolescents about medicines in developing phase can prevent possible untoward effects of medicines and enable them to improve attitude. Furthermore, it will also inculcate legal practices by the rational use of medication and eliminate the misbeliefs related to the use of medicines (Eladalo, 2014). The

objective of the current study was to assess the knowledge, attitude and practices of adolescents towards medicines among the rural populace of Maharashtra, India.

MATERIAL AND METHODS

The present study was a cross sectional questionnaire based study conducted as per the earlier described method with brief modifications (Eladalo, 2014). A survey was carried out in selected areas of Maharashtra, including Dhule, Shirpur, Shindkheda, Jammer, Thane, Mumbai and Dombivali.

Study Population

One thousand and two hundred adolescents attending the schools with the age between 14-20 years and willing to participate was included in the study.

Study Period

August to December 2019

A questionnaire was designed as described in the previous study. A questionnaire was pretested in a small group of adolescents through the pilot study. The revised questionnaire was then presented to the participants (Eladalo, 2014). A self-administered questionnaire was prepared consisting of total seventeen questions listed in Table.1. Respondents were instructed to tick (√) the option of their opinion for each question. For better understanding of respondents, the questionnaire that was originally prepared in English was translated to Marathi language. A questionnaire was handed to the participants after explaining the purpose of the study. The investigator explained the purpose of the study and questionnaire was handed to the students. Any queries raised by the participants regarding questionnaire were addressed by the investigator. Schools selected for study were based on random selection criteria. The data gathering was carried out in the regular classes of respondents during school hours under the supervision of investigator. The respondents almost took 10-15 mins to complete questionnaire without any assistance from their teachers and classmates. The filled forms were collected by the investigator from the respondent. The collected data were compiled, entered in Microsoft Excel sheet and analyzed by descriptive statistics.

Table 1: Cross Sectional Questionnaire

Que. No	Questions
1	When did you use the medicines? a) Physician's consultation b) Pharmacist's consultation c) Family members consultation d) Self-medication
2	What is your source of information about medicines? a) Physician b) Pharmacist c) Family members and relatives d) T. V and radio e) Newspaper f) Internet g) School and colleges h) Others
3	Do you think that medicines may cause harm to humans? a) Yes b) No
4	Do you think that some medicines may cause allergy? a) Yes b) No
5	Do you think that same medicine can be used in children and adult? a) Yes b) No
6	Do you think that children can use medicines without physician's consultation? a) Yes b) No
7	Do you know that some medicines are not suitable to be used by children? a) Yes b) No
8	Do you think that medicines harmness reduce by consulting physician or pharmacist? a) Yes b) No
9	Do you think that same medicine available in different dosage forms? a) Yes b) No
10	Does antibiotics are always necessary to be cured? a) Yes b) No
11	If you administer new medicine for the first time, which of the followings are necessary to know? a) Efficacy b) Duration of use c) Side effects d) When and how to use
12	Do you think that it's necessary to tell the physician regarding your allergy to some medicines? a) Yes b) No
13	Do you think that patient should tell regarding their smoking, drinking habits to physician before taking medicine? a) Yes b) No
14	Do you think that efficacy of medicine reduces when administered with tea, coffee or food? a) Yes b) No
15	Do you think that pregnant women should consult a physician before taking medicine? a) Yes b) No
16	Do you think that there is need to complete the therapy after feeling good? a) Yes b) No
17	Does the efficacy of medicine affected by following parameters? I) Medicine's weight / size / low or high quantity a) Yes b) No c) Don't know II) Medicine's shape a) Yes b) No c) Don't know III) Medicine's color a) Yes b) No c) Don't know IV) Storage place / temperature a) Yes b) No c) Don't know V) Dosage form (ex. Tablet, injection, syrup) a) Yes b) No c) Don't know VI) Timings of medicine a) Yes b) No c) Don't know VII) Missing a single dose a) Yes b) No c) Don't know VIII) Excessive exposure to sunlight a) Yes b) No c) Don't know

RESULTS

Data were collected from the one thousand and two hundred respondents. Student's age ranged from 14-20 years old (mean). Data represented as Figure 1 showed that, most of the adolescents 1009 (84%) declared that they

utilize medicine with the physician consultation, while some of them consult registered pharmacist 96 (8%) or family members 52 (4%). Interestingly, only 43 (4%) adolescents take medicine with their own consult.

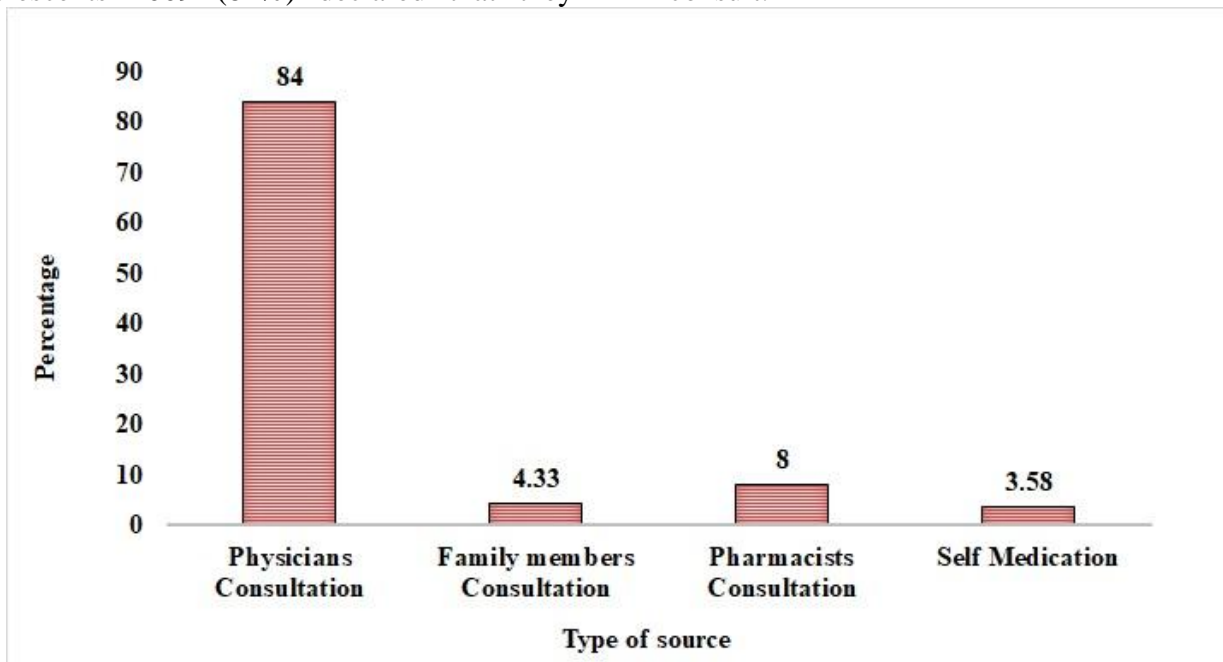


Fig.: 1 Status of Medicine use by the Adolescents

Fig. 2 illustrated that, for adolescents most reliable sources of information related to medicines were physician 725 (60.42%) and pharmacist 221 (18.42%). Amongst other options listed, internet 74 (6.17%) was the first

preferred source for adolescents whereas family member 42 (3.5%), television 49 (4%) and newspaper 47 (3.9%) were almost equally chosen sources of medicine information by the adolescents.

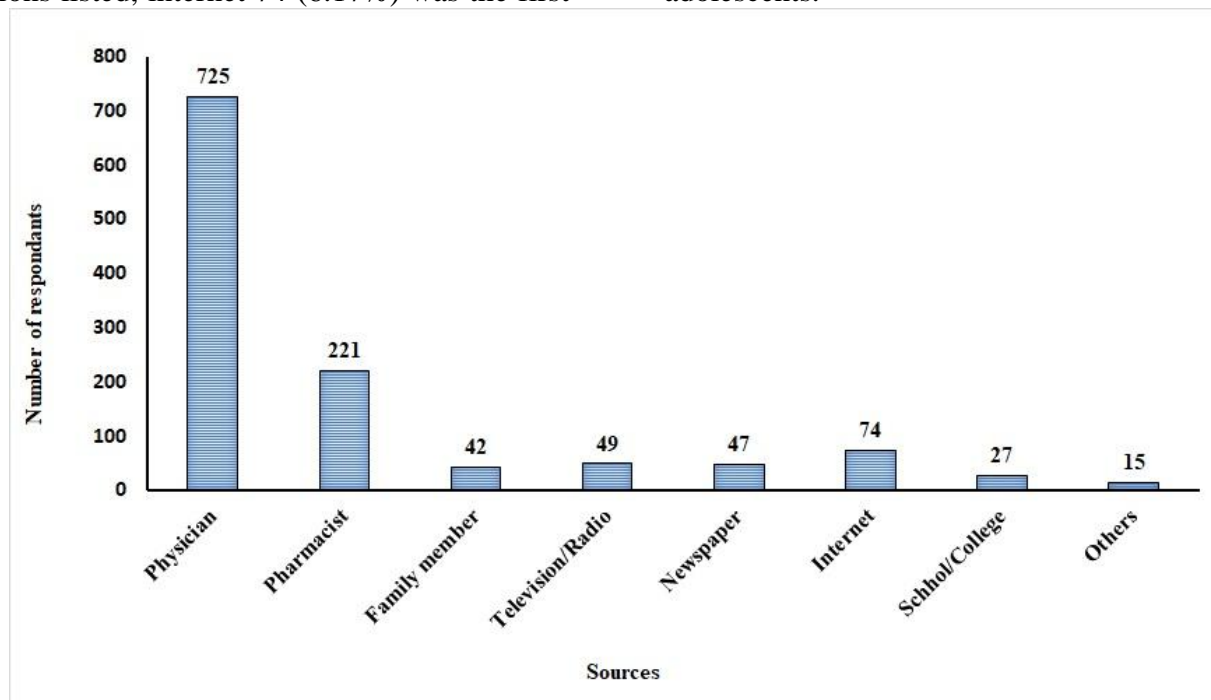


Fig.: 2 Source of Information related to Medicine

Outcomes of adolescent's awareness towards medicine and healthcare are represented in Table 2 which includes total 13 questions with responses from adolescents. Data related to awareness regarding medicines harmness represented by question number 3 and 8. The majority of respondents were aware about medicines and their harmful effects (918, 77%); while most of them were also aware that medicines harmness would be reduced by physician's or pharmacist's consultation (881, 73%). On the other side less number of respondents (282, 23%) were totally unaware that the medicine may cause harm.

Data related to allergy due to medicine represented by question number 4 and 12. Around 78% of adolescents know that some medicines are causing allergy, while 86% of study population feels that it is necessary to inform the physician regarding the history of drug allergy to the patient. Only 27% of

adolescents think that it is not necessary to tell physician regarding patient's drug allergy; while approximately 22% of adolescents ignored that medicines may cause allergies.

As represented by question number 5, the majority of adolescents answered that same medicine cannot be used by children and adults (839, 70%), whereas 361, (30%) of adolescents feels oppositely.

Around 74% of the study population reported that children should consult physician when they utilize medicine for treatment purpose and 26% of the adolescents believe that it is unnecessary to consult physician before medicine use.

Regarding the medicines suitability to children represented by question number 7, 77% of respondents reported that some medicines are not suitable for children. On the other hand 23% of respondents reported that all medicines are utilized by children.

Table 2: Adolescents Awareness and Attitude towards Medicine and Health care personnel's (N=1200)

Que. No	Questions	Yes n (%)	No n (%)
3	Do you think that medicines may cause harm to humans?	918 (77)	282 (23)
4	Do you think that some medicines may cause allergy?	936 (78)	264 (22)
5	Do you think that same medicine can be used in children's and adults?	361 (30)	839 (70)
6	Do you think that children can use medicines without physician's consultation?	316 (26)	884 (74)
7	Do you know that some medicines are not suitable to be used by children's?	919 (77)	281 (23)
8	Do you think that medicines harmness reduces by consulting physician or pharmacist?	881 (73)	319 (27)
9	Do you think that same medicine available in different dosage forms?	873 (73)	327 (27)
10	Does antibiotics are always necessary to be cured?	567 (48)	633 (52)
12	Do you think that it's necessary to tell the physician regarding your allergy to some medicines?	1031 (86)	169 (14)
13	Do you think that patient should tell regarding their smoking, drinking habits to physician before taking medicine?	1029 (86)	171 (14)
14	Do you think that efficacy of medicine reduces when administered with tea, coffee or food?	735 (61)	465 (39)
15	Do you think that pregnant women should consult a physician before taking medicine?	1031 (86)	169 (14)
16	Do you think that there is need to complete the therapy after feeling good?	873 (73)	327 (27)

n = represents sample size of adolescents, % = percentage sample size of adolescents

Question number 6 in the questionnaire is asked to know the perception of adolescents about the significance of physician with respect to medicine use (Table 2). The result indicated that 74% (884) of adolescents were aware that it's mandatory to consult physician before intake of any medicine, while the rest of the respondents (316, 26%) denied the necessity of physician consultation before drug intake. About 77% of adolescents were knowledgeable about different dosage forms of medicines

(Table 2). Only 23% of the total study population were doesn't know that medicines are available in a variety of formulations.

As illustrated in Table 2 (Question number 10) the nearly 50 % of adolescents (567; 48%) knew that antibiotic use is must to cure the disease, and nearly 50% (633; 52%) were denied the same. Still, higher percentage of respondents were negated for the regular antibiotic use and cure of disease.

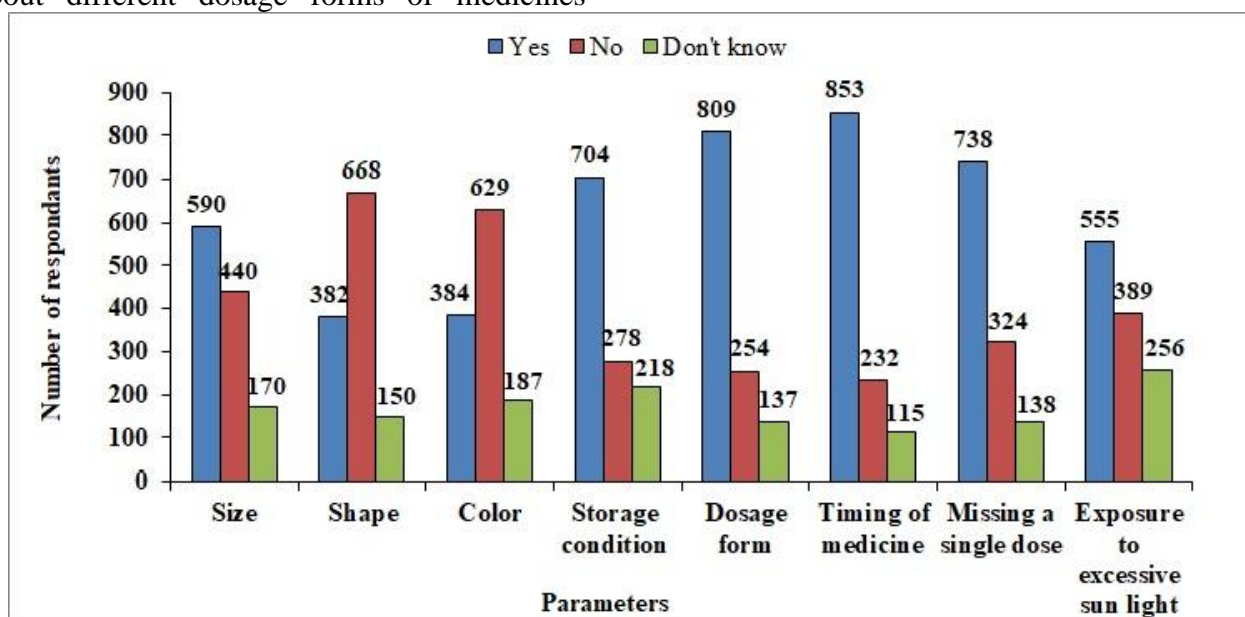


Fig.: 3 Parameters Affecting Efficacy of Medicines

As indicated in Table 2 (Question number 13), 86% (n=1029) of the study population agreed with the importance of telling smoking and drinking habits to physician before taking any medicine. Only 14 % (n=171) of respondents reported the no need to tell the physicians regarding bad habits before medicines consumption. The results indicated positivity towards adolescent's knowledge related to social history and medication use. Regarding question number 14, the majority of the study population, 61% (n=735) were totally aware about consumption of tea or coffee or food along with medicines affects efficacy of administered medicine, while 39% (n=465) of respondents denied that concurrent administration of medicines and tea or coffee affects the efficacy of the medicines.

Question number 15 indicated that consultation with a physician by pregnant women is must before intake of any medicine (86%, n=1041)

that suggested positive attitude of adolescents. Around 73% (n=873) of adolescents feels that a patient should complete the entire course of prescribed drugs even patients feel good (Table 2).

Around 73% of the adolescents were agreed the fact that it is must to complete entire drug therapy, even symptoms were well recovered and the patient feels better. Contrary to this, remaining 27% feels that discontinue the therapy when one feels better. (Table 2; Question number 16)

Figure 3 illustrated that, 809 adolescents among study populations has proper knowledge towards dosage form and its efficacy. Amongst them, 668 were feels that shape of medicine doesn't have any relation to its efficacy, while 629 also feels that even the color of medicine doesn't affect its efficacy. Related to other questions such as storage conditions (n=704), medicine timing (n=853), missing a single dose

(n=738) and light exposure (n=555) also shown positive knowledge and attitude towards medicine efficacy and its use.

DISCUSSION

The present study was carried out to provide baseline data on the knowledge, attitude and practices of adolescents from chosen study area toward medicines.

84% of the participants have confidence in their doctors (Figure 1) and they used to take their medications in the wake of counselling doctors and just 3.58% of them favored self-controlled drugs. A comparative sort of result was found in the Saudi investigation, which demonstrated that 80% of the examination members used to manage their treatment following specialist's recommendation (Eladalo, 2014). A study conducted in Malaysia which are also found to be in accordance with the present study, where nearly three quarters of participants consult physician to use their medicines (Dawood, 2011). The present result also indicated only 8% of participants administer their medication by pharmacist consultation and for 18% of them pharmacist is the primary source of information (Figure 2) that showed lack of knowledge of adolescents towards the job of pharmacist and their expertise.

The main sources of information about medicines that students rely on physicians (60.4%), community pharmacists (18.41%), parents/adult relatives (3.5%), television (4%), newspaper (3.9%), internet (6%), and school/college (2%). Though, the obtained findings reflect the proper attitude of adolescents towards healthcare professionals, still reflected the role and the accessibility of pharmacists and physician in health education among study area. This is similar to study result obtained in earlier reported studies (Eladalo, 2014, Chambers *et al.*, 1997). In the present study, internet was not considered as a primary source among the Indian adolescents from study area, this was similar with the Saudi study in which adolescents collect their medicine information from the internet (4.8%) (Eladalo, 2014), and are contrasted with another studies reported where internet was

primary source of information for adolescents (Abahussain, 2005, Gray, 2005).

Nearly, three quarters of adolescents have had sufficient knowledge related to medicine harm, allergies they possessed, and also knew that same medicine can't be used for different age grouped peoples indicating the positive perception of adolescents towards medicine harm. Additionally, adolescents possess sufficient awareness to consult physician prior to consumption. These perceptions of the adolescents in this age put them in the zone of safety in the upcoming future.

It is also revealed that adolescents thought that medicines harmness reduces by consulting physician or pharmacist. This kind of trend is expected and essential for the rational use of the medicine. Along with this, a positive discussion with the physician regarding the patient's health, medication and allergy history is found to be necessary from this study. It is very essential and found to be helpful to decide future medication protocol for the concerned patient. It is also evident that medications by the mother during the pregnancy affect the fetal growth. In this connection, relevant information from the pregnant mother with respect to her pregnancy and ongoing medication to the physician become essential. Lack of proper information to the physician regarding the same may lead to the development of congenital abnormalities in the fetus and also affect the health status of mother too.

It may be the practice of some patients regarding discontinuation of medication after subsidation of symptoms of the health issue. Subsidation of the symptoms doesn't mean a complete cure of disease or disorder. It is considered to be dangerous to discontinue while the patient is on antibiotic therapy, which further develop antibiotic resistance by the causative organism of various pathogenic diseases. With this, for proper health and longevity and to reduce the rate of mortality and morbidity, antibiotics play an important role with respect to many infectious diseases (WHO, 2012, WHO, 2014). However, sustainable, effective and careful use of antibiotics becomes very essential, otherwise

reemergence and management of life-threatening consequences may become difficult for the common infections (Jamison, 2006). Self medication, abuse and misuse are considered as major threats for the antibiotic use (HAS, 2008, Napolitano *et al.*, 2013, Jain, 2011). Hence completion of therapy as prescribed by the physician is mandatory to avoid rebound effect. In India, all the drugs are not included in schedule H category and over the counter (OTC) drugs has no legal recognition. It is recommended to include OTC drugs in schedule K. This would definitely help to avail the medicine in time and with good quality to the patients (Kenna and Wood, 2004, Ministry of Health and Family Welfare, 2003).

CONCLUSION

The findings of this study conclude that with few exceptions, the adolescents have good knowledge about the medicine and its rational use. The baseline data generated from this survey endorse the knowledge, attitude and practices of adolescents toward medicines from the selected adolescent populace of Maharashtra, India. A further exhaustive survey involving amore number of participants from diverse territory is recommended to support the outcome of present study.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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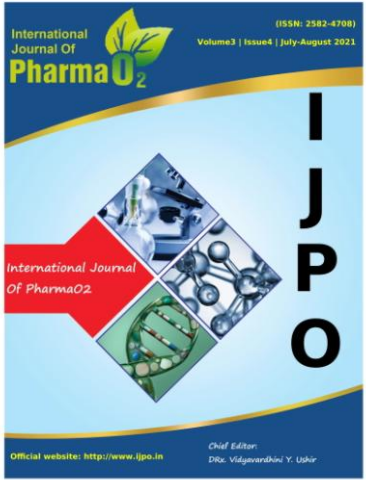
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