

Use of an educational DVD to explore the problem of irrational use of medicines

P. R. Shankar, P. Mishra, A. De, A. Saha

Department of Pharmacology and community medicine, Manipal College of Medical Sciences, Pokhara,

Correspondence to: Dr. P.Ravi Shankar, Manipal College of Medical Sciences, Deep Heights, P.O. Box 155, Pokhara, Nepal.

e-mail: ravi.dr.shankar@gmail.com

Background: Orienting undergraduate students to the concept of rational prescribing is an important strategy for promoting rational use of medicines. The video 'Tiim' deals with street-sold medicines in Burkina Faso, a country in West Africa. The objectives of the study were to:

- a) Use the video as a platform to explore medicines use problems
- b) Obtain student opinion about the sessions and
- c) Note the association of the opinion with the respondents' demographic characteristics.

Materials and Methods: The exercise was carried out during the practical session in Pharmacology. The students were divided into groups of 7 or 8 students each and were given a set of problems. After 45 minutes the groups presented their solutions, followed by discussion and comments from the facilitators. Student feedback was collected using a structured questionnaire. Demographic information was collected and the students were asked to indicate their agreement with a set of seven statements using a modified Likert-type scale. The median total score was compared among different subgroups.

Results: Fifty-eight of the 68 third semester and 72 of the 73 fourth semester students participated. Sixty-three of the 120 students (52.5%) were male. Indians, Nepalese and Sri Lankans were the major nationalities. The median total score was 24. No significant difference in the median total score was seen among different subgroups.

Conclusion: The students were of the opinion that the situation depicted in the video is similar to that existing in South Asia and appreciated the session. The concept of rational use of medicines was reemphasized among future primary care physicians.

Introduction

The World Health Organization (WHO) defines rational use of medicines as 'Patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community.' Teaching in pharmacology has traditionally tended to be drug-centred

and to concentrate more on theory than on practice.¹ Clinical training has tended to focus more on diagnostic rather than therapeutic skills. Orienting undergraduate medical students to the concept of rational prescribing is an important strategy for improving drug use.²

Problem-based learning (PBL) in pharmacology and therapeutics helps students to develop critical reasoning skills which are essential for clinical practice.³ The Manipal

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College of Medical Sciences (MCOMS), Pokhara, Nepal admits two batches of students every year for the undergraduate medical course (MBBS). Pharmacology is taught during the first four semesters in an integrated manner with the other basic science subjects. The department follows a mixture of didactic lectures and problem-stimulated learning (PSL) sessions for teaching the subject.⁴ Learning during the practical sessions is problem-stimulated, activity-based and carried out in small groups.⁵ The practical sessions are usually of two and half hours duration.

The department emphasizes the rational use of medicines (RUM) and teaches students to select and use essential medicines rationally.⁶ The students during the sessions are taught about RUM, concept of essential medicines, sources of drug information, common examples of irrational drug use and critical analysis of journal articles.⁶

The organization *Pharmaciens sans Frontieres* in association with CINOMADE had recently produced a video on street sold medicines in Burkina Faso, a country in West Africa. The video highlights various aspects of the medicines use in the country. We planned to show the video to the third and fourth semester students of our institution and to use the video as a platform to discuss medicines use problems. Student feedback about the session was obtained. The objectives of the study were to:

- Use the video as a platform to explore the problem of irrational use of medicines
- Obtain student opinion about the session using a structured questionnaire and
- Note the association of the opinion with the respondents' demographic characteristics, if any.

Materials and Methods

The exercise was carried out during the practical session in pharmacology. The practical sessions are of two and half hours duration. The batch of 37 or 38 students is divided into five groups of 7 or 8 students each. The groups are divided at the beginning of the semester and remain constant throughout the semester. While dividing the groups, due care is taken to ensure adequate representation to both sexes and different nationalities.

The students were first shown the English subtitled version of the DVD 'Tiim' which deals with street medicines in Burkina Faso, a country in West Africa. In the video, a peddler goes door to door through towns and villages carrying a blue bag containing commonly used medicines. He is illiterate and depends on the pictorial depictions on the medicine packet

to dispense the medicine and treat illnesses. Medicines are often sold in single units and without proper packaging and correct information. Village elders and an ex-street medicine seller talk about these medicines. The issue of generic medicines and pharmacy sold medicines is also covered. The video is of 31 minutes duration.

After showing the video the various groups were given a set of problems to discuss and solve. The problem set used is shown in Appendix A. Some of the questions were related to the video while others were not. The groups were asked to compare and contrast the medicines use situation in Burkina Faso and South Asia. After the activity, the students presented answers to the various questions. The presentation was followed by an open house discussion and the facilitators discussed aspects which were not covered during the presentation and the ensuing discussion. The video served as a platform to stimulate debate about medicine use problems in Nepal and South Asia.

Student feedback about the session was collected using a structured questionnaire. The questionnaire used is shown in Appendix B. Demographic information like sex, nationality, semester of study, place of residence, method of financing of medical education and occupation of parents were noted. The exercise was carried out among the third and fourth semester students of our institution. The students were asked to indicate their degree of agreement with a set of seven statements using a modified Likert-type scale. Two statements (five and seven) were not applicable to the video and we reversed the scores of these two statements while calculating the total score.

The median total score was compared among the different subgroups of respondents using appropriate non-parametric tests ($p < 0.05$). Statistical Package for Social Sciences (SPSS Version 10 for windows) was used for the statistical analysis.

Results

The exercise was carried out among the third and fourth semester students during the month of July 2006. One hundred and twenty of the 141 students from both semesters (85.1%) participated. Fifty-eight of the 68 third semester (85.3%) and 72 of the 73 fourth semester (84.9%) participated.

The demographic characteristics of the respondents are shown in Table 1. Sixty-three students (52.5%) were male. Indians, Nepalese and Sri Lankans were the major nationalities. The majority of students was from urban areas and was self-financing.

Table 1: Demographic characteristics of student respondents (n=120)

Characteristic		Number (Percentage)
Sex	Male	63 (52.5)
	Female	57 (47.5)
Nationality	Nepalese	45 (37.5)
	Indian	62 (51.7)
	Sri Lankan	11 (9.2)
	Others	2 (1.7)
Semester	Third	58 (48.3)
	Fourth	62 (51.7)
Place of residence	Urban	78 (65)
	Rural	5 (4.2)
Method of financing	Scholarship	23 (19.2)
	Self-financing	81 (67.5)
Occupation of parents	Both doctors	12 (10)
	One doctor	18 (15)
	None doctor	67 (55.8)

The individual scores (median, interquartile range) of the seven statements are shown in Table 2. As already stated, scores of statements five and seven were reversed while calculating the total score. The median total score was 24 and the interquartile range was 2. The maximum possible score was 35. No significant difference in the median total scores was seen among the different subgroups of respondents.

Table 2: Median total score and scores of individual statements

Statement	Median (Interquartile range)
Statement 1	4 (1)
Statement 2	4 (1)
Statement 3	5 (1)
Statement 4	4 (1)
Statement 5	3 (1)
Statement 6	4 (1)
Statement 7	4 (1)
Total	24 (2)

The median scores for statements 1, 2, 4 and 6 were 4 showing a high degree of agreement with the statements. For

statement 3 regarding street sold medicines the median score were 5. The respondents were also of the opinion that the situation depicted in the video is similar to that existing in South Asia and that the video emphasized the issue of counterfeit medicines.

Discussion

The students had a positive opinion regarding the sessions. No significant differences in the opinion were seen among different subgroups of respondents.

Worldwide it has been estimated that over half of all the medicines are prescribed, dispensed or sold inappropriately.⁷ Inappropriate use of medicines and its resulting consequences are prevalent in low, middle and high income countries.⁷ Polypharmacy, excessive use of injections, inappropriate use of antimicrobials, prescriptions that do not follow clinical guidelines and inappropriate self-medication are common examples of irrational drug use.⁸ A recent WHO publication has proposed 12 core policies to promote the more rational use of medicines.⁹ Problem-based learning in pharmacotherapy in undergraduate curricula has been stressed.⁹

A number of initiatives have been introduced worldwide to improve the teaching of pharmacology and therapeutics.^{10,11,12} Prescribing skills are becoming an important area in medical education. At MCOMS, the student body consists of Nepalese, Indians, Sri Lankans and a few students from other countries. At MCOMS, training sessions on RUM have been carried out for over 3 years.¹³ Selection of personal drugs, delivering drug and non-drug information to simulated patients, analysis of drug advertisements are some of the activities carried out.¹³ Solving simple problems in therapeutics, prescribing appropriate drugs for a disease condition and delivering drug-related and disease-related information in a meaningful way to the patient are important transferable skills in Pharmacology.¹⁴

The median total score of the respondents was 24 (maximum possible score 35). The students felt that the video served as a succinct introduction to drug use problems. 'Tiim' is a documentary on street-sold medicines in the Ouahigouya area of Burkina Faso, West Africa. Street medicine vendors and the public were interviewed and the complexity of issues, the motivation of the vendors, beliefs and questions of the public provide a revealing insight into the problem. The popularity of doping substances and the lack of knowledge of generic drugs are highlighted. Even though the situation was in some ways different from that in South

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Asia, we felt that the issues of under-development, illiteracy and poverty are common. We had asked a group to compare the medicines use situation in Burkina Faso and Nepal. The differences according to the students were that street sold medicines are not a common phenomenon. Alternative medicines are however sold in the streets. The drug regulatory process in Nepal is also comparatively more stringent. Medicines are cheaper in Nepal compared to Burkina Faso. Poverty, illiteracy, high prevalence of self-medication was some of the similarities.

The students were of the opinion that the video was interesting and informative. They also felt that inappropriate use of medicines is a major problem in South Asia and that street-sold medicines are dangerous. The students were of the opinion that the issue of counterfeit medicines was emphasized in the video. The students may not have understood 'counterfeit medicines' and may have filled in the questionnaire before we completed the discussion. This important issue was discussed at depth.

The issue of generics, patents, the new Intellectual Property Regime (IPR), drug prices and the inappropriate use of antibiotics were discussed. The role of women in securing access to medicines varied according to the culture and region and was an interesting aspect of the discussion. No significant differences were seen among different subgroups of students as regards their opinion about the sessions. The number of statements was small (seven) and this may have been partly responsible.

We studied the student opinion about the session using a structured questionnaire. The number of statements was small. Student knowledge about the topic was not studied. Student opinion about the strengths and weaknesses of the sessions and suggestions to improve and strengthen the sessions were not elicited.

Conclusion

The DVD-based session on rational use of medicines was appreciated by the students. We were successful in using the video as a platform to explore the problem of irrational use of medicines. The exercise has reemphasized the importance of using medicines rationally among future primary care physicians. The exercise should be continued and the possibility of introducing similar sessions during the clinical years of training explored.

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References

1. De Vries TPGM, Henning RH, Hogerzeil HV and Fresle DA (1994) Guide to good prescribing: A practical manual. World Health Organization: Geneva. WHO/DAP/94.11.
2. Joshi MP and Jayawickramarajah PT (1996) A problem-orientated pharmacotherapy package for undergraduate medical students. *Medical Teacher* **18**: 75-6.
3. Spencer JA and Jordan RK (1999). Learner centred approaches in medical education. *BMJ* **31**: 1280-3.
4. Shankar PR, Dubey AK, Mishra P, Upadhyay D, Subish P and Deshpande VY (2004) Student feedback on problem-stimulated learning in pharmacology: a questionnaire based study. *Pharmacy Education* **4**: 51-6.
5. Shankar PR (2006) Pharmacology at the Manipal College of Medical Sciences, Pokhara, Nepal: New roles and new challenges. *The Internet Journal of Pharmacology* **4**: 2.
6. Giri BR and Shankar PR (2005) Rational use of medicines –Snakes and ladders? *Regional Health Forum* **9**: 54-7.
7. Hogerzeil HV (1995) Promoting rational prescribing: an international perspective. *British Journal of Clinical Pharmacology* **39**: 1-6.
8. Holloway K, Tanna S and Laing R (2004) Rational use of medicines. In: The World Medicines Situation. World Health Organization: Geneva, pp. 75-92. WHO/EDM/PAR/2004.5.
9. Promoting rational use of medicines: core components 2002. WHO Policy Perspectives on Medicines No. 5. Geneva, World Health Organization, 2002.
10. Barakzai Q (2004) Transition from traditional to innovative teaching in and beyond pharmacology at Ziauddin Medical University. *Acta Pharmacologica Sinica* **25**: 1220-32.
11. Eroglu L and Uresin Y (2003) A model of pharmacology education: the experience of Istanbul Medical Faculty.

Journal of Clinical Pharmacology **43**: 237-42.

12. Tisonova J, Hudec R, Szalayova A, M et al. (2005) Experience with problem oriented teaching in pharmacology. *Bratislavské Lekárske Listy* **106**: 83-7.
13. Shankar PR (2005) Teaching and learning about rational use of medicines at the Manipal College of Medical Sciences, Nepal. *HAI News* **132/133**: 22-3.
14. Shankar PR, Mishra P, Shenoy N and Partha P (2003) Importance of transferable skills in Pharmacology. *Pharmacy Education* **3**: 97-101.

Appendix A:

Problem set used to explore the problem of irrational use of medicines

Group A:

Briefly comment on the drug use situation depicted in the video.

Elucidate in brief the problem of counterfeit medicines in South Asia.

Comment on the role of women with respect to securing access to medicines.

Group B:

Briefly comment on the various stakeholders involved and their role in use of street medicines in Burkina Faso.

Briefly discuss inappropriate use of antibiotics in South Asia.

Group C:

Elucidate on the role of generic medicines depicted in the video.

What impact is the new Intellectual Property Regime (IPR) likely to have on drug prices in South Asia?

Group D:

Comment on the use of stimulant drugs depicted in the video.

How does poverty contribute to inappropriate use of medicines in South Asia?

Group E:

Briefly describe how illiteracy contributes to improper use of medicines in Burkina Faso.

Elucidate the similarities and differences between the medicines use situation in Burkina Faso and Nepal.

Appendix B:

Questionnaire used to obtain student feedback about the session

Time – Student feedback

Sex: **Nationality:** **Semester:**

Urban/ Rural Scholarship/ Self-financing Parents:
Both doctors/ One doctor/ None doctor

For the following score from 1 to 5 (whole numbers only) according to the following scale: 1 = totally disagree with the statement, 2= disagree, 3 = neutral, 4 = agree, 5= totally agree with the statement.

1. The video served as a succinct introduction to drug use problems.
2. Inappropriate use of medicines is a major problem in South Asia.
3. Street sold medicines are dangerous.
4. Generic medicines are to be always preferred.
5. The situation depicted in the video is similar to that existing in South Asia.
6. The video is interesting and informative.
7. The issue of counterfeit medicines was emphasized in the video.