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Effectiveness Of An Educational Intervention On Understanding Actions And Adverse Effects Of Common Over-The-Counter (OTC) Medications Among Selected High School Teachers

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ABSTRACT

As human beings we have the fundamental right to have access to health services. Nowadays around the world people consume medicines with or without the prescription of the physicians. There are some medicines that are sold without a prescription, in contrast to prescription drugs—these drugs are termed as over-the-counter (OTC) drugs. They range from pain relievers, cough and cold remedies to vitamin supplements. But over-the-counter drugs are not guaranteed to be safe even if taken as directed. They can cause severe and fatal damage to any organs of the body. The aim of the present study was to increase the knowledge of the English medium high school teachers and evaluate the effectiveness of structured teaching programme on the actions and adverse effects of commonly used over-the-counter medications. One group pre-test post-test research design was adopted to accomplish the objectives of the study. The teaching programme was prepared by the investigator focusing on the actions and adverse effects of commonly used over-the- counter medication among English medium high school teachers. The structured knowledge questionnaire was prepared to assess the pre-test knowledge of high school teachers and the same was administered to assess the effectiveness of structured teaching programme in terms of post-test knowledge. The results showed that the mean post-test knowledge score was apparently higher (34.80) when compared to the mean pre-test knowledge score (27.84). The score of pre-tests (SD=4.77) was more dispersed than the scores of post-tests (SD=3.20). Hence, it is apparent that there was a considerable gain in knowledge of high school teachers regarding actions and adverse effects of commonly used over-the-counter medication. Further effectiveness was tested by using paired 't' test. The calculated 't' value of pre-test knowledge score ($t_{69}=16.27$, $P < 0.05$) is higher than the table value. Therefore, it can be concluded that the difference in the mean observed was a true difference and the teaching programme on the actions and adverse effects of commonly used over-the-counter medications was effective in increasing the knowledge of high school teachers. There was significant increase in the knowledge score of high school teachers after the teaching programme. Therefore, it is concluded that the structured teaching programme was highly effective in increasing the knowledge of high school teachers.

Keywords: *Effectiveness, Educational intervention, Action and Adverse effect, over-the-counter medication, High school teachers.*

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1. INTRODUCTION

Over-the-counter drugs, known as OTC drugs in short, are drugs available at the pharmacists without a doctor's prescription. Normally, the status of OTC is only granted by drug authorities to drugs whose safety has been well-established over years and years of use. Many of the medications you have in your medicine cabinet at home are OTC, from the pills you take for fever and toothache (acetaminophen, ibuprofen, or aspirin) to common cough and cold (cough syrup). Many of these medicines are even used for children. However, recent studies have reported that some OTC drugs present serious health risks and side effect.1 OTC medicines have traditionally been used to treat self-limiting minor ailments.[2] It is not surprising that a number of drug interactions involving analgesics have been reported.[3] In 2007, people were shocked at the news that several little children suffered from serious adverse events, some of them fatal, after taking OTC cough and cold medicines as reported by the Philadelphia Medical Examiner's Office.1 An observational cross-sectional study conducted on 909 subjects revealed that 75% of them had used self-medication.5 It is also observed that the arbitrary use of additional drugs other than prescribed medication is known to be a huge part of drug sales.[6] Majority of the OTC drugs are used to relieve symptoms rather than cure an underlying disease and the use of these products may mask serious illnesses.[2] OTC analgesics are generally well-tolerated and effective when taken for brief periods of time and at recommended dosages. However, their long-term use, use at inappropriately high doses, or use by persons with contraindications may result in adverse effects, including gastrointestinal haemorrhage, cardiovascular toxicity, renal toxicity and hepatotoxicity. More than 60% of people cannot identify the active ingredient in their brand of pain reliever. Additionally, about 40% of Americans believe that OTC drugs are too weak to cause any real harm.[8] According to a 2002 study, nearly 80 percent of American adults reported taking an OTC pain reliever at least once a week. While the medicines are safe when taken as directed, some consumers may not realise the potency of OTC pain relievers, and therefore, may inadvertently be taking steps that could put their health at risk. Of special concern are those situations where consumers either take more than the recommended dose of an OTC pain reliever or incorrectly combine OTC pain relievers with other OTC and prescription drugs. Misuse of OTC pain relievers can lead to medical problems, such as gastrointestinal bleeding, ulcers, and liver damage.[22]

Even though many lay persons have access to information about OTC drugs products through the mass media, they may not be knowing the actions and adverse effect of OTC drugs and due to this, it may end the life of mankind.[2] Educational campaigns to decrease the use of OTC medication need to be increased.7 Therefore, they still need guidance from healthcare professionals.

2. METHODOLOGY

Quantitative research approach and One group pre-test post-test research design was adopted to accomplish the objectives of the study. The teaching programme was prepared by the investigator focusing on the actions and adverse effects of commonly used over-the- counter medication among English medium high school teachers. Total 70 samples were selected by using Purposive sampling technique. The structured knowledge questionnaire was prepared to assess the pre-test knowledge of high school teachers and the same was administered to assess the effectiveness of structured teaching programme in terms of post-test knowledge. The data collected were analysed by using Descriptive and Inferential statistics.

3. RESULT

The collected information was organised, tabulated, analysed and interpreted using descriptive and inferential statistics. The analysis of the data was done based on the objectives of the study and analysis of the study findings has been organised under the following headings:

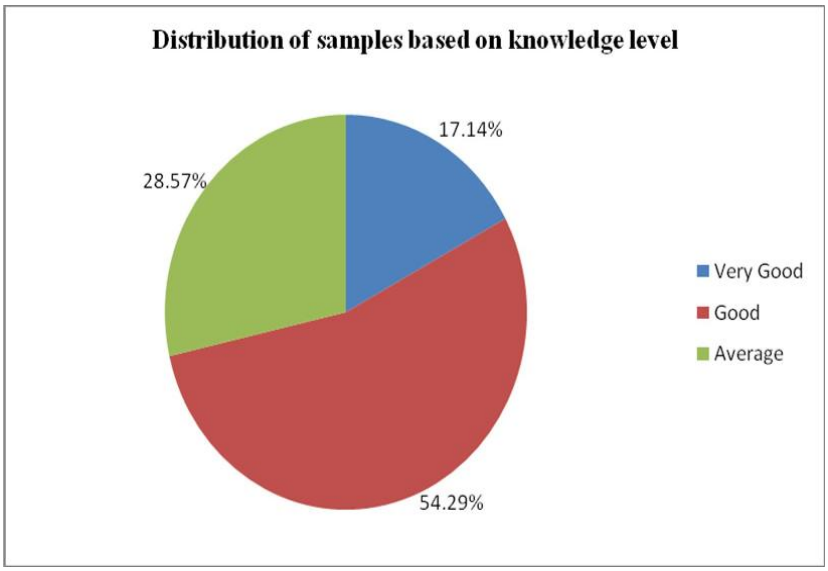
Section I: Baseline factors of the sample

Findings of the analysis showed that highest percentage (54.29%) of sample were in the age group of 21-30 years, and the least (5.71%) in the age group of 51-60 years. Gender-wise analysis revealed that 92.86% of sample was female and only 7.14% was male. This indicates that in most of the school female teachers are more and this profession is dominated by females. 58.60% were Hindus, 15.70% were Muslims, and 25.70% were Christians. (78.57%) of sample had completed B. Sc./B. A. with B. Ed., 18.57% of sample had completed M. Sc./M. A. with B. Ed. and 2.86% of sample had completed M. Com. Distribution of sample according to the total years of teaching experience indicated that highest percentage (67.14%) of sample had an experience of 0-5 years and the lowest (1.43% each) had 21-25 and 31-35 years of experience. 40% of sample purchased the medicine without prescription sometimes, 2.85% purchased medicine without prescription most of the time, 22.85% of sample purchased the medicine without prescription rarely, and 34.28% of the sample never purchased medicine without prescription. 39.13% of sample received information from the medical shopkeeper. 95.65% of sample didn't have any reaction and 4.35% of sample did have reactions like rashes and pain abdomen. 80% didn't have any health personnel in the family; 2.86% had doctors, 12.85% had nurses, and 1.43% of the sample had physiotherapists in their family, subjects who purchased drug without prescription revealed that out of 46 high school teachers who purchased

medicine without prescription, highest percentage (69.57%) purchased paracetamol, while only 2.17% purchased analgesics. Subjects who purchased drug without prescription for different complaints showed that out of 46 high school teachers, highest percentage (60.87%) of sample purchased paracetamol without prescription for fever but 8.70% purchased paracetamol for headache.

Section II: Assessment of the level of knowledge of high school teachers on the actions and adverse effects of commonly used over-the-counter medication

Figure 1: Pie diagram showing the distribution of samples based on knowledge level



Section III: Effectiveness of Educational Intervention

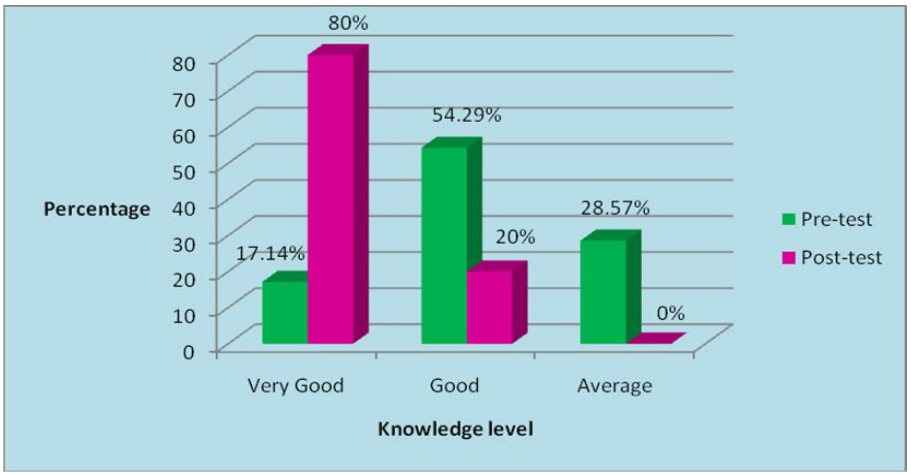


Figure 2: Bar diagram showing the comparison of pre-test and post-test scores in terms of level of knowledge of high school teachers

Table 1: Area-wise distribution of pre-test and post-test knowledge mean, SD and mean percentage

Knowledge area	score	Mean	SD	%	Mean	SD	%
Information on over- the-counter medication	6	4.28	1.21	71.33	5.29	0.83	88.17
Action of drug	7	4.87	1.22	69.57	6.157	0.7	87.96

Adverse effects of OTC medication	14	7.84	2.46	56	10.84	2.96	77.43
Commonly used over-the-counter medication	3	2.36	0.68	78.67	2.857	0.349	95.23
General instruction	11	8.47	1.57	77	9.657	1.12	87.80
Total	41	27.82	7.14	70.51	34.80	6.027	87.32

N=70

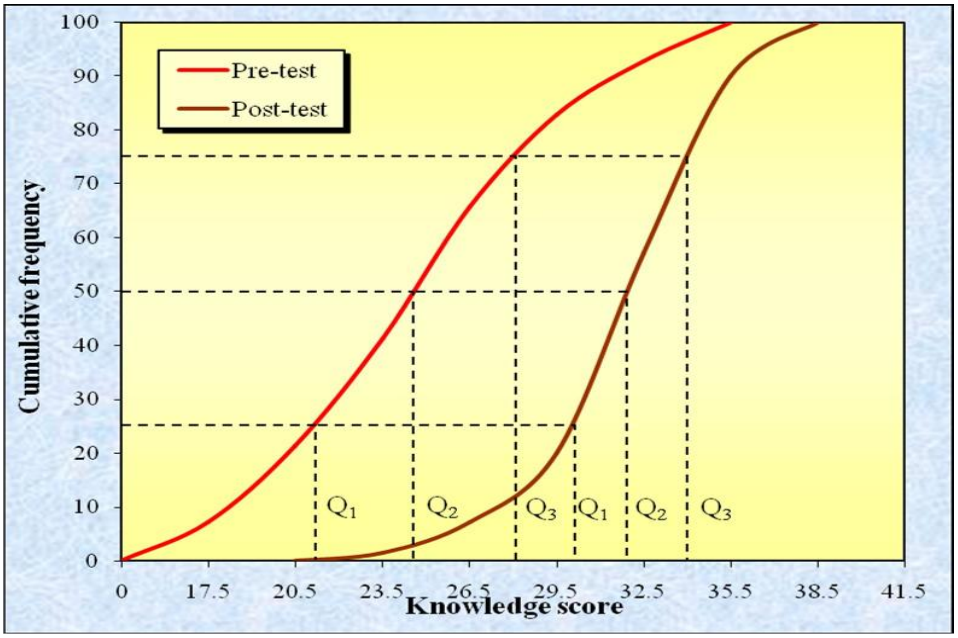


Figure3: Ogive comparing the cumulative frequency of pre and post-test knowledge score of high school teachers

Section IV: Association of mean pre-test knowledge score of teachers on the actions and adverse effects of commonly used over-the-counter medication and selected demographic variables

Chi square test was used to find the association between mean pre-test knowledge score and demographic variables such as educational status and total years of teaching experience. Results indicated that there was a significant association between pre-test knowledge score and total years of teaching experience, but no significant association was observed between knowledge score and educational status.

4. DISCUSSION

The analysis of pre-test and post-test knowledge scores showed that the post- test mean knowledge score (34.8±3.20) was apparently higher than the pre-test mean knowledge score (27.84±4.77). The median post-test scores 35 also seemed to be higher than median pre-test scores 28.

A similar study conducted on the effectiveness of an awareness programme on the actions and adverse effects of commonly used over-the-counter medication among the lay people of Manipal revealed that the post-test mean knowledge score (17.4) was apparently higher than the pre-test mean knowledge score (8.3) and the median post-test score (19) was also higher than median pre-test score (7).

The level of knowledge of high school teachers had increased in the post-test. In the pre-test 17.14% teachers had very good and 54.29% had good level of knowledge, whereas in the post-test 80% had very good knowledge and 20% had good level of knowledge. In the pre-test 28.57% of teachers had average knowledge, while in the post-test nobody had average, poor and very poor level of knowledge. This indicates that the teaching programme was effective in terms of gain in

knowledge.

The calculated 't' value of pre-test and post-test knowledge score (t69=16.27, P < 0.05) is higher than the table value. Hence, the null hypothesis is rejected. Therefore, it can be concluded that the difference of mean observed was true difference and the teaching programme on the actions and adverse effects of commonly used over-the-counter medications was effective in terms of gain in knowledge among high school teachers. A similar study on teaching medical students about over-the-counter medications was conducted in USA. A 25-question test of knowledge was administered before and 6 months after the project, and student's attitudes were assessed. The study findings showed that there was a significant gain in knowledge scores as compared to the pre-test scores. Hence, it is concluded that the teaching was effective.

Chi square test was used to find the association between mean pre-test knowledge score and demographic variables such as educational status and total years of teaching experience. Results indicated that there was a significant association between pre-test knowledge score and total years of teaching experience, but no significant association was observed between knowledge score and educational status.

A similar study conducted on the effectiveness of an awareness programme on the actions and adverse effects of commonly used over-the-counter medications among lay people of Manipal showed that there was no significant association between pre-test knowledge score and factors such as age, sex, education, monthly income and having relatives in medical or paramedical profession.

5. CONCLUSION

Over-the-counter drugs, known as OTC drugs in short, are drugs available at the pharmacists without a doctor's prescription. Normally, the status of OTC is only granted by drug authorities to drugs whose safety has been well-established over years and years of use. Many of the medications you have in your medicine cabinet at home are OTC, from the pills you take for fever and toothache (acetaminophen, ibuprofen, or aspirin) to common cough and cold drugs (cough syrup).

On the basis of the findings of the study, the following conclusions have been drawn:

Analysis of the baseline factors of the sample revealed that highest percentage (54.29%) of sample was in the age group of 21-30 years, majority of sample (92.86%) was female, 58.60% belonged to Hindu religion, 78.57% had completed B. Sc./B. A. with B. Ed. and 34.28% of the sample never purchased medicine without prescription. Distribution of high school teachers according to their level of knowledge showed that most of the subjects (54.29%) had good knowledge, 28.57% had average knowledge, and 17.14% had very good knowledge regarding the actions and adverse effects of commonly used over-the-counter medication.

The structured teaching programme was found to be an effective strategy for improving the knowledge of high school teachers on the actions and adverse effects of commonly used over-the-counter medications. All the subjects in the study group gained knowledge in different areas of actions and adverse effects of commonly used over-the-counter medications. The pre-test score (range: 19-38) was apparently less than the post-test score (range: 25-41). The mean post-test knowledge score was apparently higher (34.8) than the mean pre-test knowledge score (27.84). The scores of pre-tests (SD=4.77) seemed to be more dispersed than the scores of post-test knowledge scores (SD=3.20). This shows that there was apparent increase in the post- test mean knowledge scores after the structured teaching programme. There was significant association between the pre-test knowledge score and total years of teaching experience, but no significant association was observed between knowledge score and educational status.

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