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Research article

A teaching programme on adverse effects of some selected drugs among college students in selected college at Bhubaneswar, Odisha

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Abstract

An adverse effect is a harmful and undesired effect resulting from a medication. Adverse effects may cause a reversible or irreversible change, including an increase or decrease in the susceptibility of the individual to other chemicals, foods or procedures. **Aim:** To assess the knowledge of students regarding adverse effects of self medication of some selected drugs. To evaluate the effectiveness of a Structured Teaching Programme (STP) on adverse effect of self medication of some selected drugs. To compare the pre &post test knowledge score with their selected demographic variables. **Method:** The study was conducted by using close ended multiple choice questionnaires and the medium of teaching was through Structured Teaching Programme. **Results**: The level of knowledge of the students reveals that in pretest 65% of the students had poor knowledge and 35% students had average knowledge. But in post test 15% of the students had good knowledge and 85% of students had excellent knowledge. Area wise post test highest mean percentage is 76.4% with mean score (4.58) for area adverse effect of paracetamol. The lowest mean percentage in post test is 73.3% with mean score (2.93) for area "Adverse effect of Antibiotics". Further effectiveness varies from 58% to 68%. **Conclusion**: Item wise comparison shows that there is effectiveness of STP in increasing knowledge of the college students on adverse effect of self medication. No significant association was found between knowledge score by the pre &post test group with their selected demographic variable.

Key words: Adverse effect, Antibiotics, Demographic variable, teaching programme, Structured Teaching Programme.

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1. Introduction

Self-medication can be defined as obtaining and consuming drugs without the advice of physician either for diagnosis, prescription or surveillance of treatment [1, 2]. This includes acquiring medicines without a prescription, resubmitting old prescriptions to purchase medicines, sharing medicines with relatives or members of one's social circle or using left over medicines stored at home [3, 4].

An adverse effect is a harmful and undesired effect resulting from a medication. Adverse effects may cause a reversible or irreversible change, including an increase or decrease in the susceptibility of the individual to other chemicals, foods, or procedures (e.g. drug interaction) [5]. The harmful outcome is usually indicated by some result such as morbidity, mortality, alteration in body weight, levels of enzymes, loss of function, or as a pathological change detected at the microscopic, macroscopic or physiological level. Adverse effects can occur as a collateral or side effect of many interventions, but they are particularly important in pharmacology, due to its wider, and sometimes uncontrollable, use by way of self-medication [6-9].

Antibiotics (eg:-Amoxilin), analgesics (eg:-Diclofinac), anti-allergic (eg:-avil), nasal drops (eg:- otrovin nasal drops), antipyretics (eg:-Dolo 650), antiemetic (eg:-Domstal), anti diarrhoeal (eg: lopramide), antiseptic (detol), vitamin tablet, calcium tablet etc are commonly used self-medication drugs. Improper use of drugs due to lack of knowledge of their side effects and interactions could have serious implications, especially in extremes of ages (children and old age) and special physiological conditions like pregnancy and lactation [10-14].

The objective of the study was to assess the knowledge of students regarding adverse effects of self medication of some selected drugs. To evaluate the effectiveness of a structured teaching programme on adverse effect of self medication of some selected drugs.To compare the pre &post test knowledge score with their selected demographic variables.

Hypothesis

H 1: There will be a significant difference in the knowledge score between pre test and post test among students.

H 2: There will be a significant association between knowledge score of pre &post test group with their selected demographic variables.

2. Material and method

A quasi-experimental study with pre and post test without control group design was undertaken on 60 students of Royal College of Science & Technology, Mancheswar, Bhubaneswar, Odisha, selected by purposive sampling technique.

The tool was developed in 2 sections. Section-A includes the demographic variable and section B include close ended questionnaire related to knowledge on adverse effect of self-medication. Permission was obtained from the Principal of the Royal College of Science and Technology, Mancheswar, Bhubaneswar, Odisha to conduct the study. Also informed consent permission was taken from the college students of Royal College of Science and Technology, Mancheswar, Bhubaneswar, Odisha to participate in the study. Pretest was conducted by using closed ended questionnaires. Intervention was done through a Structured Teaching Propgramme (STP) on adverse effect of self medication on some selected drugsprior to post test.After 7 days post test was done. The data collected were analyzed by using descriptive and inferential statistics.

Level of phenomenon before treatment	Intervention	Level of phenomenon after treatment
X_1 = Pre score	STP on adverse effect of self medication	X_2 = Post core

Intervention effect= $X_2 - X_1$

3. Results

Table No 1: Frequency and percentage wise distribution of Demographic Variable

N- 60

Variable	Frequency	%
Age in year		
16-18 Yrs	49	81.7
19-21Yrs	11	18.3
> 21 Yrs	0	0
Gender		
Male	25	41.7
Female	35	58.3
Educational qualification		
Higher secondary (continuing)	49	81.7
Graduation (Continuing)	11	18.3
Marital status		
Married	0	0
Unmarried	60	100
Areas of living		
Rural	36	60
Urban	24	40
Annual Family income status		
<2 Lakhs	28	46.67
2-5 Lakhs	27	45.00
>5 lakhs	5	8.33
Previous knowledge on Self Medication		
Poor (<10)	39	65.00
Average(11-20)	21	35.00
Good (21-30)	0	0.00
Excellent (>31)	0	0.00

Table No 2: Comparison of mean standard deviation and mean percentage of pre and post test knowledge scores of college students on adverse effect of self medication according to their age

Age in Years	Gender	No of students	Pretest			Post test			Difference in Mean%
			Mean	SD	Mean%	Mean	SD	Mean%	
16-18	Male	15	8.47	2.58	19.69	34.00	2.66	79.07	59.38
	Female	34	8.00	2.10	18.60	34.40	2.1	80.00	61.40
19-21	Male	10	10.00	2.79	23.26	33.24	3.66	77.29	54.04
	Female	1	9.00	0.00	20.93	31.00	0	72.09	51.16
>21	Male	0	0	0	0	0	0	0	0.00
	Female	0	0	0	0	0	0	0	0.00

Comparison of pre &post test mean, SD & mean percentage of knowledge scores of college students regarding adverse effect of self medication according to their age shows that during post test highest mean score (34.40 ± 2.1) which is 80% of total score was obtained by the female college students in the age group 16-18, where the difference in mean percentage was highest (61.40%) the lowest mean score 31.00 which is 72.09 % of total score was obtained by the female college students in the age group of 19-21 Yrs . where the difference in mean percentage was lowest (51.16%)
Hence it can be interpreted that STP was effective for all the college students irrespective of their age group (Table 2).

Table 3: Frequency and percentage wise distribution of college students on level of knowledge scores in pre test and post testregarding adverse effect of Self medication

Level of Knowledge	Pretest		Post Test	
	Numbers	%	Numbers	%
Poor (<10)	39	65.00	0	0.00
Average (11-20)	21	35.00	0	0.00
Good (21-30)	0	0.00	9	15.00
Excellent (>31)	0	0.00	51	85.00
Total	60	100	60	100

The Knowledge level of college students was found out by using 10 point scale. Categorization of the students was done according to the scale,

The scale interpretation is

0-10	:	POOR Knowledge
11-20	:	AVERAGE Knowledge
21-30	:	GOOD Knowledge
31-43	:	EXCELLENT Knowledge

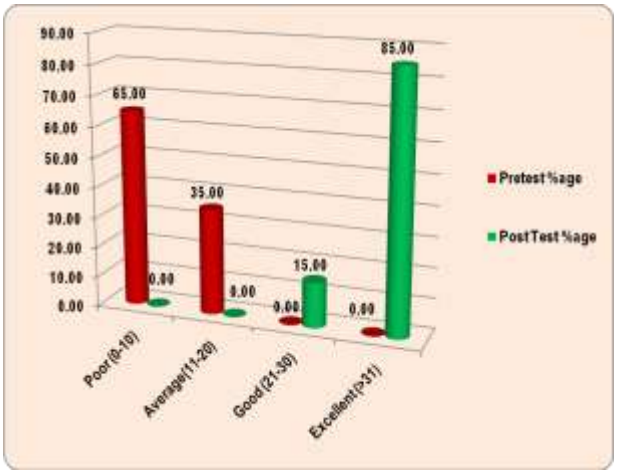

Figure No 1: Bar graphs showing the comparison between pre test and post test knowledge scores of college students regarding adverse effect of self medication

According Table 3 and Figure 1, the pre test score shows that 39 (65%) of the college students had POOR knowledge 21 (35%) college students had AVERAGE knowledge , no college students had GOOD & EXCELLENT knowledge .

The post test score shows that no college students had POOR & AVERAGE knowledge, 9(15%) college students GOOD knowledge. 51(85%) college students had EXCELLENT knowledge.

Table No 4: Area wise distribution of mean, standard deviation, mean percentage of pre test and post test knowledge scores of college students on General Information regarding self medication

Sr. No	Area	Pretest			Post Test			Difference in Mean (Y-X)
		Mean	SD	Mean % (X)	Mean	SD	Mean % (Y)	
1	General Information on self Medication	1.43	0.9	28.7	4.33	0.7	86.7	58
2	Knowledge about paracetamol	1.4	0.8	34	3.35	0.65	83.8	49.8
3	Knowledge about Analgesic	0.72	0.82	23.9	2.17	0.78	72.2	48.3
4	Knowledge about Antibiotics	1.13	0.81	37.8	2.25	0.57	75	37.2
5	Knowledge about Gastric medication	0.55	0.69	18.3	2.43	0.56	81.1	62.8
6	Knowledge on Anti-allergic medication	0.43	0.67	21.7	1.43	0.72	71.7	50
7	Advantages / Disadvantages & Principles	1.22	0.82	30.4	3.13	0.83	78.3	47.9
Total		0.98	0.79	27.83	2.72	0.69	78.4	50.57

Area wise comparison of mean, SD and mean percentage of pre &post test knowledge scores of college students regarding non prescribed self medication reveals that the highest pre test mean score was 1.43 with mean percentage 28.7 % for the item "General Information on self Medication". The lowest pre test means score was 0.43 with mean percentage 21.7 % for the item "Knowledge on Anti allergic medication". The highest post test mean score for item "General Information on self Medication" was 4.33 with mean percentage of 86.7% and mean difference percentage is 58%, which shows the effectiveness of structure teaching programme.
The lowest difference in mean percentage (37.2%) was for the item "Knowledge about Antibiotics". Further for all the other areas the difference in mean difference varies from 47.9% to 62.8%, revealing the effectiveness of structured teaching programme.

Table No 5: Area wise distribution of mean, standard deviation, mean percentage of pre test and post test knowledge scores of college students regarding knowledge of Adverse effect on self medication on selected drugs

S N	Area	Pre test			Post test			Difference in mean (y-x)
		Mean	SD	Mean % (x)	Mean	SD	Mean % (y)	
1	Adverse effect of paracetamol	0.75	0.77	12.5	4.58	0.94	76.4	63.9
2	Adverse effect of analgesic	0.3	0.53	10	2.23	0.64	74.4	64.4
3	Adverse effect of antibiotics	0.53	0.67	15.3	2.93	0.65	73.3	58
4	Adverse effect of gastric medication	0.25	0.43	12.5	1.6	0.4	81	68
5	Adverse effect of anti-allergic	0.58	0.67	14.6	3.12	0.75	77.9	63.3
Total		0.50	0.61	13.08	2.90	2.50	76.6	63.52

Area wise comparison of mean, SD and mean percentage of pre &post test knowledge scores of college students regarding Adverse effect of non-prescribed self medication reveals that the highest pre test mean score was 0.75 with mean percentage 12.5 % for the item "Adverse effect of paracetamol". The lowest pre test means score was 0.25 with mean percentage 10 % for the item "Adverse effect of Analgesic". The highest post test mean score for item "Adverse effect of paracetamol" was 4.58 with mean percentage of 76.4% and mean difference percentage is 63.9%, which shows the effectiveness of structure teaching programme on adverse effect.

The lowest difference in mean percentage (58%) was for the item "Adverse effect of Antibiotics". Further for all the other areas the difference in mean difference varies from 63.3% to 68%. Revealing the effectiveness of structured teaching programme on adverse effect.

Hypothesis testing

H01: There will be no significance association between post test knowledge score among college students regarding adverse effect of self medication with their selected demographics variables.

Table 6: Association between post test knowledge score among college students regarding adverse effect of self medication with their selected demographics variables

Demographics variables	Chi-Square Value (X^2)	Df	Table Value	Level of significance
Gender Distribution	5.24	3	7.28	Not significant
Area of living	3.54	3	7.28	Not significant
Family income	7.40	6	12.6	Not significant

($P \leq 0.05$)

Chi-Square is calculated to find out the association between post test knowledge score of the college students with their demographics variables. The values in the above table shows that there was no significant association between knowledge score among college students regarding adverse effect of self medication in post test, when compared to gender distribution, area Living and family income($P \leq 0.05$). It was found that there was no significant association of post test

knowledge score among college students with residence at 5% level of significance.

H02: There will be highly significant difference between pre &post test knowledge score among college students regarding adverse effect of self medication.

Table No 7: Comparison between difference of pre &post test knowledge scores of the college students regarding adverse effect on selected drugs of self medication

Area	't' Value	Level of significance
Knowledge on Adverse effect of paracetamol	24.43	Highly Significance
Knowledge on Adverse effect of Analgesic	17.99	Highly Significance
Knowledge on Adverse effect of Antibiotic	19.92	Highly Significance
Knowledge on Adverse effect of Gastric medication	7.18	Highly Significance
Knowledge on Adverse effect of Anti Allergic medication	20.65	Highly Significance

(df =59), (Table value- 2.00) ($P \leq 0.05$)

Paired't' test was calculated to assess the significant difference between pre &post test knowledge score, which shows highly significant difference between area wise score values of pre test and post test knowledge scores. Hence the null hypothesis is rejected ($P \leq 0.05$) and statistical Hypothesis is accepted. Thus, it can be interpreted that Structure Teaching Programme (STP) was effective for all the areas.

4. Discussion

Comparison of Pre &Post test mean, SD & mean percentage of knowledge scores of college students regarding adverse effect of self medication according to their age shows that during post test highest mean was obtained by the female college students in the age group 16-18, Area wise comparison of mean, SD and mean percentage of pre &post test knowledge scores of college students regarding non prescribed self medication reveals that the highest pre test mean score was 1.43 with mean percentage 28.7% for the item, which shows the effectiveness of structure teaching programmed [15-18].

Area wise comparison of mean, SD and mean percentage of pre &post test knowledge scores of college students regarding Adverse effect of non-prescribed self medication reveals that the highest pre test mean score was 0.75 with mean percentage 12.5 % for the item "Adverse effect of paracetamol" [19]. The lowest pre test means score was 0.25 with mean percentage 10 % for the item "Adverse effect of Analgesic". The highest post test mean score for item "Adverse effect of paracetamol" was 4.58 with mean percentage of 76.4% and mean difference percentage is 63.9%, which shows the effectiveness of structure teaching programme on adverse effect [20].

Chi-Square is calculated to find out the association between post test knowledge score of the college students with their demographics variables.. It was found that there was no significant association of post test knowledge score among college students with residence at 5% level of significance.

Conclusion

From the findings of the present study is concluded that Structured Teaching Programme (STP) on adverse effect on self medications effective for improving knowledge of college students.

Recommendation

We recommend that a holistic approach must be taken to prevent this problem from escalating which would involve:

(i) Awareness and Education regarding the implications of self medication.
(ii) Strategies to prevent the supply of medicines without prescription by pharmacies.
(iii) Strict rules regarding pharmaceutical advertising.
(iv) Strategies to make health care easily accessible.

Our study has also opened gateways for further research in this issue, besides showing that it is a real problem.

Keeping in view the findings of the present study, the following recommendations were also need to be included. A similar study on a large sample may help to draw more definite conclusion and make generalization. An experimental study can be under taken with control groups. A similar study can be conducted on nursing students. A similar study can be conducted in other students.

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References

1. Shankar KR, Kiranmayi GVN, Pharmacology: A Companion Handbook with Illustrations, Publisher: PharmaMed Press/BSP Books, New Delhi; 2015
2. F. S. K. Barar S. Chand (G/L) & Company Ltd. Textbook of Pharmacology Paperback, 132-40, 2012
3. Loyola Filho, A. I. D., Lima-Costa, M. F., & Uchôa, E. (2004). Bambuí Project: a qualitative approach to self-medication. *Cadernos de saude publica*, *20*(6), 1661-1669.
4. Marcia L.Buck. Self-medication by adolescents. *Pediatric Pharm*, *13*(5):1-4, 2007
5. Shakoor, O., Taylor, R. B., & Behrens, R. H. (1997). Assessment of the incidence of substandard drugs in developing countries. *Tropical Medicine & International Health*, *2*(9), 839-845.
6. Habeeb Jr, G. E., & Gearhart, J. G. (1993). Common patient symptoms: patterns of self-treatment and prevention. *Journal of the Mississippi State Medical Association*, *34*(6), 179-181.
7. Rajput MS, MathurV. Pharmacoepidemological study of self-medication in Indore city. *Indian journal of pharmacy practice. 3(*1):25-30, 2010
8. World Health Organization. (2009).the role of pharmacist in self-care and self-medication. Report of the 4th WHO Consultative Group on the role of the Pharmacist. 1998.
9. GHOSH*, S. O. U. R. A. V., VIKAS, V., Gupta, A., & Chaudhary, R. (2010). Evaluation of the practice of self medication among college students in west Uttar Pradesh.
10. Van der Geest, S., & Hardon, A. (1990). Self-medication in developing countries. *Journal of Social and Administrative Pharmacy*, *7*(4), 199-204.
11. Sawalha AF. Assessment of self-medication practice among university students in Palestine; Therapeutic and toxicity implication. *The Islamic university journal*, *15(*2):67-82, 2007
12. Ghosh, S. O. U. R. A. V., VIKAS, V., Gupta, A., & Chaudhary, R. (2010). Evaluation of the practice of self medication among college students in west Uttar Pradesh.
13. Sarahroodi, S., Arzi, A., Sawalha, A. F., & Ashtarinezhad, A. (2010). Antibiotics self-medication among southern iranian university students. *IJP-International Journal of Pharmacology*, *6*(1), 48-52.
14. Balamurugan, E., & Ganesh, K. (2011). Prevalence and pattern of self medication use in coastal regions of South India. *Br J Med Pract*, *4*(3), a428.
15. Nalini, G. K. (2010). Self-medication among allopathic medical doctors in Karnataka, India. *BJMP*, *3*(2), 325.
16. McCabe, S. E., Boyd, C. J., & Young, A. (2007). Medical and nonmedical use of prescription drugs among secondary school students. *Journal of Adolescent Health*, *40*(1), 76-83.
17. Sarahroodi, S., Arzi, A., Sawalha, A. F., & Ashtarinezhad, A. (2010). Antibiotics self-medication among southern iranian university students. *IJP-International Journal of Pharmacology*, *6*(1), 48-52.
18. Almasdy, D., & Sharrif, A. (2011). Self-Medication Practice with Nonprescription Medication among University Students: a review of the literature. *Archives of Pharmacy Practice*, *2*(3), 95.
19. James, H., Handu, S. S., Al Khaja, K. A., Otoom, S., & Sequeira, R. P. (2006). Evaluation of the knowledge, attitude and practice of self-medication among first-year medical students. *Medical principles and practice*, *15*(4), 270-275.
20. Abahussain, E. A., Matowe, L. K., & Nicholls, P. J. (2005). Self-reported medication use among adolescents in Kuwait. *Medical principles and practice*, *14(*3), 161-164.