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RESEARCH ARTICLE

EFFECTIVENESS OF STRUCTURED TEACHING PROGRAM ON SELF-MEDICATION KNOWLEDGE AND ITS ADVERSE EFFECTS AMONG MIDDLE AGE ADULTS RESIDING IN LALITPUR, NEPAL

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Abstract

Introduction The World Health Organization stated self-medication involves the use of medicinal products by the consumer to treat self-recognized disorders or symptoms without prescribed by a physician. Self-medication is a worldwide public health issue and is more common in developing countries. Analgesics and cough syrups were Nepal's most commonly used classes of drugs, which could be easily available over the counter.

Methods: A pre-experimental one-group pretest and post-test design was used to assess the effectiveness of the Structural Teaching Program (STP) on self-medication knowledge and its adverse effects. A nonprobability purposive sampling techniquewas used. The study included 120 middle-aged adults residing in Lalitpur, Nepal. A structured knowledge questionnaire were developed, translated into the local language, and distributed to respondents. Descriptive and inferential statistics were used to analyze the data.

Results: The mean pre-test knowledge score was 32.9% (SD 16.9%), the mean post-test knowledge score was 83.1% (9.5%), and the enhancement mean knowledge was 50.2% (SD 10.7%). When a paired't-test was done, the obtained value of 36.34 was found to be significant at 0.05. There was a significant relationship between respondents' pretest knowledge levels of self-medication and its adverse effects and socio-demographic variables such as age, religion, education, family income, occupation, and type of family, number of children, previous knowledge and source of information.

Conclusion: The respondentshad inadequate knowledge about self-medication and its adverse effects. The mean pre-test and post-test knowledge scores of respondents differed significantly. As a result, the study found that STP was effective.

Introduction:-

Self-medication is traditionally defined as "the use of drugs, herbs, or home remedies on one's own initiative or on the advice of another person without consulting a doctor" (1). According to WHO Self-medication involves the use

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of medicinal products by the consumer to treat self-recognized disorders or symptoms, or the intermittent or continued use of a medication prescribed by a physician.It is a worldwide public health problem and is more prevalent in developing countries. Age, gender, income and expenditure, self-care orientation, educational level, medical knowledge, satisfaction, and the nonseriousness of illnesses all influence self-medication patterns in different populations (2). Even though the type, extent, and reasons for self-medication vary, self-medication is increasing globally to relieve burdens on health-care systems. Inappropriate self-medication, on the other hand, results in economic waste, organ damage, the risk of adverse drug reactions, and the development of antimicrobial-resistant pathogens. These consequences have serious legal, ethical, and health-care delivery implications (3).

Self-medication is commonly obtained from family members, friends, pharmacists, neighbors, previously prescribed drugs, or suggestions from advertisements in magazines or newspapers. Nowadays, self-medication should be defined as people's desire and ability to act as intelligent, independent, and informed decision-makers, as well as in the management of preventive, diagnostic, and therapeutic activities that concern them (1). Because of the widespread prevalence of self-medication, it has become a public health concern. There is an alarming lack of knowledge about self-medication and its implications, which may lead to inappropriate medication use.As a result, the practice has resulted in the abuse of medicines, with consequences such as harmful side effects, multi-drug resistance, and delays in seeking medical care at health facilities, and children are one of the vulnerable groups to the practice of self-medication (4).

The use of non-prescribed medications and changing the dosage of prescribed medications are all examples of self-medication found in the literature (5). Because of self-medication, many signs and symptoms such as itching, heartburn, bleeding, nausea, vomiting, irregular bowel habits, insomnia, dizziness, skin rashes, general weakness, fainting, abdominal discomfort, headaches, and distension may occur. As a final complication of self-medication, heart failure and death may occur (6). Self-medication is very common, and there are numerous reasons for it. Strong desire for self-care, sympathy for sick family members, a lack of time, a lack of health services, a financial constraint, a lack of information, misconceptions, extensive advertising, and the availability of drugs in places other than drug stores are all factors contributing to the rising trend of self-medication (1).

Many factors, including sociodemographic, political, economic, and cultural issues, have contributed to an increase in self-medication trends (7). These factors are linked to a variety of conditions, including the accessibility and availability of various types of drugs and medical products from community pharmacies, as well as the difficulty and high cost of health care services in many impoverished societies (6).Many young people, regardless of age or gender, self-medicate with drugs without being aware of the potential side effects. In this regard, people must be made aware of the potential adverse effects of these drugs (8). The reasons for its use differ from place to place. Though self-medication has been widely adopted and practiced, people are not limiting themselves to over-the-counter medications, or if they are, they are using them inappropriately (4).

Because of lack of knowledge of correct dose, side effects and interactions could have serious implications, especially in vulnerable age group like children and old age and special physiological conditions like pregnancy and lactation. The practice of self-medication is widespread all over in India especially in urban and rural areas. Use of self-medication is highly prevalent in both urban and rural community (9).There is a lot of public and professional concern about the irrational use of drugs in self-medication. In developing countries like Nepal, easy availability of a wide range of drugs coupled with inadequate health services result in increased proportions of drugs used as self-medication compared to prescribed drugs. The adverse effects of self-medication include incorrect self-diagnosis, delays in seeking medical advice when needed, infrequent but severe adverse reactions, dangerous drug interactions, incorrect manner of administration, incorrect dosage, incorrect choice of therapy, masking of a severe disease and a risk of dependence and abuse (10).

Objective:-

To evaluate the effectiveness of structured teaching programme on knowledge regarding self-medication and its adverse effects among middle age adults residing in Lalitpur, Nepal"

Methods:-

Study design:
Pre experimental one group pre-test post-test design was adopted to evaluate the effectiveness of structured teaching programme on knowledge regarding self-medication and its adverse effects among middle age adults residing in Lalitpur, Nepal

Study setting and population:
The setting of the study was at Lalitpur, Nepal. The target population for the study comprises of middle-aged adults residing in selected areas of Lalitpur.The criteria for selection of the setting are the availability of subjects, feasibility of conducting the study.

Sample size:
The study sample size consisted of 120 middle-aged adults.

Sampling technique:
A purposive sampling technique was used.

Criteria for sample selection
Inclusion criteria:
The study includes middle age adults who are willing to participate in study, can read and write Nepali and/orEnglish, are present during the time of data collection and are between the ages of 45 to 65 years.

Exclusion criteria:
The study excludes middle age adults who had already participated in educational program regarding self-medication and its adverse effects and are in medical profession.

Variables:
Dependent variables:
Knowledge of middle age adults regarding self-mediation and its adverse effects.

Independent variable:
Structured teaching program on knowledge regarding self-medication and its adverse effects among middle age adults.

Attribute variables:
socio-demographic variables such as;age, religion, education level, family income, occupation, type of family, number of children, previous knowledge regarding self-medication and its adverse effects, source of information.

Data collection strategy
A structured teaching program and a structured questionnaire were prepared. The tool used for the study comprised of a socio-demographic information, structured knowledge questionnaire and a structured teaching program on knowledge regarding self-medication and its adverse effects.The questions were phrased with multiple choice questions with maximum three distracters and one correct answer. The correct response is given a score of one and incorrect response a zero score. Thus, the maximum possible score of this structured questionnaire was 33. The resulting knowledge score ranged as:

Knowledge Score	Number Of Items	Percentage
Inadequate knowledge	0 – 16	≤50 % Score
Moderate knowledge	17 – 25	51 – 75 % Score
Adequate knowledge	26 – 33	76 – 100 % Score

Formal permission was obtained from the concerned administrative office of the Lalitpur. Samples were selected according to the laid down inclusion criteria. Confidentiality and anonymity were assured. Written consents were obtained.The questionnaire was administered to each of the 120 respondents. Doubts were clarified in between. On an average, it took approximately 30 minutes to complete the test. Then structural teaching was provided at the

completion of the study with a brief explanation about its objectives and contents. On the day 10th, post-test was conducted for all respondents.

The development of structured Teaching Programme (STP) was as follows:

1. Review of literature
2. Organization of the content of STP
3. General information regarding medication.
4. Information regarding self-medication.
5. List out the incidence of self-medication.
6. Enlist the examples of self- medication.
7. Explain about the influencing factors of self-medication.
8. Explain about the potential risks of self-medication.
9. List out the adverse effects of self-medication.
10. Enlist the complications of self-medication.
11. Explain about the community level prevention of self-medication.
12. Assessment of content validity of STP
13. Preparation of final draft of the STP
14. Editing the content.

The reliability of the structured knowledge questionnaire was established by using split half method. In order to establish the reliability, the tool was administered to 12 samples that fulfilled the inclusion criteria. The reliability was established by using Karl Pearson product moment correlation formula and tool was found to be reliable with a reliability co-efficient of 'r'= 0.9540 which shows that the instrument is reliable for application

Data analysis:

The obtained data were analyzed using both descriptive and inferential statistics on the basis of the objective andhypothesis of the study. Demographic data containing sample personal characteristics were analyzed by usingfrequencies and percentage. The knowledge score before and after the administration of the STP were calculated by using mean, standard deviation and 't' test. The level of significance was at <0.05 level. Theeffect of STP was analyzed by paired't' test. Association of socio-demographic variables with pre test knowledgescore was found by using chi square test.

Result:-

Classification of Respondents by Personal Characteristics

The classification of respondents by their personal characteristics indicates that, 33.3% of respondents were in group 45-49 year, 30% were in 50-54-year group, 21.7% were in 55-59-year group and remaining 15% were in 60-65-year group. With respect to educational level, 41.7% of the respondents had primary level education, 31.7% had secondary level education and only 26.6% of the respondents had completed higher secondary level. Similarly, with regard to information on self-medication majority of the respondents, 86.7% did not have such information and only 13.3% of them had knowledge regarding the self-medication. Of the respondents who had such information, 2 (3.3%) respondents got the information from health personnel, 3 (5%) from friends and 3 (5%) from mass media. In the same regard, 52 (86.7%) respondents did not have any information.Most of the respondents, 75%, are Hindus, 15% are Christian and 10% are Buddhist. Respondents' family income per month thatwas divided into 2 sub categories: Nepalese rupees 15000-20,000 and more than 20,000. The number of respondents in each subcategory was 60 (50%). Based on the type of family, 50 (41.7%) respondents were in joint family whereas 70 (58.3%) were in nuclear family. Regarding the number of children, 41.7% participants had only one child, 33.3% had two children, 20% had more than three children and only 5% had more than three children.

Overall and aspect wise pre-test knowledge level on self-medication and its adverse effects

Table 1:- Classification of respondent pre-test knowledge level on self-medication and its adverse effects (n=120).

Knowledge Level	Category	N	%
Inadequate	≤ 50 % Score	80	66.7
Moderate	51-75 % Score	40	33.3
Adequate	> 75 % Score	0	0.0

The data depicted in the table 1 shows theclassification of the respondents with regard to their pre-test knowledge level on self-medication and its adverse effects. Most of the respondents, 80 (66.7%) had inadequate knowledge (≤ 50 % Score) while the remaining 40 (33.3%) had moderate level of knowledge (51-75 % Score). No respondents had adequate (> 75 % Score) knowledge regarding the subject matter.

Overall and aspect wise post-test knowledge scores of respondentson self-medication and its adverse effects

Table 2:- Classification of respondents of post-test knowledge level onself-medication and its adverse effects (n=120).

Knowledge Level	Category	N	%
Inadequate	≤ 50 % Score	0	0.0
Moderate	51-75 % Score	38	31.7
Adequate	> 75 % Score	82	68.3

Table 2 reveals the classification of respondents of post-test knowledge level on self-medication and its adverse effects. Majority of the respondents, 82 (68.3%), attained a score of 75% or higher whereas the remaining 38 respondents (31.7%) achieved score of 51-75 %.

Table 3:- Aspect wise post-test mean knowledge scores of respondents on self-medication and its adverse effects(n=120).

No.	Knowledge Aspects	Statements	Max. Score	Knowledge Scores			
				Mean	SD	Mean (%)	SD (%)
I	General information	6	6	4.68	1.03	78.1	17.2
II	Self-medication and its adverse effects	21	21	17.57	2.15	83.7	10.2
III	Prevention of self-medication	6	6	5.17	0.94	86.1	15.7
	Combined	33	33	27.42	3.14	83.1	9.5

Table 3 demonstrates that the post-test knowledge score on general information was 78.1% (SD 17.2%), the score on Self-medication and its adverse effects was 83.7% (SD 10.2%) and the score on prevention of self-medication was 86.1% (SD 15.7%).

Overall pre-test and post-test knowledge mean scores of respondents' to evaluate the effectiveness of STP on self-medication and its adverse effects

Table4:-Overall pre-test and post-test mean knowledge scores onself-medication and its adverse effects (n=120)

Aspects	Max. Score	Knowledge Scores				Paired 't' Test
		Mean	SD	Mean (%)	SD (%)	
Pre-test	33	10.85	5.59	32.9	16.9	
Post-test	33	27.42	3.14	83.1	9.5	36.34*
Enhancement	33	16.57	3.54	50.2	10.7	

* Significant at 5% level, 't' (0.05,59df) = 1.96

The data depicted in the table 4 showed that the mean pre-test knowledge score was 32.9% (SD 16.9%) whereas the mean post-test score was found to be 83.1% (9.5%) and the enhancement mean knowledge was 50.2% (SD 10.7%) when a paired 't' test was done, the obtained value 36.34 was found to be significant at 0.05 level.The obtained't' value 36.34 was found to be more than table value 't' (1.96 with 59 df) at 0.05 level of significance. From this it is evident that 't' value is found to be significant, based on the statistical significance that there is significant difference between mean pre-test and post-test knowledge score of middle aged adults regarding Self-medication and its adverse effects.

Comparison mean pre-test and post-test knowledge scores of respondents'' on self-medication and its adverse effects

Table 5:- Comparison mean pre-test and post-test knowledge scores of respondents'' on self-medication and its adverse effects (n=120).

No.	Knowledge Aspects	Respondents Knowledge (%)			Paired 't' Test
		Pre-test	Post-test	Enhancement	

		Mean	SD	Mean	SD	Mean	SD	
I	General information	27.5	18.1	78.1	17.2	50.6	18.4	21.30*
II	Self-medication and its adverse effects	35.0	19.0	83.7	10.2	48.7	14.8	25.49*
III	Prevention of self-medication	30.8	21.2	86.1	15.7	55.3	18.3	23.41*
	Combined	32.9	16.9	83.1	9.5	50.2	10.7	36.34*

* Significant at 5% level, t (0.05, 59df) = 1.96

The data depicted in the table 5shows the aspect wise comparison of the pre-test and post-test mean knowledge scores of the respondents regarding Self-medication and its adverse effects. A paired‘t’ test was done to compare the mean pre-test and post-test on each aspect. For general information on self-medication, the obtained‘t’ value is 21.30 which is found to be significant at 0.05 level (t = 1.96). In the area of self-medication and adverse effects, the obtained t value is 25.49 which is found to be significant at 0.05 level (t = 1.96). In the aspect of prevention of self-medication, the obtained ‘t’ value is 23.41 which is found to be significant at 0.05 level (t = 1.96).From the statistical information, it is evident that the structured teaching program was effective in enhancing the knowledge of middle-aged adults regarding self-medication and its adverse effects for all knowledge aspects under investigation.

Association between Demographic variables and Pre-test Knowledge level on Self-medication and its adverse effects

To determine the association between selected socio-demographic variables and the mean pre-test knowledge level of middle aged adults regarding self-medication and its adverse effects, a research hypothesis ($H_{2)}$ was developed that is, there is significant association between the pre-test levels of knowledge regarding self-medication and its adverse effects, among middle aged adults with their selected socio-demographic variables.With regards to the association between age group of participants and knowledge level on self-medication and its adverse effects, the obtained chi-square value was 10.53 which was found to be more than table value P<0.05 (7.815) at 0.05 level of significance. Based on these, the research hypothesis is accepted and the null hypothesis is rejected, therefore there is significant association between age group and knowledge level on self-medication and its adverse effects.

With regards to the association between education level of participants and knowledge level on self-medication and its adverse effects, the obtained chi-square value was 43.67 which was found to be more than table value P>0.05 (5.991) at 0.05 level of significance. Based on these, the research hypothesis is accepted and the null hypothesis is rejected, therefore there is significant association between education level and knowledge level on self-medication and its adverse effects.With regards to the association between occupation of participants and knowledge level on self-medication and its adverse effects, the obtained chi-square value was 24.84 which was found to be more than table value P>0.05 (7.815) at 0.05 level of significance. Based on these, the research hypothesis is accepted and the null hypothesis is rejected, therefore there is significant association between occupation and knowledge level on self-medication and its adverse effects.

Regarding the association between received information of participants and knowledge level on self-medication and its adverse effects, the obtained chi-square value was 18.46 which was found to be more than table value P>0.05 (3.841) at 0.05 level of significance. Based on these, the research hypothesis is accepted and the null hypothesis is rejected, therefore there is significant association between received information and knowledge level on self-medication and its adverse effects.With regards to the association between source of received information of participants and knowledge level on self-medication and its adverse effects, the obtained chi-square value was 18.46 which was found to be more than table value P>0.05 (7.815) at 0.05 level of significance. Based on these, the research hypothesis is accepted and the null hypothesis is rejected, therefore there is significant association between source of received information and knowledge level on self-medication and its adverse effects.

With regards to the association between family income per month of participants and knowledge level on self-medication and its adverse effects, the obtained chi-square value was 10.80 which was found to be more than table value P>0.05 (3.841) at 0.05 level of significance. Based on these, the research hypothesis is accepted and the null hypothesis is rejected, therefore there is significant association between family income per month and knowledge level on self-medication and its adverse effects.With regards to the association between type of family of participants and knowledge level on self-medication and its adverse effects, the obtained chi-square value was 8.78 which was found to be more than table value P>0.05 (3.841) at 0.05 level of significance. Based on these, the

research hypothesis is accepted and the null hypothesis is rejected, therefore there is significant association between type of family and knowledge level on self-medication and its adverse effects.

Discussion:-

To discuss the significant findings of data analysis in accordance with the objectives and stated hypothesis of this study, it was observed that the mean pre-test knowledge score of respondents regarding the self-medication and its adverse effects was inadequate. The study showed the majority of the respondents, 80 (66.7%) had inadequate knowledge (≤ 50 % Score) while the remaining 40 (33.3%) had moderate level of knowledge (51-75 % Score). No respondents had adequate (> 75 % Score) knowledge regarding the subject matter.The finding is supported by the study conducted in Malaysia on to evaluate the knowledge and practice of medicine use among the general public and the factors affecting the practice of the safe use of medicines. Around half of the respondents did not know that generic medicines can be available under different brand names, and 46.4% of the respondents did not know about the negative effects of the overuse of vitamins and the overuse of paracetamol 29.1%. There was a lack of knowledge about medicine use among the public (11).

Regarding the post-test knowledge scores of respondents on self-medication and its adverse effects, most of the respondents, 82 (68.3%), attained a score of 75% or higher whereas the remaining 38 respondents (31.7%) achieved score of 51-75 %. It is also observedthat the aspect wise post-test knowledge of respondents on general information was 78.1% (SD 17.2%), the score on Self-medication and its adverse effects was 83.7% (SD 10.2%) and the score on Prevention of self-medication was higher 86.1% (SD 15.7%).A study conducted by Maurya et al on effectiveness of self-instructional modules on knowledge regarding side-effects of self-medication among adolescents in Mahrastra, India showed that the Pre-test mean score was 10.91 and post-test mean score was 19.03. The effectiveness of the self-instructional modules on the knowledge regarding side effects of self-medication was statistically significant (p=0.034) (12).

It is observed from the finding that the respondents had aspect wise mean percentage score were 27.5% (SD 18.1%) in the area of general information on self-medication and its adverse effects. knowledge score on Self-medication and its adverse effects was 35% (SD 19%) and knowledge score on Prevention of self-medication was 30.8% (SD 21.2%) respectively. The mean percentage was found to be highest regarding knowledge score on Self-medication and its adverse effects was 35%. Another similar study conducted at Mangaluru on practice of self-medication among adolescents: effectiveness of teaching programme on knowledge regarding adverse effects of self-medication. According to the findings, 50% of adolescents self-medicate. Following the implementation of the teaching program, there was a significant improvement in the knowledge score (8).

Computed chi square test proved that there is significant association between pre-test knowledge score of middle age adults regarding self-medication and its adverse effects and selected baseline variables like their age, religion, education level, family income, occupation, type of family, number of children, previous knowledge regarding self-medication and its adverse effects, source of information.Similar study conducted in Malaysia revealed that there was associated with inappropriate practices of using medicines. Knowledge about medicine use was significantly associated with an increase in age, females, higher education level, higher monthly income and respondents suffering from chronic diseases (11).

Conclusion:-

The present study was enriching and novel experience for investigators in the field of research. The study revealed that a structural teaching programme as a mode of teaching on self-medication knowledge and its adverse effects effectively improved the knowledge level of respondents. The middle age adults who received structured teaching program were satisfied with the knowledge they received regarding self-medication and adverse effects. In this area, there is still exits for advancement in knowledge. The researchers emphasize the important role of pharmacists, doctors, health professionals, and social workers in educating adults about the dangers of self-medication.

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