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Self-Medication Practices (SMP) among Nursing Students in Selected Colleges of Kalaburagi, Karnataka

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Abstract: ***Introduction: Self-medication is a human behaviour in which an individual uses un-prescribed drugs to treat untreated and often undiagnosed medical ailments. We often take pills for common ailments like fever, colds, cough and headache, without bothering to consult a doctor. As there is an increasing rate of self medication seen in many areas and at different ages in the country, we hereby took this issue as our research topic to assess the self medication practices among student nurses in Kalaburagi. Objectives: 1. To identify the period prevalence & Pattern of SMP among nursing students. Method: A descriptive study was conducted among 571 student nurses who have been screened for self medication to get the period prevalence and 154 student nurses who found to be involved in SMP were administered with the pattern of SMP tool. Results: The period prevalence of self medication among student nurses is 269.70 per thousand student-nurses. The most common reasons for the self medication found to be Fever of 104 (67.53%), Head ache of 71 (46.10%), cold of 68 (44.16%), dysmenorrhoea of 38 (24.68%) and cough of 33 (21.43%). The most common reasons for not consulting doctor were, since it is a minor ailment 137 (88.96%), 26 (16.88%) is unnecessary investigation, 21 (13.64%) lack of time, 17 (11.04%) have adequate knowledge regarding medication. The major factor influenced for self medication are past experience 79(51.30%)influence of parents/ siblings/relatives 45 (29.22%). Only 11 (7.14%) had difficulty in getting the drug without prescription and this was overcome by taking old prescription 10 (90.90%). Around 71(46.10%) do not know regarding the pharmacokinetics of the drug, 76 (49.35%) have no knowledge regarding the pharmacodynamics of the drug and 70(45.45%) have no idea regarding side effects of the drugs. Conclusion: The period prevelance of self medication among nursing students were found to be high, but not high when compared with the other studies. The more common reason for self medication were found to be fever, headache and cold. The findings of the study indicate that nurses need to be more aware of their SMP and to take a step forward regarding awareness for the same among the public.***

Keywords: Self Medication, Over The Counter drugs, Student Nurses

1. Introduction

"The person who takes medicine must recover twice, once from the disease and once from the medicine." by William Osler [1]. Medicine is a substance used to promote health, to prevent, to diagnose or cure diseases. It is very essential that we take the treatment of a problem at the earliest as the saying states “prevention is better than cure”. Medicine is prescribed after the problem is diagnosed by a health care professionals keeping in mind the effect, dose, route and frequency of the drug to be taken. But sometimes with little knowledge of the drug and the easy availability of the drug the person do tend to take medication on their own without any prescription. This is known as self medication practice. Most over-the-counter drugs mask symptoms or control health problems or in some way alter the way organs or systems such as the circulatory system work. Drugs almost never deal with the reasons why these problems exist, while they frequently create new health problems as side effects of their activities. Self-medication is a human behaviour in which an individual uses un-prescribed drugs to treat untreated and often undiagnosed medical ailments[1].

The benefits of over-the-counter availability include; direct, rapid access to effective medicines, wide availability, decreased healthcare system utilization (fewer physician visits, lower healthcare system costs), allowing individuals to be in charge of their own health[1]. However, there are risks associated with OTC use, such as, incorrect self-diagnosis, delaying diagnosis and treatment of serious illnesses (delay in seeking advice from a healthcare professional), increased risk of drug-drug interactions; increased risk of adverse events when not used appropriately, potential for misuse and abuse. Legal or lethal medicines with legitimate uses can be abused which means they're taken by someone other than the patient or in a manner or dose other than what's recommended.[1]

Self-medication, even for minor ailments, could lead to medical complications. A large number of potent drugs such as pain relievers, cough remedies, anti-allergies, laxatives, antibiotics, antacids and vitamins are sold over-the-counter (OTC). Self medication with OTC medicines could cause allergy, habituation and addiction. For example, excessive use of vitamins can cause hypervitaminosis, or vitamin poisoning. Antimicrobial resistance is a worldwide problem, particularly in India where antibiotics are often available without a prescription.[1]

Although many people assume that no harm can come from abusing drugs for which a prescription is not needed, many

health complications as well as addiction can take place, requiring drug treatment. OTC drugs are abused when the drug is taken past the recommended dosage. In some cases, snorting of these drugs occurs. When high doses of some over the counter drugs are taken, hallucinations, bizarre sleep patterns, and mood changes take place, all creating bad effects for the individual. People choose over-the-counter drugs in an effort to achieve a certain goal. Some abuse these drugs to lose weight, others to create methamphetamine and others to receive a certain sensation. Over the counter drug addiction is extremely serious and sometimes fatal. If an individual is addicted to any type of over-the-counter medications, they should seek drug treatment as a solution to this problem without delay [2].

A comprehensive review of literature of 11 studies on self-medication practice with non-prescription medication among university students of Malaysia reports that the prevelance of SMP is high among students[1]. Self medication is a widely prevalent practice in India too. There is an increasing rate of self medication seen in many areas and at different ages in the country. It assumes a special significance among student nurses as they are the future health care professionals. Different drugs have different effects and they may be used for different reasons. We hereby took this issue as our research topic to assess the self- medication practices among student nurses in Mangalore. In our study we have screened 621 nursing students, out of which 154 students follow self medication practice because of the easy accessibility of drugs [1].

Problem Statement:
A study to assess self medication among the nursing students in selected nursing colleges of Kalaburagi, Karnataka. India**.**

Objectives of the study:
1) To identify the period prevalence of self medication among nursing students.
2) To determine the pattern of self medication among the nursing students through self reported questionnaires.
3) To find the association between the course of study and willingness to continue the SMP.

Operational Definition
1) **Nursing students:** In this study, nursing students refers to the individuals who are pursuing their diploma / B.Sc (N) / PBB.Sc (N) course and have completed at least of six months of nursing studies in school / colleges of nursing located in Kalaburagi city cooperation limits.
2) **Self medication:** In this study, it refers to consumption of any medication without doctor's prescription, within a period of last three months.

2. Review of Literature

A cross sectional study was conducted to find out frequency of self medication 207 students of 2 university students of Karachi, Pakistan. One was a medical and one Non-medical university selected through non-probability convenience sampling. Frequency of self medication was found to be 80.4%. The most common reason for not consulting the doctor was "Problem not serious". The most common symptoms when self medication sought were headache (62.3%) and fever (49.8%). The 62% participants' knew that self medication could be harmful. Frequency of self medication was high in educated youth despite the fact that majority were aware of its harmful effects [4].

A study was conducted in Palestinian medical and non medical university in to determine the reasons, extent, and correlates of self-medication practices among university students. A self-administered questionnaire eliciting self-medication practices was distributed to university students in a cross-sectional design. Self-medication practices were reported by 98% of the surveyed students (N=1581). Approximately two thirds of the respondents reported a high self-care orientation and one third reported "good" medication knowledge. Multiple logistic regressions indicted that self-care orientation, medication knowledge, and sex were insignificant predictors of self-medication practices, whereas the type of school (P=.012) was a significant predictor. A significant relation between the 4 variables and the type of therapeutic class used in self-medication was observed. For example, males were more inclined to use anti allergic medications (OR=1.48) than females. Medical students were more likely to use laxatives/anti diarrheal agents (OR=1.49) than nonmedical students. Respondents with high self-care orientation were more inclined to use headache relievers (OR=2.22) compared to those with low self-care orientation. The most commonly reported reason for self-medication practice was simplicity of the illness encountered [5].

A cross-sectional questionnaire-based study was conducted among 468 the undergraduate medical students through questionnaire. It was found that 267 (57.05%) respondents practiced self-medication. The principal morbidities for seeking self-medication included cough and common cold as reported by 94 (35.21%) each followed by diarrhea 68 (25.47%), fever 42 (15.73%), headache 40 (14.98%) and pain abdomen due to heartburn/ peptic ulcer 23 (8.61%). Drugs/ drug groups commonly used for self-medication included antibiotics (31.09%) followed by analgesics (23.21%), antipyretics (17.98%), antiulcer agents (8.99%), cough suppressant (7.87%), multivitamins (6.37%) and antihelminthics (4.49%). Reasons for seeking self-medication were mild illness, 126(47.19%) time-saving. About 42 students (15.73%) cited cost-effectiveness as the primary reason while 23 (8.62%) preferred because of urgency. The study shows that self-medication is widely practiced among students. Study suggests concludes the need for faculty to create awareness and educate their students regarding advantages and disadvantages of self-medication [6].

A study was conducted among 142 medical students to identify at Pokhara in Nepal on self-medication and non-doctor prescribing of drugs, using a semi-structured questionnaire. Demographic information and information on drugs used for self-medication or prescribed by a non-allopathic doctor were collected. The majority of the respondents (72 %) stayed within 30 minutes walking distance of a health post/medical store. 59% of these respondents had taken some form of self-medication in the 6-month period preceding the study. The common reasons given for self-medication were mild illness, previous

expeience of treating a similar illness, and non-availability of health personnel. 70% of respondents were prescribed allopathic drugs by a non-allopathic doctor. The compounder and health assistant were common sources of medicines. Paracetamol and antimicrobials were the drugs most commonly prescribed. A significantly higher proportion of young (<40 years) male respondents had used self-medication than other groups [7].

A descriptive, cross-sectional study was conducted to find out the relationship between self-medication practices and Medicine Knowledge among 236 medicine vendors, using a pretested questionnaire in Nigeria, sampled through a two-stage stratified design. Data collected were analyzed using the statistical Package for Social Sciences version 16, and the chi-square test was used to determine the association between variables. It was found that self-medication was common (75.4%) among respondents and was not associated (P>0.05) with any of the demographic characteristics studied. The classes of medicines commonly used by respondents for self-medication were analgesics (31.4%), anti-malarials (22.6%), multivitamins (17.7%), and antibiotics (11.25%). A knowledge assessment test revealed that only 34.3% of the respondents had adequate knowledge. There was no significant (P>0.05) relationship between self-medication practice and medicine knowledge, among the respondents. However, the medicine knowledge scores were significantly (P<0.05) associated with holding a certificate in health sciences, years of experience, and the place of practice of the medicine vendors. The present study demonstrated that self-medication practice was high and inadequate medicine knowledge existed among respondents [8].

A study was conducted in august 2005 at Kuwait university, Sudan, to estimate prevalence of self medication with antibiotics and antimalarials. The university evaluated factors associated with self medication. A pre-tested questionnaire was used to collect data from a sample of 600 households, (1750 adult persons), selected using a multistage stratified clustered sampling. It was found that 1293 (73.9%) of the study population had used antibiotics or antimalarials without a prescription within one month prior to the study, 841 (48.1%) used antibiotics, 43.4% used antimalarials, while 17.5% used both. Self medication with either antibiotics/ antimalarials was found to be significantly associated with age, income, gender and level of education. The main reason for the self-medication was financial constraints. The main source of medicines was the private pharmacies, which were regarded as a cheaper alternative to other primary healthcare sources [9].

A study on self medication amongst 200 general out patients in a Nigerian community hospital, were selected by simple random sampling and interviewed with semi structured questionnaire. Found majority of the respondents (85%) admitted to self medication while the remaining proportion (15%) did not practice it. Drugs utilized could be single, usually analgesics (26.5%) and anti-malaria (15.9%) or in combinations, usually antimalarial-analgesics (22.4%), antimalarial analgesic- antibiotic (15.3%) and antibiotic-analgesic (10.0%). The reasons were complaints minor (54.7%) and financial constraint (22.4%). Majority of the respondents practiced self medication using an array of drugs like analgesics, anti-malaria and antibiotics used either singly or in combination. The main reasons identified for self medication were that the ailments were minor and financial constraints [10].

A study was conducted on self medication behaviours and attitudes towards children's health management of caregivers of children in Japan among 403 adults selected through quota sampling. Online questionnaire. Participants in the 20–29 age group reported medical costs as an obstacle in seeing a doctor; in contrast, transportation was a mitigating factor for elderly people. Regarding SES, people at lower SES levels chose to rest instead of seeing a doctor or purchasing over-the-counter (OTC) medicines when sick. They also placed more value on national brand OTC medicines than private brands (likely due to advertisements). This finding suggests individuals with a low SES do not select OTC medicines based on their effects or ingredients. Participants answered 43 questions, including information about demographics. The survey inquired about self-medication behaviors (for the individual and for children if the participant was a parent) and the reasons for their choice, the choice of OTC medicines, and attitudes toward OTC medicines (for the individual and for children if the participant was a parent). Our results suggest that health and medical discrepancies among Japanese consumers pose new social problems. In Japan, universal health care is available, but the cost of receiving medical care is not completely free of charge [11].

3. Methodology

The researcher employed a descriptive survey approach to evaluate the period prevalence of self-medication, investigate common reasons and drugs used, and explore the association between the course of study and the willingness to continue self-medication among nursing students. The study was carried out at ESIC College of Nursing & Govt School & College of Nursing, Kalaburagi, which offers multiple nursing programs, including GNM, B.Sc Nursing, PB B.Sc Nursing, and M.Sc Nursing. A total of 571 nursing students were initially screened for self-medication, and 154 students who had self-medicated within the last three months were selected as subjects for detailed study. The convenience sampling method was used to choose the institution, while complete enumeration was applied to identify students who met the criteria. The main variable in the study was self-medication, and extraneous variables like age, gender, course of study, year, religion, and place of residence were also considered. To assess these factors, the researcher developed tools based on a review of the literature, personal experience, expert consultation, and pre-testing to ensure clarity and cultural relevance. The tool underwent validation by 11 experts, leading to minor revisions, and pre-testing confirmed that the language was easy to understand.

Data collection took place on April 26 and May 10, 2021, following approval from the institutional ethics committee. Permission from the authorities was also obtained, and students were briefed on the study objectives, ensuring confidentiality of their responses. The final data collection tool included a single screening question, a 9-item baseline proforma, and a 15-item self-medication pattern tool. Pre-testing was conducted with six students and the reliability of

the tool was confirmed using the test-retest method over a 7 day gap, yielding a reliability coefficient of 0.923, indicating strong consistency. On average, it took 15 minutes per student to complete the data collection process. Following data collection, analysis was carried out using both descriptive and inferential statistics to meet the study's objectives. The analysis covered the period prevalence of self-medication, students' baseline characteristics, self-medication patterns, and the association between the course of study and the willingness to continue self-medication practices.

4. Results

Period Prevalence of Self Medication for the Last Three Months:

- Total number of student's screened for self medication-571
- Total number of students consuming self medication-154
- Period prevalence = 269.70 per thousand student nurses

The period prevalence (3 months) of self medication among student nurses is 269.70 per thousand student nurses. It Includes GNMs 37(24.02%), B.Sc's 101 (65.58%) and PB B.Sc's 16 (32%).

Course Wise Self Medication Rate:

Table 1: Frequency distribution of subjects based on self medication practices
N=148+373+50

Sl	Course	N	f	Percentage
1	GNM	148	37	25
2	B.Sc	373	101	27.08
3	PB B.Sc	50	16	32

Data in the table revealed that the self medication practices among GNM is 37(25%), B.Sc's 101(27.08%) and PB B.Sc's16 (32%)

Pattern of Self Medication Practice

Among 154 subjects, the most common reason for the self medication found to be Fever of 104(67.53%), Head ache of 71(46.10%), cold of 68(44.16%), dysmenorrhoea of 38(24.68%) and cough of 33(21.43%).

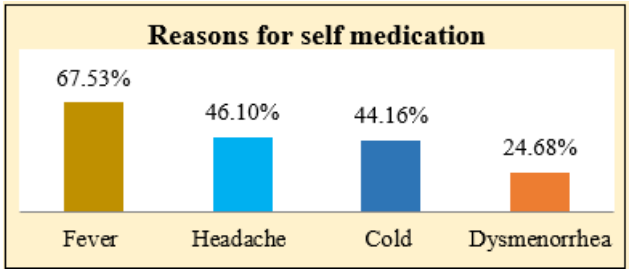

Figure 1: Bar Diagram Representing the Distribution of Subjects Based on the Reason For Self Medication

Reasons for not consulting a doctor before self-medication among nursing students.

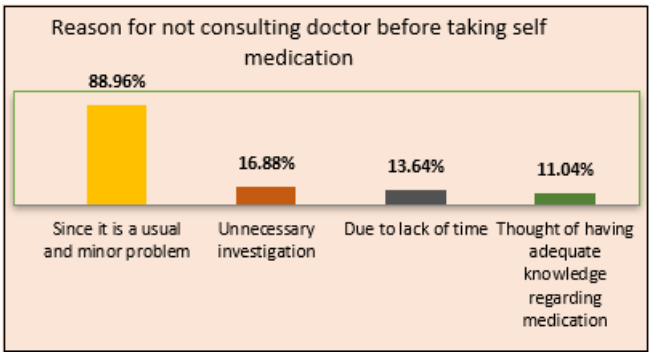

Figure 2: Bar diagram Representing Reason for not consulting doctor before taking self medication

Out of 154 number of students, 137(88.96%) are not consulting doctors since it is a minor ailment, 26(16.88%) is because of unnecessary investigation, 21(13.64%) is due to lack of time, 17(11.04%) is because they think they have adequate knowledge regarding medication, 14(9.09%) is due to easy supply from peer group, 8(5.19%) is due to difficulty in getting permission from the college to go to OPD and other reasons, 6(3.90%) has thoughts that the drug is harmless and other reasons, 4(2.60%) are due to fear of being made fun off, 2(1.30%) is due to economic reason and fear of referring to a physician.

Difficulty in getting medications and measures taken.

Among 154 subjects, 143 (92.86%) had no difficulty in getting the drug without prescription, 11(7.14%) has difficulty in getting the drug without prescription and they use measures like taking old prescription 10(90. 90%), writing their own prescription 1(9. 09%) and obtain medicine from ward stock 1(9. 09%).

Knowledge of drug

Among 154 subjects just above half 83 (53.90%) expressed of having knowledge about the pharmacokinetics before consuming the drug and 71(46.10%) do not know regarding the drug. Equal 78(50.65%) number of subjects have knowledge regarding the pharmacodynamics and 76(49.35%) have no knowledge, more than half 118(76.62%) of the subjects check the action and dosage and a quarter 36(23.38%) of the subjects do not check, 84(54.54%) know regarding the side effects of the drug and 70(45.45%) have no knowledge regarding side effects.

Way of deciding the medicine and dosage

Out of 154 subjects 75(48.70%) referred earlier prescription of same diseases, 40(25.97%) refered the medical prescription from books like CIMS, 37(24.03%) by their own decision, 22(14.29%) by asking their friends, 18(11.68%) by seeing the usual prescription used for the patient with the same disease, 4(2.59%) by using internet and 3(1.95%) by other reference.

Experience of allergic reaction / side effects of self medication in the past 3 months Among 154 subjects, most 153(99.35%) of them did not experience any allergic reaction or side effects after taking S.M. in the past 3 months and 1(0.65%) experienced allergic reaction or side effects.

Factors influencing to self medication

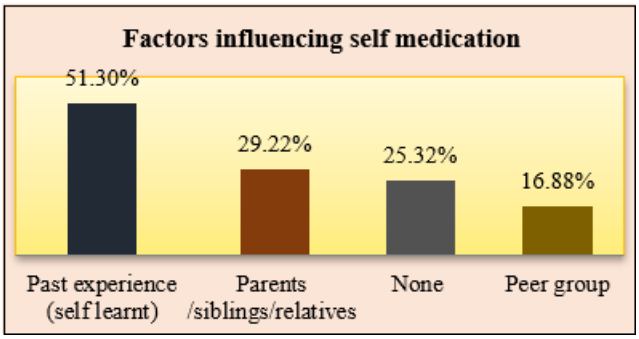

Figure 3: Bar graph depicting the factors influencing Self Medication

The influence of self medication is by past experience is of 79(51.30%), 45(29.22%) are by parents, siblings and relatives, 26(16.88%) are by peer groups, 3(1.95%) is by neighbours and 39(25.32%) were not influenced by any.

Willing to encourage self medication for others Majority 110 (71.43%) of the subject do not encourage their friends for self medication and only 44(28.57%) encourages their friends for self medication.

Opinion regarding medication without prescription
Majority 125(81.17%) of the subject's consider taking the drug without prescription for minor ailments, 33(21.43%) feels it's safe to take medication without prescription since they learned pharmacology and 17(11.04%) believes it's no harm initially

Intention to continue the intake of the drug inspite of knowing its unsafe
Among 154 subjects, 97(62.99%) would not continue self medication after knowing its unsafe and 57(37.01%) would still like to continue the same even after knowing it's unsafe.

Association between the course of study and willingness to continue self medication
The data in table shows, χ^2 value computed between course of study and willingness to continue SM. The obtained χ^2 value is 19.27, which is higher than the tabled value $\chi^2_{(3)}=5.99$ at 0.05 Level of significance. Thus significant associations exist between course of study and willingness to continue SM. Therefore the null hypothesis (H_{01}) is rejected and the research hypothesis is accepted.

5. Discussion

Prevalence
A study conducted in Karachi identified prevalence rate of 80.4%[4], Palestinian university 98%[5], Behrampore of West Bengal 57.05%[6], Nigeria 75.4%[8] and Kuwait University 73.9%[9]. However in current study the period prevalence of self medication among nursing student is 269.70 per 1000 population (24.79%). It suggests that the rate of self medication among nursing students is less.

Pattern of self medication
A study conducted in Karachi reports that Headache (62.3%), fever (49.8%) are the major reasons for self medication[4]. Study of Murshidabad medical college reports cold & cough (35.21%), diarrhoea (25.47%), fever (15.73%) are the major reasons for self medication[7]. The study conducted in Nigeria reports pain (31.4%) is the leading reason for self medication[8]. In the present study fever 104 (67.53%), headache 71 (46.10%), cold 68 (44.16%), dysmenorrhoea 38 (24.68%) are the common reasons for self medication. Present study findings are congruent with the findings of following studies.

A study conducted in Karachi reports that the most common reasons for not consulting doctor were since it is a minor a ailment[4]. In the present study, 137 reports the reasons as "since it is a minor ailment" (88.96%).

In the present study significant association ($\chi^2 = 19.27$ and $p< 0.05$) exist between course of study and willingness to continue self medication. But other studies found that only women are involved in self medication, but in the current study all samples were females, as a result analysis of association was not possible[12].

6. Conclusion

The period prevalence (3 months) of self medication among student nurses is 269.70 per thousand student nurses. The prevalence rate among GNM is 37 (25%), B.Sc's is 101 (27.08%) and PB B.Sc's is 16 (32%). It can be concluded that the rate of SM is high among student nurses, but when compare to other studies SM is low among student nurses.

The most common reasons for the self medication found to be Fever of 104 (67.53%), Head ache of 71 (46.10%), cold of 68 (44.16%), dysmenorrhoea of 38 (24.68%) and cough of 33(21.43%). The most common reasons for not consulting doctor are, since it is a minor ailment 137 (88.96%), 26 (16.88%) is because of unnecessary investigation, 21 (13.64%) is due to lack of time, 17(11.04%) is because they think they have adequate knowledge regarding medication. The major factor influenced for self medication is found to be past experience 79 (51.30%), followed by influence of parents, siblings and relatives is of 45(29.22%).

Only 11 (7.14%) do have difficulty in getting the drug without prescription and 10 overcome by that difficulty by taking old prescription (90. 90%). 71 (46.10%) do not know regarding the pharmacokinetics of the drug, 76 (49.35%) have no knowledge regarding the pharmacodynamics of the drug and 70 (45.45%) have no idea regarding side effects of the drugs. About 7 (4.55%) have not found desired effect of the drug through Self medication, 1 (0.65%) experienced allergic reaction i.e diarrhoea and 2 (1.3%) do crave for some drug i.e analgesics. 44 (28.57%) encourages their friends for self medication and 57(37.01%) would still like to continue Self Medication

The most common drugs taken for the relieve of these conditions are dolo 55 (35.71%), meftal spasm 27 (17.53%), paracetamol 26 (16.88%), sinerest 17 (11.04%). There was significant association ($\chi^2 = 19.27$ and $p< 0.05$) exist between course of study and willingness to continue self medication and it can be concluded that higher the level of education: higher the willingness to continue self medication.

Limitations of the study

- Pattern of self medication was assessed only through investigator prepared tool, self medication practice tool.
- Generalization of the findings is limited only to the population studied.

7. Future Scope

On the basis of the study the following recommendations are being made

- This study could be replicated on the larger samples for generalizing the findings.
- This study could be done in the community settings among the general public
- Meta-analysis / Comprehensive review can be done on SMP
- Similar study can be done to compare the pattern of SM among nursing professionals and other health care team members

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