Original Article

Determinants of Self Medication Practice among Adolescents of Higher Secondary Schools, Bhaktapur

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ABSTRACT

Introduction: Self-medicationis an important health issue globally and more common in developing countries like Nepal and India. Self-medication is one of the common and preferred modes resorted by adolescents.

Method: A descriptive cross sectional study was carried out to find out the determinants of self-medication practice among adolescents, data was collected among 426 adolescents of grade 11 and 12 enrolled in five higher secondary schools, Bhaktapur municipality by using structured and semi-structured self-administered questionnaire. Proportionate stratified sampling technique was used to select the schools with, enumeration sampling technique.

Results: Data analysis was done by using descriptive and inferential statistics. Multivariate Logistic regression analysis was used to identify the determinants of self-medication practice. Out of 426 adolescents, 69.71% had used self-medication. The bivariate analysis showed number of factors associated with self-medications such as age, gender, type of family, educational level of respondent and parents, occupation of parents, income source and family income status. The multivariate analysis showed that probability of consuming drugs increase in adolescent with illiterate mother 1.901 times more likely to use self-medication than those literate mothers and whose family income status was poor 1.59 times more likely to use self-medication.

Conclusion: The study concluded that educational level and family income status were the determinants for self-medication among adolescents of higher secondary school of Bhaktapur.

Keywords: Adolescents, Determinants, Self–Medication

BACKGROUND

Self-medication is the use of drugs with therapeutic intent but without professional advice or prescription. Self-medication practice is human behavior in which an individual uses a substance or any exogenous influence to self-administer treatment for physical or psychological aliments. The most widely self-medicated substances are over- the counter drugs and dietary supplements.

Medications are one of the main options in the cure, treatment, and prevention of numerous medical conditions. In fact, medication is the primary treatment associated with restoration of health (Shoemaker & Ramolho, 2008). The incorrect practice of self-medications can result in irrational use of drugs. This irrational use may take the form of overuse, under use and misuse of drugs. Incorrect use of drugs occurs in all countries, causing harm to people and wasting resources {World Health Organization (WHO), 2011}. Children and adolescents are more susceptible to the irrational use of drugs. Some of the factors responsible for self-medication are the easy availability of the drugs through pharmacies without prescription, lack of strict rules and regulations in selling drugs, quality of health care and difficult access to health care services (Pereira, Bucaretchi, Stephan, & Cordeiro, 2007).The prevalence of self-

medication practice in India is 31%, Pakistan 51% and Nepal 59% (Zafar et al., 2008).The overall objective of the study was to find out the determinants of self-medication practice among adolescents during illness.

METHODS

A descriptive cross-sectional study design was adopted to find out the determinants of self-medication among the students of higher secondary school of Bhaktapur Municipality. The population was adolescent students of grade 11 & 12. Proportional stratified sampling was adopted for selecting the each school respondents with randomly selected five higher secondary schools and number of required sample from each school was taken enumeration sampling technique and sample size was 426. Structured self-administered questionnaire was administered for data collection. Ethical approval from Institutional Review Boardwas obtained and written permission from concerned higher secondary schools. Data was analyzed by using SPSS version 16, descriptive statistics, Chi-square test were applied to test whether the factors were significant association ($p \leq 0.05$). Odds ratio (OR) was also calculated to measure the strength of association between self-medication and associated factors. The observed bivariate analyzed significant variables were subjected to multivariate analysis to identify factors associated with self-medication.

RESULTS

Table 1: Socio-demographic Characteristics of Adolescents

n=426

Socio-demographic Characteristics	Number	Percentage
Age in years		
16	82	19.24
17	198	46.47
18	131	30.75
19	15	3.52
Mean ±SD= 17.18 ±0.78 years		
Educational level		
Class 11	133	31.22
Class 12	293	68.77
Educational Level of Mother		
Literate	312	73.23
Illiterate	114	26.76
Educational Level of Father		
Literate	395	92.72
Illiterate	31	7.27
Family Income Status		
Enough for up to 6 month	62	14.55
Enough for 6-12 months	199	46.71
Enough for 1 year and surplus	165	38.73

Table 2: Practice of Self Medication by the Adolescents preceding Six Months Period

n=426

Practice of Self Medication	Number	Percentage
Practiced	297	69.71
Not practiced	129	30.28
Frequency of Self Medicine Taken		
One time	133	44.78
Twice	101	34.00
Thrice	29	9.76
More than thrice	34	11.44
Last Time of Self Medication		
One month before	140	47.13
Two month before	102	34.34
Three months before	34	17.25
Four to six months	21	7.07

This table reveals 69.71% respondents had practice of self-medication preceding six months period, 44.78% had used one time and 47.13% had taken before one month. Regarding type of self-medicine, more than half 68.35% had used anti cold and cough tablets and 41.41% of them used pain killer tablet Paracetamol and Flexon. Regarding medicine dispense majority have (82.15%) received from local pharmacy and 75.08% had purchased by telling symptoms of illness.

Table 3: Outcome of Self Medication, Action Taken and Adverse Effects

n=426

Outcome of Self medication	Number	Percentage
Outcome of Self Medication (n=297)		
Recovered	252	84.84
Not recovered	45	15.15
Action Taken for Not Recovered (n=45)		
Consulted to the doctor	27	60.00
Stopped the medicine	8	17.77
Changed the medicine	7	15.55
Took double dose	3	6.66
Faced any Adverse Effects (n=297)		
Yes	77	25.92
No	220	74.07
Action Taken for Adverse Effects (n=77)		
Visit to the doctor	50	64.93
Quit the medicine	16	20.77
Nothing done	11	14.28

This table highlights that 84.84% respondents had felt recovered from symptoms, but not recovered 60% had consulted to doctor for further treatment. While 64.93% respondents had consulted to doctor for adverse effects.

Table 4: Association between Socio-demographic Characteristics and Use of Self Medication by the Adolescents

n= 426

| Respondent Characteristics | Self-Medication | | χ2 | P-value | Unadjusted OR (95% CI) |
	Practiced N (%)	Not Practice N (%)			
Family Income Status					
Enough for up to 6 months	192 (73.6)	69 (26.4)	4.719	0.03**	1.59 (1.045-2.42)
Enough for 1 year and surplus	105 (63.6)	60 (36.4)			
Educational Level of Mother					
Illiterate	90(78.9)	24(21.1)	6.28	0.012**	1.901 (1.144-3.164)
Literate	207(66.3)	105(33.7)			
Educational Level of Father					
Illiterate	23 (74.2)	8 (25.8)	0.317	0.573	1.269 (0.552-2.915)
Literate	274 (69.4)	121 (30.6)			

χ^2 is computed for *p*-value, ** significant level is ≤0.05

This table shows that there is statistically significant association between self medication of respondent with family income (*p*-value=0.03) and education of mother (p-value =0.012).

Table 5: Adjusted Odd Ratio in the Final Logistic Model for Those Significant Variables during Multiple Logistic Regression

n=426

Parental Characteristics	Unadjusted OR (95%CI)	P-value	Adjusted OR (95%CI)	p-value
Education Level of Mother				
Illiterate	1.901 (1.144-3.164)	0.012	1.841(3.067-1.104)	0.019**
Literate				
Family Income Status				
Enough up to 6 month	1.59(1.045-2.42)	0.03	1.536 (1.006-2.345)	0.047**
Enough for one year and surplus				

The model was fit as shown by Hosmer and Lemeshow test of significance (p-value=0.981) **Significant p-value at ≤ 0.05

This table highlights all the significant variables in bi-variate analysis were put into binary regression model. It was found that educational level of mother (AOR=1.841; 95% CI=3.067-1.104, p=0.019) was significantly associated with the use of self-medication. Respondents with illiterate mothers were more likely to use of

self-medication than respondents with literate mothers. The major determining factor for self-medication was family income status. Which was statistically significant (AOR=1.536; 95% CI =1.006-2.345, p-value=0.047) respectively. Respondents with family income status enough for less than one year were more likely to use of self-medication in comparison to family income status enough for one year and surplus.

Table 6: Association between the Personal Factors and use of Self Medication by the Adolescents

n=426

| Personal Factors * | Self Medication | | P-value | OR 95%CI |
	Not Practiced N(%)	Practiced N(%)		
Lack of Time				
No	100 (31.4)	218 (68.6)	0.369	1.250 (0.768-2.034)
Yes	29 (26.9)	79 (73.1)		
Past Experience of Same Drug				
No	99 (32.7)	204 (67.3)	0.092	.504 (0.934-2.423)
Yes	30 (24.4)	93 (75.6)		
Minor Illness				
No	62 (30.2)	143 (69.8)	0.987	0.997 (0.659-1.507)
Yes	67 (30.3)	154 (69.7)		
Quick Relief from Illness				
No	71(29.1)	173(70.9)	0.538	0.877 (0.578-1.331)
Yes	58(31.9)	124 (68.1)		
Emergency Conditions				
No	103(30.1)	239 (69.9)	0.881	0.961 (0.573-1.612)
Yes	26(31)	58 (69.0))		

*Multiple responses, χ^2 is computed for p-value, significant level is ≤0.05

This table 6 represents the association between personal factors, lack of time, past experience, minor illness, quick relief and emergency conditions with self-medication. There was no statistically significant association seen. Despite of the past experience, it was 1.504 times more likely to use self-medication among adolescents.

DISCUSSION

This study shows the prevalence of self-medication practice was 69.71% .This study was supported by another study on Gujarat with the prevalence at six months was 88% (Patel et.al; 2013). This study was also supported by study done in South India among medical students showed prevalence of self medication 78.6% (Kumar et al., 2013).

This study shows that family members are the main source of drug information (57.27%) for the adolescents. In a study conducted in Pakistan, major source of information of self-medication among 15 and 20 years, were 48 % from family members, (Khan et al. 2014). However another study conducted in south India shows previous prescription 80.82% as the major source of information followed by pharmacist 36.9%, This is because family members in this part of the world try to treat their minor illness themselves and advice or provide same drugs for their children to treat their symptoms based on their previous experience.

In this study, it is notable that pharmacy is the main place for getting drug for self medication which is nearly consistent with the findings by (Patel et al., 2013). This can be attributed to the fact that there

are no strict rules and regulations regarding supply and provision of drugs in our country and almost every pharmacy has provision in selling drugs to the individual without doctor's prescription.

In this study, common illnesses for self medication are headache (69.48%) followed by cold and cough (68.77%), This finding is quite similar to the results of the study conducted among college students of Delhi University North Campus which shows headache (86.2%) followed by common cold (57.8%) (Adhikary et al; 2014). This might be explained by the fact that the research was conducted immediately after the winter seasons when the flu like symptoms is quite common.

This study demonstrate that the main reason for self-medication are minor illness (51.87%) and there was quick relief from illness for less than forty three percent (42.72%) , Another study conducted in Shiraz, Iranby Askarian showed previous experience and inability to access physician as major causes of self-medication (Askarianet.al., 2013). This has implications, because many diseases have similar symptoms, and a person using self-medication for quick relief to continue their daily activities, may be expose to the dangers of misdiagnosis consequently wrong treatment.

There was also statistically significant association between educational level of mother and self-medication practice. Respondents with illiterate mothers has 1.901 times more likely to use self-medication as compared to respondents with literate mothers (OR=1.901 at 95% CI; 1.144-3.164) (P<0.012). The result of this study is in contrast with the findings of the study conducted in Germany where use of self-medication was found more among higher maternal educational level 1.37 times more likely to use self medication than respondents with lower maternal educational level (OR=1.37; at 95% CI;1.19-1.57) (Du & Knopf, 2009).However educational level of father is not significantly associated with self-medication. The status of family income also shows poor family income status had higher self-medication practice 73.6% that is 1.59 times more likely to practice than those with good family income status. This finding supported with the study on Tunisian people is significantly associated with self-medication (Salem et.al., 2015).

The association between personal factors with self-medication**,** shows no significant association with lack of time, past experience, minor illness, quick relief and emergency conditions. Lack of time is 1.250 times more likely to use self-medication by respondents (OR=1.250 at 95 % CI =0.768-2.034) (p-value 0.369). Respondents with past experience of same drug is 1.504 times more likely to use self-medication; those findings are consistent with a previous study conducted in Karnataka India showed more than half of respondents used old prescriptions (Kumar et.al., 2013).

Similarly, a study conducted in New Delhi University showed that the students

(21.3%) did not have sufficient time for buying medication (Adhikary M, 2014). Next study in Iran showed that 41% students had past experience of self-medication (Askarian at.al.,2013). Finding of the study is also comparable to the study conducted in Pokhara Valley which revealed that 25% felt that the illness was too mild and not require the services of a doctor, 19% of the respondents felt that they had previous experience (Shankar et.al., 2002). Similarly, study conducted in Karachi stated that the most common reasons 33.3% were previous experience with similar symptoms (Afridi et al. 2015).

Regarding association between availability of services with self-medicationshowed not statistically significant. Similarly, a study revealed that cost-effectiveness was major reason to practice self-medication, and 15.8% stated for emergency use. 10.4% felt high cost of doctor fee (Adhikary, 2014).

CONCLUSION

The study concluded that practice of self-medication was high among higher secondary school adolescents for headache cold and cough which belongs to NSAID group. Based on the study findings, the determinants of self-medication were associated with educational level of mothers' and family income status. These findings provide a useful insight on reason for which patients resort to practice and might help the policy maker and regulatory authorities to streamline the process of drug.

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