Medicine Usage Behavior among Common People of Bangladesh: A Cross-Sectional Analysis

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Original Research Article

ABSTRACT

Medication usage behavior of people is an important concern for health authorities worldwide. This study was aimed to find the prevalence of self-medication, perception about drug storage, dosage regimen, side effects and missing doses of prescribed medications among people of Bangladesh. The study also aimed at the different factors that regulate the above-mentioned behavior of people from different regions of the country. This cross-sectional study was performed using an online questionnaire form that was distributed randomly among the people. A total of 1028 respondents took part in the survey. Different statistical operations were done on the responses and the results were presented were using tables and graphs. Among the participants, 31.52% often practiced self-medication and 26.94% did it rarely. There was a significant correlation between self-medication and educational qualification (p=0.023) and residence (p<0.001) variables. The tendency to not completing the dosage regimen is high in villages (44%) than urban (35%) and semi-urban (38%) areas. The rate of not recovering the missing doses is higher (40%) among the people with a low level of education than the educated people (27%). This study showed a

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significant correlation among medicines usage behavior and educational qualification and residential area of the participants. The policymakers should take steps to increase awareness about the safe use of medicines among common people of rural area.

Keywords: Self-medication; dosage regimen; educational qualification; Bangladesh.

1. INTRODUCTION

Medicine plays a key role in the healing of illness and bringing the patient to normal healthy life [1]. As the medicinal agents have become an indisputable part of the treatment procedures, therefore, the choice of medicine and the trends regarding such choice are very important in the proper treatment and subsequent persistence of the thriving conditions. The propensity of the general people in terms of drug use is changing tremendously throughout the world, particularly in developing countries [2]. The choice and succeeding manner of drug use are usually dominated by educational qualification, living standards, age, sex, knowledge, and awareness [3]. Due to the availability of drugs without prescription, propensity for applying internet-based treatment particularly among the young generation, and overall inadequacy of the healthcare professional, there is an upward trend ongoing in the self-medication practice amongst the general people predominantly in the developing countries like Bangladesh [4,5]. The overall fitness of the healthcare system is depicted by the rational use of medicine by the general people [6]. The alarming results of the irrational application of drugs as self-medication [7] can be found in the scenario of antimicrobial resistance, which is a worldwide burden occurring approximately almost all the countries although the developing countries [8] are on the lions share in particular [9,10]. A study on Bangladeshi hospital out patients showed that, about 68.98% of the respondents practiced self-medication mainly for the treatment of respiratory tract infections (27.49%) and gastrointestinal disorders (21.51%) [11]. Another behavioral feature of medication is drug overuse and associated risks. The overuse of medication for the treatment of illness such as headache is very frequent [12] where Non-steroidal anti-inflammatory drugs (NSAIDs) misuse, available as prescribing and Over the Counter (OTC) has shown noteworthy gastrointestinal as well as cardiovascular toxicity [13]. A study performed in Ghana also revealed the self-medication tendency (70%) with antibiotics among tertiary level students [14]. However, the main drivers for self-medication of antibiotics has been listed as lack of public, prescribers and dispensers perception, easy access to antibiotics without prescription, inappropriate medical training, forced pharmaceutical promotion, lack of appropriate diagnostic tests, and patient–doctor interaction as major factors among care-givers [15]. The irrational use of drugs induces a lot of drug interaction which severely affect the community health [16]. Therefore, the present study has been designed to find out the behavioral pattern amidst the general people of Bangladesh and the components of knowledge leading to the application of the drug and subsequent development of practice attitudes with the responsible use of medicines [17].

2. MATERIALS AND METHODS

2.1 Data Collection

An online survey form was created containing the survey questions and circulated. The questionnaire was divided into two sections- (a) respondent's demographic data, (b) participant's perception about medicines' safe and rational uses. Under section (a), participant's age, sex, residential information, educational background and qualification were covered. The section (b) included the basic perception about self-medication, dosage regimens, pharmacovigilance, missing doses and safe storage of medicines. The survey form was kept open for collecting responses from 14 July 2020 to 13 August 2020. However, during this time 1028 people of different occupation answered the questionnaire and their responses were recorded. The participants were of different types of people including students, job holder, businessman and other professionals.

2.2 Data Analysis

The data obtained through the survey was primary data and further analysis was performed to make a clear view about the medication usages. For this purpose, different statistical operations (t-test, one way ANOVA test, chi-square test etc.) were done on the data by using SPSS program. For better presentation of

numerical data, various graphs and charts were prepared using the MS excel program.

3. RESULTS AND DISCUSSION

A total of 1028 people participated in the survey. 480 (46.7%) of the total participants were female and 548 (53.3%) were male. Among the participants, 554 (53.89%) resided in city, 166 (16.15%) resided in semi-urban area and rest of 308 (29.96%) resided in rural area. 344 (33.46%) participants were graduated or post-graduated while the other 684 (66.54%) participants were of under-graduate or of lower level of education.

3.1 Self-medication

It was observed that about 41.54% participants didn't practice self-medication; among others 26.94% do it rarely and 31.52% often practice self-medication. The significance (p-value from chi-square test) of different factors affecting the behavior of self-medication practice are summarized in Table 1.

The residence and educational qualification of the respondents significantly (p<0.05) affect the self-medication behave. Gender and educational background have no significant relationship with the self-medication practice. A study conducted in Islamabad, Pakistan showed that self-medication was prevalent in 61.2% of participants [18] while that was 83% in Iran [19] and 11.9% in urban area of India [5].

3.2 Completion of Dosage Regimen

Completion of a dosage regimen is very crucial to get the maximum therapeutic benefits of medicines. Along with self-medication, the tendency to not complete the dosage regimen (for infectious diseases) is also a nature of irrational use of drugs. The survey data showed that, the percentage of participants who occasionally or never complete the dosage regimen is varied upon their residence area. The tendency to not complete the dosage regimen is comparatively high in semi-city (38%) and village (44%) than the city (35%) area. The comparison represents in Fig. 1.

Lacking proper knowledge and public awareness on medicine usage may influence this context in rural areas of Bangladesh. Another probable cause of incompletion of dosage regimen by rural people is that they don't want to expense extra money for purchasing medicines. After using some of the prescribed medicines they started feeling well and stop using rest of the doses. However, this practice is detrimental for several medicines especially for antibiotics. Incompletion of dosage regimen of these drugs may lead to antibiotic resistance [20].

Table 1. Self-medication tendency of the participants

Characteristics	Not at all, n (%)	Scarcely, n (%)	Very often, n (%)	Total, n (%)	P value
Responses	427 (41.54)	277 (26.94)	324 (31.52)	1028 (100)	
Gender					
Male	220 (40.15)	147 (26.82)	181 (33.03)	548 (53.30)	0.4955
Female	207 (43.12)	130 (27.08)	143 (29.80)	480, (46.73)	
Educational Qualification					
Post Graduate	27 (40.30)	20 (29.85)	20 (29.85)	67 (6.52)	
Graduate	127 (45.85)	64 (23.10)	86 (31.05)	277 (26.94)	
HSC	204 (42.32)	143 (29.67)	135 (28.01)	482 (46.89)	0.023[*]
High school	19 (31.15)	18 (29.51)	24 (39.34)	61 (5.93)	
SSC	25 (30.49)	24 (29.27)	33 (40.24)	82 (7.98)	
Primary School	25 (42.37)	8 (13.56)	26 (44.07)	59 (5.74)	
Residence					
City	227 (40.97)	177 (31.95)	150 (27.08)	554 (53.89)	
Semi-urban	80 (48.19)	37 (22.29)	49 (29.52)	166 (16.15)	<0.001[**]
Village	120 (38.96)	63 (20.45)	125 (40.59)	308 (29.96)	
Educational Background					
Medicines related	124 (46.44)	67 (25.09)	76 (28.46)	267 (25.97)	0.21959
Other than science	159 (37.50)	122 (28.77)	143 (33.73)	424 (41.25)	
Science, but not medicine related	144 (42.73)	88 (26.11)	105 (31.16)	337 (32.78)	

*p<0.05, **p<0.01

Occasionally or never complete the dosage regimen
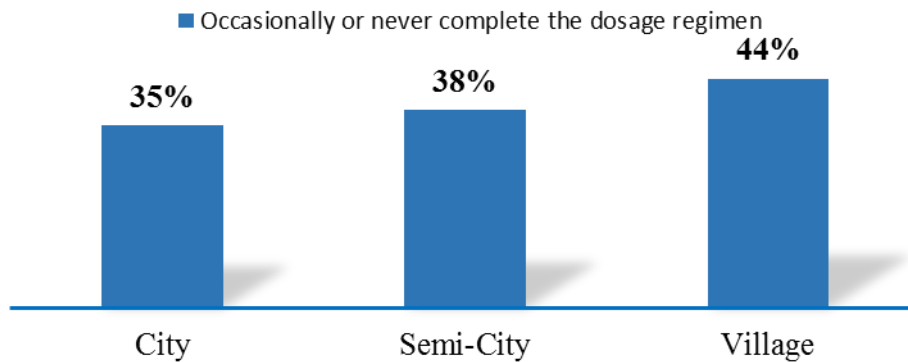
■ Occasionally or never complete the dosage regimen

Fig. 1. Percentage of not completing dosage regimen based on the residence of participants

Tendency to not recover a missed dose
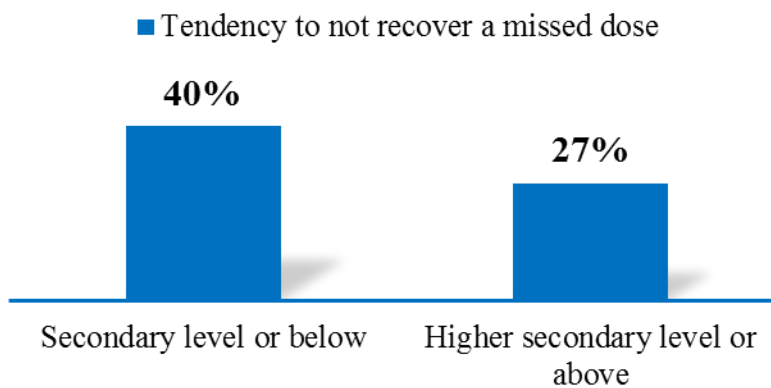
■ Tendency to not recover a missed dose

Fig. 2. Percentage of not recovering the missing doses

3.3 Missing Dose Recovery Rate

The best therapeutic efficacy of the medication is to rest on its accurate dosing interval. Non-adherence to therapy or skipping a dose can lead to a patient's medical condition being poorly managed, affecting his or her health-related quality of life as well as increase treatment cost [21]. To recover a missed dose can lessen these undesirable effects and not recover is an inappropriate practice. Participants' tendency to not recover a missed dose can be correlated with their level of education. The tendency is higher (40%) among the people with low level of education i.e. secondary level or below than the educated people (27%) i.e. higher secondary

level or above. The comparative result is shown in Fig. 2.

3.4 Other Drug Use Behaviors

Proper storage is a pre-requisite for maintaining the shelf-life of a medicine. The storage guideline is usually given on the packing materials of the product. Deviation from these instructions may cause unwanted changes in the drug molecule. However, most of the participants (50.29%) properly followed the instruction for the storage of medicines. They were also aware of the expiry date of the medicines. 70.43% of participants checked the expiry date before purchasing a medicine.

4. CONCLUSION

Participants of rural and urban area significantly differed in terms of self-medication and completion of dosage regimen. People of urban area showed more positive responses in these cases. Educational qualification of the participants was also correlated with self-medication and recovery of missing doses. As improper use of medication is occurring in rural area and uneducated people, it is necessary to increase awareness among them by means of different strategies (arranging seminar, distributing leaflets, lecture by influential people of the society etc.).

CONSENT

As per international standard or university standard, Participants' written consent has been collected and preserved by the authors. In the description of the survey form, the purpose of the study was clearly mentioned and it was clarified that the data given by the respondents would not be used in any commercial purposes nor given to the third party. The participants will be remained anonymous and no personal data (email address, password, name, bank account number, photo etc.) was collected during the survey procedure.

ETHICAL APPROVAL

The questionnaire was formed after getting the institutional review board (IRB) approval.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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