Assessment of the drug knowledge of patients' visiting medical stores in Islamabad

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Abstract – The objective of this study was to assess the drug knowledge of patients visiting medical stores in Islamabad. A basic cross sectional study was carried out in Islamabad in patients visiting the medical stores. Sixty two medical stores were selected by systematic random sampling at 95% CI. One hundred twenty four patients were selected conveniently i.e. 2 patients from each medical store. For data collection a structured questionnaire was used. The data analysis was done by using 16th version of SPSS (Statistical Package for Social Sciences), and the tests applied for data analysis were Mann-Whitney test and Kruskal Wallis.

Keywords – Drug information, Patients, Medical stores

1. Introduction

The rational use of drugs requires that patients receive medicines appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and the community. [1] Rational use of drugs is aimed at appropriate use of drugs so that the basic aim of health care system, that is the benefit of patients, can be achieved. For the achievement of this purpose it is necessary that all the stake holders of this system contribute their efforts. The main stake holders of the health care system include manufacturers, prescribers, providers (pharmacists and dispensers) and receivers that are the patients. Patients are among the most important of all as whole of the health care system is revolving around the purpose to treat the disease of patients. The efforts of all other members of health system can go in vain if the patients do not participate in it properly. For this purpose they require proper knowledge of disease and drugs. [2]

The global increase in the consumption of medications needs for studying medication knowledge and behaviours. [3] Knowledge on drugs is an important element in their proper use. Drugs can be dangerous, particularly to those who have little awareness on the potential risks. One of the factors that contribute to improper use of drugs is lack of overall knowledge on drugs. [4] In Iran a study showed that parents administer wrong drugs to their children to treat mild ailments. It also showed that the doses used were so high that drug toxicity occurred in such children, this was all due to the lack of drug knowledge of parents. [5] 36% of the medication errors are due to lack of knowledge. [6] Lack of knowledge regarding the need of regular intake of medicine was among one of the major reasons for noncompliance-related admission. [7] Various studies have shown that because of lack of knowledge and information many people take and use their medication incorrectly or in appropriately. This in turn leads to loss of efficacy and an inefficient use of the considerable resources which are spent annually on drugs. [8]

2. Methodology

2.1. Study design

A basic cross sectional study was carried out in Islamabad in patients visiting the medical stores

2.2. Sample size

The number of medical stores in Islamabad was 174 so the sample size calculated by the sample calculator at CI=95%; CL=10 was 62. [17] While the sample size for patients was selected conveniently, which was 124 i.e. 2 patients were selected from each medical store; they were selected conveniently because no sample frame was available.

2.3. Sampling method

There were two sampling units in this study so two different methods used i.e. one for selecting the medical stores and the other for selecting patients from a medical stores. The method used for selection of medical stores was

systematic random sampling. As there was no sampling frame available for patients so selection of patients was done convenient sampling method. The sampling methods used in this study for sampling purpose are equally reliable as their reliability has been proved after being used in different studies

2.4. Questionnaire

For knowledge assessment a semi-structured questionnaire was developed. The tool was developed by focused group discussion between pharmacists, academic researchers. A semi-structured questionnaire was selected because a similar type of questionnaire was used in earlier studies aimed for knowledge assessment. The questionnaire consisted of two parts i.e. demographics section and purpose section. The demographics contained name of patients, age, gender, education and monthly income of patients. The purpose part contained different questions for assessment of patients' knowledge about drug and behaviour towards knowledge of drugs. A scale was made for knowledge consisting of eight items namely name of drug, dose, frequency, route of administration, storage conditions, reason for taking that medication, side effects and interactions of that drug. Scoring was done for the scale with the lower and higher scales. 0 was the lower scale meaning no knowledge and 8 was the higher scale meaning good knowledge.

2.5. Validation of tool

Face validation was done by expert's panels consisting of pharmacists, patients and academic researchers. Content validation was done by pilot testing and panel discussion.

Pilot testing ensured that the tool was appropriate to be used for study. A few changes were made to the tool that is the sequence of questions was changed. The tool was filled from the patient during implementation of tool in study. The tool was not filled by the patients themselves rather it was administered to them by the data collector.

2.6. Data collection time and data management

Data was collected from third week of March 2009 to third week of April 2009. Data collection was done in seventeen visits at an average of about four medical stores per visit. Most of the data was collected on weekends i.e. Saturday and Sunday. Data was also collected on working days especially on Monday. Data collection was planned on weekends and Monday. After collection of data all questionnaire forms were compiled and their variables were made for data entry in SPSS (Statistical Package for Social Sciences). Then coding was done for each variable and data was entered in 16th version of SPSS and results were analyzed.

2.7. Research Ethics

During the collection of data research ethics were followed. Patients consent was taken before collection of data from each patient. No patient was forced to participate in the study; only those patients participated who were willing to participate in the study.

2.8. Data Analysis

After collection of data their variables were made and coding was done and the data was entered in the SPSS software, where it was analyzed i.e. its frequencies were run and the frequencies were analyzed. For the relation of results with independent variables tests were run. Two tests were run in this study for data analysis i.e. Mann-Whitney test and Kruskal Wallis test

3. Results

Out of 124 respondents 108 (87%) were males and 16 (13%) were females, with age ranging from 16 to 67 years, where patients were divided into five age groups whose detail is given in figure 1.
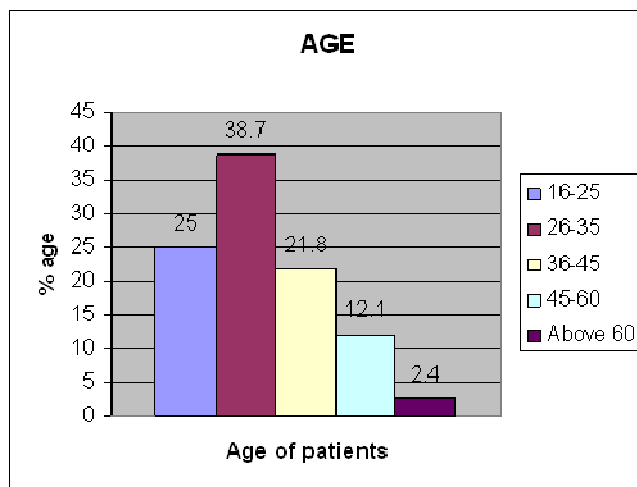

Figure 1: Percentage of patients with different age groups

3.1. Monthly income of patients

Respondents were divided into different income groups i.e. below Rs.10,000 per month, Rs.10,000 to 20,000 per month, Rs.20,000 to 30,000 per month, Rs.30,000 to 40, 000 per month and above Rs.40,000 per month. Their detail is given in the table 1.

Income range	N (%)
Below 10,000	34 (27.4)
10,000 to 20,000	45 (36.3)
20,000 to 30,000	36 (29)
30,000 to 40,000	7 (5.6)
Above 40,000	2 (1.6)
Total	124 (100)

Table 1: Monthly income of patients

3.2. Education

The educational background of the total 124 respondents was 21 postgraduates, 24 with bachelors level of education, 19 with intermediate level of education, 35 with matric level, 13 with middle level and 12 were under middle that were considered as uneducated. Further details are given in figure 2.
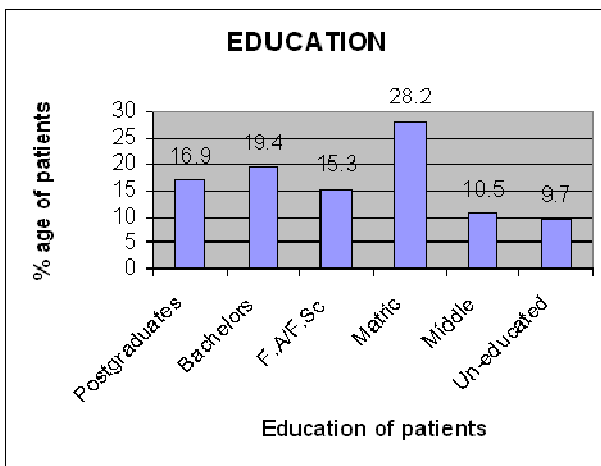
Figure 2: Percentage of patients with different educational background

3.3. Patients' visit

Out of the 124 respondents 74 came to the medical store with prescription, 17 with symptoms, 3 with a written slip (other than the prescription) and 30 with name of medicine to be purchased. Their detail is given in the figure 3.
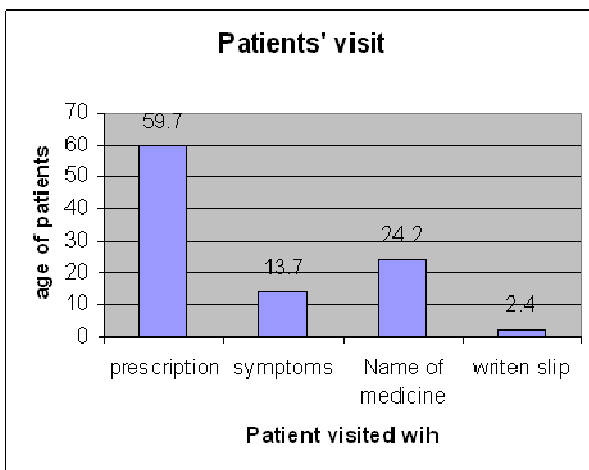

Figure 3: Description of the visit of the patient to the medical store

3.4. Diseases

The diseases with patients came to the medical stores included GI diseases, Respiratory diseases, Fever and Headache, eyes and skin diseases, Diabetes and CVS diseases and certain other diseases including Anxiety, burns and injuries. Their detail is given in the table 2.

Diseases	N (%)
GI Disease	19 (15.3)
Respiratory Diseases	39 (31.5)
Fever and Headache	32 (25.8)
Eyes and Skin Diseases	9 (7.3)
Diabetes and CVS Diseases	14 (11.3)
Other Diseases	13 (10.5)
Total	124 (100)

Table 2: Percentage of patients with different diseases

3.5. Chronic and Acute diseases

The patients with acute diseases were 91 and those with chronic diseases were 33 and their percentages are given in following figure 4.
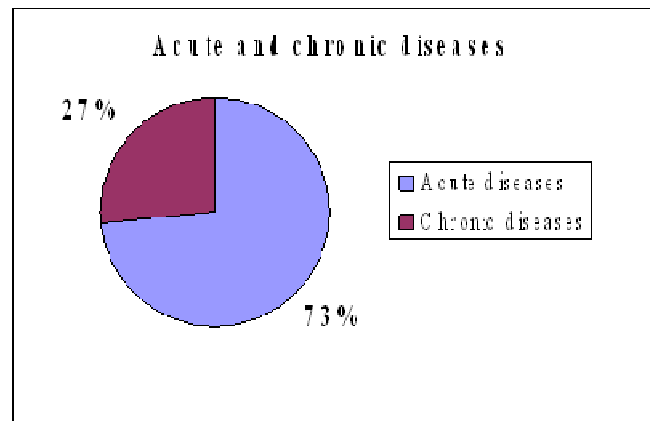

Figure 4: Percentage of patients with chronic and acute diseases.

Here a chronic disease is one lasting 3 months or more, by the definition of the U.S. National Centre for Health Statistics [18]

3.6. Mostly used drugs

The most commonly used classes of drugs were Analgesics/antipyretics (n=64), Antimicrobials (n=42), GI drugs (n=14), Respiratory drugs (n=16) and certain other drugs (n=43). Others included those for CVS, diabetes, anxiolytics, drugs for eyes and skin. Their detail is given in the figure 5.
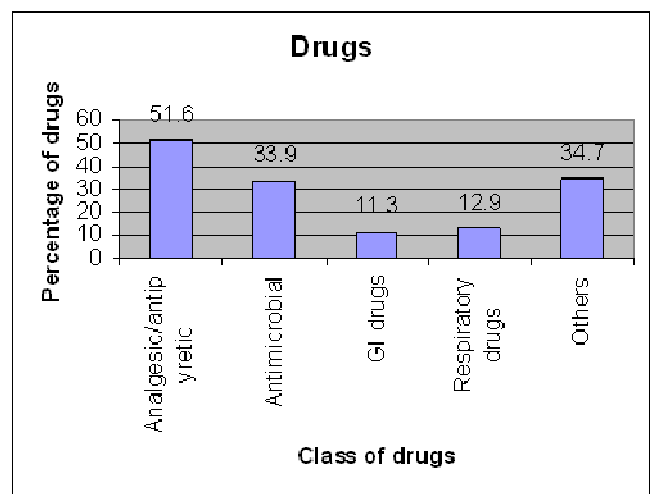

Figure 5: Description of drugs used.

3.7. Preference of patient during illness

Patients were asked about what they prefer to do when they get ill, for which they replied that 29 patients preferred to self medicate, 74 consult physician, 19 consult dispenser or pharmacist present at medical store and 2 preferred to consult others which included friends and medical representatives. Total respondents were 124. The detail is given figure 6.
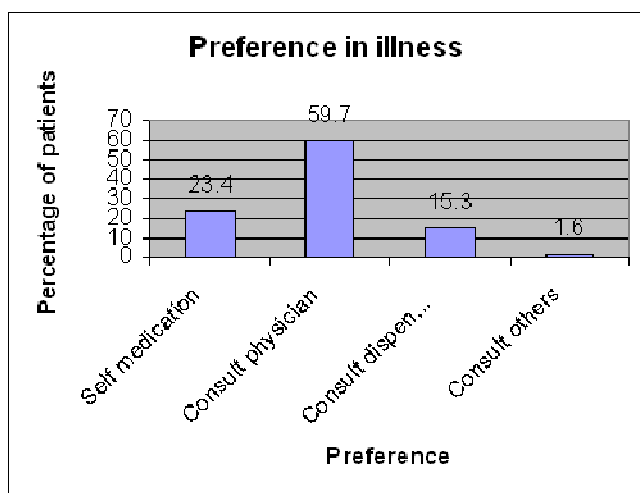
Figure 6: Description of preferences of patients during illness.

3.8. Discontinuation of drug

74 (59.7 %) patients out of 124 discontinue taking drugs before the date advised. The reasons included when illness relieved (n=61), who believed drug is not working (n=5), side effects (n=0), saved for later use (n=8), any other reason (n=0). Their detail is given in figure 7.

The knowledge scale consisted of eight items and the average knowledge score was 3.84 with a minimum value of 0 and maximum value 7 and the standard deviation was ± 1.56.

On further analysis it was found that data was skewed so Mann Whitney test was applied to check the correlation between different knowledge and gender with value of significance 0.35 showing no significance, similarly for correlation between knowledge and type of disease (chronic and acute) of patients also showed no significant correlation with value of significance 0.159. The results of knowledge and age groups of patients showed that both of these parameters were not significantly correlated with each other and there was no significant difference in knowledge of different age groups. The test applied was Kruskal-Wallis test. It was also noted that there was no significant difference in the knowledge of patients with different income groups. It was also analyzed with Kruskal-Wallis test as in figure 8.

3.9. Belief

Their attitude towards need of knowledge about drugs was positive for majority of the population. Only 13 % patients believed that it is not necessary for a patient to have knowledge about drugs. Whereas the attitude towards consulting a doctor before using medication was also positive. 21 % believed that it is not necessary to take medication after consulting a doctor.

4. Discussion

The results showed that out of 124 respondents 108 (87%) were males and 16 (13%) were females with age ranging from 16 to 67 years, where patients were divided into five age groups whose detail is given in figure 1. In this study the results show that the percentage of females was very low however the actual proportion of patients contains a significant number of females. The low proportion of female respondents in this study was for the reason that most of the female patients were not willing to cooperate, so that is why their proportion in the study was less. Another reason may be that in most of the cases females do not go to medical stores to purchase medicines themselves, instead males from their family purchase medicines for them from medical stores. This is also due to the cultural values that males do the most of the purchase rather than the females, so a less number of female patients were available at medical stores. Relation of gender with knowledge was tested to be non significant (p=0.35) by the application of Mann Whitney test. There were different frequencies of patients in each of the age group with maximum percentage of patients in the age group ranging from 26 years to 35 years of age, followed by 16 to 25, 36 to 45 and 45 to 60. At last the group with least percentage of respondents was above 60 years of age. Relation between knowledge and age of patients was tested by applying Kruskal wellis test which showed that there was no significant relation of knowledge with age (p=0.149), i.e. age does not effect knowledge and the knowledge of every age group was poor.

Respondents were divided into different income groups i.e. below Rs.10,000 per month, Rs.10,000 to 20,000 per month, Rs.20,000 to 30,000 per month, Rs.30,000 to 40, 000 per month and above Rs.40,000 per month. The most number of patients belonged to the 2nd income group i.e. Rs.10,000 to Rs.20,000 and then Rs.20,000 to Rs.30,000, followed by less than Rs.10,000. As a whole the results show that more than 90 % of respondents had an income below Rs.30,000 per month. This income status is low as compared to those of people in developed countries. This is because Pakistan is a developing country facing several economic difficulties. The relation of income with knowledge was checked by applying Kruskal wellis test which showed that there was no significant relation (p = 0.13) between knowledge and income. The knowledge of every income group was poor.

The educational background of the total 124 respondents was: 21 postgraduates, 24 with graduation, 19 with intermediate level of education, 35 with matric level, 13 with middle level and 12 were under middle that were considered as uneducated. As the study was conducted in Islamabad the capital city of Pakistan, there are possibilities that this result may not be the actual figure of educational background because the educated population of Pakistan according to ministry of education is nearly 37%. The relation of education with knowledge was tested to be non significant (p=0.15) by the application of Kruskal Wellis test.

The most commonly used classes of drugs were Analgesics/antipyretics (n=64, 51.6%), Antimicrobials (n=42, 33.9%), GI drugs (n=14, 11.3%), Respiratory drugs (n=16, 12.9%) and certain other drugs (n=43, 34.7%). Others included those for CVS, diabetes, anxiolytics, drugs for eyes and skin. This study shows that antipyretics are the most used drugs another study conducted in Karachi about self medication showed that analgesics and antipyretics are among the most self medicated drugs i.e. 46.6% and the antimicrobials are among the second with 40.3% usage. [20] A study conducted in Addis Ababa also showed that out of the top 15 most commonly used drugs 6 were antimicrobials. [4] An increased proportion of antimicrobial use was also for the

reason that the time period during which data was collected was the time for change of season where respiratory infections are common so more antimicrobials are used. There is no data available that can exactly indicate the proportion of drugs used during this period so these results can not be directly compared to any results.

This study showed that59.7 % patients out of 124 discontinue taking drugs before the date advised. This result is comparable to that of a study conducted in Taiwan which shows that a more than 53.3% of patients usually discontinued their prescription medicines upon symptom relief without consulting their doctor or pharmacist. [3] The reasons included when illness relieved, who believed drug is not working, side effects, saved for later use, any other reason. Same study conducted in Taiwan indicates that main reason (53.3%) for discontinual of medicines was relief of illness (symptoms), which is also indicated by this study. Another study conducted in Addis Ababa also validates this result which indicates that main reason (50.4%) for discontinuation of drugs before advised date is relief of illness (symptoms). [4] Same study shows that 16.7% patients discontinue taking drugs due to belief that drug is not working, 20.6% feel side effects create problems and 10.5 % save drugs for later use. These results are not exactly comparable to this study because there are vast differences in that setting and this one.

5.   Conclusion

From this study it was concluded that the overall knowledge of patients in the study population was poor and it was not significantly different to any of the groups like age, gender, education, and income of patients. Therefore a comprehensive campaign should be launched to improve the knowledge of patients using medicine irrespective of their age, gender, education or income of patients.

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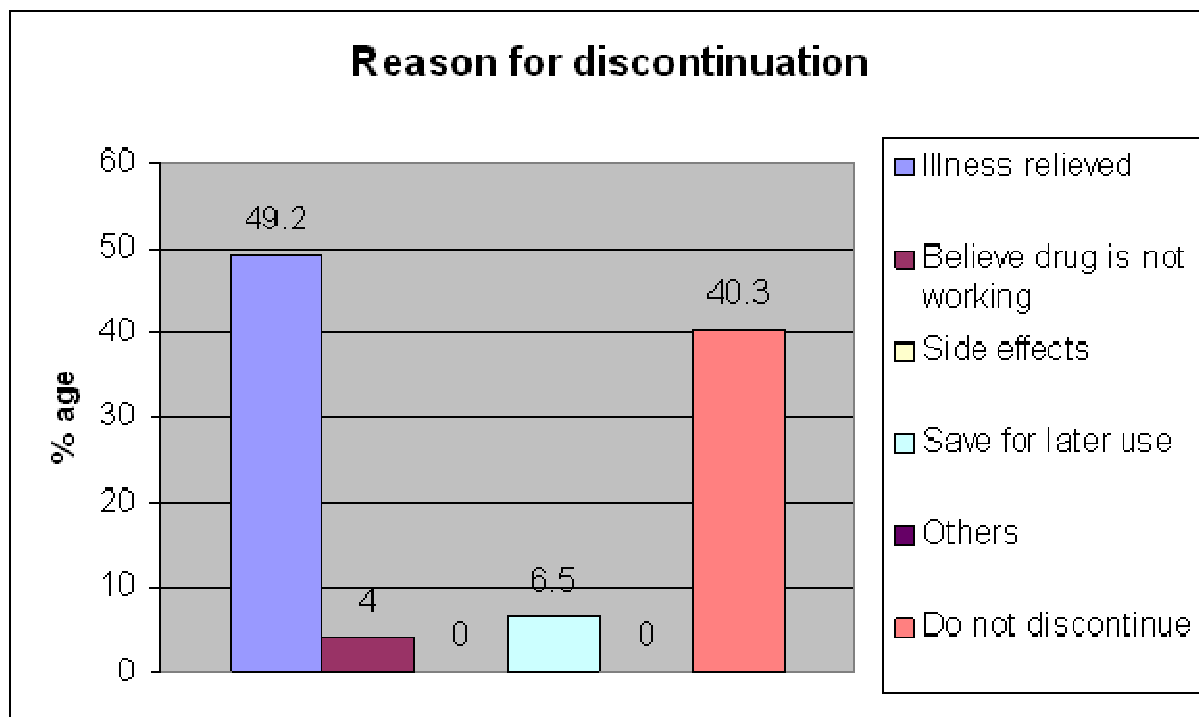
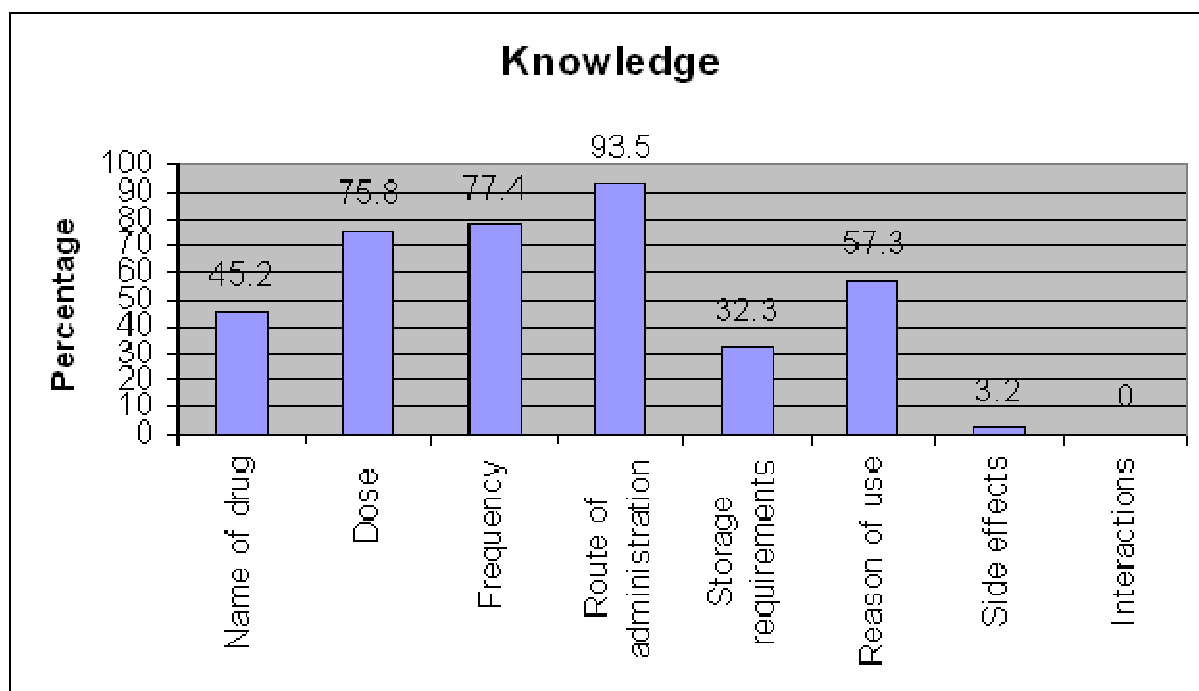Figure 7: Reasons for discontinuation of medication.

Figure 8: Description of knowledge of patients about drugs.