ORIGINAL ARTICLE

Assessment of compliance in cardiovascular patients in Nishter Hospital, Multan, Pakistan

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The objective was to find the factors involve that contributes toward the noncompliance in the patients with cardio-vascular diseases. This was descriptive in nature. Nishter Hospital, Multan. Patients admitted in the cardio ward of the hospital were interviewed during the period of June 6, to August 6, 2013. The information regarding the demographics, level of education, and trust on doctors, medication taking behavior and compliance were taken with the help of questionnaire. Statistical analysis was performed with the help of SPSS 17 (SPSS Inc. Released 2008. SPSS Statistics for Windows, Version 17.0. Chicago: SPSS Inc). Of 200 respondents 65.0% were compliant and 35% were noncompliant.

Key words: *Compliance, literacy, noncompliance*

INTRODUCTION

Most of the disease states, particularly those without symptoms or that don't interfere with the daily routine of life of the individual are ignored easily even after the diagnosis. This ignoring behavior of individuals may lead to noncompliance. In pharmacy practice compliance means the degree to which, patient obeys the doctor's advice in taking their medication. The faith of the patient of the physician is directly related to the compliance. The cost of medication also plays an important role in this regard. According to the estimates of WHO in 2003, almost 50% of the patients with serious diseases in the developed countries follow the treatment guidelines of the physicians.[1] Most of the studies indicate that the medication noncompliance is associated with 10% of the inpatients and 23% of the outpatients.[2] The medication noncompliance is related with the four factors which include demographic, medication-related factors, diseaserelated factors, socioeconomic factors. The studies indicate that the aged people are more noncompliant than the young. Some studies show that the noncompliance is also related to gender. Males are more noncompliant than the females. The education level also plays a crucial role in the noncompliance[3]. The disease type, the harshness of the disease, the number of medications prescribed, the trust of a patient to the doctor, all are related to compliance. The variables that are related to the therapy include time of taking the medicine, dosage form and the untoward effects of the therapy.[4,5] The cognition and belief by patients regarding their medication/condition appear to take on an important role in medication compliance.[6,7,8]

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METHODOLOGY

Study design and sample recruitment

This descriptive study involves a questionnaire-based cross-sectional analysis. A simple random sample of 200 patients was selected between Jan 2013 and July 2013 from Nishter Hospital, Multan (in cardiology ward), Pakistan. Nishter Hospital is one of the biggest hospitals of southern Punjab in Pakistan.

Inclusion criteria

The inclusion criteria were (1) patients of age 20 years and above, (2) those who had been diagnosed with "essential" hypertension and other

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Quick Response Code:

Website: www.asiapharmaceutics.info

DOI: 10.4103/0973-8398.150041

cardiovascular diseases (3) those that were on prescribed antihypertensive medications since at least the previous 1-week. All people who fulfilled the inclusion criteria were then assessed for familiarity with Urdu, which is the national language of Pakistan and is understood and spoken by most people throughout the country, irrespective of ethnicity.

Ethical approval, informed consent and patient privacy

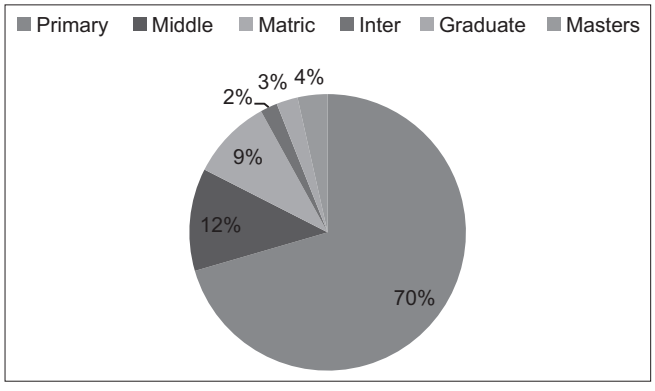
Patients who agreed to participate were explained the nature and the objectives of the study, and informed consent was formally obtained. The information about patients identity was not included with the other data and only the principal investigator had access to this information. No reference to the patient's identity was made at any stage during data analysis or in the paper.

Data collection

The information collection instrument was a questionnaire, designed-based on an extensive literature review of similar subjects. The questionnaire elicited information regarding patient demographics and clinical characteristics, including co-morbidities such as ischemic heart disease, and others, characteristics of hypertension and antihypertensive treatment, awareness about hypertension and antihypertensive treatment, and factors that, in the patient's views, encouraged or discouraged the patients drug taking behavior.

RESULTS

A total of 200 patients were analyzed out of which 70% of the respondents are male and 30% were females. About 81.0% were from the urban areas of southern Punjab and 19.0% were from the rural areas. Most of the patients were not educated. Out of 200 patients, only 30.0% were literate and the remaining 70.0% were illiterate. 35.5% of the patients were of the age between 40 and 50 years, 28.5% of the patients were of the age between 50 and 60 and the percentage of other age groups can be seen in the Tables 1-5. 60.0% of the patients say that they don't trust the recommendations of their doctors, 67.0% of the patients say that they trust on their recommendations and 6.0% of the patients tell that these recommendations are just satisfactory. 64.0% patients say that they usually stop taking medications when they feel symptoms are disappeared and only 36.0% patients take their medications regularly. Correct time of taking medication is also very important. 74.0% of patients say that they take medication on time, 21.5% patients say that they don't take medications at right time and 4.5% of patients say that they take medications when they feel problem. Out of 200 patients 65.0% of the patients comply with the medication as seen in Table 6-11. Education level is also demonstarted in graph 1.



Graph 1: Education level of patients

Table 1: Patient's sex

Sex	Frequency	Percentage	Cumulative percentage
Male	140	70.0	70.0
Female	60	30.0	100.0
Total	200	100.0	

Table 2: Patient's area

Area	Frequency	Percentage	Cumulative percentage
Urban	162	81.0	81.0
Rural	38	19.0	100.0
Total	200	100.0	

Table 3: Patient's educational status

Educational status	Frequency	Percentage	Cumulative percentage
Literate	60	30.0	30.0
Illiterate	140	70.0	100.0
Total	200	100.0	

Table 4: Patient's level of education

Education level	Frequency	Percentage	Cumulative percentage
Primary	141	70.5	100
Middle	24	12.0	15.5
Matric	19	9.5	25.0
Inter	4	2.0	27.0
Bachelors	5	2.5	29.5
Master	7	3.5	70.5
Total	200	100.0	

Table 5: Patient's age group

Age groups	Frequency	Percentage	Cumulative percentage
20-30	3	1.5	1.5
30-40	23	11.5	13.0
40-50	71	35.5	48.5
50-60	57	28.5	77.0
60-70	28	14.0	91.0
70-80	13	6.5	97.5
80-90	5	2.5	100.0
Total	200	100.0	

Table 6: Patient's occupation

Occupation	Frequency	Percentage	Cumulative percentage
Labor	57	28.5	28.5
Farmer	53	26.5	55.0
Office work	28	14.0	69.0
Housewife	55	27.5	96.5
Nothing	7	3.5	100.0
Total	200	100.0	

Table 7: Trusts on doctor

Trust on doctor	Frequency	Percentage	Cumulative percentage
Nontrustable	60	30.0	30.0
Trustable	134	67.0	97.0
Satisfactory	6	3.0	100.0
Total	200	100.0	

Table 8: Medication taking behavior

Behaviour of taking medicine	Frequency	Percentage	Cumulative percentage
On time	149	74.5	74.5
Not on time	40	20.0	94.5
Randomly	11	5.5	100.0
Total	200	100.0	

Table 9: Medication stops on feeling better

Patients comply to therapy	Frequency	Percentage	Cumulative percentage
Stop on feeling relief	128	64.0	64.0
Continuous therapy	72	36.0	100.0
Total	200	100.0	

Table 10: Correct time usage

Time of using medicines	Frequency	Percentage	Cumulative percentage
On correct time	148	74.0	74.0
Not on correct time	43	21.5	95.5
Take when feel problem	9	4.5	100.0
Total	200	100.0	

Table 11: Patient counseling

Patient counseling	Frequency	Percentage	Cumulative percentage
Counseled	84	42.0	42.0
Not counseled	116	58.0	100.0
Total	200	100.0	

DISCUSSION

A recent study shows that about 60% of the medications prescribed are not taken as advised by doctors.[9,10] The behavior of noncompliance in the patients with cardiovascular disease will lead to the more serious complications.[11,12] The data show that 35.0% of the populations studied don't comply with the medication prescribed. This behavior of noncompliance is also related to the gender, because some studies show that females are more compliant than males.[13,14] Most of the patients studied were illiterate, which may be the major reason of the noncompliance. The ability of the patients to understand his/her disease state, treatment nature, the untoward effects of the therapy is important factors in controlling noncompliance.[15-17] 30.0% of the patients don't trust on the doctor's recommendations. The lack of the trust on the doctor's recommendations may also contribute to the noncompliance. Most of the patients stop taking medications when the symptom of the disease sub-sides. The subsidence of the disease symptoms doesn't mean that they don't have the disease and hence medications are taken regularly for the prescribed period. The time of taking medication is also important. The medications should take at the correct time.

According to study, the illiteracy is the most important factor for the noncompliance. This can be intervened by the proper counseling of the patients and telling the importance of medication that they are taking in overcoming their disease state.

CONCLUSION

Noncompliance toward the medication taking behavior is very common in the patients suffering from the cardio-vascular disease. Illiteracy and improper counseling of the patients are the major reason for the noncompliance.

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How to cite this article: Baig MM, Shahzad Q, Jabeen M, Saeed HM, Wahid M, Irfan M, Iqbal I, Bano Q. Assessment of compliance in cardiovascular patients in Nishter Hospital, Multan, Pakistan. Asian J Pharm 2015;9:56-9.

Source of Support: Nil. **Conflict of Interest:** None declared.