

Compliance, Chemist prescribing and Self-medication in urban Ahmedabad: Problems and Perspectives



Medical Science

KEYWORDS : Compliance, chemist prescribing, self-medication

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ABSTRACT

Objective: Incompliance, chemist prescribing and self-medication are prevalent in all societies. These may have a significant impact on public health and treatment outcome. A rapid urbanization may also change the drug utilization pattern. Therefore, this study was undertaken to evaluate patient compliance, chemist prescribing and self-medication in urban Ahmedabad.

Methods: The study was conducted at five retail pharmacies over a period of nine months. Data of 200 patients visiting each of these pharmacies was recorded and analyzed.

Results: Data obtained from 1000 patients showed that 64% (643) patients had a written prescription while 36% had none. Out of 643 patients, most (89%) bought all the drugs as prescribed while only 11% did not take all the drugs or bought them for a shorter (than prescribed) duration. Reasons for incompliance were cost ('not enough money'), wait and watch policy ('shall buy later'), already in possession ('from earlier prescription') and dislike for a particular dosage form (e.g. 'liquids'). Out of the remaining 357 patients that did not have a prescription, 72% asked for drugs on their own (self-medication), while 28% sought the chemist advice. Common complaints for the chemist advice were pain, cold and cough, diarrhoea, fever, hyperacidity, conjunctivitis, motion sickness, generalized weakness and oral ulcers. Commonly advised drugs by chemist were analgesics, cough/cold preparations, antidiarrhoeals, antipyretics, antacids/antiulcer drugs, antispasmodics, eye/ear antibacterial drops, vitamins and antiemetics. Common ailments for self-medication were pain, hypertension, cold and cough, fever, hyperacidity, weakness, diarrhea etc. Commonly asked drugs for self-medication were analgesics, cough/cold preparations, antihypertensives, antacids/antiulcer drugs, skin preparations, vitamins, antipyretics, anti bacterial, antidiarrhoeals, antidiabetic agents, anxiolytics/antidepressants etc.

Conclusion: The study suggests that incompliance is not a major issue in urban areas. Self-medication and chemist prescribing are quite common. A chemist, therefore, assumes crucial role in providing proper guidance to the patient.

INTRODUCTION

Incompliance, self-medication and chemist prescribing are commonly observed drug taking behaviour and may have a significant impact on public health as well as the success or failure of drug therapy [1-3].

Patient incompliance (non-compliance) has been claimed as the failure to follow the medication regimen, diet and other aspects of healthcare as prescribed by doctor [3]. Poor or no compliance may lead to therapeutic failure from under utilization of medication and even the adverse effects from an advertant over utilization [4].

The chemist prescribing has been credited with several benefits such as easier accessibility and immediacy of pharmacy advice [5]. Although convenient, time saving and cheaper than a doctor's consultation, the chemist prescribing may lead to indiscriminate use of drugs, increased risk of adverse drug reactions or complications of existing condition and diversion of money for useless remedies [6].

Self-medication can be defined as the use of a medicinal product by consumers on their own responsibility, to treat self recognized disorders or symptoms when they consider such use appropriate [7]. This can also have serious repercussions as described above [8]. It can be a problem in ensuring the rational use of drugs [9].

Very few studies have been conducted in India regarding patient compliance, chemist prescribing and self-medication. Whatever studies have been done are quite old. A rapid urbanization may possibly change the drug utilization pattern. Hence, this study was conducted in urban Ahmedabad to evaluate compliance,

chemist prescribing and self-medication.

MATERIAL AND METHODS

The consumer purchase of drugs across the pharmacy counter is considered to be the most accurate source of information about the drug use [8,15]. Therefore, this work was carried out at five retail pharmacies situated in different areas of Ahmedabad city (asarwa, sola road, shahibaug, bapunagar, meghaninagar).

All the chemists of the selected pharmacies were explained about the objectives of this work. The author covered each pharmacy one by one. A pharmacy was visited twice everyday for approximately four hours between 10:30 am to 12:30 pm and 5:30 pm to 7:30 pm. A total number of 200 patients (or their representatives) were studied at each retail pharmacy. Thus, at the end of the study a total of 1000 (i.e. 200 x 5) cases were available for evaluation. The investigator recorded the details as per his convenience. This means that while he was busy recording one patient all others that came during this period were not counted and he took up the next patients only when he had finished with the earlier one.

The cases were classified into one of the following categories right at the time of initial entry:

1. Patients who had a doctor's prescription and bought all the drugs as prescribed.
2. Patients who had a doctor's prescription and did not buy all the drugs as prescribed.
3. Patients who did not have a doctor's prescription and sought the chemist advice.
4. Patients who did not have a doctor's prescription and asked for self-medication.

Different case record forms were used as per the above classification.

cation. Additionally while recording the data cases falling in category 2, 3 and 4 were briefly interviewed after they had bought the drugs. In addition to their demographic details, they were specifically asked about reasons for not taking all the drugs, complaints for which chemist advice was sought and their understanding about the drugs prescribed and bought. A note was also made of the quality of instructions given by the chemist, if any, to the patients. The collected data was pooled and analyzed for various parameters.

RESULTS

Distribution of Patients:

Out of 1000 patients, 643 had a doctor's prescription and the remaining 357 did not have the same. Out of 643 patients 569 (89%) bought all the drugs as prescribed (full compliance) and the remaining 74 (11%) were incompliant in some way or other. Amongst those that were incompliant 19 (26%) did not buy one or more drugs as prescribed while 55 (74%) bought the drugs for an incomplete course i.e. for a duration that was shorter than prescribed. Out of the remaining 357 patients that did not have a doctor's prescription, 97 (28%) patients sought the chemist's advice and 260 (72%) indulged in self-medication. Majority of the patients (89.5%) bought the drugs for themselves while only 10.5% bought them for others (usually close relatives).

Demographic Details of Patients:

Out of 1000 patients, 682 (68%) were males while remaining 318 (32%) were females. Majority of patients (64%) belonged to the age group of 21-40 years.

Out of 569 patients that bought all the drugs as prescribed, 374 (66 %) were males while remaining 195 (34 %) were females. On an overall basis, however, it appears that only 374 or 54% of the total male patients in the study (682) were fully compliant. On the other hand, the corresponding figure for the female patients was 61% (195 out of 318).

TABLE- 1. AGEWISE DISTRIBUTION OF FULLY COMPLIANT CASES (n=569)

AGE GROUP (YEARS)	NO. OF PATIENTS (%)
10-20	22 (4%)
21-30	197 (35%)
31-40	162 (28%)
41-50	144 (25%)
> 50	44 (8%)

Out of 74 incompliant patients, 44 (60 %) were males while remaining 30 (40 %) were females. On an overall basis, however, it appears that 44 or 6% of the total male patients in the study (682) were incompliant about the prescription they had. On the other hand, the corresponding figure for the female patients was 9% (30 out of 318).

TABLE -2. AGEWISE DISTRIBUTION OF INCOMPLIANT PATIENTS (n=74)

AGE GROUP (YEARS)	NO. OF PATIENTS (%)
10-20	01 (1%)
21-30	31 (42%)
31-40	20 (27%)
41-50	16 (22%)
> 50	06 (8%)

Out of 97 patients who sought the chemist advice, 67 (69%) were males while remaining 30 (31%) were females. The corresponding rates on an overall basis, however, were approximately 10% for both males as well as females.

TABLE-3. AGEWISE DISTRIBUTION OF PATIENTS THAT SOUGHT A CHEMIST ADVICE (n=97)

AGE GROUP (YEARS)	NO. OF PATIENTS (%)
10-20	09 (9%)
21-30	38 (39%)
31-40	32 (33%)
41-50	18 (19%)
> 50	00 (0%)

Out of 260 patients who indulged in self-medication, 197 (76%) were males (29% of the total males in the study) while remaining 63 (24%) were females (20% of the total females in the study). It is, thus, clear that while in other categories a baseline demographic distribution by gender was nearly similar, it was not so for the self-medication. A much larger number of males indulged in self-medication as compared to females.

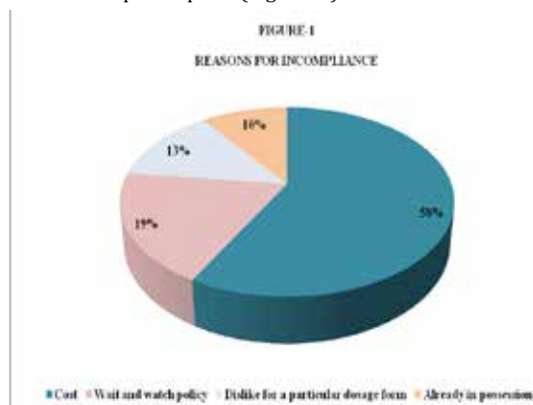
An age wise distribution in each category of observation as described above demonstrates that majority of patients (approximately 60%) belonged to the age group of 21-40 years.

TABLE - 4. AGEWISE DISTRIBUTION OF PATIENTS THAT INDULGED IN SELF-MEDICATION (n=260)

AGE GROUP (YEARS)	NO. OF PATIENTS (%)
10-20	26 (10%)
21-30	99 (38%)
31-40	60 (23%)
41-50	53 (20%)
> 50	22 (9%)

Reasons For Incompliance:

A number of reasons were narrated for incompliance. Cost was the most frequently cited reason. About 58% patients said that they did not have enough money. Others (19%) said that they will buy the remaining medicines later and possibly they wanted to evaluate the effect of prescribed medicines first before buying the full course. Few (13%) disliked a particular dosage form (e.g., liquids) while 10% patients were already possessing the prescribed drug at their home presumably as a left-over from earlier prescription (Figure- 1).



Common complaints for seeking the chemist Advice:

The most common complaint for chemist advice was pain (38.1%). Headache, bodyache, backache, pain in abdomen, toothache, arthritis and pain in lower extremities were the most frequent types of pain. The other major complaints for which a chemist advice was sought were cold and cough, diarrhoea and fever (Table-5).

TABLE-5. COMMON COMPLAINTS FOR WHICH A CHEMIST ADVICE WAS SOUGHT (n=97)

COMPLAINT	NO. OF PATIENTS (%)
Pain (headache, bodyache, backache, abdominal pain, toothache, pain in lower extremities, arthritis)	37 (38.1%)
Cold/cough	19 (19.6%)
Diarrhea	16 (16.5%)
Fever with or without associated symptoms	15 (15.5%)
Hyperacidity	05 (5.2%)
Conjunctivitis	02 (2.1%)
Motion sickness	01 (1%)
Generalized weakness	01 (1%)
Oral ulcers	01 (1%)

Commonly Prescribed Drugs By Chemist:

The most commonly drugs prescribed by the chemists were analgesics. The other drugs prescribed by them were anticold/cough preparations, antidiarrhoeals, antipyretics, antacids/ antiulcer drugs, antispasmodics, eye/ear antibacterial drops, vitamins and antiemetics (Table-6). Atleast five different types of analgesics were prescribed for 41 patients. As shown in Table 7 and 8, a variety of other drugs mostly in the form of combinations were also prescribed by the chemists for the ailments that were commonly presented to them.

TABLE- 6. COMMONLY PRESCRIBED DRUG CLASSES BY CHEMIST (n=97)

DRUG CLASS	NO. OF PATIENTS (%)	TYPE OF DRUGS	NO. OF UNITS PRESCRIBED
Analgesics	41 (39.1%)	05	127
Anticold/cough preparations	20 (19.1%)	06	53
Antidiarrhoeals	16 (15.2%)	04	39
Antipyretics	15 (14.3%)	03	45
Antacids/antiulcer drugs	05 (4.8%)	03	20
Antispasmodics	03 (2.9%)	01	08
Eye/ear antibacterial drops	02 (1.9%)	02	02
Vitamins	02 (1.9%)	08	10
Antiemetics	01 (0.9%)	01	05

TABLE-7. DETAILED COMPOSITION OF THE DRUGS PRESCRIBED BY THE CHEMISTS

DRUG CLASS	TYPES OF PREPARATIONS PRESCRIBED
Analgesics	Paracetamol, diclofenac+paracetamol, Ibuprofen+paracetamol, paracetamol+caffeine, diclofenac+paracetamol+chlorzoxazone, paracetamol+caffeine+propylphenazone
Anticold/cough preparations	Cetirizine, paracetamol+caffeine+phenylpropanolamine, chlorpheniramine maleate+paracetamol+caffeine+phenylephrine, chlorpheniramine maleate+ sodium citrate+methanol+ammonium chloride, salicylamide+paracetamol+ sodium citrate+caffeine+ephedrine
Antidiarrhoeals	Loperamide, Vit D3, metronidazole+loperamide +furazolidone

Antipyretics	Paracetamol, paracetamol+ibuprofen, diclofenac+ paracetamol, paracetamol +caffeine
Antacids	Ranitidine, aluminium hydroxide+magnesium hydroxide+methyl polysilox+sodium carboxy methyl cellulose
Antispasmodics	Dicyclomine+ paracetamol
Eye/ear antibacterial drops	Gentamicin, ciprofloxacin
Vitamins	Folic acid, Vit B1+B2+B3+B5+B6+B12+folic acid+ascorbic acid+biotin
Antiemetics	Promethazine
Antibacterials	Metronidazole

TABLE -8. SINGLE V/S COMBINATION DRUGS PRESCRIBED BY CHEMISTS (n=97)

DRUG CLASS	NO. OF PATIENTS	
	Single Drugs Prescribed	Combination Drugs Prescribed
Analgesics	06	35
Anticold/cough preparations	01	19
Antidiarrhoeals	15	01
Antipyretics	04	11
Antacids/antiulcer drugs	04	01
Antispasmodics	00	03
Eye/ear antibacterial drops	02	00
Vitamins	01	01
Antiemetics	01	00

Common Complaints For Self-Medication:

Among the 260 patients who indulged in self-medication, 43% came with an empty container while 57% patients asked the drugs by name. Pain was the most common complaint for self-medication (23.7%) that included headache, bodyache, backache, pain in abdomen, toothache, joint pain and pain in lower extremities. The remaining complaints were hypertension (16.2%), cold and cough (15.2%), fever with or without associated symptoms (8.6%), hyperacidity (8.6%), generalized weakness (6.6%), diarrhoea (5.1%), diabetes (5.1%) and others (breathlessness, myocardial infarction, insomnia, traumatic wound, ulcer in mouth, indigestion with flatulence, renal calculus, giddiness, acne, malaria, sore throat, thick blood). One patient asked for ecosprin (aspirin) to make the blood thin. Hence his complaint was considered as thick blood (Table-9).

TABLE -9. DETAILS OF SELF - MEDICATION (n=260)

SELF-MEDICATION SOUGHT FOR	NO. OF PATIENTS (%)
Pain (headache, bodyache, backache, abdominal pain, toothache, joint pain, pain in lower extremities)	47 (23.7%)
Hypertension	32 (16.2%)
Cold/cough	30 (15.2%)
Fever with or without associated symptoms	17 (8.6%)
Hyperacidity	17 (8.6%)
Generalized weakness	13 (6.6%)
Diarrhoea	10 (5.1%)
Diabetes	10 (5.1%)
Others (breathlessness, myocardial infarction, insomnia, traumatic wound, ulcer in mouth, indigestion/flatulence, thick blood, renal calculus, giddiness, acne, malaria, sore throat)	22 (11%)

Commonly Used Drugs For Self-Medication:

The drugs employed for self-medication were in line with the complaints. Thus analgesics were most common drugs followed by anticold/cough preparations, antihypertensives etc (Table-10). To illustrate the point further, 689 units of 9 types of antihypertensives were bought by 31 patients, 413 units of 10 types of analgesics were bought by 62 patients, 250 units of 4 types of antidiabetic agents were bought by 9 patients while 246 units of vitamins were bought by 22 patients. Details of these medicines are shown in Table-11. A further analysis of the results shows that for most categories, combinations were preferred by the patients for self-medication. Single drugs were preferred as antacids/antiulcer drugs, antihypertensives, antipyretics, antidiarrhoeals, antianginals and anxiolytics/anti-depressants (Table-12).

TABLE -10. COMMONLY USED DRUGS FOR SELF - MEDICATION (n=260)

DRUG CLASS	NO. OF PATIENTS (%)	TYPE OF DRUGS	NO. OF UNITS BOUGHT
Analgesics	62 (19.8%)	10	413
Anticold/cough preparations	32 (10.2%)	09	97
Antihypertensives	31 (9.9%)	09	689
Antacids/antiulcer drugs	27 (8.6%)	08	220
Vitamins	22 (7%)	11	246
Skin preparations	22 (7%)	16	22
Antipyretics	17 (5.4%)	03	71
Antibacterials	13 (4.2%)	11	79
Antidiarrhoeals	11 (3.5%)	02	41
Antidiabetic agents	09 (2.9%)	04	250
Anxiolytics/antidepressants	08 (2.6%)	05	80
Antianginals	07 (2.2%)	04	120
Bronchodilators	05 (1.6%)	04	80
Others	45 (14.1%)	40	444

TABLE -11. DETAILS OF THE DRUGS EMPLOYED FOR SELF-MEDICATION

DRUG CLASS	TYPE OF PREPARATIONS USED
Analgesics	Paracetamol, aspirin, rofecoxib, diclofenac, ibuprofen, neproxen, nimesulide, diclofenac+paracetamol, ibuprofen+paracetamol, acetaminophen+caffeine, nimesulide+paracetamol, diclofenac+ serratiopeptidase, paracetamol+dextropropoxyphene, nimesulide+ tizanidine, diclofenac+ paracetamol+ chlorzoxazone
Anticold/cough preparations	Cetirizine, diphenhydramine, dextromethorphan, phenylpropanolamine, triprolidine+pseudoephedrine, chlorpheniramine maleate+ codeine+menthol, paracetamol+ caffeine+cetirizine, paracetamol+ caffeine+phenylephrine, chlorpheniramine maleate+paracetamol+ caffeine+phenylephrine, codeine+sodium citrate+chlorpheniramine maleate+menthol, ammonium chloride+sodium citrate+ terpenhydrate +menthol+viscous liquid extract+alcohol
Antihypertensives	Amlodipine, atenolol, nifedipine, diltiazem, metoprolol, clonidine +hydrochlorothiazide, amlodipine+ atenolol, losartan+ hydrochlorothiazide, lisinopril+amlodipine, atenolol+nifedipine

Antacids	Ranitidine, famotidine, omeprazole, lansoprazole, megladrate+ simethicone, aluminium hydroxide+ magnesium hydroxide+ methyl polysilox+sodium carboxy methyl cellulose
Local skin preparations	Fluticasone, miconazole povidone iodine, salicylic acid, diclofenac, framycetin, fluocinolone, clobetasol propionate, betamethasone+neomycin, clobetasol propionate+gentamicin, diclofenac+ methylsalicylate+menthol, choline salicylate+ benzylkonium+ lignocaine, neomycin sulphate+ polymyxin B+bacitracin, beta methasone+gentamicin +tolnaftate+iodochlorhydroxyquin, lidocaine+hydrocortisone+zinc oxide+allantoin
Antipyretics	Paracetamol, nimesulide, paracetamol+ibuprofen
Vitamins	Folic acid, Vit E, Vit B1+B6+B12, Vit B1+B2+ B3+B5+B6+B12, Vit B1+B2+B3+B5+B6+B12+Vit C, Zinc+ Vit B1+B2+B6+B12+ Calcium+Vit C, Vit B1+B2+B3+B5+B6+B12+Vit C+Zinc+Folic acid, Vit B1+B2+B3+B5+B6+B12+folic acid+Ascorbic acid+ biotin, Vit B1+B2+B3+B5+B6+B12+Vit C +Zinc+Folic acid+ calcium+chromium, Vit A+Vit D3+Vit C+Vit E+VitB1+ B2+B3+ B5+B6+B12 +magnesium +manganese+copper+zinc+selenium
Antidiarrhoeals	Loperamide, metronidazole
Antibacterials	Ofloxacin, doxycycline, roxithromycin, cefadroxil, metronidazole, norfloxacin, ciprofloxacin+ tinidazole, norfloxacin+tinidazole, ampicillin+ cloxacillin, amoxicillin+cloxacillin
Antidiabetic agents	Glipizide, metformin, phenformin, glipizide+ metformin, glizide+metformin
Antispasmodics	Mebeverine, avapryazone+metamizole, dicyclomine+paracetamol, diclofenac+dicyclomine
Eye/ear antibacterial drops	Gentamicin, ciprofloxacin, neomycin + dexamethasone+ benzalkonium chloride, sulphacetamide+hydrocortisone+ phenylmercuric acetate
Bronchodilators	Salbutamol, theophylline+terbutaline, salbutamol+ theophylline, ephedrine+salbutamol, salbutamol+bromhexine +guaiphenesine+menthol
Anxiolytics/ Antidepressants	Diazepam, alprazolam, chlordiazepoxide, diazepam+ imipramine, amitriptyline+chlordiazepoxide
Corticosteroids	Prednisolone, dexamethasone, betamethasone
Antiemetics	Promethazine, doxylamine succinate+pyridoxine, domperidone+ omeprazole
Haematinics	Iron hydroxide polymaltose complex+folic acid
Calcium preparations	Calcium carbonate+Vit D3, tribasic calcium phosphate+ Vit B12+Vit C+Vit D3
Oestrogen/ progesterone preparations	Norethisterone, ethinyl estradiol+levonorgestrel
Antiflatulents	Mosapride, fungal diastase+papain+simethicone+ nicotinamide+ activated charcoal
Thyroid hormone	Thyroxine
Antiparkinsonian agents	Levodopa+carbidopa
Antimalarials	Chloroquine, sulphadoxine+pyrimethamine
Antianginal drugs	Isosorbidedinitrate, isosorbidedimonitrate, nitroglycerine, trimetazidine

Antiplatelet agents	Aspirin
Anticonvulsants	Carbamazepine, clonazepam
Antihistamines	Betahistine, pheniramine maleate, buclizine, promethazine
Throat lozenge	Dichlorobenzyl alcohol+amylmetacresol

TABLE-12. SINGLE V/S COMBINATION DRUGS USED FOR SELF - MEDICATION (n=260)

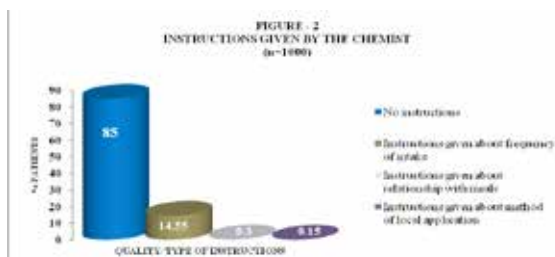
CATEGORY OF DRUGS	NO. OF PATIENTS (%)	
	Single Drugs Bought	Combination Drugs Bought
Analgesics	15	47
Anticold/cough preparations	04	28
Antihypertensives	21	10
Antacids/antiulcer drugs	25	02
Vitamins	08	14
Skin preparations	09	13
Antipyretics	15	02
Antibacterials	07	06
Antidiarrhoeals	11	00
Antidiabetic agents	03	06
Anxiolytics/antidepressants	05	03
Antianginals	07	00
Bronchodilators	01	04
Others	25	20

Instructions Given By Chemist:

On an overall basis, most of the patients received no instructions (Table-13). Amongst few of those who received them, they were informed mainly about frequency of intake, relationship with meals or the method of local application. A similar situation prevailed amongst subdivisions of various types of drug buyers (Figure-2). Surprisingly, even those who took the chemist advice were also given a grossly insufficient attention.

TABLE-13. INSTRUCTIONS RECEIVED BY DIFFERENT TYPES OF DRUG BUYERS (n=1000)

CATEGORY OF PATIENTS (n)	TYPE OF INSTRUCTIONS	NO. OF PATIENTS (%)
Fully compliant (569)	No instructions	443 (78)
	Frequency of intake explained.	126 (22)
Incompliant (74)	No instructions	60 (81)
	Frequency of intake explained.	14 (19)
Chemist advice (97)	No instructions	89 (92)
	Frequency/method of administration explained.	08 (08)
Self-medication (260)	No instructions	260 (100)



DISCUSSION

Incompliance, chemist prescribing and self-medication are important problems in application of rational use of drugs. They

are some of those issues that are conventionally given a much less attention than what they deserve.

In this study, we observed that about 65% patients had a prescription and out of them nearly 90% bought the drugs as prescribed and were fully compliant. We also observed that out of the 35% patients that had no prescription, 72% indulged in self-medication and 28% sought the chemist advice.

Our findings suggest that a large number of patients in the urban setting obtain a doctor's prescription and have a satisfactory compliance. This is contrary to other studies wherein the extent of incompliance has been noted to be 64% to 87% (Basak & Manavalan, 1996, Ponnusankar, Anand harajan, Badrinath et al, 2001) [3,4]. Clearly, incompliance was not a major issue in our study.

Cost was the most frequently cited reason for incompliance. Some patients, however, said that they will buy the remaining medicines later and they obviously wanted to evaluate the effect of prescribed medicines first before buying the full course (wait and watch policy). Some patients disliked a particular dosage form (e.g., liquids) and few were already possessing the prescribed drug at their home presumably as a left over from an earlier prescription. Cost and nature of medication have also been reported to be the major causes of non-compliance in a study cited above (Ponnusankar, Anandharajan, Badrinath et al, 2001) [3]. With the advancement of technology medical care has become complex and costly. It is, therefore, no surprise that cost of the medication continues to be the major hurdle in way of compliance. However, a smaller proportion of incompliance in our study denotes that perhaps the population we studied was economically better-off than the samples chosen by other workers in the past.

We found that the chemist advice is usually sought for a seemingly trivial complaints (pain, cold and cough, diarrhoea, fever, hyperacidity, conjunctivitis, motion sickness, generalized weakness etc). It is only rarely that a serious condition is put forward for a chemist advice. However, we observed that while larger than required number of units are usually dispensed for pain, cold/cough and fever. No advice is given regarding ORS (oral re-hydration salts) in cases of diarrhoea. Chemists usually do not inquire about any associated disorder(s) and they dispense only a symptomatic treatment for a presenting complaint. Chemist prescription usually contains combination products.

Self medication was a bigger issue in our study. It has also been observed to be so in a study in 1983 by the National Institute of Nutrition in the south India. In the US and Canada around 60-80% of the population have been shown to practise self-medication [10]. This rate of self-medication is not markedly different to that found in developing countries such as Taiwan (70-90%) and Srilanka [11]. It has been reported in India that the extent of self-medication varies from 30-95% between pharmacies [12]. In our study amongst the patients who did not have a doctor's prescription, 72% indulged in self-medication. However, in terms of absolute sample size, the number of such cases was only 26% of the total population studied. Most of the patients who asked for self-medication were males and belonged to age group of 21-40 years. In a study carried out by Kasilo & Charles (1992) in urban Harare (Zimbabwe), majority of patients that indulged in self-medication were also males [13]. It confirms the fact that active members of the family are more involved in self-medication. In another study (Joshi, Bhattacharya, Raj et al, 1986) most of the patients who asked for self-medication belonged to age group of 21-40 years [8]. Like chemist prescribing, pain and other trivial symptoms (cold and cough, fever, hyperacidity, generalized weakness and diarrhea) seem to be the common ailments for which the self-medication is practised. The remaining complaints were hypertension, cold and cough, fever, hyperacidity, generalized weakness, diarrhea, diabetes and others (breathlessness, myocardial infarction, insomnia, traumatic wound, ulcer in mouth, indigestion with flatulence, renal calculus, giddiness, acne, malaria, sore throat, thick blood). Amongst the categories of drugs used for self-medication, analgesics

were the most commonly used drugs. The other drugs used for self-medication were anticold/cough preparations, antihypertensives, antacids/antiulcer drugs, skin preparations, vitamins, antipyretics, antibacterials, antidiarrhoeals, antidiabetic agents, anxiolytics/antidepressants, antianginals, bronchodilators etc. Large number of units of antihypertensives, analgesics, antidiabetic agents, vitamins and antacids/antiulcer drugs were bought by patients who asked for self-medication. However, medications are also demanded for a number of significant chronic conditions such as hypertension, diabetes mellitus, breathlessness, myocardial infarction and renal calculus. For most categories, combinations were preferred by the patients for self-medication. It thus appears that while males indulge more in self-medication, it may also mean that they try to seek a qualified medical advice less than females. Similarly the findings also suggest that it is only the trivial conditions for which a self-medication is usually practiced. The fact that combinations are frequently chosen for self-medication may imply that such choices may be based upon past experiences with prescriptions given by a qualified doctor. Additionally, an earlier episode of chemist prescribing may also have a greater influence on self-medication as compared to an earlier prescription by doctor. It also appears that the scheduled drugs bought for chronic serious complaints (like hypertension, diabetes or infections) may be based upon earlier prescriptions as a good number of buyers turned up with empty containers or tablet strips.

In a study carried out by Greenhalgh (1987) 64% patients were found to indulge in self-medication in India^[14]. In that study common drugs employed for self-medication were nutritional supplements, analgesics and anti-infectives followed by cold/cough remedies, antacids/anti-spasmodics, steroids, skin creams, sedatives/tranquilizers, antidiarrhoeals etc. Majority of the drugs were combination products. The rate of self-medication seen in our study is lower as compared to the referred study by Greenhalgh. This may be due to a number of factors such as improved awareness, easier availability of qualified medical practitioners and strict compliance of regulations in urban areas. While a regular follow up with the treating physician is essential for a number of chronic conditions (like diabetes and hypertension), prescription only medicines for all such conditions have perhaps been employed as self-medication seemingly on the basis of a past prescription. Inappropriate use at times may, however, lead to several adverse consequences and both the patients as well as the chemists should be made aware of this.

Amongst the patients who visited the pharmacies, most of the patients are not instructed regarding use of medicines. In case of patients who indulged in self-medication, very few were informed about frequency of intake, relationship with meals or the method of (local) application. Surprisingly, even those who took the chemist advice were also given a grossly insufficient attention. It has been noted before by Bruneton, Maritoux and Fontaine (1997) that customers are not given enough instructions by drug sellers on use of drugs^[16]. In the present study also chemists did not advise the patients regarding important aspects of drug therapy including what to do on the continuation or recurrence of symptoms after taking drugs prescribed by them.

CONCLUSION

The problem of patient compliance, chemist prescribing and self-medication do exist. Incompliance does not seem to be a major issue in urban areas. Self-medication is much more common than chemist prescribing. Although chemists usually prescribe only the symptomatic treatment for a presenting complaint, they do not inquire about any associated disorder. Chemist prescription usually contains combination products. Combinations are frequently chosen for self-medication perhaps due to a similar prescription in the past by a chemist or doctor. Similarly drugs bought for a chronic condition may be based on an old prescription. Most of the patients are not instructed by chemists regarding use of drugs. Chemists do not advise the patients regarding important aspects of drug therapy including what to do on the continuation or recurrence of symptoms after taking drugs prescribed by them. Careful attention must be given to the patient compliance, chemist prescribing and self-medication. These issues should be suitably modified to achieve better healthcare. Prescription only medicines are sold without prescription. Over the counter drugs should be listed out, in consideration of their importance, delisting the dangerous and abusable drugs and regulatory measures should ensure that only the safe products are available for use in this manner. Only over the counter drugs should be sold without prescription. The self-medication should be allowed only for minor ailments and in case of major diseases a doctor's prescription must be insisted. Currently, when health policy is directed towards the community, the role of the chemist becomes increasingly important. A chemist assumes an important role in providing proper guidance to the patient. The role of chemist in advising the patients over the counter for their health problems is significant. Hence, the education of the chemist as well as public awareness are strongly advocated.

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