Primary Non-Compliance in a Singapore Polyclinic

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ABSTRACT

Aim of Study: To determine the rate of patients not collecting their medication despite being given a prescription (primary non-compliance) in a Singapore polyclinic; to compare the results with similar studies done abroad and to identify the characteristics of patients most likely to be non-compliant.

Methods: Out of 500 prescriptions issued consecutively by the author, those that were not presented to the pharmacy for collection of medication were identified. The case sheets of these patients were then retrieved for further analysis.

Findings: The primary non-compliance rate in this study was 4.0%. Patients who were less than 30 years old or who consulted for an acute complaint were significantly more likely to be non-compliant. While the overall non-compliance rate was similar to that of studies done in the UK, the number of non-compliant patients with chronic illnesses was markedly lower in the local population.

Keywords: primary non-compliance, unfilled prescriptions, primary healthcare, polyclinic

INTRODUCTION

Polyclinic doctors are aware that not all prescriptions are filled by their patients – every now and then a prescription can be found in the public litter bin or crumpled up and discarded outside the clinic.

Not collecting medication despite being given a prescription is termed primary non-compliance. Primary non-compliance has been studied in the primary care setting before. Studies from the UK reported primary non-compliance rates of between 5% – 20%[1-4]. The objective of this study was to determine the primary non-compliance rate in the polyclinic setting in which the author was working at that time.

METHOD

For this study, the details (name, sex, age and diagnosis of patient) of 500 consecutive prescriptions issued by the author while working in Toa Payoh Polyclinic were recorded. A check was then made with the polyclinic pharmacy to see which prescriptions had been presented to them for issue of medication. The case sheets of patients who failed to collect their medication were then retrieved for further analysis.

RESULTS

Out of 500 consecutive prescriptions issued between 16 August 1997 and 28 August 1997, 20 were not submitted to the pharmacy for collection of medication. There were no cases of partially filled prescriptions in this study. The primary non-compliance rate was therefore 4.0% of all prescriptions issued.

During this period, 80 patients who were seen did not receive a prescription. The primary non-compliance rate was therefore 3.45% of all patients seen. However, all further calculations were based on the 500 prescriptions issued rather than the 580 patients actually seen.

Characteristics of study population

The age and sex distribution of the study population as well as the reasons for consultation (classified as "for acute complaints" or "for follow-up of chronic illness") are presented in Table I.

Characteristics of patients who did not fill their prescriptions

Details of the 20 patients who were non-compliant are presented in Table II.

Table I – Characteristics of study population

Age of patient	No	(%) of patients
< 20 years	110	(22%)
21 – 40 years	105	(21%)
41 - 60 years	170	(34%)
> 61 years	115	(23%)
Sex of patient		
Male	243	(48.6%)
Female	257	(51.4%)
Reason for seeing doctor		
Acute complaint	313	(62.6%)
Follow-up of chronic illness	187	(37.4%)

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Primary non-compliance and reasons for seeing doctor

Almost all non-compliant patients had an acute complaint. Only one patient on chronic follow-up was non-compliant. The non-compliance rate was 6.07% for acute patients and only 0.53% for chronic patients. This difference was statistically significant (Table III).

Amongst non-compliant patients, URTI (upper respiratory tract infection) was the most common diagnosis. However, the difference between the non-compliance rate of patients with URTI (9.6%) and that of patients with other acute complaints (4.0%) failed to reach statistical significance (Table IV).

Primary non-compliance in asthmatic patients

This was looked at in detail to compare the results with an Australian study on asthmatic patients (Watts et al[5]). Results are shown in Table V.

Primary non-compliance rate and age of the patient

Amongst patients with acute complaints, patients less than 30 years old were significantly more likely to be non-compliant than those over 30 years old (Table VI).

Primary non-compliance rate and sex of patient

There was no significant difference in the non-compliance rates of male and female patients (Table VII).

DISCUSSION

In this study, the non-compliance rate could have been over-estimated if the "non-compliant" patients had brought their prescriptions to other pharmacies to be filled. However, this is unlikely as pharmacy charges in polyclinic are subsidised and it would be significantly more expensive for their prescriptions to be filled elsewhere.

The overall primary non-compliance rate in this study was 4%. This is comparable to published studies from the UK – for instance, Bearden et al[4] found a non-compliance rate of 5.2% in their 1989 study of a Tayside GP practice. In Singapore, however, patients on chronic follow up appear to be much more compliant than their British counterparts. In Bearden's study, the non-compliance rate for acute cases was approximately 8% while the non-compliance rate for patients receiving a repeat prescription was approximately 4%. The corresponding local figures are 6.1% (acute cases) and 0.6% (chronic cases). The number of non-compliant asthmatic patients was also remarkably lower than in a study done in Australia[5] – 6.67% locally as compared to 30% in Australia.

Why is the non-compliance rate of chronic patients so low locally? A likely explanation is that, unlike many GP practices in the UK and Australia, the pharmacy in our polyclinics are located in the same building as the doctor. In other countries, the patient may have to travel quite a distance to the pharmacy, whereas in a government polyclinic, the pharmacy is usually a few steps away from the consultation room. Cultural factors may also play a part. Local patients may in fact be no more willing to take their medication than patients in the UK, but they may feel it necessary to at least collect the medication to avoid embarrassment to themselves (or their doctor).

On the other hand, why are so many patients with acute problems non-compliant? Reasons that may first come to mind are "because the patient was not sick in the first place" or "because the patient just wanted medical certification". However, it is worth recalling that many acute complaints (eg. mostly URTIs and diarrhoea) are in fact self-limiting and it may not be fair to label these patients "MC seekers". This is especially true of the two youngest defaulters – one was 4 months old and who had been scheduled for routine immunisation and the other was 19 months

Table II – Characteristics of 20 non-compliant patients

Age	Sex	Main diagnosis	Medicine prescribed
4 months	F	URTI	promethazine, hydrocortisone cream
1 year	M	URTI	promethazine
10 years	F	URTI	dextromethorphan, chlorphenamine betamethasone cream
15 years	M	URTI	*paracetamol*, codeine/promethazine syrup, diphenoxylate/atropine tablets
15 years	M	URTI	*paracetamol, lozenges, diphenoxylate/ atropine tablets*
16 years	M	URTI	*paracetamol*, dextromethorphan, chlorphenamine
16 years	M	URTI	dextromethorphan, chlorphenamine
16 years	F	URTI	*lozenges*, chlorphenamine
18 years	F	URTI	*paracetamol, lozenges*, dextromethorphan
21 years	M	URTI	codeine/promethazine syrup, *paracetamol, lozenges*, amoxicillin
24 years	M	URTI	codeine/promethazine syrup, *paracetamol*, amoxicillin
22 years	M	Asthma (mild exacerbation)	dextromethorphan, chlorphenamine, *lozenges*, salbutamol tablets
18 years	F	Backache	mefanamic acid
20 years	M	Ankle sprain	mefanamic acid
15 years	F	Vomiting (? food poisoning)	prochlorperazine
18 years	F	Gastroenteritis	*diphenoxylate/atropine tablets*
22 years	F	Gastroenteritis	*diphenoxylate/atropine tablets*
17 years	F	Non-specific giddiness	prochlorperazine, hydrocortisone cream
52 years	F	Oral aphthous ulcer	*Bonjela gel*
78 years	F	Ishcaemic heart disease	atenolol, nifedipine, *aspirin*

F = female
M = male
URTI = upper respiratory tract infection
medication available "over the counter" in italics

Table III – Acute patients vs chronic patients

	No. who filled prescription	No. who did not fill prescription
Patients with acute complaints	294 (93.9%)	9 (6.1%)
Patients on follow-up for chronic illness	186 (99.4%)	1 (0.6%)

difference statistically significant p < 0.01

Table IV – Patients with URTI vs patients with other acute complaints

	No. who filled prescription	No. who did not fill prescription
Patients with URTI	104 (90.4%)	11 (9.6%)
Patients with other acute complaints	190 (96.0%)	8 (4.0%)

difference not statistically significant p = 0.052

Table V – Asthmatic patients

	This study	Watts et al[5]
Total no. of asthmatic patients	15	359
No. of non-compliant asthmatic patients	1	108
Non-compliance rate of asthmatic patients	6.67%	30.0%

Table VI – Younger patients vs older patients (acute patients)

	No. who filled prescription	No. who did not fill prescription
Acute patients 30 years old or younger	152 (89.4%)	18 (10.6%)
Acute patients more than 30 years old	42 (99.3%)	1 (0.7%)

statistically significant difference p = 0.002

Table VII – Male vs female patients

	No. who filled prescription	No. who did not fill prescription
Male patients	182 (95.3%)	9 (4.7%)
Female patients	112 (91.8%)	10 (8.2%)

difference not statistically significant p = 0.12

old who was also scheduled for routine physical screening. It is likely that their parents were using the opportunity of a scheduled visit to seek reassurance about their child's symptoms rather than medication.

Other possible reasons for primary non-compliance include:
- patient does not agree with the doctor's diagnosis or feels that the treatment is inappropriate
- fear of long waiting time in the pharmacy
- unable to afford medication
- previous adverse reaction to the prescribed medication
- patient already has the prescribed medication at home – either as "leftovers" from a previous illness or because the medication is available "over the counter" (ie. can be purchased without prescription).

Although the figures in this study are small, they reiterate the point that medication may not be necessary or desired by the patient.

CONCLUSIONS
The primary non-compliance rate in the patient population of a government polyclinic in Singapore is comparable to that in a primary health setting in the UK. However, local patients with chronic illnesses are apparently more compliant than their counterparts in the UK. A patient who fails to fill his prescription in Singapore is most typically less than 30 years old, and is consulting for an acute illness. For these patients, a more satisfactory consult may result if we ask if they wish to receive medication rather than assuming that they do.

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