

ORIGINAL ARTICLE

Patient recall of medication details in the outpatient clinic. Audit and assessment of the value of printed instructions requesting patients to bring medications to clinic

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Objective: There is no ambiguity when a patient presents their medications in the correct packaging during a consultation and declares, "this is what I am taking, doctor, I take this many, at this time". The aim of this study was to establish the prevalence of consultations in which patients attend both "empty handed" and unsure of their treatment. A re-evaluation was made after a simple intervention.

Design: Prospective cross sectional study with subsequent intervention and re-evaluation based on patient completed questionnaire.

Setting: University hospital cardiology outpatient department.

Patients: Consecutive patients arriving at clinic reception desks.

Results: Altogether 774 of 857 patients were receiving treatment; 15% attended with their tablets and 28% provided a note of their medication in some form; 40% attended empty handed but confident they could recall all aspects of their treatment from memory; 17% attended empty handed and unsure of their treatment.

Intervention: Clinic appointment cards were stamped with the request PLEASE BRING YOUR MEDICATIONS WITH YOU TO THE CARDIOLOGY CLINIC. A second unrelated cohort of patients was then surveyed in an identical manner, nine months later. Of these, 329 of 376 patients were receiving medication. Those attending with their tablets in hand now accounted for 78% rather than 15% ($\chi^2=423$, $df=2$, $p<0.001$). The group unsure of their treatment, but attending empty handed, fell from 17% to 2%.

Conclusions: Reprinted appointment cards are highly successful in encouraging patients to attend with their tablets. This provides reliable information for decision making.

When a patient arrives in clinic "empty handed" with neither their tablets nor a note of their treatment, the quality of the consultation may be impaired. An apparently well informed patient may recall their treatment concisely from memory but falter when asked the treatment dosages. In contrast, an unsure patient may resort to describing tablets in terms of colours and shapes. The only recourse available to the physician is either to assume case note documentation is both current and detailed and to read aloud hoping to elicit recognition from the patient, or to interrupt the clinic to telephone the patient's general practitioner.

Should uncertainty over treatment remain unresolved, then the potential for poor compliance, drug interactions, and poor communication between medical professionals is clear. The consequences will be most evident for a specialty such as cardiology in which multiple drug therapies are often employed for cardiac conditions often complicated by co-morbid respiratory, renal, and peripheral vascular disease. Some of the benefits of ensuring accurate information about patients' medication are outlined below

PRESCRIBING ACCORDING TO EVIDENCE

Health care outcomes demonstrated by clinical trials are achievable in outpatient clinics when patients are treated to the appropriate dose and regimens. Inability to define the strength of tablet taken by a patient may lead to failure to up-titrate introductory doses and thereby deny patients symptom relief or expected improvement in long term outcome.¹⁻³ Premature deterioration of a treatable condition

leads to avoidable early loss of life,⁴ and further drain on health service resources through hospital admissions and repeated investigations.

PROVISION OF OUTPATIENT SERVICES

Acceptance of new referrals to a large clinic requires equal numbers of "follow up" patients to be either discharged, die, or choose not attend for the overall size of the clinic to be maintained. To return a patient to primary care requires review of drug treatment and succinct communication among other issues. Presentation of tablets in their correct packaging during the consultation will reduce the risk of pharmaceutical interactions and related problems,⁵ and make polypharmacy and inappropriate dosing regimens less likely.⁶

POOR COMPLIANCE

The evidence suggests compliance with long term medication for chronic conditions is seldom more than 50%.⁷ Treatment aimed at disease prevention rather symptom alleviation could be met by even poorer rates of compliance. This is an important consideration when managing asymptomatic hypertension,^{8,9} left ventricular dysfunction,¹ hyperlipidaemia,^{3,10} and employing secondary prevention after myocardial infarction.^{2,3} Reviewing actual tablets with the patient is in itself educational and the discussion improves both parties' satisfaction with the consultation.¹¹ A deeper understanding of their underlying condition is more likely to prompt lifestyle changes involving exercise, diet, and cessation of smoking.¹²

CONCEPT OF CONCORDANCE IN PREFERENCE TO COMPLIANCE

A patient's own health beliefs may be contrary to those of the cardiologist. This factor is not considered in the traditional definition of non-compliance which views non-compliance as a failure on the part of a patient to adhere to a physician's advice. The patient's health beliefs are strongly influenced by their previous experiences, personality, culture, and family traditions and are notable impediments to evidence based prescribing. Mindful of this, the Royal Pharmaceutical Society advocates adoption of the term "concordance" rather than compliance.^{13,14} Central to a theme of doctor-patient concordance is the open doctor-patient relationship whereby the patient accepts a greater element of responsibility for his treatment. A positive outcome from this study would be a practical contribution to the theme of concordance. If a disparity arises between the tablets presented by the patient and that recorded in the case notes, then this should lead to constructive discussion. Drug prescribing and management decisions will then proceed pragmatically based on the reality of the situation as understood by both doctor and patient.

DEFINING A "GOLD STANDARD"

There is no ambiguity when a patient presents their medications in the correct packaging during a consultation and declares, "this is what I am taking, doctor, I take this many, at this time". A comprehensive list of medication with doses and time schedules declared is an acceptable alternative.

METHODS

An anonymous questionnaire was constructed with a simple "tick-box" format acceptable to patients and swiftly completed at the clinic reception desk on arrival. The study was performed across all cardiology clinics over a five week period. Analysis of these data revealed that the proportion of patients attending empty handed might represent a significant clinical issue. Appointment cards were stamped with a simple message and a second cohort of patients was surveyed nine months later.

Design of questionnaire

The patient questionnaire is shown in box 1. The reasoning behind the wording of this questionnaire was as follows. A polite introductory sentence was given, with the instruction to "please tick one box only". Option 1 invited a response from those patients who brought their medication to clinic. Options 2 and 3 applied to patients who had brought documentation with them. Option 2 was directed towards those patients providing a comprehensive list of their treatment. General practitioner surgeries and pharmacies often provide automated lists of prescriptions, which are invaluable when kept up-to-date. Dosing schedules, however, are often not included. In contrast with this group of patients, option 3 was worded to attract individuals who provide a list of names of their drugs but who do not appreciate the importance of including tablet doses and dosing schedules.

The creation of options 4 and 5 required careful deliberation. Many individuals are well informed of their medical condition and will recall their treatment concisely from memory. This should be especially so for patients taking only one or two drugs. Insistence on all patients presenting with evidence of their drug therapy would therefore be inappropriate and possibly perceived as insulting to a patient in this category. Option 4 was worded to challenge the reader to recall their tablet names, amounts, and time taken. Hesitation or self doubt is hoped to lead to consideration of option 5, which is specific for those bringing neither tablets nor list of medication and who are unsure of their treatment. To avoid making the questionnaire appear judgmental, the statement "I was not asked to bring them with me" was added to deflect

Box 1: Patient questionnaire

Dear Sir/Madam

We would be grateful for your help with this survey. It will help us to improve the service offered in our clinics. Please tick *one* box only:

1. I have brought *all my medications* with me to clinic.
2. I have brought a list of my medications with *drug names, amounts, and time of day taken*.
3. I have brought a list of my medications with *drug names only*.
4. I am absolutely certain of my medications. From memory I can recall the exact *drug names, amounts, and time of day taken*.
5. I am *slightly unsure* of my medications. I was not asked to bring them with me.
6. *I do not take any medications*.

responsibility. Finally, option 6 accommodates the patient group not on treatment.

Sample size

The study was performed over a five week period across cardiology outpatient services. These comprised the chest pain clinic, lipid, arrhythmia, hypertension, and two general cardiology clinics. In all, 857 patients were surveyed. Of these 753 (88%) correctly ticked one box as requested. The responses on 13 forms (1.5%) were either inappropriate or meaningless and therefore recorded as spoilt. A further 91 patients (10.5%) chose combinations, such as a choice of options 1 and 4 (brought tablets and could recall from memory) or options 2 and 4 (brought a list but could also recall from memory). Since these answers were logical ones, the responses were recorded as the more favourable option, in these examples as 1 and 2 respectively. The total response to the questionnaire was therefore judged to be $753 + 91 = 844$ patients (98.5%). Receptionists reported no patients expressing dissatisfaction in taking part. An estimate of 5% of the total clinic attendees was not surveyed. This was due to the occasions when shortage of questionnaires arose or insufficient pens were available.

Statistics

Data were grouped as attending with tablets (option 1), list (option 2 + 3), or empty handed (option 4 + 5). A two sample χ^2 test was applied to determine whether relative frequencies of response to these groups were significantly different before and after intervention.

RESULTS

Results of the survey responses are presented in fig 1. It is apparent only 15% (option 1) of patients fulfilled the gold standard of bringing all their medications to clinic, while 19%

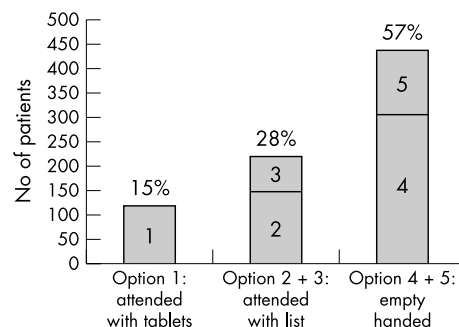


Figure 1 Initial study.

provided a comprehensive written list (option 2). Nine per cent of patients (option 3) brought a list with drug names only; 40% (option 4) attended empty handed but stated that they were confident in recalling all aspects of their treatment from memory; and 17% (option 5) attended empty handed and unsure of their treatment.

Instituting change

Observation of patients admitted for day case procedures such as coronary angiography, suggests patients are cooperative in attending with their medication if so requested on their admission documents. The question arose, therefore, as to whether patients in the outpatient clinic had simply never been asked to attend with their treatment. The initial survey results demonstrate this represents an underestimated, and probably long standing, "system failure" of communication. Since patients invariably attend outpatients with appointment cards in hand, stamping a request PLEASE BRING YOUR MEDICATIONS WITH YOU TO THE CARDIOLOGY CLINIC on these cards appeared to be the appropriate intervention. The re-evaluation was carried out nine months later on an unrelated group of patients. Any patient attending a clinic with an appointment card bearing this message was asked to complete a survey form.

Results of the second study are presented fig 2. Of 376 patients surveyed, 329 were receiving treatment; 78% (option 1) of these now attended clinic with their tablets. A list of treatment was provided by 15% (6% option 2 + 9% option 3), while 7% (5% option 4 + 2% option 5) arrived empty handed. The possibility that this would have occurred by chance is less than $p < 0.001$ ($\chi^2 = 423$, $df = 2$).

DISCUSSION

In terms of the defined gold standard, the proportion of patients attending with their tablets increased from 15% to 78% after issuing the new appointment cards. This provides reliable information for the physician for decision making. The result is achieved at trivial expense and without engaging the time of any medical or nursing staff.

A second issue is whether the study is likely to improve quality of patient care. Two questions must be addressed:

- Are the worrying group of individuals unsure of their medications and previously attending empty handed, now attending with their tablets?
- Or, are the results mainly attributable to already well informed patients now supplying their tablets when the same information could have been given verbally?

As stated previously, the challenge in design of the questionnaire was to word option 4 appropriately to distinguish between the well informed patients and those with less firm knowledge who were to be guided towards option 5. The data were therefore analysed as best and worst case scenarios.

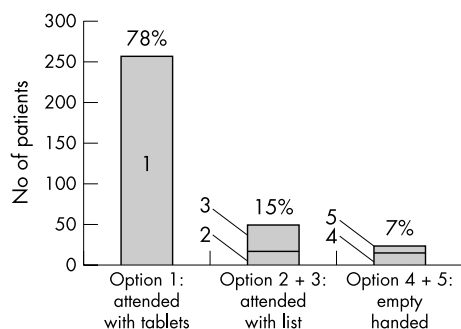


Figure 2 Responses after tablets requested on appointment cards.

Best case scenario

Assume all patients responding to option 4 are, as stated, "absolutely sure of their medications" and "can recall the exact drug names, amounts, and time of day taken from memory". This implies that 74% of patients in the original survey (option 1 + 2 + 4) provided comprehensive information about their treatment with a further 9% (option 3) providing a useful list of drug names, although without doses and schedules.

However, the 17% of patients (option 5) attending empty handed and unsure of their treatment are likely to represent a significant problem. If uncertainty over treatment remains unresolved, there is a potential for poor compliance, drug interaction, and a prolonged but less than satisfactory consultation. The impact of the new appointment cards in encouraging these individuals to attend with tablets (17% reduced to 2%) is therefore likely to be a useful contribution to improving quality of care in this group

Worst case scenario

The worst case assumption is that patients responding to option 4 are less certain of their treatment than they perceive. In addition to uncertainty over dosages, there is scope for confusion between proprietary and non-proprietary drug names. Valuable time in the clinic may also be lost in attempting to recall data accurately. In this scenario 57% (40% option 4 + 17% option 5) arrived empty handed to the clinic and, in addition, 9% of patients provided less than ideal written records (option 3). Overall, 66% of patients might not provide gold standard accurate information (option 1 or 2). The result of intervention for this worst case scenario is a profound reduction from 66% to 16% in the proportion of patients providing less than optimal data (9% option 3) + (5% option 4) + (2% option 5).

Strengths and limitations of the study

The strengths of the study lie with establishing the questionnaire as an integral element of the check-in process at clinic reception desks. Selection bias was avoided by studying consecutive patients across all six weekly clinics. The questionnaire was completed before any interaction with nursing or medical staff, which might influence patient responses. The wording of the questionnaire was finalised after long deliberation and a feasibility trial performed successfully on a single clinic. The "Achilles' heel" of the study, being to distinguish between options 4 and 5, is highlighted and data presented as best and worst case scenarios.

The study was not designed to formally test the patients' knowledge of their treatment or to assess compliance with treatment. Neither does it examine the quality of case note record keeping or quality of communications with primary care. These issues are already the focus of much research in the literature.¹³⁻¹⁵ This study asks whether the numbers of patients arriving empty handed to outpatient clinics poses a serious clinical issue.

As a single centre study, it defines the problem to be a significant one, but one which is eminently correctable. The problem is unlikely to be unique to this centre or to cardiology clinics alone.

CONCLUSIONS

By printing a brief request on clinic appointment cards, this study demonstrates the numbers of patients attending with their tablets in hand improves from 15% to 78%. The proportion of patients arriving empty handed and with little recollection of their treatment is reduced from 17% to 2%. We would anticipate correction of the problem would have major importance for the smoother running of clinic consultations, optimal evidence based prescribing, patient education, and compliance.

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