

The Effect of “Group Detailing” on Drug Prescribing in Primary Care

I Mastura*, MMed Fam Med, C L Teng**, MMed Fam Med

*Kuala Pilah Health Clinic, 72000 Kuala Pilah, Negeri Sembilan, **International Medical University, Seremban, Negeri Sembilan, Malaysia

SUMMARY

The quality of physician prescribing is suboptimal. Patients are at risk of potentially adverse reaction because of inappropriate or writing error in the drug prescriptions. We assess the effect of “group academic detailing” to reduce writing drug name using brand name and short form in the drug prescriptions in a controlled study at two primary health care clinics in Negeri Sembilan. Five medical officers in Ampangan Health Clinic received an educational intervention consisting of group academic detailing from the resident Family Medicine Specialist, as well as a drug summary list using generic names. The academic detailing focused on appropriate prescribing habit and emphasized on using the full generic drug name when writing the drug prescription. Analyses were based on 3371 prescriptions that were taken from two clinics. The other health clinic was for comparison. The prescribing rates were assessed by reviewing the prescriptions (two months each for pre- and post-intervention phase). Statistically significant reduction in writing prescription using brand name and using short form were observed after the educational intervention. Writing prescription using brand name for pre- and post-intervention phase were 33.9% and 19.0% (post-intervention vs pre-intervention RR 0.56, 95% CI 0.48 to 0.66) in the intervention clinic. Prescription writing using any short form for pre- and post-intervention phase were 49.2% and 29.2% (post-intervention vs pre-intervention RR 0.59, 95% CI 0.53 to 0.67). This low cost educational intervention focusing on prescribing habit produced an important reduction in writing prescription using brand name and short form. Group detailing appears to be feasible in the public health care system in Malaysia and possibly can be used for other prescribing issues in primary care.

KEY WORDS:

Prescribing, Prescription writing, Academic detailing

INTRODUCTION

The safety of medicines management in primary care is very important, given the wide variety of drugs prescribed and the fact that primary care teams are taking responsibility for increasingly complex medication regimens. Medicines management includes prescribing, dispensing, administration, monitoring, repeat prescribing and the education and training of patients and healthcare professionals¹.

There are some studies suggesting that the most hazardous points in the medicines management process relate to prescribing decisions, administration (how patients take their medicines) and monitoring¹⁻³. The most serious medication-related adverse events often lead to hospital admission. A systematic review and meta-analysis of 15 descriptive studies suggests that some 7% (median=7.1%; interquartile range = 5.7 to 16.2) of hospital admission are drug related and over half (median = 4.3%; interquartile range = 3.1 to 9.5) of these could be considered preventable⁴. The largest case series shows that, of 1000 consecutive claims lodged against general practitioners in UK after July 1996, 19.3% related to alleged prescribing mistakes, the most common – across all drug categories – involved failure to recognize or monitor adverse medication effects. Eighteen percent involved prescription of incorrect or inappropriate medication, 12.5% involved contraindicated drugs and 12% involved wrong dose of medications⁴.

Consumers usually do not know or realize that medicines have both a generic and a brand name. Using a brand name interchangeably with generic name could confuse consumers. Consumers may think that their medicine has been changed because of the different drug name and may take a double dose or avoid taking the new and unfamiliar medicine⁵. Prescription writing using short form can also cause medication error. There are several reasons why drugs errors might have increased e.g. rapid turn over of patients, new drug development, increasing complexity of medical care and increased use of medicine generally. Medication errors could lead to great personal misery and injury, diminish public confidence and are expensive and wasteful for the health service⁶.

Implementation research has revealed lack of effectiveness of passive strategies (e.g. printed educational materials)⁷ in changing physician's behavior; while relatively more active strategies (e.g. academic detailing⁸, opinion leader⁹ and audit with feedback¹⁰) have shown greater promise. Academic detailing or educational outreach, a face-to-face encounter between the detailer and the prescriber with the aim of transferring unbiased information,¹¹ has been shown to be effective in modifying physicians' prescribing behaviors^{12,13}. Group academic detailing is carried out between the detailer and a group of prescribers¹⁴. Similar evidence has not been available for “group academic detailing” in Malaysia.

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Corresponding Author: Mastura Hj Ismail, Family Medicine Specialist, Kuala Pilah Health Clinic, 72000 Kuala Pilah, Negeri Sembilan Darul Khusus, Malaysia

In Malaysia, the Pharmacy Division, Ministry of Health has developed a set of indicators to be used as a starting point when comparing the performance of health care groups to identify non-performers or those which are more likely to benefit from intervention to modify behaviour¹⁵. Among the indicators are prescription error, incomplete prescription writing and polypharmacy. The Negeri Sembilan State Health Department has encouraged all the districts to do further audit on drug prescription writing using generic name and prescription writing using full drug name at the health clinics since 2002¹⁶.

In this study, we focus on drug prescribing to assess the effectiveness of group detailing combined with nine drug summary list to reduce writing using the brand name and using short form in the drug prescriptions in Ampangan Health Clinic in Negeri Sembilan, Malaysia.

MATERIALS AND METHODS

Subjects and setting

Two health clinics in Negeri Sembilan took part in the study in 2004. Both clinics are typical of the many government health clinics in Malaysia that provide comprehensive and continuing medical care. The average total outpatients attendance in the Ampangan Health Clinic is about 60,000 annually. In the controlled clinic, the total annual outpatients attendance is about 75,000. Five medical officers from Ampangan Health Clinic participated in an educational program (group academic detailing) on proper prescribing habit in March 2004. All participating doctors gave written consent.

Study design

The scheme of the study is as shown in Figure 1. This study was a sub-analysis of another study¹⁷. This study was conducted to test the group detailing information model for primary care doctors. Prescription writing with focus on reducing use of any brand name and short form was chosen as a target condition.

Rate of prescription writing using brand name and using short form was measured in these two clinics. Educational interventions consisted of group academic detailing and dissemination of a summary drug list using generic names. The first two months (January to February 2004) were considered as the pre-intervention phase and the last two months (May to June 2004) were considered as the post-intervention phase.

Intervention

Intervention was started after the first drug prescription audit was carried out at the intervention clinic. The other health clinic with four medical officers remained as control. In the intervention program at the intervention clinic (March 2004), five medical officers were trained. The educational intervention consisted of several components:

(1) Group academic detailing on proper prescribing habit.

Group detailing was conducted by the resident Family Medicine Specialist. All the medical officers in Ampangan Health Clinic participated. Among the specific things

discussed during the session was usage of full generic drug name, avoidance of short form in prescription writing, proper prescribing habit etc.

(2) Supplying a drug name summary list using generic drug name

A drug summary list containing the common drugs used in primary care was prepared by the clinic's pharmacist. The trade names were written in alphabetical order. The generic name of the drug was written beside the trade name. This drug summary would hasten the process of the medical officer checking for the generic name during consultation.

The previous audit results in 2003 undertaken by the clinic were fed back to the intervention clinic while the control did not receive any information during the study. In general, the information sessions were planned to encourage active participation by the medical officers.

Outcome variables and data collection

Prescription slips for the months January to June 2004 were collected from the pharmacy of the two clinics. In view of the huge number of prescription slips, a systematic sampling (1:3) of these prescription slips was done. Drug names were all entered as they are. Identification of usage of brand name and short form was done by comparing with the standard drug reference which is the Drug Formulary, Ministry of Health¹⁸. Any usage of brand name and short form in the drug prescription was captured by the research assistant.

This study was a subanalysis of another study¹⁷. All participating doctors gave informed written consent.

Statistical analysis

The primary aim of the analysis was to compare the intervention and the control groups. Throughout the study, the unit of the analysis was the health clinic. We entered prescribing data into Excel and later converted and analyzed them in SPSS version 11.5. We calculated the prescribing rates using any brand name and any short form at the two clinics. We compared rates of drug prescription writing using any brand name and any short form after intervention with that before intervention by generating the relative risk (with 95% confidence intervals) using Confidence Interval Analysis¹⁹.

RESULTS

Prescriptions

Data from 3371 prescription slips were retrieved from nine medical officers in two clinics for the whole period of the study. The drug prescriptions which were written using any brand name and using any short form were analyzed at baseline in January-February 2004 and after the intervention program in May-June 2004. One thousand seven hundred and eighty two (52.9%) and 1589 (47.1%) of the drug prescriptions were taken in the pre-intervention and post-intervention phase respectively.

Effect of quality improvement program on the drug prescription writing

After the quality improvement program, prescriptions were written better at the intervention clinic (Tables I and II).

Table I: Number of drug prescriptions with any brand name used

Any brand name used in prescription	Ampangan Health Clinic			"Controlled" Health Clinic		
	Pre - Intervention	Post-intervention	Total	Pre - Intervention	Post-Intervention	Total
No	649 (66.1%)	700 (81.0%)	1349 (73.1%)	144 (18.0%)	86 (11.9%)	230 (15.1%)
Yes	333 (33.9%)	164 (19.0%)	497 (26.9%)	656 (82.0%)	639 (88.1%)	1295 (84.9%)
Total	982 (100%)	864 (100%)	1846 (100%)	800 (100%)	725 (100%)	1525 (100%)

Risk estimate

Ampangan Health Clinic: [after vs before]

RR 0.56 (95%CI 0.48 to 0.66) - 20%

Observed difference in proportion = -24.9% (95%CI -18.9% to -11%)

Controlled Health Clinic: [after vs before]

RR 1.07 (95%CI 1.03 to 1.12)

Observed difference in proportion = +6.1% (95%CI 2.6% to 9.7%)

Table II: Number of drug prescription with any short form used

Any short form used in prescription	Ampangan Health Clinic			"Controlled" Health Clinic		
	Pre - Intervention	Post-intervention	Total	Pre - Intervention	Post-Intervention	Total
No	499 (50.8%)	612 (70.8%)	1111 (60.2%)	378 (47.3%)	391 (53.9%)	769 (50.4%)
Yes	483 (49.2%)	252 (29.2%)	735 (39.8%)	422 (52.8%)	334 (46.1%)	756 (49.6%)
Total	982 (100%)	864 (100%)	1846 (100%)	800 (100%)	725 (100%)	1525 (100%)

Risk estimate

Ampangan Health Clinic: [after vs before]

RR 0.59 (95%CI 0.53 to 0.67)

Observed difference in proportion = -20% (95%CI -24.4% to -15.7%)

Controlled Health Clinic: [after vs before]

RR 0.87 (95%CI 0.79 to 0.97)

Observed difference in proportion = -6.7% (95%CI -11.7% to -1.7%)

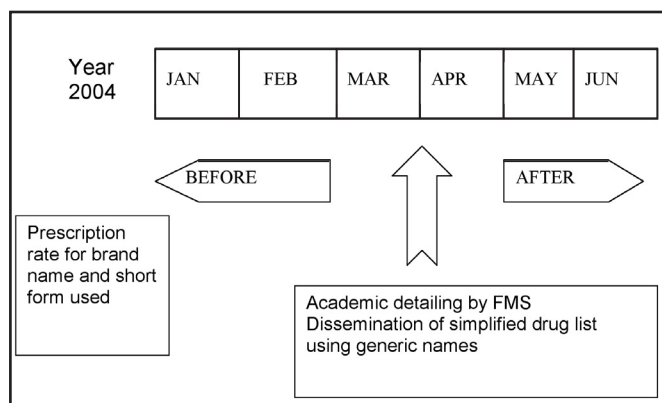


Fig. 1: Study design

Rates of writing prescription using any brand name for pre- and post-intervention phases were 33.9% and 19.0% (post-intervention vs pre-intervention RR 0.56, 95% CI 0.48 to 0.66). This is contributed by the relative risk reduction in writing drug prescription using any brand name of up to 44%.

The rates of drug prescription writing using short form for pre-intervention and post-intervention phases are shown in Table II. Prescription writing using any short form for pre- and post-intervention phase were 49.2% and 29.2% (post-intervention vs pre-intervention RR 0.59 (95% CI 0.53 to 0.67). This is contributed by the relative risk reduction in writing drug prescription using any short form of up to 41%.

DISCUSSION

The quality of writing prescription using brand name and using short form was better at the intervention clinic at baseline. This is because of an ongoing audit program undertaken by the clinic. The group academic detailing program at the intervention clinic was associated with a significant improvement in prescription writing.

Quality of prescription writing

Before the intervention program in 2004, drug prescription writing using generic name and short form were suboptimal at both clinics, especially at the controlled clinic. These results are in agreement with many other earlier studies¹⁴. This suggests that the writing of drug prescription was far from satisfactory. The usual explanations for improper prescription writing – poor routines, lack of time, etc. are probably also relevant for the present study. The simplified drug summary list probably helped the personnel at the intervention clinic to improve their prescription writing practices.

In clinical trials of drugs, the expectancy and Hawthorne effects are generally controlled for by using a double blind study design. Naturally this is not possible in information experiments, as the content of the information can hardly be concealed from the recipients. However, the Hawthorne effect could obviously not influence the control group, as this group was unaware of any activities related to the study. The disadvantage is that at least part of the difference between the two groups might have been due to the attention effect as this could be expected to be working in the intervention group.

On the other hand, such an effect is always present when information is transmitted and can therefore be regarded as an intrinsic characteristic of the information program itself.

The quality improvement program and its effects

In our study, the difficulties in conducting the intervention program was overcome by using a team approach from the planning and start of the program. When the professionals teamed up to solve the practical problems experienced in their own working environment, they enjoyed the process and completed it well. A regular general quality improvement movement in the Seremban District Health Services has also supported our intervention. It is important to foster a sense of ownership and engagement among health staff, as many are wary that clinical governance will be used to monitor poor performance, rather than foster quality improvement,²⁰ aggravated by fears relating to the annual performance appraisal.

Improvement in audit results motivated the doctors at the intervention clinic. We tried to avoid possible contamination effect between the two clinics by not reporting the audit results at the control station and asking the personnel at the intervention clinic not to discuss the quality improvement program and audit results with the control clinic personnel. The clinics did not have any occasions where the quality improvement project could be discussed.

The prescription writing using generic name and full drug name increased significantly at the intervention clinic during the quality improvement program. A number of studies have shown that, in order to change prescribing behaviour, an active intervention is required^{21,22}. The use of mailed educational materials, or distributing lists of patient-specific medications without explicit suggestions for change tends to have little beneficial effect²². Educational outreach,²¹ the use of computerized prompts,²³ and active intervention²¹⁻²⁴ by pharmacist have all been shown to have beneficial effects upon prescribing behaviour. These points should be borne in mind when designing interventions aimed at improving safety in primary care.

This study confirms that earlier findings of an impact of "individual detailing" on the prescribing behaviour of the practitioners¹⁴ are also applicable to "group detailing". Group detailing is more appropriate in primary care in Malaysia, where practitioners work in groups of two or more. Group detailing also has the advantage of encouraging discussions within the group, thus increasing the diffusion of the information and increasing the impact.

In conclusion, we feel that educational intervention using strategies that have been verified in systematic reviews or randomized control trials should continue to be explored in the Malaysian health care system. The combination of active strategy and passive strategy may be synergistic and worth pursuing for other prescribing issues in primary care.

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