Pharmacist-Led Medication Management in Nursing Homes

Tung H.T.¹, Yap K.Z.², and Lee J.³

Department of Pharmacy, Faculty of Science, National University of Singapore
Block S4, 18 Science Drive 4, Singapore 117543

INTRODUCTION

The elderly usually have several medical problems. Nursing home residents are even frailer and require multiple drugs, thus they are more at risk of adverse drug events. Hence, the purpose of this study was to determine the types of pharmacist medication management programs and the impact of these programs.

METHODS

A literature review was conducted on journal publications in the past 10 years to identify relevant studies. Five search engines, PubMed, CINAHL, International Pharmaceutical Abstracts, Scopus and Cochrane were used to look for articles.

Studies were included if (i) the intervention involved a pharmacist, (ii) only elderly aged 65 years old and above were included, (iii) the elderly resided in nursing homes, (iv) the article was published between 1998 and 2008, and (v) the studies were controlled trials. 8 studies were deemed to be relevant.

RESULTS

In randomized controlled trials conducted by Crotty (2004) and Stuijt (2008), healthcare professionals identified potential drug-related problems and implemented changes accordingly. Statistically significant improvement was shown when Medication Appropriateness Index (MAI) was used to measure the appropriateness of drug use.

In Zermansky’s (2006) study, the pharmacist reviewed the intervention group, and there was an increase in medication changes for the patients in that group. The number of falls was also significantly reduced.

Furniss (2000) and Burns (2000) conducted medication reviews on residents over 8 months. The results were examined in two separate reports. In the first article, the impact on residents’ health status was examined. During the intervention phase, the number of deaths in the intervention group was significantly lower than that in the control group. In the second article, the focus was on costs, and there was a significant reduction in costs for the intervention group.

In the study by King (2001), multidisciplinary conferences were conducted where management plans for residents were discussed, and changes implemented. There were no statistically significant results.

¹ Student  
² Research Assistant  
³ Assistant Professor
The intervention by Roberts (2001) was a year-long intervention and involved medication reviews and nurse education. There were no significant outcomes for the intervention group, though there was a net reduction in medication costs.

In the study by Schmidt (1998), problems were identified by pharmacists, and discussed with other health professionals, before recommendations were implemented. 19% of recommendations were considered to have a significant beneficial effect. The pharmacists’ role and recommendations were rated positively by the nursing staff and physicians who took part in the discussions.

DISCUSSION

The articles show that pharmacist medication management programs in nursing homes generally can reduce inappropriateness of medicine used, even though the evidence is not very strong. Increase in cost effectiveness appeared to be an effect of the medication management programs. This is because many interventions involved removing drugs that had no clear clinical indication (Furniss, 2000), (King, 2001). The savings were then used to get new medicines that had better therapeutic effect on patients. (Zermansky, 2006)

When it comes to the other criteria used to assess the effectiveness of the pharmacist’s role, results are often less clear. This could be due to several reasons. Sometimes, the criterion used sometimes may not be very appropriate. When validated approaches such as MAI were used, effectiveness of the pharmacist’s role was statistically significant (Crotty, 2004), (Stuijt, 2008).

Some studies showed that there was little improvement in the medication use in nursing homes even after intervention. This could be due to the fact that not all the suggestions made by the pharmacists were implemented. The GPs involved with the nursing homes did not accept all the recommendations made by the pharmacist, or there could have been refusal on the part of the resident. This could be due to the fact that the GPs and pharmacists did not have direct contact so the pharmacists could not explain to them personally the reasons for making the suggestions. When the intervention was carried out by a multidisciplinary group involving the GP as well, there was a better result (Furniss, 2000).

Also, the studies were mostly carried out over a short period of time. Thus, the pharmacists did not have time to build a good relationship with the residents, GPs and nursing home staff.

Lack of significant differences between control and intervention could be due to the involvement of some of the healthcare professionals in nursing homes in both the intervention and control groups. They might have applied the knowledge that they had gained from the medication reviews to residents in the control group.

The number of elderly in nursing homes has been increasing, thus it is important to find ways to improve quality of patient care. With their expertise in the area of drug therapy, pharmacists can play an important role in medication management. Though some studies have shown the benefits of having a pharmacist involved in nursing homes, more research needs to be conducted to support the importance of pharmacist medication management programs in nursing homes.

CONCLUSION

In conclusion, long-term involvement of pharmacists in nursing homes could possibly help to reduce potentially inappropriate medication use by the elderly. However, there are insufficient studies available to demonstrate the effects of their involvement. More studies need to be done.
### Table 1: Basic information about the intervention

<table>
<thead>
<tr>
<th>Article</th>
<th>Intervention</th>
<th>Team</th>
<th>Results</th>
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</thead>
<tbody>
<tr>
<td>Crotty et al. (2004)</td>
<td>Multidisciplinary case conferences.</td>
<td>Resident’s general practitioner (GP), geriatrician, pharmacist and residential care staff.</td>
<td>Statistically significant improvement in Medication Appropriateness Index (MAI) scores for intervention group, but no difference in behaviour scores.</td>
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<td>Stuijt et al. (2008)</td>
<td>Medication review.</td>
<td>GP, care home staff and a pharmacist.</td>
<td>Statistically significant improvement in MAI scores post-intervention.</td>
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<td>Zermansky et al. (2006)</td>
<td>Medication review and consultation with patient and carer.</td>
<td>Pharmacist.</td>
<td>The number of medication changes in the intervention group was significantly greater than that in the control group and reduction in number of falls. There were no significant differences in other tests conducted.</td>
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<tr>
<td>Furniss et al. (2000)</td>
<td>Medication review.</td>
<td>Pharmacist.</td>
<td>During the intervention phase, the number of deaths in the intervention group was significantly lower than that in the control group. Other results were not significant.</td>
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<tr>
<td>King et al. (2001)</td>
<td>Multidisciplinary case conference.</td>
<td>GPs, the GP project officer, a clinical pharmacist, senior nursing staff, other health professionals and sometimes the resident.</td>
<td>Less people in the intervention group died, but it is not statistically significant. There were also less medication orders and decreased total cost which was also not statistically significant.</td>
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<td>Roberts et al. (2001)</td>
<td>Multifaceted intervention with medication review.</td>
<td>Pharmacist.</td>
<td>When clustering effect of the nursing homes was not accounted for, there was a reduction in drug use without adverse effects on survival and morbidity. There was an estimated net cost saving of $A16 per resident per year.</td>
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<td>Burns at al. (2000)</td>
<td>Medication review.</td>
<td>Pharmacist, home manager, old age psychiatrist and primary care physician.</td>
<td>There was a significant reduction in costs associated with resource use for the intervention group.</td>
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<tr>
<td>Schmidt et al. (1998)</td>
<td>Regular multidisciplinary case conference.</td>
<td>GP Physician, a pharmacist, nurses, undernurses and nurse’s aides.</td>
<td>19% of the changes evaluated were of significant beneficial effect, while 47% had no observable effect on the resident.</td>
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REFERENCES


