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Abstract

Patient education is central to the practice of all health professionals. Pharmacists often use printed educational material, such as consumer medicine information, as adjuncts to verbal communication and education of patients about their medications. A relatively large proportion of the Australian population have low literacy skills and cannot read or understand written patient educational materials which are typically written at levels equivalent to year 9 and above. By using simple readability assessment tools such as RAIN, SMOG or FOG and the UK's Department of Health 'Toolkit for producing patient information' health professionals can ensure that printed educational materials are simple and easily read by a wide patient population. These measures will ensure that pharmacists can become more effective educators to improve patients' medication knowledge and understanding, which will assist with optimising compliance and overall therapeutic outcomes.

Keywords

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RAIN, SMOG, FOG and Printed Educational Material

Judy R Mullan, Patrick A Crookes, Heather R Yeatman

ABSTRACT

Patient education is central to the practice of all health professionals. Pharmacists often use printed educational material, such as consumer medicine information, as adjuncts to verbal communication and education of patients about their medications. A relatively large proportion of the Australian population have low literacy skills and cannot read or understand written patient educational materials which are typically written at levels equivalent to year 9 and above. By using simple readability assessment tools such as RAIN, SMOG or FOG and the UK's Department of Health 'Toolkit for producing patient information' health professionals can ensure that printed educational materials are simple and easily read by a wide patient population. These measures will ensure that pharmacists can become more effective educators to improve patients' medication knowledge and understanding, which will assist with optimising compliance and overall therapeutic outcomes.

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INTRODUCTION

Chronic disease is the principal cause of disability, the major reason for seeking health care, and accounts for the majority of healthcare expenditure in Australia and overseas.^{1,3} Although the ageing population has contributed to these increases, the prevalence of chronic disease has risen in virtually every age group.⁴ For patients with chronic disease there is a growing interest in 'self-management' programs that emphasise the patients' central role in managing their illness. Several studies have concluded that low-cost programs involving health and medication education can help to improve health outcomes,⁵ reduce healthcare costs⁶ and reduce hospitalisation due to adverse drug events.⁷ Printed materials are an essential and economical part of this education.⁸ These materials must be easy to read and understand as patient outcomes may depend on their level of comprehension.⁵ Health professionals need to ensure that written patient educational materials, such as consumer medicines information (CMI), are simple and easily read by a wide patient population (people from non-English speaking backgrounds, low literacy and the elderly).

The aim of this paper is to raise awareness of the availability of simple tools, which can be used to ensure the delivery of easy to understand printed educational material. This, in turn, should help to optimise the quality, cost and outcomes of patient care.

DISCUSSION

Self-Management and Patient Education

Two of the principal components of self-management are

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compliance with medication and adherence to self-treatment guidelines. Informed patients have a better understanding of their medication and can therefore make educated decisions about their treatment. They have been found to be more willing to accept or continue treatment despite minor or transitory adverse effects.⁹

In this era of healthcare reform with its emphasis on self-management and prevention, education of patients and their families has taken on an even greater role than previously.^{5,10} Patient education is any set of planned, educational activities designed to improve patients' health behaviours and/or health status. The purpose of patient education is to maintain or improve health or, in some cases, to slow deterioration. Patient education is central to the practice of all health professionals.

Printed Educational Materials

Pharmacists typically use verbal communication as part of their patient education intervention. CMI leaflets are often used as adjuncts to these verbal education sessions. This printed educational material is convenient, economical and very useful for providing drug information to patients and/or their carer(s).⁸ Unfortunately, in Australia most printed educational material and the CMI leaflets are pitched beyond the level of comprehension of most of the population including, but not only, people who have English as their second language.^{11,12}

Low Literacy in Australia

Low literacy is a pervasive and under-recognised problem in health care in Australia and overseas.^{11,13} A recent study has shown that patients with inadequate literacy skills have a much greater risk of being hospitalised than patients with adequate literacy skills.¹⁴ Low literacy groups include not only the poorly educated but also the elderly and immigrants who speak English as a second language.¹⁵ A 1996 survey of literacy found that 41 to 46% of people aged 65 to 74 years had very poor literacy skills and that of the 20% of the Australian population who are from non-English speaking backgrounds, 2.5% spoke little or no English.¹⁶ There is evidence to suggest that Australian migrants' need for information about their medications and pharmacy services are not being met.¹⁷

Given that a proportion of the Australian population have low literacy skills, it is logical that printed educational material should be pitched at no greater than the average reading ability of the Australian population (estimated at year 8 level).¹² Presently the reading level for printed educational material in Australia and overseas range from year 9 to 14.^{11,18-20}

Drug-Related Errors and Health Literacy

Drug-related errors are the major cause of adverse events, causing an estimated 10 to 20% of all medically related adverse events.²¹⁻²³ Australian research has shown that between 2.4 to 3.6% of all hospital admissions are drug-

related with an estimated cost of \$350 million per annum.²⁴⁻²⁶ A large proportion of these adverse events could be prevented by improving patient education and communication.²⁷ All health professionals, could help to reduce medically related adverse events by ensuring that all printed educational material and CMI leaflets are written at levels no greater than year 6 to 8, in order to increase the level of patient understanding.¹³

Assessment of Health Literacy

Assessing Literacy Levels

There are two obvious ways in which to deal with the problems associated with health literacy. The first involves carrying out simple tests to establish the patients' literacy level. Wide Range Achievement Test-Revised (WRAT-R),²⁸ Rapid Estimate of Adult Literacy in Medicine (REALM)²⁹ and Slosson Oral Reading Test-Revised (SORT-R)³⁰ are simple literacy tests which are quick and easy to administer. The REALM test, unlike the WRAT-R and the SORT-R tests, is healthcare specific thus making it appropriate for the assessment of health literacy. The REALM test involves the patient reading out aloud sixty-six words typically used in medical literature such as 'nutrition', and 'haemorrhoids'.

Alternatively, the Cloze test³¹ and the Test of Functional Health Literacy in Adults (TOFHLA)³² are much more comprehensive. TOFHLA takes approximately 22 minutes to administer, includes 50 comprehension and 17 numerical ability tests based on tasks often required of patients seeking health care, e.g. reading prescription bottles or appointment slips. Time constraints may make testing impractical especially since some of the health-related literacy tests, are time consuming to administer.³³

Readability Assessment of Written Information

The second way in which to deal with the problems associated with health literacy is to assess the readability levels of printed educational material. There are several well-known literacy tests such as SMOG,³⁴ FOG,³⁵ The Fry Readability Formula³⁶ and the Flesch Reading Ease Index,³⁷ which estimate the reading grade level a patient requires to understand the printed educational materials. These tests use sentence number and word length to estimate the reading (grade) level. Unfortunately, these readability tests are generic rather than health-specific making interpretation of the reading level and the understanding of printed educational materials difficult. The Readability Assessment Instrument (RAIN)³⁸ however, is a tool especially designed to assess health and mental health patient education materials. RAIN estimates readability and patient comprehension in terms of the following variables: structure, pronoun references, audience appropriateness, writing style, illustrations, print size, print style, colour and the highlighting of titles and subtitles.

DISCERN³⁹ is another tool, developed by researchers at the University of Oxford, UK. It can assist both patients and health professionals to quickly analyse the quality of the plethora of written health information available not only as printed educational leaflets or booklets but also on the Internet.

In addition to these instruments, there are several computer programs, which can be used to assess readability levels. Some of these include: The Flesch Reading Ease (FRE) formula, Grammatik for Windows, Right Writer, Que software and Readability Calculations.

Preparation of Printed Educational Materials

Many health professionals are involved with the preparation of printed educational material. When preparing or perhaps rewriting these documents it is important to consider both the literacy levels of the Australian population, and the readability levels of the written health information. An Australian study, investigated factors influencing patient satisfaction with, and the utilisation of cancer information booklets and found that patients preferred information to be written in plain English at a readability level of year 8 or lower.⁴⁰

In addition to vocabulary, sentence length and readability levels, other factors such as format and the use of colour illustrations may influence the patient's understanding and satisfaction with the printed educational materials.^{40,41} This will potentially influence the patient's use of the written information.³³ These factors have been incorporated into the 'Toolkit for producing patient information'⁴² developed by the UK's Department of Health. The toolkit is easy to use and ensures that the health practitioners' printed educational materials are of a high standard and understood by a wide population.

CONCLUSION

Patient education is a central part of the practice of all health professionals. Simple and easy-to-read printed educational materials and CMI leaflets are necessary and useful adjuncts to verbal education sessions with patients. The knowledge and information patients gain from these sessions can empower them to make informed decisions about their treatment, compliance and self-management guidelines. These informed decisions ultimately optimise therapeutic outcomes and minimise possible drug-related adverse events. Simple tests such as RAIN, SMOG and FOG as well as the UK's Department of Health 'Toolkit for producing patient information' can be used to ensure that printed educational materials and CMI leaflets are of a high standard and understood by a wide patient population including those from non-English speaking backgrounds, with low literacy, and the elderly.

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Competing interests: None declared

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