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Development and evaluation of a training program to foster the use of written drug information in community pharmacies–part 1–development

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Abstract

Providing written drug information to consumers fulfils an important societal need. However, simply providing written information without integration into overall medication counselling has limited impact on consumers' medication taking behaviour. Provision of information may be regarded as a pharmaceutical service whose delivery represents a practice change for many practitioners. This will require changes in behaviour, attitudes, beliefs and overcoming perceived and actual barriers.

Objective: This paper describes the development and process evaluation of an educational program to foster the use of written information available in Australia in pharmacy practice.

Methods: Two models of behaviour, Ajzen's theory of planned behaviour and Green's predisposing, reinforcing and enabling causes in educational diagnosis and evaluation (PRECEDE) model, were used as the theoretical framework for the program. The educational program was pre-tested and process evaluated as part of the development process.

Results: The program consisted of a one-day, off-site educational workshop and a follow-up visit at the community pharmacy. An androgenic approach to education informed its delivery. The workshop consisted of didactic, group discussions and experiential modes of teaching. The process evaluation illustrated the feasibility of implementing the educational program.

Keywords: *Educational program, pharmacists, theoretical models, written information*

Introduction

Since as early as 1970s, there has been an apparent demand from consumers for drug information. Research has shown that consumers favour receiving written information (Lam & Krass, 1995, Livingstone, Pugh, Winn & Williamson, 1996, Sleath & Wurst, 2002) and consider an information leaflet about medicines useful (Mottram & Reed, 1997, Koo, Krass & Aslani, 2002). While some patients prefer to receive drug information from their physician (Hargie, Morrow & Woodman, 1992), others expect to receive both written and verbal medication information from pharmacists (Culbertson, Arthur, Rhodes & Rhodes, 1988, Livingstone et al., 1996). However, there are reports of limited interaction with health professionals when written information is provided (Koo et al., 2002). It has been reported that the general British public consider availability of written information as a factor in selecting their pharmacy (Mottram & Reed, 1997). Leaflets, however, cannot substitute for verbal counselling, and are recommended to be accompanied by verbal advice (Dodds, 1993, Blom, Jonkers, Kok & Bakker, 1998). Pharmacists have expressed a preference for using both modes of information provision (Kimberlin & Berardo, 1987, Schommer & Wiederholt, 1994). The combination has been shown to increase drug knowledge recall (Morris & Halperin, 1979, Peura, Klaukka, Hannula & Eerikainen, 1993, Livingstone et al., 1996) and improve compliance (Gotsch & Liguori, 1982, Myers & Calvert, 1984, Espejo, Gutierrez & Herrera, 2003, Al-Saffar, Desmukh, Carter & Adib, 2005), over either intervention alone.

Thus, from the evidence seen in the literature, there is a need to encourage pharmacists not only to provide written drug information, but also to integrate the

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information into their verbal counselling process, in order to optimise their patient education activities. One strategy to promote this behaviour is to provide training programs for pharmacists.

Educational programs for pharmacists

Education for pharmacists has long been suggested as a method of addressing barriers to the provision of pharmaceutical services (Baker, 1979). The majority of programmes available aim to increase pharmacists' therapeutic knowledge, and consequently address the cognitive barriers to providing a professional service (Todd, 1993, Keene & Cervetto, 1995). However, in recent years, more training programs have been developed to address both cognitive and communication needs of pharmacists (Blom, 1996, Anderson & Greene, 1997, Lee, Borham, Korman, Keeney & Mock, 1998; de Almeida Neto, Benrimoj, Kavanah & Boakes, 2000), and a number have been designed on the basis of underlying theoretical frameworks (Blom, 1996, Sinclair, Bond, Lennox, Silcock & Winfield, 1998, Sinclair, Bond & Lennox, 1999, de Almeida Neto et al., 2000). Some training programs have been shown to be effective in changing pharmacists' knowledge, attitudes and behaviour (Mackie, Worthington & Hobson, 1992, Bentley, Mackie & Fuller, 1993, Heslop et al., 1994, Barnette, Murphy & Carter, 1996, Ghalamkari, Rees, Saltrese-Taylor & Ramsden, 1997, Benrimoj, Berry, Collins, Lauchlan & Stewart, 1997, Currie, Chrischilles, Kuehl & Buser, 1997). Several have been successful in improving pharmacists' verbal counselling (Anderson, 1995, Blom, 1996, Krass, 1996) and communication skills (Berger et al., 1990). However, there have been few programs aimed at promoting the provision and use of written drug information by community pharmacists, in particular underpinned by a theoretical framework for behavioural change.

Development of the educational program to promote the use of written drug information

Format of the program. The adult education literature supports teaching approaches that encourage reflection by the "learners", discussion of the topic, performance of role plays, and are intellectually challenging (Brookfield, 1990, Apps, 1991, Heimlich & Norland, 1994, Jarvis, 1995). Additionally, there has been a move away from the traditional didactic teaching methods, such as lectures, to techniques which involve group collaboration (Jarvis, 1987, Bonk & Kim, 1998), for example, workshops. Since individuals learn from experience (Jarvis, 1987), it is therefore important to incorporate observation and practice of the "new behaviour" in the educational program.

Workshops have been identified as a new learning forum (Bonk & Kim, 1998), which can provide the desirable teaching environment and characteristics described above. Furthermore, workshops can provide a learning community, which is social and allows learning through interaction with others (Kahn, 1993, Bonk & Kim, 1998). Thus, a workshop was selected as the primary component of the educational program.

The workshop included group discussions and participant role plays. Brief lecture sessions were also included in the workshop for information transmission and filling gaps in the participants' knowledge of the issues discussed.

Theoretical models of individual behaviour

A number of theories and theoretical models have been developed to understand and predict individual behaviour. Two models, Ajzen's theory of planned behaviour (Ajzen, 1985, Ajzen & Madden, 1986) and Green's PRECEDE–PROCEED model (Green, 1984) (specifically the PRECEDE component) provided the theoretical framework for the design of the content of the educational program. Additionally, many features for designing programs aimed at changing behaviour (Egger, Spark & Lawson, 1990) were also applied.

Ajzen's theory of planned behaviour

The theory of planned behaviour is an extension of the theory of reasoned action (Ajzen, 1985). Both theories place emphasis on a person's intention to perform a behaviour as opposed to the person's attitude towards the behaviour in question, such as in the health belief model (HBM) and the social cognitive model (Egger et al., 1990).

The theory of reasoned action states that for a willing behaviour to occur there must first be an intention to perform or achieve the behaviour in question, which in turn is determined by attitude and subjective norm. By changing beliefs, it is assumed that attitudes and subjective norm will also be changed, which will in turn influence behavioural intention and therefore, ultimately alter behaviour. The theory of planned behaviour includes a third factor which directly influences the behavioural intention and embraces an individual's perceived control over the barriers to performing the new behaviour. The more control a person believes to have or the more confident they are in performing the behaviour in question, the more likely they are to achieve this behaviour. Therefore, the theory of planned behaviour is a more robust theory.

The theory of reasoned action has been applied to examining and predicting pharmacists' verbal patient medication counselling behaviour (Kirking, 1984, Mason, 1984), and in pharmacists' drug therapy decision making (Campagna & Newlin, 1997). The theory of planned behaviour has been previously used

Table I. Application of Green's model to the development of the educational program.

Phase	Goal (in reference to model)	Action taken
1⋆-(Epidemiological)	To study the population in question, that is NSW community pharmacists, and determine some of the issues and problems associated with achieving the behaviour in question	Literature review Population: NSW community pharmacists Behaviour: Provision of professional services to consumers with prescription medications
2⋆-(Social diagnosis)	To identify a specific problem	A mail survey of a sample of the population
3⋆-(Behavioural diagnosis)	To identify specific barriers to the use of CMIs	Qualitative and quantitative research on samples of the population
4	To identify three factors which influence the performance of a new behaviour or a behavioural change	Predisposing Enabling Reinforcing
5	To select the appropriate predisposing, enabling and reinforcing factors	Selecting factors which will be included and addressed as part of the educational program
6	To develop and implement the program	Development and implementation of educational program (written protocol, workshop, on-site training)
7–9†	To process, impact and outcome evaluate the program	Quantitative and qualitative measures, in a randomised-controlled quasi-experimental, time series research design (not reported here)

⋆ Phases 1–3 are conducted as part of the program needs assessment.
† The impact and outcome evaluation of the program are not described as they are outside the scope of this paper.

as a theoretical framework in developing educational programs for pharmacists and their staff (Blom, 1996).

Green's PRECEDE–PROCEED model

The predisposing, reinforcing and enabling causes in educational diagnosis and evaluation model (PRECEDE) was developed by Green (1984) as a framework for health educational interventions. The policy, regulatory and organisational constructs in educational and environmental development (PROCEED) model "provides additional steps for developing policy and initiating the implementation and evaluation process" (Green & Kreuter, 1991). The model has been described in-depth (Green & Kreuter, 1991) and Table I illustrates the application of the model in the development of the educational program. The PROCEED model was found to be applicable to the evaluation of the program, not the developmental phase and therefore not reported in this paper.

Rationale for an education program

Since 1993, Australian pharmaceutical manufacturers have been required to produce consumer medicine information (CMI) for prescription medications, with all expected to have a CMI by 2003†. Although pharmacists are not legally obliged to provide CMI (Therapeutic Goods & Regulations, 1993), they have a duty of care to provide information, either verbally and/or in written format, to ensure that their customers understand how to use their medications appropriately.

A self-reported study of CMI use by 464 community pharmacists revealed limited provision and use of CMIs in verbal medication counselling (Aslani, 1999). Guidelines targeting health professionals in general (Commonwealth Department of Human Services & Health, 1995), and community (Pharmacy Guild of Australia, Pharmaceutical Society of Australia, Society of Hospital Pharmacists of Australia, 1996) and hospital pharmacists (Dowling, Duguid & Thronton, 1996) in particular, have been developed and published. However, these have their limitations (Aslani, 1999). This paper describes the development and process evaluation of a program to foster the integration and use of CMI in professional pharmacy practice.

Materials and methods

The development of the program consisted of a needs assessment phase, selection of appropriate theoretical

†CMI is a brand specific, written document about medicinal products and may be produced in one of three formats: electronic which is produced by the dispensary computer, package inserts found inside the medication box and loose leaflet or tear-off pads which are sent directly to community pharmacies by the manufacturer. The content of CMI conforms to Schedule 12 of the Therapeutic Goods Regulations, which requires CMI to be "in English, clearly legible, written in a language easily understood by consumers and consistent with the product information (within the meaning of section 32 of the Act) of the medicinal product" (Therapeutic Goods Regulations, 1993).

models of behaviour to underpin the program design, selection of appropriate modes of teaching for adult education, and process evaluation (including pilot testing) of the educational program with practicing community pharmacists. This paper does not describe the evaluation of the impact of the educational program on community pharmacists' behaviour in using CMIs (impact evaluation). This evaluation is discussed in part 2 of the project.

Needs assessment for the development of the program

The first step in developing the educational program was to determine the needs of community pharmacists and factors which influenced the use of CMIs in their practice. The needs or conditions which were assessed were how, and how often, were CMIs provided and used in counselling, who received CMIs, and the barriers to the use of CMIs in practice. Each of the four types of need (normative, expressed, comparative and felt) (Hawe, Degeling & Hall, 1990) was assessed to ensure that a complete picture of community pharmacists' needs with respect to using CMIs in practice was produced.

The needs assessment was conducted using qualitative (in-depth interviews) and quantitative mail surveys (Aslani, 1999) (Table II), following the procedure recommended by Hawe et al. (1990). In-depth interviews were conducted with a convenience sample of 35 community pharmacists in NSW. The interviews focussed on all of the needs or conditions described above. A pilot ($n = 99$) and main ($n = 464$) survey of a random sample of NSW community pharmacists was conducted (using self-reported structured questionnaires) to collect quantitative data. Data were collected on how CMI was provided to consumers, how CMI was used as part of the verbal counselling practice of the community pharmacists, the frequency of provision of CMI and its use in verbal counselling, the types of CMI most frequently used by pharmacists and pharmacists' attitudes to CMI (with regard to pharmacists' professional role in using CMI, pharmacists' confidence in using CMI economic impact of supply, pharmacists' responsibility in supplying CMI, and perceived impact of CMI on consumers' medication taking behaviour).

Table II. Suggested information content of educational program.

CMI and its legislations;
Verbal patient counselling techniques;
Incorporation of CMI into the verbal medication counselling process;
Barriers to the use of CMIs in community pharmacy (and strategies to address the barriers);
Community pharmacists' actual experiences in using CMIs in their practice;
Use of CMI as a counselling tool for specific disease states or drug classes;
How to discuss the side effects section of the CMIs with consumers, and how to address their anxiety about the side effects;
How to demonstrate the benefits of CMIs to consumers and illustrate the positive impact of CMIs

Normative need

"Normative need has come to refer to what expert opinion defines as need" (Hawe et al., 1990). In the case of CMI use by community pharmacists, the expert opinion refers to the guidelines available on the use of CMI (Commonwealth Departmen of Human Services & Health, 1995, Pharmacy Guild of Australia, Pharmaceutical Society of Australia, Society of Hospital Pharmacists of Australia, 1996). To determine a normative need, the data on the provision of CMIs and their use as a verbal counselling tool from in-depth interviews and mail surveys (Table III) were compared to the content of the guidelines. The normative needs were identified as the limited and narrow modes of provision and use of CMIs.

Expressed need

Expressed need refers to the needs of the community pharmacists which the researcher can infer from the data obtained in the in-depth interviews and mail surveys. The results of the expressed needs assessment also revealed limited provision and use of CMIs in verbal counselling and limited modes of CMI provision and use in counselling. Additionally, it revealed restricted groups of consumers receiving CMIs. These groups included consumers on new medications, consumers taking medications with "serious" side effects, and consumers judged by the pharmacist as requiring additional written information.

Table III. Modes of CMI provision and use in verbal counselling.

Modes of CMI provision	Modes of CMI use in verbal counselling
Routinely give out CMI to all customers with prescription medication(s)	Only draw the customers attention to the presence of the CMI
Assess each customer individually to determine if they need CMI and then give out CMI	Draw the customers attention to the presence of the CMI and invite the customer to return to the pharmacy if they have queries after reading the CMI
Give out only if requested by the customer	Draw the customers attention to the presence of the CMI and highlight sections of the CMI during counselling
	Discuss some sections of the CMI only if requested by the customer

Comparative need

Comparative needs assessment involves determining the needs of a population by comparing the behaviour in question (such as CMI provision) between two populations, where one population is used as the standard. This was not relevant in the context of use of CMI in community pharmacy.

Felt need

Felt need is defined as what the community pharmacists in the in-depth interviews and mail surveys have stated that they need or want in order to provide CMIs more often and use CMIs more effectively in their verbal counselling. The felt needs assessment revealed several barriers to the use of CMIs in practice, which if addressed, may lead to increased CMI use. The barriers included both actual barriers experienced by pharmacists who were providing and using CMI in their practice as well as perceived barriers reported by pharmacists who had not commenced providing CMI. The barriers identified were categorised into four groups: cognitive, situational, financial and attitudinal barriers (Table IV), and were found to be similar to barriers to the provision of pharmaceutical services, including written information, reported in the literature (Farris, Ascione & Kirking, 1993, Sarriff, 1994, Bell, McElnay, Hughes & Woods, 1998). In developing the educational program, it was not possible to address all barriers, as some were outside the scope of a program.

Content of the program

The components of the educational program were a one-day workshop, written protocol and follow-up on-site training.

The new or modified behaviours targeted by this program were an increased provision of CMIs and the effective integration of CMIs in pharmacists' verbal patient medication counselling. Thus, the content of the workshop needed to influence participants to perform the new behaviours. Additionally, the content incorporated suggestions received from community pharmacists from the needs assessment stage (Aslani, 1999) (Table II).

The structure of the program consisted of three parts, based on the three factors in Green's PRECEDE model. The attitude and subjective norm factors of Ajzen's theory of planned behaviour were combined with the predisposing factors of Green's PRECEDE model, and the perceived control factors combined with the enabling factors. Predisposing factors are factors such as attitudes, beliefs, values, knowledge and perceptions, which provide the rationale and motivation for the behaviour to occur, or which can also hinder the change in behaviour. Enabling factors are those factors which act as a barrier or enable a person to perform the behaviour. Reinforcing factors (internal and external factors) influence the behaviour maintenance, allowing the individual to carry on performing the new behaviour without relapse.

The factors that may predispose, enable and reinforce community pharmacists to provide CMIs to consumers and to effectively integrate CMIs in the verbal medication counselling process were explored, and arranged into learning outcomes for the educational workshop. Strategies were developed to address the learning outcomes (Appendix). The predisposing factors, such as positive and negative attitudes to the use of CMI, were addressed by sessions discussing the rationale, benefits and impact of written drug information, including CMI.

The enabling factors were divided into two groups: firstly, the ease of CMI provision (including CMI availability); and secondly, the skills required to use CMIs as part of the verbal counselling process. To facilitate the use of CMI, a box of the top 50 most commonly dispensed medications (identified by drug

Table IV. Barriers identified from needs assessment.

Barrier Type	Barriers
Cognitive	Limited awareness and understanding of the CMI legislation (pertaining to availability and supply)⋆, Limited skills to use CMI as part of the dispensing and verbal medication counselling practices†, Lack of educational or training programs on the use of CMIs in community pharmacy⋆,
Situational	Limited availability of CMIs in community pharmacies, in particular loose leaflets, and inability to print electronic CMIs due to lack of appropriate software⋆, Limited storage space in pharmacies for loose leaflet CMIs†, Lack of printers (in particular, laser printers) to generate electronic CMIs†,
Financial	Increased dispensing and counselling times when using CMIs⋆, Increased cost, both in computer equipment and extra staff, when using CMIs; Lack of remuneration for the use of CMIs in community pharmacy;
Attitudinal	Pharmacists' perceived negative impact of CMIs on consumers' medication taking behaviour⋆, Pharmacists' perceived negative impact of CMIs on their relationship with general practitioners (if pharmacists were the main providers of CMIs)⋆, Dislike of the content and format of the CMI document by community pharmacists†

⋆ Barriers which could be addressed within the scope of an educational program.

† Barriers which were not addressed within the scope of the educational program but for which strategies were recommended during the program.

names), which had electronic or loose leaflet CMIs available, were provided to pharmacists prior to the educational program. Package insert CMIs are already available in the medication box, and were therefore not included in the CMI box.

The skills required to use CMIs in verbal counselling were separated into communication skills, verbal counselling and the ability to integrate written drug information into verbal counselling. Pharmacists, until recently, have not received extensive training in communication and counselling skills (Smith, Salkind & Jolly, 1990). A high standard of communication skills is required by pharmacists to counsel, educate and motivate consumers about their medications and to influence consumer satisfaction and adherence to therapy (Nagy & Wolfe, 1984). To provide pharmacists with the skills to use CMIs, we included training on communication (Gardner, Boyce & Herrier, 1991, Pfizer, 1993, Tindall, Beardsley & Kimberlin, 1994, Rantucci, 1997) and verbal counselling skills (Ranelli, 1990, Gardner et al., 1991, Raynor, 1992, Pfizer, 1993, Tindall et al., 1994, Currie et al., 1997, Rantucci, 1997), as well as experiential learning. The encouragement of self-efficacy is an essential requirement of changing behaviour (Bandura, 1986).

The framework for the verbal counselling skills section of the workshop was based on the Indian Health Service interactive counselling model: "Pharmacist-Patient Consultation Program-Parts 1 and 2" (Gardner et al., 1991, Pfizer, 1993). Pharmacists trained on the Indian Health Service model (Part 1) have expressed greater confidence in counselling, felt more comfortable in interacting with patients and demonstrated improved counselling skills (Lee et al., 1998). Furthermore, they continued to use the Indian Health Service interactive technique in their practices after the training programme had finished.

An on-site training component was developed to reinforce the educational components of the workshop training and address the third set of factors (reinforcing factors) in Green's model (Green, 1984). A workshop combined with on-site training has been shown to be effective in changing community pharmacists' behaviour, and sustain the new behaviour for a period of at least 14-weeks (de Almeida Neto et al., 2000). The observer gave feedback soon after the behaviour had occurred (Bandura, 1986), following a method devised by Pendleton (1984).

Whilst the protocol included in the program incorporated the guidelines available on CMI use (Table III) (Commonwealth Department of Human Services & Health, 1995, Pharmacy Guild of Australia, Pharmaceutical Society of Australia, Society of Hospital Pharmacists of Australia, 1996), it was intended to be more comprehensive than both guidelines. Other sources which informed its development included results of earlier research (Aslani, 1999); and the Indian Health Service Pharmacist–Patient Consultation Programs 1 and 2 (Gardner et al., 1991, Pfizer, 1993).

The protocol was presented in a 17 page A4-sized booklet, containing a summary flow-diagram of the protocol for the incorporation of CMI in the dispensing and counselling processes; detailed notes for the flow diagram (including background information about CMI), information on how to deal with problem situations when providing CMIs, such as contradictory information, non-approved uses of the medication (not included in the CMI), third party collection of CMI, withholding CMI and non-English speaking customers; and copies of the legislations relating to the supply and content of CMI.

Pre-testing the educational program

Pre-testing the protocol, educational workshop and on-site training with a group of community pharmacists was needed to assess the acceptability and suitability of the protocol to the needs of the target population (Hawe et al., 1990). The pre-testing constituted the process evaluation of the educational program, an essential step in program development. The program was pre-tested to meet the following objectives:

1. assess the clarity and interpretation of the protocol;
2. evaluate community pharmacists' opinions on the components and information content of the program and
3. determine the feasibility and practicality of the protocol, the workshop content and on-site training process in community pharmacy practice.

The pre-testing was conducted in three stages.

Individual discussions

First, we conducted individual discussions with a convenience sample of nine community pharmacists. Draft copies of the written protocol were distributed to the pharmacists for review and comment. The pharmacists were asked to provide feedback on the information content of the protocol and its feasibility and practicality in community pharmacy practice, during individual discussions with the researcher. All discussions were tape recorded, transcribed verbatim and content analysed.

Group discussion

In the next stage, the amended protocol was mailed to a convenience sample of community pharmacists ($n = 5$), who had previously completed the mail survey in the needs assessment stage, prior to the focus group discussion. The pharmacists were asked to assess the protocol implementation in their practice

and provide feedback on the same issues as the subjects who participated in the individual discussions. Group discussions are ideal for generating new ideas and therefore useful in the context of development or refinement of a professional practice tool, such as, guidelines in general practices (Fardy & Jeffs, 1994). Typed transcripts were prepared and content analysed.

Pilot testing of the educational program

For the final stage, a convenience sample of nine community pharmacists attended the one-day workshop at the University of Sydney. They were also provided with follow-up training at the community pharmacy. They were requested to comment on the feasibility and practicality of the written protocol (which was incorporated in the workshop) for community pharmacy; provide their opinions on the educational workshop and on-site training content and procedure; and suggest any possible strategies to improve the program. Furthermore, they completed an anonymous written feedback based on the questionnaire used by the Institute for Teaching and Learning, at the University of Sydney, where they reported on the components of the workshop which they liked and disliked, what information they gained, relevance to practice and how the workshop could be improved. Individual telephone or face-to-face interviews were also conducted with each pharmacist to discuss and gain further feedback and comments after the workshop and when on-site training was provided.

Results

Pre-testing of the educational program

Minor changes were made to the protocol as a result of the comments received from the individual and focus group discussions.

The results from the final stage, the pilot-testing, indicated that overall, the training was found to be useful and participants reported that they were able to incorporate the written protocol into their dispensing and counselling processes. They found the content of the protocol easy to read and understand, and of an appropriate length and information content. All participants found the flow diagram more useful than the booklet, but felt that the booklet was essential until they became completely familiar with the steps in the flow diagram. No suggestions were made to modify the content of the written protocol.

Respondents stated that the entire training program was practical and could be implemented in their practice and extended to other pharmacists. They felt that it was possible to take day off from work at the pharmacy to attend the workshop, but that it would not be possible for all pharmacists from the same pharmacy to attend the workshop on the same day (for pharmacies which employed more than one pharmacist) because of the need to find more than one locum. Under these circumstances the respondents suggested that several training sessions should be offered. They believed that the on-site training was very useful, not only in reinforcing new material learnt from the workshop, but also in receiving direct feedback about communication and verbal counselling skills, and the use of CMI, in practice.

The feedback received from the semi-structured written questionnaire about the one-day workshop included:

1. Provision of new information in the workshop. Nearly all workshop participants stated that new information had been provided. The most common responses were, information on the rationale for CMI, different CMI distribution formats, methods of verbal and non-verbal communication with consumers, the use of open-ended questions in verbal counselling, the modes of CMI use in practice and possible ways of addressing barriers to communication with consumers. Other responses included, confirmation that pharmacists can highlight sections of the CMI document during verbal counselling, and suggested methods for verbal counselling of consumers with repeat medications.

> Interesting discussion with other pharmacists and "ideas" on various aspects of communication especially for difficult patients.

> All about the different types of CMI. I did not know there was more than one type. I also was not aware of the lack of availability and the electronic CMI.

One participant stated that they had not gained any new information from the workshop. However, he/she found the workshop useful because it reinforced some of the information about CMI, and communication and verbal counselling skills which he/she already knew.

> very good for reinforcing and hearing other people's opinions on certain subjects

Additionally, the workshop provided an opportunity for the participants to become aware of other pharmacists' opinions about CMI and its use in practice, as well as their opinions on communication and verbal counselling skills. This may indicate the importance of subjective norm (from Ajzen's "theory of reasoned action") in influencing the use of CMI by some community pharmacists.

2. Relevance to community practice. All workshop participants agreed that the workshop had been relevant to their practice. The majority stated that the verbal counselling techniques and the communication skills discussed, as well as the modes of

CMI use in verbal counselling, were the most relevant parts of the workshop. They did not find any part of the workshop irrelevant to their practice.

. . .related to one of the most important professional roles of the pharmacy. . .you need good communication skills in order for you to be able to use the CMI.

The discussion helped me work out in my own mind how I will try to use CMI from now on.

3. Most liked component of the workshop. The most common response provided by the pharmacists was the ability to perform role plays, practice the verbal medication counselling skills (gained in the workshop), practice using CMIs in counselling, and discussing and exchanging ideas about the workshop issues with the other participants. A few pharmacists also enjoyed observing the role-plays on the counselling and communication videos.

Being able to talk to other pharmacists and get their ideas on their procedures.

4. Least liked component of the workshop. Two participants felt that the workshop was "too long", while another pharmacist felt that "time was a restriction" and more discussion of CMI use in practice was required. Another pharmacist found the introductory section on CMIs too long.
5. Improvements to workshop. Some of the comments made under this question were: to reduce the workshop time; to increase the information content on communication skills, barriers to communication and verbal counselling of consumers; to perform more role plays, in particular, on the implementation of the written protocol in practice; and to discuss "real" examples. One participant felt that more workshops should be run so that all pharmacists employed at his/her pharmacy could attend.

More focus on real life situations. More on actual best practice models

Additionally, the pharmacists found the follow-up on-site training useful, in particular, in reinforcing the material covered in the workshop such as the use of CMI as a verbal counselling tool.

The modifications made to the content of the educational workshop and the on-site training component as a result of this stage, included:

1. Summarising the section on the impact of written drug information on consumers' behaviour;
2. Expanding the communication skills component of the workshop and
3. Allocating more time for counselling role plays.

Discussion

The educational program was designed to change individual behaviour. Therefore, theoretical models were used which described behavioural change, rather than models which placed emphasis on attitudes, or attitudes towards behaviour. Furthermore, the theories consider factors other than attitude which can influence behaviour.

Fishbein and Ajzen have complemented and improved on aspects of a HBM analysis of health decision making by separating belief from attitude and emphasising the paramount importance of the influence of "significant other" on an individual's intention to act (Tones, Tilford & Robinson, 1990).

Both models also consider the importance of enabling factors or perceived control as a factor influencing behaviour change. A person may have a positive attitude, a strong intention and have the appropriate social pressures to perform the new behaviour, but be unable to do so because of internal or external factors. If the person has control over these factors, then she/he will be able to manage or regulate these factors and accomplish the behaviour, specifically, behaviours under volitional control. Bandura's (1986) theory of self-efficacy provides support for the relationship between an individual's perceived control over performing a behaviour and the actual performance of the behaviour. Thus, the two models of behaviour: Ajzen's theory of planned behaviour and Green's PRECEDE model were robust theories for designing the educational program.

However, in changing individual's behaviour it is important to consider how the individual's attitudes, beliefs, intentions and behaviour fit into or are opposed within the social or community structure. An individual's attitudes, beliefs and intentions are developed and changed within the social context through interactions with other individuals (Douglas, 1971). Furthermore, peer support or pressure does influence behavioural intention (Ajzen & Madden, 1986) and this was considered in designing the educational program. For example, lack of employer (Venkataraman, Madhavan & Bone, 1997) or peer support may be a barrier to the provision of pharmaceutical services such as CMI provision and use as a counselling tool. The purpose of the on-site training was to provide reinforcement for the new behaviour and minimise relapse into the old behaviour.

Lack of peer support can go beyond the community pharmacy, to a local or national network of pharmacists and colleagues, or to professional pharmacy bodies who guide and set standards for the practice of pharmacy. Developing programs to change individual behaviour may be insufficient in view of the issues of peer support and environment,

even though the majority of community pharmacists appear to practise in isolation. Thus, one of the weaknesses of using the above models of behaviour is that they do not take account of pharmacy as a larger organisation and the social networks linked with community practice. If factors "outside" the community pharmacy outweigh a person's intention to perform a behaviour, then it is possible that the behaviour change will not occur, no matter how well grounded the educational program, in models of individual behaviour. Models such as the organisational change and social networks theory would be more appropriate, however, they in turn are limited as they do not consider individual behaviour change. A combination of several models, or development of a model of behavioural change which incorporates aspects of individual as well as organisational behaviour change may be more appropriate for underpinning educational programs targeted at changing pharmacists' behaviour (Blom, 1996).

The evaluation of the educational program demonstrated the feasibility of the program, and its ability to be implemented in practice. Although, a sample of nine community pharmacists were used, the sample was adequate for process evaluation, and a valid result in terms of feasibility of the program for future implementation may be drawn.

Conclusion

This paper has described the development and process evaluation of an educational program to foster the provision of CMI, and its use as a verbal counselling tool by community pharmacists. Two models of behaviour change, namely Ajzen's Theory of Reasoned Action and Greens PRECEDE model, provided the theoretical framework for the development of the educational program. The components of the program were carefully selected to incorporate the issues identified in the needs assessment; to incorporate the guidelines on the provision and use of CMI developed by government and professional pharmacy bodies and to address the factors described in the above theoretical models. The process evaluation of the program with three groups of pharmacists resulted in minor changes to the content of the protocol and workshop, as well as to the format of workshop delivery.

The educational program has been embraced by the Pharmaceutical Society of Australia and over 25 one-day workshops have been delivered to practicing pharmacists.

While the educational program was well received by the participants, it is important to evaluate its impact on community pharmacists behaviour, with respect to the rate of CMI provision and its use in verbal counselling, in order to determine the success of the program in changing behaviour and adoption of a new pharmaceutical service. The impact of the program on the provision of CMI and its integration in verbal counselling has been evaluated in a quasi-experimental, randomised comparative study.

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Appendix

Predisposing factors.

Learning objectives/behavioural outcomes	Strategies used in educational program
1. Explain the rationale for written patient drug information	1. Discussion and review of the literature
2. Discuss the consumers' needs for drug information	2. As Above
3. Identify positive and negative impacts of written patient drug information, including CMIs	3. As Above
4. Explain the history and legislation, and benefits of CMI to consumers	4. Information on CMI, history and legislation to be provided in workshop[a]

Enabling factors.

Learning objectives/behavioural outcomes	Strategies used in educational program
1. Demonstrate the use of the Indian Health Service interactive counselling model which recommends: • use of open-ended questions assessment of patient understanding • filling in gaps in patient's drug knowledge • interactive counselling • patient verification/summary of information provided	1. Discussion of the verbal counselling model, and barriers to verbal counselling and strategies to overcome barriers • Video examples of counselling model • Role plays
2. Be able to effectively incorporate CMI in the verbal medication counselling process	2. Discussion of the study written protocol • Use of CMI box • Problem solving • Role plays

Reinforcing factors.

Learning objectives/behavioural outcomes	Strategies used in educational program
1. Incorporate CMIs into practice	1. Researcher to observe the use of CMI in practice and provide feedback and/or suggestions for improvement, where applicable
2. Use CMIs as part of the counselling process	2. Researcher to observe the use of CMI as a counselling tool, and the pharmacists' communication and counselling skills, and provide feedback
3. Overcome problems encountered when using CMIs	3. Researcher to discuss the problems pharmacists have encountered and overcome, and suggest possible strategies for the future