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RESEARCH ARTICLE

Community pharmacists' attitudes towards medicines use reviews and factors affecting the numbers performed

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Abstract *Objective of the study* Medicines use review and prescription intervention ('MUR services') is the first advanced service within the NHS community pharmacy contract and is a structured review that is undertaken by a pharmacists with patients on multiple medicines. The objective of this study was to investigate factors that influence the number of Medicines use reviews (MURs) performed by community pharmacists and to explore community pharmacists' attitudes towards the service. *Setting* This study was conducted with pharmacists who were employed by one UK community pharmacy chain. *Method* A questionnaire was developed to investigate factors that influence the number of MURs performed and pharmacists' attitudes towards MURs. It consisted of a series of attitudinal statements together with brief demographic data. Questionnaires were distributed to a sample of 280 pharmacists accredited to provide the service during April and May 2006. *Main outcome measure* Factors affecting the number of MURs performed and community pharmacists' attitudes towards MURs. *Results* Sixty per cent (167/280) of pharmacists returned a completed questionnaire. Twenty-seven per cent of respondents had not performed any MURs, 43% had conducted one to 14 reviews and 31% had conducted 15 or more. Job title affected the number of reviews performed; respondents categorised as 'Store based' pharmacists performed significantly more MURs than those working as 'Locums' but not significantly more than 'Managing' pharmacists. Pharmacists reporting access to an accredited consultation area performed significantly more MURs than those who did not. Those working more than 20 h per week performed significantly more MURs than those working less. Gender, time since qualification, the pharmacy size and those having or currently undertaking a clinical diploma were not found to be associated with the number of MURs performed. Most respondents reported that MURs were an opportunity for pharmacist to use their professional skills in an extended role and patients would benefit from the service. However they reported concerns about GPs opinion of the service, lack of time and support staff to conduct MURs and were unhappy about consultation areas. *Conclusion* This study demonstrates that pharmacists perceive MURs to be an opportunity for an extended role and of value to patients. However, this study has identified perceived barriers, including the availability of a consultation area suitable for performing MURs, time to perform MURs and support staff. The number of MURs performed by pharmacists appears to be affected by the pharmacists' job title, their working hours and the presence of a consultation area. Additional support for 'locum' pharmacists was also highlighted and may be needed.

Keywords Attitudes · Community pharmacist · Concordance · Drug use reviews · Medicines use reviews · Questionnaire · United Kingdom

Impact of findings on practice

- Medicines use reviews are a relatively new service, it is important that pharmacist's attitudes surrounding the service are acknowledged so future services can be tailored to both the patients and pharmacists needs.
- This study demonstrates that pharmacists generally have a positive attitude towards MURs.

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- This study highlights barriers that pharmacists face when providing the service and includes concerns over time to perform the reviews, levels of supporting staff, and issues surrounding the consultation area.

Introduction

The UK government introduced medicines use review (MUR) and prescription intervention service ('MUR services') as an advanced community pharmacy service in April 2005 [1]. The purpose of MURs is to establish a picture of the patients understanding and use of prescribed and non-prescribed medications. The consultation with the pharmacist provides patients an opportunity to ask about their medicines and identifies any problems they might be experiencing along with possible solutions. These reviews are conducted privately in a consultation area within the pharmacy and the report of the review is provided both to the patient and if necessary to their General Practitioner (GP) [1]. MURs are modelled on the concept of concordance where during consultations with pharmacists, patients are encouraged to become increasingly empowered in their own medicine-taking decisions in order to achieve the most effective use of medicines [2, 3].

Several distinct approaches to reviewing patients' medicines have been described in which the levels of patient engagement and clinical input vary. These can be conducted by a variety of health care professionals, ranging from the most basic ad-hoc unstructured opportunistic review through to a full clinical medication review that is conducted face-to-face with the patient and considers both the patients medicines and condition(s) [4]. MURs do not fit easily into these approaches in that there is a high level of patient engagement but absence of access to patient medical records limits the clinical input; however, MURs have been described as a 'valuable addition' to the medication review framework [5]. The benefits of reviewing medication (medication reviews), particularly in the older population, is increasingly being realised and is recommended within the UK National Service Framework (NSF) for older people as a routine part of helping patients manage their medication [6, 7]. It has yet to be established whether MURs would be correspondingly beneficial as medication reviews.

Pharmacists have conducted few MURs despite the training to do so. According to national statistics, within the first year of the new national community pharmacy contract, 39.1% of community pharmacies in England and Wales have claimed payments for providing MURs; the national average number of MURs conducted in England and Wales per accredited pharmacy was 37, despite an expectation that five times this number would be conducted per pharmacy [8]. The total number that were performed has been reported as 152,854 [8]. Although £ 39 m had been allocated, it has been estimated that approximately £ 36 m was under spent during the 2005–2006 financial year [9].

Whilst a UK study suggests that MURs are regarded positively by the majority of community pharmacists, a lack of time, support staff, patient knowledge about the service and the GP response have been cited as barriers [10]. Additionally, pharmacists have raised concerns over insufficient space for an accredited consultation area (which must conform to the nationally agreed service specifications related to being a clearly designated area for confidential consultations), inadequate financial rewards to encourage pharmacists to offer MURs, problems with recruiting patients for a MUR and a lack of support from Primary Care Organisations (PCOs-NHS organisations that provide local health and social care) [11]. Conversely, PCOs have expressed views that pharmacists lacked the confidence to perform MURs and one study suggests that most PCOs have encouraged the role out of MURs through publicising the service, however only around one third had a medicines review strategy which included MURs [12].

The Australian home medicines review (HMR) service, which became available from 1 October 2001, has comparable aims to MURs. They contrast with MURs as they are conducted by pharmacists within the patients' home and involve referral from the patients' GP [13]. Like MURs, the uptake has been slower than expected, with only 6.17% of GPs referring patients for a HMR up to May 2003 [14]. Australian GPs have suggested that the reasons for the slow uptake include poor relationships between GPs and pharmacists [15], the time involved in completing the paperwork, insufficient remuneration and a perceived lack of pharmacists available to conduct reviews [16–18]. A small UK study of GPs views about MURs suggested that they welcomed the MUR service in principle and that the service should be more widespread; however, they did seek a clearer understanding of their role within the MUR process [19]. The more established Australian HMR model provides a useful insight into some of the issues that may arise with MURs.

Aim of the study

The MUR service is relatively new and little is known about pharmacists' attitudes towards the service. The aim of this study was to explore factors that affect the number of MURs performed by community pharmacists who were accredited to perform MURs and to investigate pharmacists' attitudes towards the implementation and value of this new service.

Method

Postal questionnaires were used to survey community pharmacists about the MUR service. A convenience sample of pharmacists working in a single pharmacy chain was selected for this study. The sample consisted of pharmacists who were accredited to provide MURs and was provided by the company in which this study was conducted. The first 70 names from an alphabetical list of pharmacists in each of four of the company's geographical areas were supplied. Questionnaires were distributed in April 2006 with a covering letter using the company's internal mailing system to the sample of 280 pharmacists. Non-responders were followed-up with a remainder letter and second questionnaire one month later (May 2006).

The questionnaire was developed with reference to the literature and consultation with community pharmacists involved with the service and researchers. To improve face validity the questionnaire was piloted on ten pre-registration pharmacists (those who are training to become pharmacists). Questions were designed to be concise, applicable to all respondents and took an estimated 5–10 min to complete. The questionnaire consisted of demographic and attitudinal questions. The demographic section included questions about gender, time since qualification as a pharmacist, job title, average number of weekly hours worked, the total number of MURs the pharmacist had conducted since accreditation (the maximum number for this category was arbitrarily set at 15+, it was anticipated that the majority of pharmacist would have conducted fewer at this early stage), whether the pharmacist had attained or was studying for a clinical diploma (postgraduate qualification designed to develop the knowledge and skills of the pharmacist), the size of the pharmacy (each pharmacy is designated a size by the company) and availability of an accredited consultation area. The pharmacists' job title was categorised into three main groups: 'Store based' pharmacists, whose main role was in providing pharmaceutical services with only minimal staff or business responsibilities; 'Managing' pharmacists were those who in addition to pharmaceutical responsibilities managed both staff and business aspects; 'Locum' pharmacists were those who worked in several pharmacies (these pharmacists were asked to answer according to their base pharmacy) and 'other pharmacists' were those who did not fit into any of the three main definitions i.e. MDS pharmacists (those working to provide care in residential or nursing homes), teacher practitioners (who teach at a university as well as practise as a pharmacist) or Sunday only pharmacists. The second section consisted of 16 five-point Likert scaled attitudinal statements. Attitudinal statements covered three main areas: views about pharmacists' extended role in relation to the MUR service; effectiveness of the service; and barriers to implementation.

Data and statistical analysis

Data from returned questionnaires were entered into SPSS (version 14.0) for analysis. Data analysis included simple frequencies of demographic variables. Cross-tabulations of the number of MURs and demographic variables were performed to determine if there were any associations between variables and tested using the Mann–Whitney U and Kruskal–Wallis statistical tests.

Ethical approval was obtained from the Centre for Pharmacy, Health and Society ethics committee, University of Nottingham (now the Division of Social Research in Medicines and Health).

Results

After one reminder, a total of 167 (60%) questionnaires were returned; 113 respondents (68%) were female and 54 (32%) were male. Almost half of the pharmacists were 'store based' with most of the remainder working in management roles (Table 1). Most (86%) respondents were working 21 h or more per week but less then one third had or were currently studying for a clinical diploma. Three quarters of the pharmacists reported that there was an accredited consultation area available for them to perform a MUR. However over a quarter (27%) of pharmacists had not conducted a MUR, 43% had conducted between 1 and 14 and 31% had conducted 15 or more since becoming accredited.

Factors affecting the number of MURs conducted by pharmacists

Pharmacists who reported working 21 h or more per week performed significantly more MURs than those who worked 20 h or less per week ($U = 1170.5$, $P = 0.009$) (Table 2). In addition, pharmacists reporting an accredited consultation area performed significantly more MURs than those without access to such a facility ($U = 1621.5$, $P < 0.001$). The pharmacist's job title was also shown to be associated with the number of MURs carried out ($H(3) = 10.73$, $mdn = 2$, $P = 0.013$). With a Bonferroni correction applied and significance tested at the $P = 0.01$ level, further testing found no differences between the groups in the number of MURs performed other than that 'Store based' pharmacists performed significantly more MURs than 'Locum' pharmacists ($U = 671$, $P = 0.009$).

Table 1 Demographic details of respondents (n = 167)

Variable	n*	%
Gender		
Male	54	32
Female	113	68
Qualified as pharmacist		
0 to 9 years	57	34
10 to19 years	47	28
20 or more years	62	37
Pharmacist job title		
'Store based'	76	46
'Locum'	26	16
'Management'	56	34
'Other'	9	5
Average number of weekly hours worked		
20 h or less/week	24	14
21 h or more/week	143	86
Clinical diploma		
Yes/currently studying	45	27
No	122	73
Number of MUR performed since accreditation		
None	44	27
1 to 14	71	43
More than 15	51	31
Pharmacy size		
Small	66	42
Medium	61	39
Large	29	19
Availability of consultation area		
Yes	124	75
No	42	25

* Total is not always 167 as not all respondents answered every question

Interestingly, those who had reported studying for or had completed a post-graduate clinical diploma performed as many MURs as those who had not.

The respondent's gender, the length of time qualified as a pharmacist and the size of pharmacy the pharmacist worked did not significantly affect the number of MURs performed. Additionally, there was no significant difference between those who were studying for or possessed a clinical diploma compared with those without a clinical diploma.

Characteristics of attitudinal statements

There was almost universal acknowledgement that MURs are an opportunity for an extended role (93%), that they would make better use of the pharmacists' professional skills (86%) and would enhance pharmacists understanding of their patients' views about medicines (96%). This was supported by a high expression of disagreement with the suggestion that MURs were a waste of the pharmacists time (90%) and that they would not like to see more advanced services introduced in the future (69%) (Table 3).

A large proportion of respondents (93%) felt the MUR service would improve patients' use of medicines. A high level of disagreement (86%) was reported with the suggestions that MURs would not improve patient compliance or the cost-effectiveness of prescribed medication (66%). Whilst half of the respondents felt that a lack of access to medical records reduced the benefits of MURs, they still felt patients wanted pharmacists to review their medicines. However, there were doubts as to whether GPs thought the service was valuable to patients (43%). Three quarters of the pharmacists identified a lack of time and support staff as barriers to performing MURs. The majority of the respondents were also not happy with their consultation area. Almost half of the respondents reported that they could perform a greater number of MURs if they had a suitable consultation area. Also, nearly half concurred that they would perform more if they had a reasonable financial incentive.

Discussion

This study found that approximately three quarters of the respondents were providing MURs however more than a quarter (27%) had not performed any and less than one third reporting having performed more than 15. Findings from a UK national evaluation of the community pharmacy contractual framework suggested that 59% of respondents were providing MURs and that the mean number of MUR completed per pharmacist was 63 [20]. Pharmacists' job title, working hours and the presence of a consultation area all affected the number of MUR conducted. However gender, length of time qualified, having a clinical diploma and the size of the pharmacy worked at did not affect the numbers of MURs performed.

Pharmacists were positive about this new service viewing it as beneficial to both pharmacists and patients; however, they did report barriers to the service. Lack of support staff and problems with consultation areas were identified as barriers. Pharmacists categorised as 'Store based' significantly performed more MURs than those categorised as 'Locum' pharmacists. This finding accentuates the need for additional support for 'Locum' pharmacists to enable them to perform MURs; perhaps pharmacy staff could assist in both pre-booking patients who would be happy to return for a MUR or by helping the

Table 2 Number of MUR carried out by pharmacists by demographic variables

Test variables	Number of MUR performed			Test statistic**	Sig.
	0	1–14	15+		
Gender					
Male	14	22	18	U = 2920.0	$P = 0.701$
Female	30	49	33		
Years qualified as pharmacist					
0–9 years	13	24	19	H (2) = 0.742	$P = 0.690$
10–19 years	13	21	13		
20+ years	18	26	18		
Pharmacist job title					
'Store based'	13	34	29	H (3) = 10.73	$P = 0.013$*
'Management'	15	24	16		
'Locum'	10	12	4		
'Other'	6	1	2		
Pharmacist job title					
'Store based'	13	34	29	U = 1801.5	$P = 0.148^{+}$
'Management'	15	24	16		
Pharmacist job title					
'Store based'	13	34	29	U = 671.0	$P = 0.009^{*,+}$
'Locum'	10	12	4		
Pharmacist job title					
'Management'	15	24	16	U = 587.0	$P = 0.165^{+}$
'Locum'	10	12	4		
Average number of weekly hours worked					
20 h or less/wk	11	10	3	U = 1170.5	$P = 0.009$*
21 h or more /wk	33	61	48		
Clinical diploma					
Yes/currently studying	12	15	17	U = 2491.0	$P = 0.450$
No	32	56	34		
Pharmacy size					
Small	16	35	15	H (2) = 2.567	$P = 0.277$
Medium	18	20	23		
Large	5	11	12		
Availability of consultation area					
Yes	24	55	45	U = 1621.5	$P < 0.001$*
No/unsure	20	15	6		

* Significant at 0.05 level of significance

** Mann–Whitney U tests used for: 'Gender', 'Weekly hours worked', 'Clinical diploma', 'Availability of consultation area' and further testing of 'Job title' variables; Kruskal–Wallis H test used for: 'Years qualified as pharmacist', 'Pharmacist job title' and 'Pharmacy size' variables

+ Bonferroni correction applied, significance tested at 0.01 level of significance

'Locum' pharmacist identify patients who regularly visit the pharmacy and are suitable candidates for the service. Many of these barriers to conducting MURs have also been found for HMRs in Australia, where lack of time, funding and staff cover were cited as barriers to the service [16–18]. Although communication issues were not investigated in this study, a PCO survey found low levels of communication between pharmaceutical and medical committees indicating that relationships between frontline stakeholders need improving for the service to prosper [12]. The perceived barriers described appear to be substantial; accredited pharmacists have been slow to take the next step to implementing the MUR service. In order for the service to grow additional support for pharmacists or the reduction of their daily workload appear necessary so that pharmacists feel comfortable with this new emerging patient-centred

Table 3 Pharmacist responses as valid percentages to attitudinal statements

Variable	n	Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)
Attitudes towards MURs as an extended role						
The MUR service is a great opportunity for an extended role for community pharmacists	167	32	61	4	3	0
MURs make excellent use of the pharmacist's professional skills in the community	165	33	53	7	6	0
Pharmacists understanding of their patients views about medicines will be enhanced by the MURs	166	28	68	2	2	1
The MUR service is a waste of the pharmacist's time	167	1	2	7	53	37
I would not like to see more of these advanced services in the future	167	6	16	9	37	33
Attitudes towards the perceived effectiveness of MURs to patients						
The MUR service will improve poor or ineffective use of the patient's medicine	167	25	68	5	1	1
The MUR service will not improve patient compliance	167	0	7	8	65	21
The MUR service will not improve the cost-effectiveness of prescribed medication	167	2	20	13	59	7
Without access to medical notes, patients will not see the full benefit from the review	165	10	41	7	40	3
In my opinion patients simply do not want the pharmacist to review their medication	167	2	15	16	55	12
Attitudes towards perceived barriers						
I simply do not have enough time to carry out MUR	166	36	38	5	21	1
I have enough supporting staff to enable me to conduct MURs to my satisfaction	165	2	19	6	40	34
I would conduct more MURs if I had a reasonable financial incentive	167	19	31	12	33	5
I am happy with the consultation area I have at the moment	166	13	19	4	28	36
I could conduct more MURs if I had a suitable consultation area	165	16	26	19	30	10
I think GPs see MURs as a valuable contribution to patient care	165	2	21	35	33	10

role. In this survey, the extent to which pharmacist are avoiding this new practise model in favour of traditional, predominately reactive, pharmacist activities was not established.

The response to the attitudinal statements illustrates that the majority of the respondents welcomed the opportunity to extend their role and perceive that MURs make better use of the pharmacists' professional skills. The respondents were positive that MURs would enhance their understanding of their patients views and that they would like to see further advanced services in the future. These findings add to other research that has suggested that pharmacists perceive MURs as a 'good idea' and that pharmacists enjoy doing MURs [10, 21]. On the whole, the respondents did agree with the aims of the service however over 50% agreed that patients will not see the full benefits without access to medical notes. This finding indicates that the some respondents may not be clear about the purpose of MURs, seeing them as a clinical rather than a concordance-based review. Training providers may wish to emphasise differences between MURs and medication reviews using the categorisation of medication review activity proposed by the Medicines Partnership (an organisation established by the Department of Health in 2002 that promotes the concept of concordance) [4, 5]. Pharmacists may also find it useful to use their continuing professional development (CPD) training cycle to review the aims of the service and its limitations. Furthermore, although many respondents remained neutral (35%), only 23% were in agreement that GPs perceived MURs as a valuable service. This supports other findings that showed that only 26% of pharmacists reported having received feedback from GPs and only 12% indicated that providing MURs had improved their relationship with GPs [20].

A major limitation of this study was that it was conducted in one pharmacy chain. The findings may not

represent the situation in other pharmacy chains or views of other pharmacists as they will have their own strategies for implementing the MUR service. Likewise, the views of independent contractors, who have conducted significantly less MURs compared with chain pharmacies [12] maybe different. Data about time since accreditation was not collected and thus the low numbers of MURs conducted may, in part, relate to the time since accreditation. We found much agreement in pharmacists attitudes towards MURs, however there were some areas with less agreement. These differences in attitudes may vary with demographic variables, however the study was not designed to investigate this and the small sample size means that any differences may not be detected. This study has highlighted some of the barriers perceived by pharmacists as hindering their involvement in the provision of MURs; removing these barriers is no guarantee that pharmacist will respond by adopting the service. Likewise, there is no evidence within this study to suggest that analysing attitudinal statements is a predictor of pharmacist behaviour towards the MUR service. This study was to gauge initial impressions of MURs and factors that affect the numbers that are performed. It will take longer to substantiate the opinions of pharmacists as the service evolves and becomes more established.

Although pharmacists appear to have favourable views towards MURs the numbers that are performed suggest otherwise. Investigating pharmacists' attitudes towards MURs is important in understanding pharmacist's perceptions of their involvement in these recent patient-centred roles [22] and is inevitably an influencing factor in the service implementation and feasibility of future advanced services. As with the Australian HMR, the MUR service is a novel model for community pharmacists and previous research suggests that change can be predictably slow [23]. In order for pharmacists to adopt this extended role, their concerns need to be addressed. Reviewing the daily activities of pharmacists, their support staff and investigating issues relating to consultation area could be useful initial steps.

Further research should establish the effectiveness/patient-centred outcome(s) of MURs as well as patient experiences and perspectives. Also, determining other health care professional views would illustrate how this facet of the pharmacist extended role is being received. In light of these findings, policy makers need to reflect whether in Rogers's terms [24], the 'early and late majority' will sustain and grow the service or more detrimentally, discontinue this practise at a later point in time.

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